CX Cloud Agent Overview v2.0

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Introduction

This document describes Cisco's Customer Experience (CX) Cloud Agent. Cisco's (CX) Cloud Agent is a modernized modular on-premise software platform that hosts lightweight containerized microservice capabilities. These capabilities can be installed, configured, and managed on customer premise from the cloud. CX Cloud Agent expedites the monetization of new offers, scales capabilities, and helps to develop next-generation services driven by big data, analytics, automation, Machine Learning/Artificial Intelligence (ML/AI), and streaming.

Note: This guide is intended for CX Cloud Agent v2.0 users. Please refer to the <u>Cisco CX</u> <u>Cloud Agent</u> for other related information.



CX Cloud Agent Architecture

Note: Images (and the content within) in this guide are for reference purpose only. Actual content can vary.

Prerequisites

CX Cloud Agent runs as a Virtual Machine (VM) and is available for download as an Open Virtual Appliance (OVA) or a Virtual Hard Disk (VHD).

Requirements to deploy:

- Any of these hypervisors: VMWare ESXi version 5.5 or laterOracle Virtual Box 5.2.30Windows
 Hypervisor version 2012 to 2016
- The hypervisor can host a VM which requires: 8 Core CPU16 GB Memory/RAM200GB Disk

Space

- For customers that use designated Cisco US data centers as the primary data region to store CX Cloud data:
 - The CX Cloud Agent must be able to connect to the servers shown here, using the FQDN, and using HTTPS on TCP port 443:
 - FQDN: agent.us.csco.cloud
 - FQDN: ng.acs.agent.us.csco.cloud
 - FQDN: cloudsso.cisco.com
 - FQDN: api-cx.cisco.com
- For customers that use designated Cisco Europe data centers as the primary data region to store CX Cloud data:

The CX Cloud Agent must be able to connect to both of the servers shown here, using the FQDN, and using HTTPS on TCP port 443:

- FQDN: agent.us.csco.cloud
- FQDN: agent.emea.csco.cloud
- FQDN: ng.acs.agent.emea.csco.cloud
- FQDN: cloudsso.cisco.com
- FQDN: api-cx.cisco.com
- For customers that use designated Cisco Asia Pacific data centers as the primary data region to store CX Cloud data:
 - The CX Cloud Agent must be able to connect to both of the servers shown here, using the FQDN, and using HTTPS on TCP port 443:
 - FQDN: agent.us.csco.cloud
 - FQDN: agent.apjc.csco.cloud
 - FQDN: ng.acs.agent.apjc.csco.cloud
 - FQDN: cloudsso.cisco.com
 - FQDN: api-cx.cisco.com
- For customers who use the designated Cisco Europe and Cisco Asia Pacific data centers as their primary data region, connectivity to FQDN: agent.us.csco.cloud is required only for registering the CX Cloud Agent with CX Cloud during initial setup. After the CX Cloud Agent is successfully registered with CX Cloud, this connection is no longer required.
- For local management of the CX Cloud Agent, port 22 must be accessible.

Other notes on CX Cloud Agent:

- An IP will automatically be detected if Dynamic Host Configuration Protocol (DHCP) is enabled in the VM environment. Otherwise, a free IPv4 address, Subnet mask, Default Gateway IP address, and DNS server IP address must be available.
- Only IPv4 is supported, not IPv6.
- The certified single node and High Availability (HA) Cluster Cisco Digital Network Architecture (DNA) Center versions from 1.2.8 to 1.3.3.9 and 2.1.2.0 to 2.2.3.5 are required.
- If the network has SSL interception, permit-list CX Cloud Agent's IP address.

Critical Domains Access

To start the CX Cloud journey, users require access to these domains.

Major Domains Other Domains

cisco.com	mixpanel.com
csco.cloud	cloudfront.net
split.io	eum-appdynamics.com
	appdynamics.com
	tiqcdn.com
	jquery.com

Domains specific to region:

AMERICAS	EMEA	APJC
cloudsso.cisco.com	cloudsso.cisco.com	cloudsso.cisco.co m
api-cx.cisco.com	api-cx.cisco.com	api-cx.cisco.com
agent.us.csco.cloud	agent.us.csco.cloud	agent.us.csco.clou d
ng.acs.agent.us.csco .cloud	agent.emea. <u>csco.clou</u> d ng.acs.agent.emea. <u>cs</u> <u>co.cloud</u>	agent.apjc. <u>csco.cl</u> oud ng.acs.agent.apjc. csco.cloud

Prerequistes to Upgrade to CX Cloud Agent v2.0

The prerequisites outlined in this section must be met prior to the upgrade to CX Cloud Agent v2.0.

