Upgrade SD-WAN Controllers with the Use of vManage GUI or CLI

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Introduction

This document describes the process to upgrade the Software-defined Wide Area Network (SD-WAN) Controllers.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Software-defined Wide Area Network (SD-WAN)
- Cisco Software Central
- Download the Controllers software from <u>software.cisco.com</u>
- Run the AURA script before the upgrade <u>CiscoDevNet/sure: SD-WAN Upgrade Readiness</u> <u>Experience</u>

There could be multiple reasons to plan for a Controllers upgrade, such as:

- New releases with new features.
- Fix of known caveats/bugs.
- Deferred Releases.

Note: If the release has been deferred, it is a best practice to upgrade as soon as possible to the goldstar version. Deferred releases are not recommended on production controllers due to know defects.

When it is time to upgrade your Controllers, please consider the next useful information:

- Verify the <u>Release Notes</u> of the SD-WAN Controllers.
- Verify the Cisco vManage Upgrade Paths.
- Verify the Cisco SD-WAN Controllers meet the Recommended Computing Resources.
- Verify the End-of-Life and End-of-Sale Notices of the SD-WAN products.

Note: The order to upgrade the SD-WAN Controllers is vManage > vBonds > vSmarts.

Components Used

This document is based on these software versions:

- Cisco vManage 20.3.5 and 20.6.3.1
- Cisco vBond and vSmart 20.3.5 and 20.6.3

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Pre-checks to Be Performed Prior to a Controller Upgrade

Backup your Controller

- If cloud-hosted, confirm the latest backup is done or initiate a backup of **config db** as mentioned in the next step.
 - You can view the current backups as well as trigger an on-demand snapshot from the SSP portal. Find more guidance <u>here</u>.
- If on-prem, take a **config-db** backup and VM snapshot of the controllers.

<#root>

vManage#

request nms configuration-db backup path /home/admin/db_backup

successfully saved the database to /home/admin/db_backup.tar.gz

- If on-prem, collect the **show running-config** and save this locally.
- If on-prem, ensure you know your **neo4j** password and notate to your exact current version.

Run an AURA Check

- Download and adhere to the steps in order to run AURA from <u>CiscoDevNet/sure: SD-WAN Upgrade</u> <u>Readiness Experience</u>
- Open to a TAC SR in order to address any questions related to the failed checks in the AURA report.

Ensure Send to Controllers/Send to vBond is Done

Check vManage Statistics Collection Interval

Cisco recommends the Statistics Collection Interval in **Administration > Settings** is set to the default timer of 30 minutes.



Note: Cisco recommends that your vSmarts and vBonds be attached to the vManage template before an upgrade.

Verify Disk Space on vSmart and vBond

Use the command **df -kh** | **grep boot** from vShell to determine the size of the disk.

controller:~\$ df -kh | grep boot /dev/sda1 2.5G 232M 2.3G 10% /boot controller:~\$

If the size is greater than 200 MB, proceed with the upgrade of the controllers.

If the size is less than 200 MB, pursue these steps:

1. Verify the current version is the only one listed under **show software** command.

VERSION	ACTIVE	DEFAULT	PREVIOUS	CONFIRM	ED TIMESTAMP
20.11.1	true	true	false	auto	2023-05-02T16:48:45-00:00
20.9.1	false	false	true	user	2023-05-02T19:16:09-00:00
20.8.1	false	false	false	user	2023-05-10T10:57:31-00:00

2. Verify the current version is set as default under show software version command.

```
controller# request software set-default 20.11.1
status mkdefault 20.11.1: successful
controller#
```

3. If more versions are listed, remove any versions not active with the command **request software remove** <**version**>. This increases the space available to proceed with the upgrade.

4. Check the disk space in order to ensure it is greater than 200 MB. If it is not, open a TAC SR.

Controllers Upgrade Workflow



There are two types of images for controllers: new deployment and upgrade. For the scope of this guide, the image to download must be an upgrade image.

Software Download

Downloads Home / Routers / Soft	tware-Defined WA	N (SD-WAN) / SD-WAN / SD-WAN Software Update-	20.6.3.1(MD)				
Q. Search Expand All Collaps Suggested Release	ie All	SD-WAN Release 20.6.3.1 MD A My Notifications	Related Links a Controllers Release M	nd Documentation Notes for 20.6.3.1			
20.6.3.1(MD) 😒							
20.3.5(MD) 📀		ATTN: Before upgrade, please refer Cisco SD Compatibility Matrix Recommendations	0-WAN Controller Compatibility Matrix and Server Recommendations page:				
Latest Release	~						
20.3.7(MD)		File Information	Release Date	Size			
20.6.5(MD)		vManage upgrade image vmanage=20.6.3.1=x86.64 tar.gz	27-Jul-2022	3050.79 MB	±₩∎		
20.10.1(ED)		Advisories Ґ					
20.9.2.1(ED)							

Navigate to Software Download and download the software version image for vBond and vSmart.

Note : The image for v	Bond and vSmart is the same.	
Software Download		
Downloads Home / Routers / Software-Defined WA	N (SD-WAN) / SD-WAN / SD-WAN Software Update- 20.6.3(MD)	
Q Search Expand All Collapse All 20.6.5(MD)	SD-WAN Release 20.6.3 MD A My Notifications	Related Links and Documentation Controllers Release Notes for 20.6.3 vEdge Release Notes for 20.6.3
20.10.1(ED)	File Information	Release Date Size

20.9.2.1(ED)		File Information	Release Date	Size	
All Release	~	vSmart, vEdge Cloud, vEdge 5000, ISR1100 series and vBond upgrade image	18-Apr-2022	162.54 MB	±∵⊭∎
20.10	>	viptela-20.6.3-x86_64.tar.gz Advisories 📑			
20.9	>	vManage upgrade image	18-Apr-2022	3050.74 MB	± ∵ ∎
20.8	>	vmanage-20.6.3-x86_64.tar.gz Advisories 📑			
20.7	>				
20.6	~				

To upload the new images, navigate to **Maintenance** > **Software Repository** > **Software Images**, click **Add New Software** and select **vManage** in the drop-down menu.

= "	Cisco vN	lanag	ge						▲ B	# 12	0	admin 👻	
📰 Da	ashboard	>	MAINTENANCE SOFTWAR	RE REPOSITORY									
шм	Ionitor	>	Software Images Virtual In	ire Images Virtual Images									
• •			Note: Software version is compar	te: Software version is compatible with specified controller version or less									
4 U	onliguration	'	Add New Software *								C		
🔦 То	ools	>	vManage Remote Server	_	Search Options 🗸						Total R	xows: 1	
💼 M	laintenance	>	Remote Server - vManage	oller Version	Software Location	Image Type	Architecture	Version Type Name	Available Files	Updated On			
	Software Penosito	~	20.3.5 20.3	Ex	vmanage	Software	x86_64	software	[vmanage-20.3.5-x86_64.tar.gz, viptela-20.3.5	x8 29 Mar 2023	3 11:48:45		

Select the images and click Upload.

Upload Software to vManage			×
Upload Software to vManage	Upload Image (Total:2) vmanage-20.6.3.1-x86_64.tar.gz 2.98 GB viptela-20.6.3-x86_64.tar.gz 162.54 MB	×	×

Upload

Once the images are uploaded, verify they are listed in **Software Repository** > **Software Images**.