- 1. Ensure that CX Cloud Agent v1.12.x and later must be installed prior to the initiation of the upgrade.
- Perform these steps to configure the Domain Name Server if it is not already configured: Log in to the Command Line Interface (CLI) console of the CX Cloud Agent Virtual Machine.Execute the *cxcli agent configureDNS* command.Enter the DNS IP address.Click Exit.
- 3. Ensure that the customer's network allows the domain names in <u>Critical Domain Access</u> to complete the Cloud Agent re-registration during migration. CX Cloud Agent must be able to reach these domains and also the domains must be resolvable from DNS server. Contact the Network Team if any domain is unreachable.
- 4. Take a Cloud Agent VM snapshot before initiating v2.0 upgrade (proper access required).

Note: Versions prior to 1.10 must upgrade to v1.10 first, followed by incremental upgrades to v1.12.x, and then to v2.0. Users can upgrade from Admin Settings > Data Sources in CX Cloud portal. Click View Update to complete the upgrade.

Following conditions to be met for successful setup:

- 1. List of DNACs and their credentials
- 2. DNAC user with Admin or Observer role access
- 3. Virtual IP address or Standalone/Physical IP address for DNAC cluster
- 4. Successful reachability between Cloud Agent and DNAC
- 5. DNAC must have minimum 1 (one) managed device

Cisco DNA Center Certified Versions

Certified single node and HA Cluster Cisco DNA Center versions are from 1.2.8 to 1.3.3.9 and 2.1.2.0 to 2.2.3.5.



Multi-Node HA Cluster Cisco DNA Center

Supported Browsers

For the best experience on Cisco.com, we recommend the latest official release of the these browsers:

- Google Chrome
- Microsoft Edge
- Mozilla Firefox

Deploy CX Cloud Agent

To deploy CX Cloud Agent:

- 1. Click <u>cx.cisco.com</u> to log in to CX Cloud.
- 2. Select Campus Network and navigate to ASSETS & COVERAGE tile.

CISCO CX CI	oud AMERI	ICAN SOCIETY OF COMPOSERS AUTHORS AND PUBLISHEP	5		Search			0 0 1	6
A My Portfolo	< Campus Netw	ork • Select •						9 Automation	Jobs
< (49% Att		Epert Recommendations 945 Uperning Engagements 0 EXPERT ENGAGEMENTS	(Advisories	ty 137 vences 5 vitrige 19	Open Cases Open Cases With Rt CASES	816 5	2
Assets 0	loverage I	Licenses					GET HELP	T FR	ers x
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	OTAL	ASSET TYPE CONNECTION	N STATUS COVER	NGE	ADVISORIES	LAS	ET DATE OF SUPPORT		RC
🚺 Set ur	p CK Cloud Ager	nt and connect with Cisco DNA Center to see complete inform	nation about your network. This pro-	cess may take 2-3	hours.		Set Up C	K Cloud Agent	
Al - dn1		×							-
Assets 3 Terral									
Assets 3 Tanai Name	Product ID	Product Description	Critical Security Advisories	Location	Coverage Status	Software Type	Software Release	IP Address	
Assets 3 Tacal Name FCH2219V0M9	Product ID DN1+HW- APL	Product Description Gent DNA HW Appliance. DN1-HW-APL has an EQL announcement.	Critical Security Advisories	Location NEW YORK,NY,USA	Coverage Status	Software Type O	Software Release	IP Address O	1