≡	cisco Cisco vi	lanag	e								•		# 12	0	admin 👻
-	Dashboard	>	ź	MAINTENANCE SOF	TWARE REPOSITORY		Softw	rare images uploaded succ	cessfully 🤇						
	Monitor	>		Software Images Virt	tual Images										
~	Configuration	、		Note: Software version is c	ompatible with specified contr	oller version or less									~~
Č		ĺ		Add New Software											0e
4	Tools	`		Q		Search Options 🗸								lot	al Rows: 3
÷	Maintenance	>		Software Version	Controller Version	Software Location		Image Type	Architecture	Version Type Name	Available Files		Updated	On	
		_		20.6.3.1	20.6.x	vmanage		Software	x86_64	software	[vmanage-20.6.3.1-x86_64.tar.g:	:]	29 Mar 20	023 2:54:44	
	Software Reposito	۳۷		20.6.3	20.6.x	vmanage		Software	x86_64	software	[viptela-20.6.3-x86_64.tar.gz]		29 Mar 21	023 2:46:52	
	Software Upgrade			20.3.5	20.3.x	vmanage		Software	x86_64	software	[vmanage-20.3.5-x86_64.tar.gz,	viptela-20.3.5-x8	29 Mar 21	023 11:48:4	5

Step 2. Installation, Activation and Set New Version as Default

This step explains how to perform the upgrade in three steps, installation, activation and set the new version as default.

vManage

Step A. Installation

On the main menu, navigate to **Maintenance** > **Software Upgrade** > **vManage** and click **Upgrade**.

=	cisco vManag	ge							•	• ê	ı	i @ @	admin 🔻
	Dashboard >	AINTENA	NCE SOFTWARE UP	GRADE									
	Monitor >	WAN Edge	Controller vMan	nage									
٠	Configuration >									ion	000		
a.	Tools >	Device Group	Al • (2	Search Options 🗸						Total Rows: 1		
		Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability*	Current Version	Available Versions	Default V	ersion	Available S	ervices Up
	Maintenance >	😁 vmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3-d65	1	vManage	reachable	20.3.5		20.3.5		0	28
_	Software Repository												
	Software Upgrade												

In the Software Upgrade pop-up window, do as follows:

- Choose the **vManage** tab.
- Select the image version to upgrade to from the version drop-down list.
- Click Upgrade.

Note: This process does not execute a reboot of the vManage, only transfers, uncompresses and creates the directories needed for the upgrade.

Note: Backup of data volume is highly recommended before to proceed with the upgrade of vManage.

Software Upgrade		×
Backup of data volume is highl vManage.	ly recommended before upgrading	
	Remote Server - vManage	
Platform	Version	_
vManage	20.6.3.1	~
	Upgrade Canc	el

Verify the status of the task until it shows as **Success**.

>	Status	Message		System IP Site ID		Device Type	Device Model	vManage IP	
~	Success	Done - Software Install	🜐 vmanage	1.1.1.1	1	vManage	vManage	1.1.1.1	
	[29-Mar-2023 21:54:51 U [29-Mar-2023 21:54:52 U [29-Mar-2023 21:54:52 U [29-Mar-2023 21:54:52 U [29-Mar-2023 21:54:57 U [29-Mar-2023 21:55:26 U [29-Mar-2023 21:55:25 U	TC] Installing software TC] Current active part TC] Software image: vma TC] Software image down TC] Downloading http:// TC] Downloaded http:// TC] Signature verificat	image ition: 20.3.5 nage-20.6.3.1-x86_64.ta load may take upto 60 m 1.1.1.1:8080/software/p 1.1.1.1:8080/software/p ion Suceeded.	r.gz inutes ackage/vmanage-20.6.3.1 ckage/vmanage-20.6.3.1	L-x86_64.tar.gz?deviceId x86_64.tar.gz?deviceId	4=1.1.1.1 =1.1.1.1		^	•

Step B. Activation

On this step, vManage activates the new installed software version and reboots itself to boot up with the new software.

Navigate to Maintenance > Software Upgrade > vManage, and click Activate.

≡	Cisco vManag	çe							•	•	ê	# 10	0	admin 🔻
55	Dashboard >	S MAINTENAN	NCE SOFTWARE UP	GRADE										
	Monitor >	WAN Edge	Controller vMan	nage										
٠	Configuration >						① Activate	Delete Availabl	le Software 🛛 🖋 Set	Default V	ersion		0	90
4	Tools >	Device Group	Al - C	2		Search Optic	ins 🗸						Total	Rows: 1
		Hostname												Up
÷	Maintenance 🗸 🗸	😁 vmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3-d65	1	vManage	reachable	20.3.5	20.6.3.1	20.3.5	5	0		28
	Software Repository													
	Software Upgrade													

Select the new version and click Activate.

Activate Software	×	*
Activating new version of will log out all active clients an	f software on vManage requires a reboot, which nd bring down all control connections	
Platform vManage	Version 20.6.3.1	
	Activate Cancel]

Note: The access to the GUI is not available while the vManage reboots. The complete activation can take up to 60 minutes.

After the process finishes, log in and navigate to **Maintenance > Software Upgrade > vManage** to verify the new version is activated.

≡ Cisc	o vManage	Select Resource Group	•	Maintenance	 Software Up 	ograde			\bigcirc	= 0	0 4
			WANT	Edge Controller	vManage F	Firmware					
Q Searc	h										∇
Upgrade				e Activate	Delete Availabl	e Software Set I	Default Version				
Device Group	All V								Total Rows: 1	g	± ‡
Hostname	System IP	Chassis Number	Site ID Device Model	Reachability	Current Version	Available Versions	Default Version	Available Services	Up Since		
(wmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3	1 vManage	reachable	20.6.3.1	20.3.5	20.3.5	0	29 Mar 2023 4:1	3:00 PM	CS'

Step C. Set Default Software Version

You can set a software image to be the default image on a Cisco SD-WAN device. It is recommended to set the new image as default after verify that the software operate as desired on the device and in the network.

If a factory reset on the device is performed, the device boots up with the image that is set as default.

Note: It is recommended to set the new version as default because if the vManage reboots, the old version is booted up. This can cause a corruption in the database. A version downgrade from a major release to an older one, it is not supported in vManage.

To set a software image as default image, do as follows:

- Navigate to Maintenance > Software Upgrade > vManage.
- Click Set Default Version, select the new version from the drop-down list and click Set Default.

Note: This process does not perform a reboot of vManage.

≡ Cisco	vManage	😯 Select Resource Group	₽▼	Maintenance	· Software Upgrade			0	≡ 0) 🗘
			WAN	Edge Controller	vManage Firmware					
Q. Search										∇
Upgrade Device Group	Upgrade Virtual			ge Activate	Delete Available Software	Set Default Version		Total Rows: 1	g :	* \$
Hostname	System IP	Chassis Number	Site ID Device Model	Reachability	Current Version Available Ve	rsions Default Version	Available Services	Up Since		
(#) vmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3	1 vManage	reachable	20.6.3.1 20.3.5	20.3.5	0	29 Mar 2023 4:13	:00 PM C	CS.

Set Default Version

Select default software version for all selected devices



Verify the status of the task until it shows as **Success**.

Θ	Status	Message	Hostname	System IP	Site ID	Device Type	Default Version	vManage IP
Θ	Success	Done - Set Default Version	vmanage	1.1.1.1	1	vManage	20.6.3.1	1.1.1.1
	[29-Mar-2023 22:52:16 UTC] [29-Mar-2023 22:52:16 UTC] [29-Mar-2023 22:52:16 UTC] [29-Mar-2023 22:52:16 UTC] [29-Mar-2023 22:52:17 UTC]	Set Default Version action Executing device action Se Set default software versi Set default software versi Software image version 20.	n submitted for execution et Default Version ion ion as 20.6.3.1 6.3.1 set as default					
								A . Y

To verify the Default Version, navigate to Maintenance > Software Upgrade > vManage.