Home page

3. Click Set Up CX Cloud Agent in the banner. The Set Up CX Cloud Agent - Review deployment requirements window opens.

O Mate

SET UP CX CLOUD AGENT	Add Cloud Agent to your CX Cloud pit crew CX Cloud Agent gathers telemetry data from the devices on your network, allowing you to take
Review Deployment Requirements	advantage of all the hyper-relevant insights and trusted expertise that CX Cloud has to offer.
Accept Strong Encryption Agreement	Review deployment requirements
Deploy and Pair with Virtual Machine	Prepare your network for CX Cloud Agent
	CX Cloud Agent runs as a virtual machine (VM), so you'll need a hypervisor to host it.
•••	Before you download and install the image file, make sure CX Cloud Agent is able to connect to the designated server(s) via HTTPS on port 443 using both FQDN and the IP address:
÷	For AWS US data centers:
	- FQDN: agent.us.csco.cloud
	- FQDN: ng.acs.agent.us.csco.cloud
	- FQDN: cloudsso.cisco.com
	- FQDN: api-cx.cisco.com
	Review the CX Cloud Agent Overview for complete hardware and software prerequisites.
	CX Cloud takes security seriously. Review the Security section of the CX Cloud Agent Overview to learn how CX Cloud Agent handles and stores your data.
	I set up this configuration on port 443

Review deployment requirements

4. Read the prerequisites in **Review deployment requirements** and select the check box for **I set up this configuration on port 443**.

Note: Images (and the content within) in this guide are for reference purpose only. Actual content can vary.

5. Click **Continue**. The **Set Up CX Cloud Agent - Accept the strong encryption agreement** window opens.



Encryption Agreement

6. Verify the pre-populated information in the **First Name,Last Name,E-mail**, and **CCO User Id** fields.

- 7. Select the appropriate Business division's function.
- 8. Select the Confirmation check box to agree to the usage conditions.
- 9. Click Continue. The Set Up CX Cloud Agent Download image file window opens.



Download Image

10. Select the appropriate file format to download the image file required for installation.

11. Select the I accept check box to agree to the Cisco End User License Agreement.

12. Click **Download and Continue**. The **Set Up CX Cloud Agent - Deploy and pair with your virtual machine** window opens.

13. Refer to <u>Network Configuration</u> for OVA installation and continue to the next section to install the CX Cloud Agent.

Connect CX Cloud Agent to CX Cloud

1. Enter the **Pairing Code** provided in the console dialog or Command Line Interface (CLI).

Pairing Code

2. Click **Continue** to register the CX Cloud Agent. The **Set Up CX Cloud Agent -Registration successful** window displays for few seconds before automatically navigating to **Configure Connection to CX Cloud** window

Set Up CX Cloud Agent		×
SET UP CX CLOUD AGENT 75%	Registration successful!	
Review Deployment Requirements Accept Strong Encryption Agreement Download Image File Deploy and Pair with Virtual Machine		
	 Next up: add your data sources 	

Registration Sucessful

								O Help
								0
✓ Back to Data Sources							×	
	Configure connection to C	X Cloud						
	Connect a Cisco DNA Center							
	IP Address or FQDN		Location ((City, State, Country)				
						Q		
	Username		Password	1				
	Collection Frequency	Time						
	Frequency	Time	\sim	IST	~			
	Run the first collection now (this may to)	ake up to 75 minutes)						
	The first data source you add must be a Cisc to a controller.	to DNA Center. After tha	t you can add	additional Cisco DNA	A Centers and devices	not connected		
	Connect This Date Source							

Configure Connection

3. Enter data and click **Connect This Data Source**. The confirmation message "Successfully Connected" displays.

Configure connection to CX Cloud



Connect another data source to CX Cloud Agent?



DNAC Added Successfully

Configure connection to CX Cloud

Successfully Connected





Multiple DNACs Added

4. Click Done Connecting Data Sources. The Data Sources window opens.

Connect Meraki Dashi	board to CX Cloud to get insights and additional systems infom	nation about your Meraki assets. Get set up in about 10 mi	Add Meraki Dashboard
Add a Data Source			Search data sources
3 Total Data Sources			
Name	Туре	Data Last Updated	Status
CX Cloud Agent	CX Cloud Agent v2.0.3	1 minutes ago	Running
10.197.238.126	Cisco DNA Center	1 minutes ago	Reachable
22.1.90.1	Cisco DNA Center	1 minutes ago	Reachable

Data Sources

Deployment and Network Configuration

Any of the these options can be selected to deploy the CX Cloud Agent:

- If you select VMware vSphere/vCenter Thick Client ESXi 5.5/6.0 go to Thick Client
- If you select VMware vSphere/vCenter Web Client ESXi 6.0 go to <u>Web Client</u> vSphere or <u>Center</u>
- If you select Oracle Virtual Box 5.2.30 go to Oracle VM
- If you select Microsoft Hyper-V go to Hyper-V

OVA Deployment

Thick Client ESXi 5.5/6.0 Installation

This client allows the deployment of CX Cloud Agent OVA by use of the vSphere thick client.