≡ Cisco	vManage	Select Resource Group	-	Maintenance	 Software Upgrade 			\bigcirc	=	0 4
				WAN Edge Controller	vManage					
Q Search										∇
Upgrade				I Image Activate	Delete Available Software	Set Default Version				
Device Group	All 🗸						_	Total Rows: 1	S	不稳
Hostname	System IP	Chassis Number	Site ID Device Mo	del Reachability	Current Version Available Ve	rsions Default Version .	Available Services	Up Since		
(ff) vmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3	1 vManage	reachable	20.6.3.1 20.3.5	20.6.3.1	0	29 Mar 2023 4:1	3:00 PM	/ CS

vBond

Step A. Installation

On this step, vManage sends the new software to vBond and install the new image.

Navigate to Maintenance > Software Upgrade > Controller and click Upgrade.

E Cisco vMar	nage 📀	Select Resource Group -		Main	itenance · S	Software Upgra	de			\bigcirc	0	4
				WAN Edge	Controller	vManage Firmwa	are					
Q Search											7	7
1 Rows Selected	Upgrade	Upgrade Virtual Image Act				Activate	Delete Available Sc	ftware Set De	fault Version	otal Rows: 2	g ±4	<u>چَ</u>
Hostname S	iystem IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions	Default Version	Available Services	Up Since		
Vsmart 1	.1.1.3	7a1d6c95-d0f8-41a7-8d10	1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023	12:07:00 F	
VBondDR 1	.1.1.2	e6cbcae6-01cc-4f31-be42	1	vEdge Cloud (vB	reachable	20.3.5		20.3.5	0	29 Mar 2023	11:53:00 /	

In the Software Upgrade pop-up window, do as follows:

- Choose the **vManage** tab.
- Select the image version to upgrade to from the version drop-down list.
- ClickUpgrade.

Note: This process does not execute a reboot of the vBond, only transfers, uncompresses and creates the directories needed for the upgrade.

Software Upgrade

vManage Remote Server - vManage	erver	
Platform	Version	
vEdge-x86	20.6.3	~
Activate and Reboot		
Up	grade	Cancel

Verify the status of the task until it shows as **Success**.

 Status 	Message	Hostname	System IP	Site ID	Device Type	Device Model	vManage IP
Success	Done - Software Install	⊕ vBondDR	1.1.1.2	1	vBond	vEdge Cloud	1.1.1.1
[13-Apr-2023 4:25:23 UTC] [13-Apr-2023 4:25:29 UTC] [13-Apr-2023 4:25:29 UTC] [13-Apr-2023 4:25:55 UTC] [13-Apr-2023 4:26:06 UTC] Signature verification Su [13-Apr-2023 4:26:06 UTC]	Software image download may take upto Connection Instance: 0, Color: defaul Device: Downloading http://1.1.1.1808 Device: Downloaded http://1.1.1.1808 Device: Signature verification Succed ceeded. Device: Installed 20.6.3	60 minutes t 30/software/package/viptela-20 /software/package/viptela-20. ed.	1.6.3-x86_64.tar.gz?deviceId⇒1.1. 6.3-x86_64.tar.gz?deviceId⇒1.1.1	1.2 .2			ļ

Step B. Activation

On this step, vBond activates the new installed software version and reboots itself to boot up with the new software.

Navigate to Maintenance>Software Upgrade>Controller, and click Activate.

≡ Cisco vManag	ge 🔮 Select Re	esource Group-		Maint	enance · So	oftware Upgrade					0 4
				WAN Edge	Controller	Manage Firmware					
Q. Search											∇
1 Rows Selected U	pgrade Upgrade \	Virtual Image Activate Virtual		al Image Activate	Delete Ava	ilable Software Se	et Default Version			Total Rows: 2 🔗	± @
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	. Current Version	Available Versions	Default Version	Available Services	Up Since	
wsmart	1.1.1.3	7a1d6c95+d0f8+41a7-8d10	1	vSmart	reachable	20.3.5		20.3.5	0	12 Apr 2023 10:38:00 PM CDT	
VBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be42	. 1	vEdge Cloud (vBond)	reachable	20.3.5	20.6.3	20.3.5	0	30 Mar 2023 5:49:00 PM CST	

Select the new version and click Activate.



Note: This process requires a reboot of vBond. The complete activation can take up to 30 minutes.

Verify the status of the task until it shows as Success.

Θ	Status	Message	Hostname	System IP	Site ID	Device Type	New Active Version	vManage IP	
Θ	Success	Done - Change Partition	vBondDR	1.1.1.2	1	vBond	20.6.3	1.1.1.1	
<pre>(13-Apr-202) 4:41:16 U(C) (4/60) Operation status being verified by VMenage (13-Apr-202) 4:41:16 U(C) (5/60) Operation status being verified by VMenage (13-Apr-202) 4:42:12 U(C) (4/60) Operation status being verified by VMenage (13-Apr-202) 4:42:12 U(C) VMenage: Sending upgrade-confirm to device (13-Apr-202) 4:42:12 U(C) vMenage: Sending upgrade-confirm to device (13-Apr-202) 4:42:12 U(C) (and apr) (4:10 U(C) (4:10 U(C))) (13-Apr-202) 4:42:10 U(C) (10-c) - Chenge Pertition</pre>									
									~

After the process finishes, navigate to **Maintenance > Software Upgrade > Controller** to verify the new version is activated.

≡ Cisco vMa	nage 🔿) Select Resource Group+		Main	itenance • \$	Software Upgra	de) 🗘
				WAN Edge	Controller	vManage Firmwa	are				
Q Search											∇
0 Rows Selected		Upgrade Virtual Image Acti								Total Rows: 2 📿	± @
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	. Current Version	Available Versions	Default Version	Available Services	Up Since	
🗌 🋞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d1	0 1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023 12:07:00 PM CST	
U 🕀 vBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be42	2 1	vEdge Cloud (vB	reachable	20.6.3	20.3.5	20.3.5	0	29 Mar 2023 5:07:00 PM CST	

Optional Step. Activate and Reboot the New Software Image

Note: This step is optional. You can check the box of **Activate and Reboot** option during the installation process. Use this procedure to install and activate the new upgraded software version.

Step C. Set Default Software Version

You can set a software image to be the default image on a Cisco SD-WAN device. It is recommended to set the new image as default after verify that the software operate as desired on the device and in the network.

If a factory reset on the device is performed, the device boots up with the image that is set as default.

To set a software image as default image, do as follows:

- Navigate to Maintenance>Software Upgrade>Controller.
- ClickSet Default Version, select the new version from the drop-down list and clickSet Default.

Note: This process does not perform a reboot of vBond.

■ Cisco vMar	nage 🖓) Select Resource Group-		Main	itenance • S	oftware Upgra	de			\bigcirc	≡ ⊘
				WAN Edge	Controller	vManage Firmwa	ire				
Q Search											2
Rows Selected	Upgrade				ge Activate	e Delete Avail	able Software	et Default Version]		
Device Group All 🗸										Total Rows: 2	S ₹
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions .	Default Version	Available Services	Up Since	
🗋 🋞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d	10 1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023 12:07:00	PM CST
🛃 🕀 vBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be4	42 1	vEdge Cloud (vB	reachable	20.6.3	20.3.5	20.3.5	0	29 Mar 2023 5:07:00 P	M CST

Set Default Version

Select default software version for all selected devices



Verify the status of the task until it shows as **Success**.

Θ	Status	Message	Hostname	System IP	Site ID	Device Type	Default Version	vManage IP
Θ	Success	Done - Set Default Version	vBondDR	1.1.1.2	1	vBond	20.6.3	1.1.1.1
	[13-Apr-2023 5:05:46 UTC] Set Def4 [13-Apr-2023 5:05:46 UTC] Executi [13-Apr-2023 5:05:46 UTC] Set def4 [13-Apr-2023 5:05:46 UTC] Set def7 [13-Apr-2023 5:05:47 UTC] Software	sult Version action submitted for ng device action Set Default Versi sult software version sult software version as 20.6.3 e image version 20.6.3 set as defi	execution lon sult					

To verify the Default Version, navigate to Maintenance > Software Upgrade > Controller.