1. After you download the image, launch the VMware vSphere Client and log in.

♂ VMware vSphere Client ×
vmware [*] VMware vSphere ^{**} Client
All vSphere features introduced in vSphere 5.5 and beyond are available only through the vSphere Web Client. The traditional vSphere Client will continue to operate, supporting the same feature set as vSphere 5.0.
To directly manage a single host, enter the IP address or host name. To manage multiple hosts, enter the IP address or name of a vCenter Server.
IP address / Name: 10.126.77.60
User name: root
Password: ***** Use Windows session credentials
Login Close

Login

2. Navigate to File > Deploy OVF Template.

New +	tory > (1) Inventory					
Deploy OVF Template						
ipot +						
leport +	A	localhost.localdomain VHware E	584, 5.5.0, 1623387			
Irowse VA Marketplace	192.168.1.100 hat_vishes_10.126.77.111	Getting Started Summary Virtu	al Hachines Resource Allocation	Performance Configuration Local Users & Groups Deer	th Permissions	6
Nint Maps +	Vohnu_10.126.77.136	General		Resources		
Luit	(shru_10.126.77.136	Non-dark com	Const Evaluation Inc.	Chiusane 3120 MMr Constru		
Concernment 111 Note 4	kshru_192.368.1.300_112	Hardscare:	Uside Systems and	16 x 2.899 Dit		
CXCloudAgent_1.12_Build-12	_signed_test	(Bill County)	14 (D) h = 3 800 (D)			
CXCloudApent_1.12_Build-12	vishnu_30.126.77.136	doctores:	20 CPUS X 2.099 CPU	memory usage: 40345.00 PHB Capacity		
CXCloudApent_1.12_Build-12	_wishviu_192.568.1.500_112	Processor 1/04:	0 8 2.900Hz	654/6.40 PB		
COCOUGApert_1.12_Build-1_	vahru_10.126.77.136	License:	Weare Schere SEnterprise	Strate / Distance Cataly		
Children 112 Build 4	verna_10.126.77.136		Plus - Licensed for 2 physic	G (determined (10) Name (10)	47	
Cicloudeant 112 Builds	Johny 10 136 77 136	Processor Sockets:	2	(overstover(m) 400-300 319310	100	
CiCloudApent 1.12 Build-7	Vaheu 10,136,77,136	Cores per Socket:		<	>	
CXCloudAgent_1.12_Build-7	Vahru 192 168 1 100	Logical Processors:	32	Network Type		
CXCloudApent_1.2_Build-21_	192.368.1.300	Hyperthreading:	Active	VM Network Renderd and area		
CXCloudApent_1.4_Build-20_	vishnu_10.126.77.136	Number of NOCs:	2	VM NAT Resident and ones		
CKCoudApent_1.5_Build-8_v	sheu_10.126.77.136	State:	Connected	VM NAT 2 Resident and area		
CKCloudApent_1.6_Build-8_v	sheu_10.126.77.136	Virtual Machines and Templates:	56	Tencerchord App		
CiCloudApent_1.7_Build-10_	vishnu_10.126.77.136	vMotion Enabled:	NA	e	>	
CXCloudAgent_1.7_Build-7_v CXCloudAgent_1.8_Build-8_1	shnu_10.126.77.111_demo_anushc _signed_Vishnu_10.126.77.111_syd	VMware EVC Mode:	Disabled	Fault Tolerance		
CXCloudAgent_1.8_Build-8_v	shnu_10.126.77.136	vSphere HA State	(B) N/A	Excelose verses Exceloses		
Chicoustopert_1.9_Build-6_V	sheu_10.126.77.136	Host Configured for PT:	NA	Paul (001010 10100) 500/500/500		
CXClauddaard 2.0 B-14-111	visbou 10.126.77.111			Refresh Virtual Machine Court	•	
CiCloudApent 2.0 Build-111	vishou 192,568,1,500,208	Active Tasks:		Total Primary VMs: 0		
CiCloudApent 2.0 Build-136	vishnu 30.126.77.111	Host Profile:	NJA	Powered On Primary 1995 0		
CXCloudApent_2.0_Build-136	vishnu_192.568.1.500_208	Image Profile:	ESN-5.5.0-20140302001-6	Total Secondary VMs: 0		
CXCloudApent_2.0_Build-137	_corona_scan	Profile Compliance:	😨 NA	Powered On Secondary VMs: 0		
CXCloudAgent_2.0_Build-137	_signed_demo_10.125.77.111	DirectPath 1/D:	Supported C			
CXCoudApert_2.0_Build-137	_vishvu_392.568.5.500_208 ~			Host Planagement		
	>	Commande				
Tasks						Name, Target or Status of

vSphere Client

3. Browse to select the OVA file and click Next.

🚱 Deploy OVF Template

Source

Select the source location.

Source OVF Template Details Name and Location Disk Format Ready to Complete	Deploy from a file or URL Browse Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.
Help	< Back Next > Cancel

OVA Path

4. Verify the OVF Details and click Next.

_

Deploy OVF Template OVF Template Details Verify OVF template details				-		×
Source OVF Template Details Name and Location Disk Format Network Mapping Ready to Complete	Product: Version: Vendor: Publisher: Download size: Size on disk: Description:	CXCloudAgent_2.0_Build-144 2.0 Cisco Systems, Inc CISCO SYSTEMS, INC. 1.1 GB 3.1 GB (thin provisioned) 200.0 GB (thick provisioned) CXCloudAgent_2.0_Build-144				
Help			< Back	Next >	Can	cel

Template Details

5. Enter a Unique Name and click Next.

Deploy OVF Template	-		\times
Name and Location Specify a name and loca	tion for the deployed template		
opearly a nume and roce			
Source	Name		
OVF Template Details	CXCloudAgent 2.0 Build-144 DEMO		
Name and Location	The name can contain up to 80 characters and it must be unique within the inventory folde	r.	
Vetwork Mapping			
Ready to Complete			
Help	Rade Navet S	6	ocol
(Classical Section 1997)	< back Next >		ncer

Name and Location

6. Select a Disk Format and click Next (Thin Provision is recommended).



Disk Format

In which format do you want to store the virtual disks?

	urce /F Template Details ame and Location isk Format	Datastore: Available space (GB):	datastore 1 (11) 973. 1			
Ne Re	etwork Mapping eady to Complete					
		C Thick Provision Lazy Zero	bed			
		C Thick Provision Eager Ze	roed			
		Thin Provision				
	Help			< Back	Next >	Cancel
						///

 \times

Disk Format

7. Select the Power on after deployment checkbox and click Finish.



Ready to Complete

Are these the options you want to use?

Source OVF Template Details	When you click Finish, the deplo	yment task will be started.						
Name and Location	Deployment settings:							
Disk Format	OVF file:	C:\Users\cxcadmin\Downloads\OVA\CXCloudAgent_2.0						
Network Mapping	Download size:	1.1 GB						
Ready to Complete	Size on disk:	3.1 GB						
	Name:	CXCloudAgent_2.0_Build-144_DEMO						
	Host/Cluster:	localhost.						
	Datastore:	datastore1 (11)						
	Disk provisioning:	Thin Provision						
	Network Mapping:	"VM Network" to "VM Network"						
	Power on after deployment)							
Help		< Back Finish Cancel						

Ready to Complete

Deployment can take several minutes. Wait until you get a success message.



Deployment in Progress



Deployment Completed

8. Select the VM just deployed, open the console and go to **<u>Network Configuration</u>**.

Web Client ESXi 6.0 Installation

This client deploys CX Cloud Agent OVA by use of the vSphere web.

1. Log in to VMWare UI with the ESXi/hypervisor credentials used for deploying VM.

vm ware [.]	
User name 1 Password Log in	VMWare esxi

VMware ESXi Login

2. Select Virtual Machine > Create / Register VM.

Eile Edit View Higtory Bookmarks I	ools Help
Iocalhost.localdomain - VMwarr ×	♦ New Tab × +
$\leftarrow \ \ \rightarrow \ \ {\mathfrak C}$	○ A 0~ https://10.126.77.20/ui/#/host
vmware' esxi"	
Ta Navigator	localhost.localdomain
Host Manage Monitor Of Virtual Machines Storage Networking	Manage with vCenter Server Create/Register VM Manage with vCenter Server Create Register VM Manage with vCenter Server Center Server Normal (connected to vCenter Server at 10.126.77.54) Uptme: 182.07 days

Create VM



OVA Deployment

- 3. Select Deploy a virtual machine from an OVF or OVA file and click Next.
- 4. Enter the name of the VM, browse to select the file, or drag-and-drop the downloaded OVA file.
- 5. Click Next.