≡ Cisco vMar	nage 🔿) Select Resource Group		Mair	itenance · Se	oftware Upgrad	le				0 4
				WAN Edge	Controller	Manage Firmwa	re				
Q Search											∇
0 Rows Selected										Total Power 2	1.12
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions	. Default Version	Available Services	Up Since	× 107
🗌 🋞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-	8d10 1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023 12:07:00 PM CST	
U HondDR	1.1.1.2	e6cbcae6-01cc-4f31-t	be42 1	vEdge Cloud (vB	reachable	20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:07:00 PM CST	

vSmart

Step A. Installation

On this step, vManagesends the new software to vSmart and install the new image.

Navigate to Maintenance>Software Upgrade>Controller and click Upgrade.

≡ Cisco vMan	age 📀	Select Resource Group+		Main	tenance · So	oftware Upgrad	le			\bigcirc	≡ 0) 🗘
				WAN Edge	Controller	Manage Firmwa	re					
Q Search												∇
1 Rows Selected	Upgrade		ivate Virtual Image		ge Activate	Delete Avail	able Software Se	Default Version				
Device Group All 🗸										Total Rows: 2	C	± @
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions	Default Version	Available Services	Up Since		
🕑 🛞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d1	10 1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023 12:07:00	PM CST	
U 🕀 vBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be4	2 1	vEdge Cloud (vB	reachable	20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:07:00 F	PM CST	

In the Software Upgrade pop-up window, do as follows:

- Choose the **vManage** tab.
- Select the image version to upgrade to from the version drop-down list.
- ClickUpgrade.

Note: This process does not execute a reboot of the vSmart, only transfers, uncompresses and creates the directories needed for the upgrade.



Х

Θ	Status	Message	Hostname	System IP	Site ID	Device Type	Device Model	vManage IP	
Θ	Success	Done - Software Install	(*) vsmart	1.1.1.3	1	vSmart	vSmart	1.1.1.1	
	<pre>[13-Apr-2023 5:11:16 UTC] Software [13-Apr-2023 5:11:22 UTC] Connect[13-Apr-2023 5:11:22 UTC] Device: [13-Apr-2023 5:11:21 UTC] Device: [13-Apr-2023 5:12:12 UTC] Device: [13-Apr-2023 5:12:12 UTC] Device:</pre>	<pre>:image download may take upto 60 on Instance: 0, Color: default Downloading http://l.l.l.18880/s Downloaded http://l.l.118880/so Signature verification Suceeded. Installed 20.6.3</pre>	minutes oftware/package/viptela-20.6.3-x86 ftware/package/viptela-20.6.3-x86,	5_64.tar.gz?deviceId*1.1.1.3 64.tar.gz?deviceId*1.1.1.3					•

Step B. Activation

On this step, vSmart activates the new installed software version and reboots itself to boot up with the new software.

Navigate to Maintenance>Software Upgrade>Controller, and click Activate.

≡ Cisco vMan	age 🕜 Select R	esource Group-		Maint	tenance · Software Upgrade	e				4
				WAN Edge	Controller vManage Firmware					
Q Search										7
1 Rows Selected	Upgrade Upgrade	Virtual Image Activate Virtual	Image Delete Virtu	al Image Activate	Delete Available Software	Set Default Version			Total Rows: 2 🔗 :	± @
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability Current Version	Available Versions	Default Version	Available Services	Up Since	
Vsmart 🛞	1.1.1.3	7a1d6c95-d0f8-41a7-8d10	. 1	vSmart	reachable 20.3.5	20.6.3	20.3.5	0	12 Apr 2023 10:38:00 PM CDT	
VBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be42	1	vEdge Cloud (vBond)	reachable 20.6.3	20.3.5	20.6.3	0	12 Apr 2023 11:40:00 PM CDT	

Select the new version and click Activate.



Note: This process requires a reboot of vSmart. The complete activation can take up to 30 minutes.

Verify the status of the task until it shows as **Success**.

Θ	Status	Message	Hostname	System IP	Site ID	Device Type	New Active Version	vManage IP	
Θ	Success	Done - Change Partition	vsmart	1.1.1.3	1	vSmart	20.6.3	1.1.1.1	
	3-Apr-2023 5:20:25 UTC] Activati 3-Apr-2023 5:20:25 UTC] Configur 3-Apr-2023 5:20:25 UTC] Activati 3-Apr-2023 5:20:25 UTC] Activati 3-Apr-2023 5:22:13 UTC] VManage: 3-Apr-2023 5:22:14 UTC] Checking 3-Apr-2023 5:22:14 UTC] Done - C	ing SM version 20.6.3 ing upgrade confirm timer to 15 m ing SM version 20.6.3 ig device to other partition. Devi : Sending upgrade-confirm to devic g new boot partition Thange Partition	inutes ce may take up to 30 minutes befor e	e it comes online					•

After the process finishes, navigate to **Maintenance > Software Upgrade > Controller** to verify the new version is activated.

≡ Cisco vMana	ge 🕜 Select Re	esource Group+	Maintenance · Software Upgrade						△ ≡ ⊚ ¢
				WAN Edge	Controller vManage Firmware				
Q Search									Y
0 Rows Selected U	pgrade Upgrade \	/irtual Image Activate Virtua		ual Image Activate	Delete Available Software				Total Rows: 2 🏾 🖯 👱 🚯
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability Current Version	Available Versions	Default Version	Available Services	Up Since
Vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d10	. 1	vSmart	reachable 20.6.3	20.3.5	20.3.5	0	13 Apr 2023 12:20:00 AM CDT
VBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be42	1	vEdge Cloud (vBond)	reachable 20.6.3	20.3.5	20.6.3	0	12 Apr 2023 11:40:00 PM CDT

Optional Step. Activate and Reboot the New Software Image

Note: This step is optional. You can check the box of Activate and Reboot option during the installation process. Use this procedure to install and activate the new upgraded software version.

Step C. Set Default Software Version

You can set a software image to be the default image on a Cisco SD-WAN device. It is recommended to set the new image as default after verify that the software operate as desired on the device and in the network.

If a factory reset on the device is performed, the device boots up with the image that is set as default.

To set a software image as default image, do as follows:

- Navigate to Maintenance>Software Upgrade>Controller.
- ClickSet Default Version, select the new version from the drop-down list and clickSet Default.

Note: This process does not perform a reboot of vSmart.

E Cisco vMana	ge 📀 Select R	Resource Group+		Main	tenance · So	ftware Upgra	de				04
				WAN Edge	Controller	Manage Firmwa	sre				
Q Search											7
1 Rows Selected	Jpgrade Upgrade	Virtual Image Activate Virtual		ual Image Activate	Delete Ava	ilable Software	Set Default Version				
Device Group All 🗸										Total Rows: 2 🏾 🏳	主命
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions	Default Version	Available Services	Up Since	
🛃 🛞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d10	1	vSmart	reachable	20.6.3	20.3.5	20.3.5	0	29 Mar 2023 5:42:00 PM CS1	г
□ ⊕ vBondDR	1.1.1.2	e6cbcae6=01cc=4f31=be42=.	. 1	vEdge Cloud (vBond)	reachable	20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:07:00 PM CS1	г

Set Default Version

Select default software version for all selected devices



Verify the status of the task until it shows as **Success**.

Set Default Version 🕑 Validation Success									
Total Task: 1 Success : 1									
Q. Search								V	
							Total Rows: 1	C @	
 Status 	Message	Hostname	System IP	Site ID	Device Type	Default Version	vManage IP		
Success	Done - Set Default Version	vsmart	1.1.1.3	1	vSmart	20.6.3	1.1.1.1		
[30-Mar-2023 19:57:50 UT [30-Mar-2023 19:57:50 UT [30-Mar-2023 19:57:50 UT [30-Mar-2023 19:57:50 UT [30-Mar-2023 19:57:51 UT [30-Mar-2023 19:57:51 UT	C] Set Default Version action submitted C] Executing device action Set Default V C] Set default software version C] Set default software version as 20.6. C] Software image version 20.6.3 set as	for execution ersion 3 default							
							A 1	*	

To verify the Default Version, navigate to **Maintenance** > **Software Upgrade** > **Controller**.