102 of Gave	
 1 Select creation type 2 Select OVF and VMDK files 3 Select storage 4 License agreements 5 Deployment options 6 Additional settings 7 Ready to complete 	Select OVF and VMDK files Select the OVF and VMDK files or OVA for the VM you would like to deploy Enter a name for the virtual machine. Virtual machine names can contain up to 80 characters and they must be unique within each ESXi instance. Click to select files or drag/drop
vm ware	
	Back Next Finish Cancel



6. Select Standard Storage and click Next.



Select Storage

102.00 Gaves 102 New virtual machine - CX Cloud Agrnt 2.0 DEMO						
 ✓ 1 Select creation type ✓ 2 Select OVF and VMDK files ✓ 3 Select storage 	Deployment options Select deployment options					
4 Deployment options 5 Ready to complete	Network mappings	VM Network VM Corporate Network ~				
	Disk provisioning	Thin () Thick				
	Power on automatically					
vm ware [*]						
Toront	Initiator	Back Next Finish Cancel				

Deployment Options

7. Select the appropriate Deployment options and click Next.

Y 4 Deployment options S Ready to complete Product CXCloudAgent_2.0_Build-144 VM Name CX Cloud Agent_2.0_Build-144.1_signed-sha1-disk1.vmdk Datastore datastore1 Provisioning type Thin Network mappings VM Network: VM Corporate Network Guest OS Name Unknown	 1 Select creation type 2 Select OVF and VMDK files 3 Select storage 	Ready to complete Review your settings selection before finishing the wizard						
Guest OS Name Unknown Image: Do not refresh your browser while this VM is being deployed.	 4 Deployment options 5 Ready to complete 	Product VM Name Disks Datastore Provisioning type Network mappings	CXCloudAgent_2.0_Build-144 CX Cloud Agrnt 2.0 DEMO CXCloudAgent_2.0_Build-144-1_signed-sha1-disk1.vmdk datastore1 Thin VM Network: VM Corporate Network					
	vm ware [*]	Do not refresh your brow	ser while this VM is being deployed.					

Ready to Complete

Elle Edit View Higtory Bookmarks Iools Help ×									
ar localhost.localdomain - VMwar X 😻 New Tab X +									
$\leftarrow \rightarrow C$	C 🔒 🕶 https://10.126.77.20	/ui/#/host						\odot \pm	≡•
VmWare Esxi root@10.126.77.20 - Help - Q Search -									
🖫 Navigator 🗉	localhost.localdomain								
Host Manage Monitor Strutual Machines Storage Networking Metworking	Image with vCenter Server Image Create/Register VM Image Shut down Image Reboot Image Refresh Image Actions CPU Image Refresh Image Actions Image With vCenter Server Image Not Included Image Refresh Image Refresh Image Actions USED: 3.4 GHz CAAPAL Image With vCenter Server Image Refresh Image Refresh						FREE: 79.2 OHz 4% 42 CAPACITY: 82.6 GHz FREE: 32.6 G GB 34% 1 GB CAPACITY: 351.66 GB FREE: 3.67 TB 18% 8 GB CAPACITY: 4.35 TB		
	- Hardware				- Confi	iguration			
	Manufacturer	Cisco Systems In			Imag	e profile	(Updated) VMware-ES) Custom-Cisco-6.0.3.5	ü-6.0.0-9313334- (Cisco)	
		0000-0220-1100	~~		vSnh	ere HA state	Not configured		~
	😨 Recent tasks								
	Task v	Target v	Initiator ~	Queued	~	Started ~	Result .	 Completed 	~
	Upload disk - CXCloud Agent_2.0	CX Cloud Agrnt 2.0 D	root (03/11/2022 1	4:22:19	03/11/2022 14:22:19	Completed successfully	03/11/2022 14:25:10	
	Power On VM	CX Cloud Agent 2.0 D	root (03/11/2022 1	4:07:48	03/11/2022 14:07:46	Completed successfully	03/11/2022 14:07:4	8
	Import VApp	Resources	root	03/11/2022 1	4:04:47	03/11/2022 14:04:47	Completed successfully	03/11/2022 14:07:44	5
	Reconfig VM	CX Cloud Agent 2.0 D	VC Internal	03/11/2022 1	4:05:01	03/11/2022 14:05:01	Failed - The operation is not al	03/11/2022 14:05:0	
	Download VMXConfig	None	VC Internal	03/11/2022 1	4:04:51	03/11/2022 14:04:51	Completed successfully	03/11/2022 14:04:5	~

Successful Completion

- 8. Review the settings and click Finish.
- 9. Select the VM just deployed and select Console > Open browser console.

<u>File Edit View History Bookmarks</u>	[ools <u>H</u> elp						- 0	×	
- localhost.localdomain - VMwarr×	👙 New Tab 🛛 🗙	+							
$\leftarrow \rightarrow G$ () 🔒 🕶 https://10.126.77.20/ui/	/#/host/vms				☆	⊚ ₹	; ≡	
vmware [,] ESXi ⁻					root@10	.126.77.20 - Help -	Q Search	-	
T Navigator	🚯 localhost.localdomain - Virtual Ma	achines							
✓ ☐ Host Manage	😚 Create / Register VM 🛛 📑 C	Console Power on	Power off	II Suspend CR	tefresh 🔅 Action	s Q Sea	irch) ^	
Monitor	Virtual machine	Open browser console Open console in new wind	ad space	✓ Guest OS	~ Host nam	e ~ Host CPU ~	Host me V		
Storage	CXCloudAgent_2.0	Open console in new tab	52 GB 19 GB	Ubuntu Linux Ubuntu Linux	(64-bit) Unknown (64-bit) Unknown	458 MHz 0 MHz	15.61 GB 0 MB		
r so networking	CXCloudAgent_2.1	Download VMRC	.48 GB 74 GB	Ubuntu Linux Ubuntu Linux	(64-bit) Unknown (64-bit) Unknown	493 MHz 492 MHz	15.81 GB 15.99 GB		
	CXCloudAgent_2.1_Build	d-17_chbin 📀 No d-17_chbin 📀 No	47.85 GB	Ubuntu Linux	(64-bit) Unknown (64-bit) Unknown	506 MHz 467 MHz	16.07 GB 16.03 GB		
	CXCloudAgent_2.1_Build	d-18_chbin 🔇 No	47.27 GB	Ubuntu Linux	(64-bit) Unknown	501 MHz	16.06 GB		
	CX Cloud Agrnt 2.0 DEMC	0 🥑 No	19.43 GB	Ubuntu Linux	(64-bit) Unknown	0 MHz	0 MB 🗸		
	Quick filters	~					12 items	~	
	🕄 Recent tasks								
	Task 🗸 Ta	arget 🗸 I	Initiator ~	Queued ~	Started ~	Result 🔺	~ Completed •	~	
	Upload disk - CXCloud Agent_2.0	CX Cloud Agrnt 2.0 D	root	03/11/2022 14:22:19 0	03/11/2022 14:22:19	Completed successfully	03/11/2022 14:25	10 ^	
	Download VMXConfig No	one N	VC Internal	03/11/2022 14:07:51	03/11/2022 14:07:51	Completed successfully	03/11/2022 14:07:	.61	
	Power On VM	CX Cloud Agmt 2.0 D	root	03/11/2022 14:07:46	03/11/2022 14:07:48	Completed successfully	03/11/2022 14:07	.48	
	Recordio VM	esources r	VC Internal	03/11/2022 14:04:47	03/11/2022 14:04:47	Ealled - The operation is not al	03/11/2022 14:07:	-01	
	Download VMXConfig No	one 1	VC Internal	03/11/2022 14:04:51	03/11/2022 14:04:51	Completed successfully	03/11/2022 14:04	:51 🗸	