■ Cisco vManage ⑦ Select Re) 🗘						
		WAN Edge	ontroller vManage Firmware					
Q Search								Y
0 Rows Selected Upgrade Upgrade V Device Group All ~	rirtual Image Activate Virtual Image De	iete Virtual Image Activate	Delete Available Software Se				Total Rows: 2 🔗	± @
Hostname System IP	Chassis Number Site ID	Device Model	Reachability Current Version	Available Versions	Default Version	Available Services	Up Since	
□	7a1d6c95-d0f8-41a7-8d10 1	vSmart	reachable 20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:42:00 PM CST	
□ ⊕ vBondDR 1.1.1.2	e6cbcae6=01cc-4f31=be42= 1	vEdge Cloud (vBond)	reachable 20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:07:00 PM CST	

Upgrade SD-WAN Controllers via CLI

Step 1. Installation

There are two options to install the image:

Option 1: From CLI with the Use of HTTP, FTP or TFTP.

To install the software image from within the CLI:

1. Configure the time limit to confirm that a software upgrade is successful. The time can be from 1 through 60 minutes.

<#root> Viptela# system upgrade-confirm minutes

2. Install the software:

```
<#root>
```

Viptela#

```
request software install url/vmanage-20.6.3.1-x86_64.tar.gz [reboot]
```

Specify the image location in one of the next ways:

• The image file is on the local server:

/directory-path/

You can use the autocompletion feature on CLI to complete the path and filename.

• The image file is on an FTP server.

ftp://hostname/

• The image file is on an HTTP server.

http://hostname/

• The image file is on a TFTP server.

tftp://hostname/

Optionally, specify the VPN identifier in which the server is located.

Thereboot option activates the new software image and reboots the device after the installation completes.

3. If you did not include the **reboot** option in Step 2, activate the new software image and this automatically performs a reboot of the instance to boot the new version up.

<#root>

Viptela#

request software activate

4. Confirm, within the configured upgrade confirmation time limit (12 minutes by default), that the software installation was successful:

<#root>

Viptela#

```
request software upgrade-confirm
```

If you do not issue this command within this time limit, the device automatically reverts to the previous software image.

Option 2: From vManage GUI

This step helps you to upload the images into vManage repository.

Navigate to Software Download and download the software version image for vManage.



Navigate to Software Download and download the software version image for vBond and vSmart.

Software Download

Downloads Home / Routers / Software	-Defined WAN	I (SD-WAN) / SD-WAN / SD-WAN Software Update- 20.6.3(MD)			
Q. Search Expand All Collapse All 20.6.5(MD)		SD-WAN Release 20.6.3 MD A My Notifications	Related Links a Controllers Release N vEdge Release Notes	nd Documentation otes for 20.6.3 for 20.6.3	
20.10.1(ED)	1				
20.9.2.1(ED)		File Information	Release Date	Size	
All Release	~	vSmart, vEdge Cloud, vEdge 5000, ISR1100 series and vBond upgrade image	18-Apr-2022	162.54 MB	±∵∵∎
20.10	>	viptela-20.6.3-x86_64.tar.gz Advisories 📑			
20.9	>	vManage upgrade image	18-Apr-2022	3050,74 MB	$+ \lor \blacksquare$
20.8	>	vmanage-20.6.3-x86_64.tar.gz Advisories Cf			
20.7	>				
20.6	~				

To upload the new images, on the main menu, navigate to **Maintenance** > **Software Repository** > **Software Images**, click **Add New Software** and on the drag-and-drop option select **vManage**.

=	cisco VMa	nage	1					▲ 13	# 12	Ø	admin 👻	
	Dashboard >	,	A MAINTENANCE SOFTWARE REPOSITORY									
	Monitor >	Monitor > Software Images										
۰	Configuration >		Note: Software version is compatible with specified con Add New Software	Note: Software version is compatible with specified controller version or less Add New Software								
٩	Tools >	,	vManage Remote Server	Search Options 🗸						Total	Rows: 1	
÷			Remote Server - vManage oller Version	Software Location	Image Type	Architecture	Version Type Name	Available Files	Updated C	n		
	Software Repository		20.3.5 20.3.x	vmanage	Software	x86_64	software	[vmanage-20.3.5-x86_64.tar.gz, viptela-20.3.5	x8 29 Mar 20	23 11:48:45		

Select the images and click Upload.

Upload Software to vManage		×
	Upload Image (Total:2)	
<u>±</u>	vmanage-20.6.3.1-x86_64.tar.gz 2.98 GB	×
	viptela-20.6.3-x86_64.tar.gz 162.54 MB	×
Drag and Drop File		
Or		
Browse		

To verify if the images are available, navigate to **Software Repository** > **Software Images**.

≡	cisco vManage									# 0	0	admin 👻
55	Dashboard	>	MAINTENANCE SOFTWARE REPOSITORY			Software images uploaded s	uccessfully	0				
	Monitor	>	Software Images Vir	tual Images								
~	Configuration		Note: Software version is o	compatible with specified contr	roller version or less							~~
*	Configuration	<i>'</i>	Add New Software	•			0 e					
٩	Tools	>	Q		Search Options 🗸						Tot	al Rows: 3
÷	Maintenance		Software Version	Controller Version	Software Location	Image Type	Architecture	Version Type Name	Available Files	Updated O	n	
	0.0		20.6.3.1	20.6.x	vmanage	Software	x86_64	software	[vmanage-20.6.3.1-x86_64.tar.gz]	29 Mar 20	23 2:54:44	
	Software Repository		20.6.3	20.6.x	vmanage	Software	x86_64	software	[viptela-20.6.3-x86_64.tar.gz]	29 Mar 20	23 2:46:52	
	Software Upgrade		20.3.5	20.3.x	vmanage	Software	x86_64	software	[vmanage-20.3.5-x86_64.tar.gz, viptela-20.3.5-x	3 29 Mar 203	23 11:48:4	5 ***

Note: This procees needs to be done for all controllers.

vManage:

ClickUpgrade.

≡	cisco vManag	ge							•		# ®	Ø	admin 🔻
	Dashboard >	🖆 MAINTENAI	C MAINTENANCE SOFTWARE UPGRADE										
	Monitor >	WAN Edge	WAN Edge Controller VManage										
٠	Configuration >	🕤 Upgrade 🖓 Upgrade Virtual Image 🔄 Activate Virtual Image 🗈 Delete Virtual Image 🔮 Activate 🖉 Delete Available Software 🖉 Set Default Version							efault Version	000			
a.	Tools >	Device Group	All + C	2	Search Options 🗸						Total Rows: 1		
		Hostname	System IP	Chassis Number		Device Model	Reachability*		Available Versions	Default Version		able Service	s Up
-	Maintenance >	😁 vmanage	1.1.1.1	fe46772b-e8e5-47bd-9ba3-d65	1	vManage	reachable	20.3.5		20.3.5	0		28
	Software Repository												
	Software Upgrade												

vBond:

Click Upgrade.

■ Cisco vManage	♦ Select Resource Group •	Main	ntenance · Software Up	grade	\bigcirc	≡ ⊘ \$
		WAN Edge	Controller VManage Fit	mware		
Q Search						∇
1 Rows Selected Upgrade	e Upgrade Virtual Image Ac		a Virtual Image Activate	Delete Available Software Set D	efault Version Total Rows: 2	© ⊻@
Hostname System IP	Chassis Number	Site ID Device Model	Reachability Current Version	Available Versions Default Version	Available Services Up Since	
Svsmart 1.1.1.3	7a1d6c95-d0f8-41a7-8d10	1 vSmart	reachable 20.3.5	20.3.5	0 29 Mar 20:	23 12:07:00 F
☑ ⊕ vBondDR 1.1.1.2	e6cbcae6-01cc-4f31-be42	1 vEdge Cloud (vB	reachable 20.3.5	20.3.5	0 29 Mar 20	23 11:53:00 /

vSmart:

Click Upgrade.

≡ Cisco vMar	nage 🔿 s	Select Resource Group+		Main	tenance · S	oftware Upgrad	le			\bigcirc	≡ 0	D 🗘
				WAN Edge	Controller	Manage Firmwa	re					
Q Search												∇
1 Rows Selected	Upgrade				ge Activate	e Delete Availa	able Software Se	t Default Version				
Device Group All V										Total Rows: 2	C	± @}
Hostname	System IP	Chassis Number	Site ID	Device Model	Reachability	Current Version	Available Versions	Default Version	Available Services	Up Since		
🛃 🛞 vsmart	1.1.1.3	7a1d6c95-d0f8-41a7-8d10	1	vSmart	reachable	20.3.5		20.3.5	0	29 Mar 2023 12:07:00	PM CST	
U 🕀 vBondDR	1.1.1.2	e6cbcae6-01cc-4f31-be42	1	vEdge Cloud (vB	reachable	20.6.3	20.3.5	20.6.3	0	29 Mar 2023 5:07:00 P	M CST	

In the Software Upgrade pop-up window, do as follows:

- Choose the vManage tab.
- Select the image version to upgrade to from the version drop-down list.
 ClickUpgrade.

For vManage:

Software Upgrad	le		×						
A Backup of o vManage.	data volume is highly	recommended before up	ograding						
💿 vManage	● vManage								
Platform		Version	× I						
vivianage		70.0.3.1							
		Upgrade	Cancel						

For vBond and vSmart:

Software Upgrade



Step 2. Activation

Once the installation is done, verify the software images that are installed in the controllers.

×

<#root>

vbond#

show software

VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP
20.3.5 true true - 2022-10-01T00:30:40-00:00
20.6.3
false false false - -

Note: To activate the image, issue the next command in the controllers (Controller by Controller, 1st vManage, 2nd vBond, 3rd vSmart).

<#root>

vmanage#

request software activate ?

Description: Display software versions Possible completions: 20.3.5 20.6.3.1 clean Clean activation now Activate software version vmanage#

request software activate 20.6.3.1

This will reboot the node with the activated version. Are you sure you want to proceed? [yes,NO]

Broadcast message from root@vmanage (console) (Tue Feb 28 01:01:04 2023): Tue Feb 28 01:01:04 UTC 2023: The system is going down for reboot NOW!

<#root>

vbond#

request software activate ?

Description: Display software versions Possible completions: 20.3.5 20.6.3 clean Clean activation now Activate software version vbond#

request software activate 20.6.3

This will reboot the node with the activated version. Are you sure you want to proceed? [yes,NO]

yes

Broadcast message from root@vbond (console) (Tue Feb 28 01:05:59 2023):

Tue Feb 28 01:05:59 UTC 2023: The system is going down for reboot NOW!

<#root>

vsmart#

request software activate ?

Description: Display software versions Possible completions: 20.3.5 20.6.3 clean Clean activation now Activate software version vsmart#

request software activate 20.6.3

This will reboot the node with the activated version. Are you sure you want to proceed? [yes,NO]

yes

Broadcast message from root@vsmart (console) (Tue Feb 28 01:13:44 2023):

Note: The controllers activate the new image and reboot themselves.

To verify that new software version is activated, issue the next command:

<#root>

vmanage#

show version

20.6.3.1 vmanage#

show software

VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP 20.3.5 false true true - 2023-02-01T22:25:24-00:00

20.6.3.1 true

false false auto 2023-02-28T01:05:14-00:00

<#root>

vbond#

show version

20.6.3 vbond#

show software

VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP

20.3.5 false true true - 2022-10-01T00:30:40-00:00

20.6.3 true

false false - 2023-02-28T01:09:05-00:00

<#root>

vsmart#

show version

20.6.3 vsmart#

show software

VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP 20.3.5 false true true - 2022-10-01T00:31:34-00:00 20.6.3 true

false false - 2023-02-28T01:16:36-00:00

Step 3. Set Default Software Version

You can set a software image to be the default image on a Cisco SD-WAN device. It is recommended to set the new image as default after verify that the software operate as desired on the device and in the network.

If a factory reset on the device is performed, the device boots up with the image that is set as default.

Note: It is recommended to set the new version as default because if the vManage reboots, the old version is booted up. This can cause a corruption in the database. A version downgrade from a major release to an older one, it is not supported in vManage.

Note: This process does not perform a reboot of Controllers.

To set a software version as default, issue the next command in the controllers:

<#root>

vmanage#

request software set-default ?

Possible completions: 20.3.5 20.6.3.1 cancel Cancel this operation start-at Schedule start. | Output modifiers <cr> vmanage#

request software set-default 20.6.3.1

status mkdefault 20.6.3.1: successful

<#root>

vbond#

```
Possible completions:
20.3.5
20.6.3
cancel Cancel this operation
start-at Schedule start.
| Output modifiers
<cr>
vbond#
request software set-default 20.6.3
status mkdefault 20.6.3: successful
<#root>
vsmart#
request software set-default ?
Possible completions:
20.3.5
20.6.3
cancel Cancel this operation
start-at Schedule start.
| Output modifiers
<cr>
vsmart#
request software set-default 20.6.3
status mkdefault 20.6.3: successful
```

request software set-default ?

To verify that new default version is set on controllers, issue the next command:

<#root>

∨manage#

show software

VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP

20.3.5 false false true - 2023-02-01T22:25:24-00:00 20.6.3.1 true

true

false auto 2023-02-28T01:05:14-00:00

<#root>

vbond#

show software

```
VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP
20.3.5 false false true - 2022-10-01T00:30:40-00:00
20.6.3 true
```

true

false - 2023-02-28T01:09:05-00:00

<#root>

vsmart#

show software

```
VERSION ACTIVE DEFAULT PREVIOUS CONFIRMED TIMESTAMP

20.3.5 false false true - 2022-10-01T00:31:34-00:00

20.6.3 true

true

false - 2023-02-28T01:16:36-00:00
```

Troubleshoot

1. If GUI goes down for a long time after activation, and never become reachable again, these outputs can be helpful to find the root cause out:

<#root>

vmanage#

request nms application-server status

```
NMS application server
Enabled: true <<<<<<< "false"
Status: running PID:26470 for 22279s <<<<<< "not running"
```

If the app-server status shows **Enabled** as **false** and the **Status** is **not running**, you can issue the next command to restore the GUI:

<#root>

∨manage#

2. To verify the status of all the nms services, you can issue the next command:

<#root>

vmanage#

request nms all status

NMS service proxy Enabled: true Status: running PID:22194 for 22774s NMS service proxy rate limit Enabled: true Status: running PID:24076 for 22795s NMS application server Enabled: true Status: running PID:26470 for 22638s NMS configuration database Enabled: true Status: running PID:25030 for 22697s NMS coordination server Enabled: true Status: running PID:23918 for 22741s NMS messaging server Enabled: true Status: running PID:23386 for 22795s NMS statistics database Enabled: true Status: running PID:23284 for 22741s NMS data collection agent Enabled: true Status: running PID:21708 for 22746s NMS CloudAgent v2 Enabled: true Status: running PID:25431 for 22704s NMS cloud agent Enabled: true Status: running PID:21731 for 22747s NMS SDAVC server Enabled: false Status: not running NMS SDAVC proxy Enabled: true Status: running PID:21780 for 22747s

3. To verify the TCP handshake is completed, issue the next command:

<#root>

vmanage#

request nms all diagnostics

NMS service server Checking cluster connectivity... Pinging server on localhost:8443... Starting Nping 0.7.80 (https://nmap.org/nping) at 2023-02-28 01:48 UTC SENT (0.0023s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (0.0023s) Handshake with localhost:8443 (127.0.0.1:8443) completed SENT (1.0036s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (1.0036s) Handshake with localhost:8443 (127.0.0.1:8443) completed SENT (2.0051s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (2.0051s) Handshake with localhost:8443 (127.0.0.1:8443) completed Max rtt: 0.039ms | Min rtt: 0.029ms | Avg rtt: 0.035ms TCP connection attempts: 3 | Successful connections: 3 | Failed: 0 (0.00%) Nping done: 1 IP address pinged in 2.01 seconds WARNING: Reverse DNS lookup on localhost timed out after 2 seconds Checking server localhost... Server network connections -----tcp 0 0 127.0.0.1:37533 127.0.0.1:8443 TIME_WAIT tcp 0 0 127.0.0.1:40364 127.0.0.1:8443 ESTABLISHED 1614/python3 tcp 0 0 127.0.0.1:46626 127.0.0.1:8443 ESTABLISHED 1615/python3 tcp 0 0 127.0.0.1:46606 127.0.0.1:8443 ESTABLISHED 1617/python3 tcp 0 0 127.0.0.1:46654 127.0.0.1:8443 ESTABLISHED 21708/python3 tcp 0 0 127.0.0.1:36835 127.0.0.1:8443 TIME_WAIT tcp 0 0 127.0.0.1:46590 127.0.0.1:8443 ESTABLISHED 1616/python3 tcp 0 0 127.0.0.1:46255 127.0.0.1:8443 TIME_WAIT tcp6 0 0 :::8443 :::* LISTEN 23643/envoy tcp6 0 0 127.0.0.1:8443 127.0.0.1:46606 ESTABLISHED 23643/envoy tcp6 0 0 127.0.0.1:8443 127.0.0.1:46654 ESTABLISHED 23643/envoy tcp6 0 0 127.0.0.1:8443 127.0.0.1:46626 ESTABLISHED 23643/envoy tcp6 0 0 127.0.0.1:8443 127.0.0.1:40364 ESTABLISHED 23643/envoy tcp6 0 0 127.0.0.1:8443 127.0.0.1:46590 ESTABLISHED 23643/envoy NMS application server Checking cluster connectivity... Pinging server 0 on localhost:8443... Starting Nping 0.7.80 (https://nmap.org/nping) at 2023-02-28 01:48 UTC SENT (0.0023s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (0.0023s) Handshake with localhost:8443 (127.0.0.1:8443) completed SENT (1.0037s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (1.0037s) Handshake with localhost:8443 (127.0.0.1:8443) completed SENT (2.0050s) Starting TCP Handshake > localhost:8443 (127.0.0.1:8443) RCVD (2.0050s) Handshake with localhost:8443 (127.0.0.1:8443) completed Max rtt: 0.042ms | Min rtt: 0.031ms | Avg rtt: 0.035ms TCP connection attempts: 3 | Successful connections: 3 | Failed: 0 (0.00%) Nping done: 1 IP address pinged in 2.01 seconds Disk I/O statistics for vManage storage avg-cpu: %user %nice %system %iowait %steal %idle 1.59 0.05 0.63 0.11 0.00 97.62 Device tps kB_read/s kB_wrtn/s kB_dscd/s kB_read kB_wrtn kB_dscd

NMS configuration database Checking cluster connectivity... Pinging server 0 on localhost:7687,7474... Starting Nping 0.7.80 (https://nmap.org/nping) at 2023-02-28 01:48 UTC SENT (0.0023s) Starting TCP Handshake > localhost:7474 (127.0.0.1:7474) RCVD (0.0023s) Handshake with localhost:7474 (127.0.0.1:7474) completed SENT (1.0036s) Starting TCP Handshake > localhost:7687 (127.0.0.1:7687) RCVD (1.0037s) Handshake with localhost:7687 (127.0.0.1:7687) completed SENT (2.0050s) Starting TCP Handshake > localhost:7474 (127.0.0.1:7474) RCVD (2.0050s) Handshake with localhost:7474 (127.0.0.1:7474) completed SENT (3.0063s) Starting TCP Handshake > localhost:7687 (127.0.0.1:7687) RCVD (3.0064s) Handshake with localhost:7687 (127.0.0.1:7687) completed SENT (4.0077s) Starting TCP Handshake > localhost:7474 (127.0.0.1:7474) RCVD (4.0078s) Handshake with localhost:7474 (127.0.0.1:7474) completed SENT (5.0090s) Starting TCP Handshake > localhost:7687 (127.0.0.1:7687) RCVD (5.0091s) Handshake with localhost:7687 (127.0.0.1:7687) completed Max rtt: 0.061ms | Min rtt: 0.029ms | Avg rtt: 0.038ms TCP connection attempts: 6 | Successful connections: 6 | Failed: 0 (0.00%) Nping done: 1 IP address pinged in 5.01 seconds Connecting to localhost... +-----+ | type | row | attributes[row]["value"] | +-----+ "StoreSizes" | "TotalStoreSize" | 554253748 | "PageCache" | "Flush" | 19834 | "PageCache" | "EvictionExceptions" | 0 | "PageCache" | "UsageRatio" | 0.001564921426952844 | "PageCache" | "Eviction" | 0 | "PageCache" | "HitRatio" | 1.0 | "ID Allocations" | "NumberOfRelationshipIdsInUse" | 907 | "ID Allocations" | "NumberOfPropertyIdsInUse" | 15934 | "ID Allocations" | "NumberOfNodeIdsInUse" | 891 | "ID Allocations" | "NumberOfRelationshipTypeIdsInUse" | 27 | "Transactions" | "LastCommittedTxId" | 415490 | "Transactions" | "NumberOfOpenTransactions" | 1 | "Transactions" | "NumberOfOpenedTransactions" | 36268 | "Transactions" | "PeakNumberOfConcurrentTransactions" | 5 | "Transactions" | "NumberOfCommittedTransactions" | 31642 | -----+ 15 rows available after 644 ms, consumed after another 20 ms Completed Disk space used by configuration-db 961M . NMS statistics database Checking cluster connectivity... Pinging server 0 on localhost:9300,9200... Starting Nping 0.7.80 (https://nmap.org/nping) at 2023-02-28 01:48 UTC SENT (0.0022s) Starting TCP Handshake > localhost:9200 (127.0.0.1:9200) RCVD (0.0023s) Handshake with localhost:9200 (127.0.0.1:9200) completed SENT (1.0036s) Starting TCP Handshake > localhost:9300 (127.0.0.1:9300) RCVD (1.0037s) Handshake with localhost:9300 (127.0.0.1:9300) completed SENT (2.0050s) Starting TCP Handshake > localhost:9200 (127.0.0.1:9200) RCVD (2.0050s) Handshake with localhost:9200 (127.0.0.1:9200) completed SENT (3.0055s) Starting TCP Handshake > localhost:9300 (127.0.0.1:9300) RCVD (3.0055s) Handshake with localhost:9300 (127.0.0.1:9300) completed SENT (4.0068s) Starting TCP Handshake > localhost:9200 (127.0.0.1:9200)

RCVD (4.0068s) Handshake with localhost:9200 (127.0.0.1:9200) completed

SENT (5.0080s) Starting TCP Handshake > localhost:9300 (127.0.0.1:9300) RCVD (5.0081s) Handshake with localhost:9300 (127.0.0.1:9300) completed Max rtt: 0.043ms | Min rtt: 0.022ms | Avg rtt: 0.029ms TCP connection attempts: 6 | Successful connections: 6 | Failed: 0 (0.00%) Nping done: 1 IP address pinged in 5.01 seconds Connecting to server localhost Overall cluster health state _____ Total number of shards: 35 Total number of nodes: 1 Average shards per node: 35 Primary shard allocation of 35 is within 20% of expected average 35 Cluster status: healthy (green) Cluster shard state _____ There are no unassigned shards Cluster index statistics -----health status index uuid pri rep docs.count docs.deleted store.size pri.store.size green open trackerstatistics_2023_02_27t19_39_42 S-2Zq9MMRN-apsr562z-zw 1 0 0 0 261b 261b green open sulstatistics_2023_01_11t21_21_16 BmnHn29dSFeGKjayJHz6aQ 1 0 0 0 261b 261b green open deviceconfiguration_2023_01_11t21_21_24 OqF86WgoSTm3ysve6e_hnw 1 0 5 0 57.3kb 57.3kb green open deviceevents_2023_01_11t21_21_23 1rOapbVwR_ipH1PvcWbhVg 1 0 406 0 153.4kb 153.4kb green open alarm_2023_01_11t21_21_20 mY4hmLf8ScaL32cD_Jzlzw 1 0 73 3 203.2kb 203.2kb green open umbrella_2023_01_11t21_21_21 0AEhzE0wTaiwbvgE2m9e_g 1 0 0 0 261b 261b green open sleofflinereport_2023_01_11t21_21_19 j0ALD8s6SgW_ostXGkSKLA 1 0 0 0 261b 261b green open deviceevents_2023_02_27t19_39_57 kKT6L0FRSaSQ45YIq_BW8Q 1 0 133 0 75.2kb 75.2kb green open eioltestatistics_2023_02_27t19_39_50 mSI3dVEISeKa4HVaDAUcQA 1 0 0 0 261b 261b green open utddagioxstatistics_2023_01_11t21_21_21_Uw52JOTMRo2aw0W2ZfBF-w 1 0 0 0 261b 261b green open fwall_2023_01_11t21_21_20 ImSKES5UQ_m50NA3xE916A 1 0 0 0 261b 261b green open approutestatsstatistics_routing_summary_2023_02_28t00_54 8cTHcjROSMaf7gLaqp0ztg 1 0 0 0 261b green open apphostingstatistics_2023_01_11t21_21_24 F0CnoCsBSIGLsFJD5oPB9g 1 0 0 0 261b 261b green open urlf_2023_01_11t21_21_24 541JR9PjRJ2F5VCAnnu_qQ 1 0 0 0 261b 261b green open bridgemacstatistics_2023_01_11t21_21_17 B_Za3olfTU-sh0cmVpJ5AA 1 0 0 0 261b 261b green open wlanclientinfostatistics_2023_01_11t21_21_19 QW3fxuqaScm5girepulUEA 1 0 0 0 261b 261b green open devicesystemstatusstatistics_2023_01_11t21_21_23 0eyHAP6uTH2KukP-eTqZow 1 0 90067 0 36.8mb 3 green open nwpi_2023_01_11t21_21_22 p0ohA5eAS4-mUo2V5CUAew 1 0 0 0 261b 261b green open vnfstatistics_2023_01_11t21_21_24 ZFoka_AORoen37PNrxVTGg 1 0 0 0 261b 261b green open device-tag-v1 8L9UIFgGTkCkUct2KcDHyQ 1 0 6 0 3.4kb 3.4kb green open artstatistics_2023_01_11t21_21_22_ziMT4UixSMCV116W2PsoaQ_1_0_0_261b_261b green open dpistatistics_application_summary_2023_02_28t00_54 OtYhwgXIRkepG1gVoWLiEQ 1 0 0 0 261b 261b green open bridgeinterfacestatistics_2023_01_11t21_21_22 qk7AuPzUTqas0xM0G0DtSA 1 0 0 0 261b 261b green open speedtest_2023_01_11t21_21_22 MdR4FUF1R0KqBYXmhXDR-w 1 0 0 0 261b 261b green open aggregatedappsdpistatistics_2023_01_11t21_21_24 g4y-eKklTL-PHwwRvKmiyQ 1 0 0 0 261b 261b green open ipsalert_2023_01_11t21_21_21 13L6NhB6Sha31mp0UZBgig 1 0 0 0 261b 261b green open flowlogstatistics_2023_01_11t21_21_20 F9uuICzfS6Cq8GcGkU0wTA 1 0 0 0 261b 261b green open nwpiflowraw_2023_01_11t21_21_22 FdIv-sjwQGiq0YPVh2-alw 1 0 0 0 261b 261b green open auditlog_2023_01_11t21_21_21 LLsBmyAjRWiIJiDYkEBVqg 1 0 407 0 447.7kb 447.7kb green open interfacestatistics_2023_01_11t21_21_23 u8LXrT8qTcmeeeIFSo3hOw 1 0 0 0 261b 261b green open approutestatsstatistics_transport_summary_2023_02_28t00_54 g6V1J_ByS8-6PfH9_1Rkmg 1 0 0 0 26 green open qosstatistics_2023_01_11t21_21_16 Yr6x2NsYTC2c9o8KUgb9ZA 1 0 0 0 261b 261b green open approutestatsstatistics_2023_01_11t21_21_18 OIWGMGvoSS0-xZUd-ajI-g 1 0 0 0 261b 261b green open cloudxstatistics_2023_02_27t19_40_01 tAx45uDeQ0Gz5XnAUafpyg 1 0 0 0 261b 261b green open dpistatistics_2023_02_27t19_39_54 yTkRk7XRSA2tTeRmDM--Dg 1 0 0 0 261b 261b NMS coordination server

Checking cluster connectivity... Pinging server 0 on localhost:2181... Starting Nping 0.7.80 (https://nmap.org/nping) at 2023-02-28 01:48 UTC SENT (0.0021s) Starting TCP Handshake > localhost:2181 (127.0.0.1:2181) RCVD (0.0021s) Handshake with localhost:2181 (127.0.0.1:2181) completed SENT (1.0033s) Starting TCP Handshake > localhost:2181 (127.0.0.1:2181) RCVD (1.0033s) Handshake with localhost:2181 (127.0.0.1:2181) completed SENT (2.0047s) Starting TCP Handshake > localhost:2181 (127.0.0.1:2181) RCVD (2.0047s) Handshake with localhost:2181 (127.0.0.1:2181) completed Max rtt: 0.039ms | Min rtt: 0.032ms | Avg rtt: 0.035ms TCP connection attempts: 3 | Successful connections: 3 | Failed: 0 (0.00%) Nping done: 1 IP address pinged in 2.00 seconds WARNING: Reverse DNS lookup on localhost timed out after 2 seconds Checking server localhost... Server network connections _____ tcp 0 0 127.0.0.1:2181 0.0.0.0:* LISTEN 23864/docker-proxy tcp 0 0 127.0.0.1:34397 127.0.0.1:2181 TIME_WAIT tcp 0 0 127.0.0.1:2181 127.0.0.1:47388 ESTABLISHED 23864/docker-proxy tcp 0 0 127.0.0.1:40733 127.0.0.1:2181 TIME_WAIT tcp 0 0 127.0.0.1:45953 127.0.0.1:2181 TIME_WAIT tcp6 0 0 127.0.0.1:47388 127.0.0.1:2181 ESTABLISHED 26470/java NMS container manager is disabled NMS SDAVC server is disabled

Related Information

The Cisco SD-WAN Solution

Cisco SD-WAN Overlay Network Bring-Up Process

Troubleshoot Cisco SD-WAN Solution

Upgrade for cEdges CLI

Upgrade for cEdges GUI

Upgrade vEdges