Open Console

10. Navigate to **Network Configuration**.

Web Client vCenter Installation

1. Log into vCenter Client using the ESXi/hypervisor credentials.



Login

		-						
Home Shortcuts		Home						
I Marte and Chatter		🗗 10.126.77.54 ~						
VMs and Templates								
Storage		CD11		Mamony		Storage		
Networking		131 TH	lz free	2 87 T	B free	76 44	TB free	
Content Libraries			12 1100	2.07	Direc	70.44	10 Hee	
Global Inventory Lists		66.19 GHz used	f 1.38 THz total	1.48 TB used	4.35 TB total	22.48 TB use	d 98.92 TB total	
Policies and Profiles								
Auto Deploy								
> Developer Center		🔂 VMs		358	Hosts			24
VRealize Operations								
Administration		62	292	4	20	2	0	
Update Manager		Powered On	Powered Off	Suspended	Connected	Disconnected	Maintenar	nce
) Tasks								
events						and a second		
¹ Tags & Custom Attributes		Objects with m	lost alerts	7	Installed Pli	ugins		3
		Item	() Alerts	🛆 Warnings	VMware vRops	Client Plugin		^
		<						
atk Name Taroet	v Status ♠			v Initiator			Queued For v	Start Tim
and the second sec								
eploy plug-in 🔗 10.126.77.54	✓ Completed			VSPHERE.LOCAL/vsp	where-webclient-a79a972a-e	72c-4dfd-a70d-fe3ef67a5f69	6 ms	03/16/20
heck new notifications 🔗 10.126.77.54	✓ Completed			VMware vSphere Upp	date Manager Check Notifice	tion	294 ms	03/16/20
_								
v								Adverse 1

Home Screen

- 2. On the Home page click Hosts and Clusters.
- 3. Select the VM and click Action > Deploy OVF Template.

vm vSphere Client Menu v Q Search in all environments				C ⑦ ~ Adminis	itrator@iocalos 🗸 🙄
□ □ ① ① ∨ ∅ 10.126.77.54 > □ CommonPool	10.126.77.51 Summary Monitor C Hypervisor	ACTIONS - Actions - 10.126.77.51 New Virtual Machine	Resource Pools Datastores	Networks Updates	Free: 46.28 GHz
> Delete > Performance > M Automation > M Build-Server > M DNAC Security I Security I Tools	Model: Processor Logicut NICs: Virtual Mac State: Uptime:	Deploy OVF Template New Resource Pool New VApp Maintenance Mode Connection Power	0 0 © 2 906Hz	Used: 123.0Hg Memory Used: 2.49.0B Storage Used: 387.45.0B	Cepacity: 48.4 One Prec. 91.30.08 Cepacity: 63.87.08 Free. 3.23.78 Cepacity: 3.83.78
	Hardware	Certificates Storage	Configuration		^
	Manufacturer	2 Add Networking	Image Profile	(Updated) ESXI-5. standard	5.0-20140302001-
	> CPU	Export System Logs	> Fault Tolerand	ate ? N/A	
	> Virtual Flash Resource	Reconfigure for vSphere HA.	(Legacy)	e Unsupported	
	> Networking	Settings	> EVC Mode	Disabled	
Recent Tasks Alarms Task Name V Tarpet V Status †		Move To Tags & Custom Attributes		v	Gueued For v Start Time
Deploy plug-in 🥝 10126-77.54 🗸 Completed		Remove from Inventory Add Permission	RELOCAL/vsphere-webclient-a79a972a	J-e72c-4dfd-a70d-fe3ef67a5f69	6 ms 03/16/2022
Check new notifications 🧭 10/126-77:54 🗸 Completed		Alarms • Update Manager •	e vSphere Update Manager Check Notif	fcation	294 ms 03/16/2022
					More Tasks

Actions



Select Template

- 4. Add the URL directly or browse to select the OVA file and click Next.
- 5. Enter a unique name and browse to the location if required .
- 6. Click Next.

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 resource4 Review details5 Select storage6 Deadu to complete	Virtual machine name: CXCloudAgent_2.0_Build-144-demo
	 IO.126.77.54 CommonPool Delete Performance Automation Build-Server DNAC Security Tools
	CANCEL BACK NEXT



7. Select compute resource and click 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 Review details	e Security
5 Select storage	> 10.126.77.51
6 Ready to complete	
	Compatibility
	 Compatibility checks succeeded.

Select Compute Resource

8. Review the details and click Next.

Select an OVF template 2 Select a name and folder 3 Select a compute resource	Review details Verify the templa	ate details.
A Review details	Publisher	DigiCert SHA2 Assured ID Code Signing CA (Trusted certificate)
6 Select networks 7 Ready to complete	Product	CXCloudAgent_2.0_Build-144
	Version	2.0
	Vendor	Cisco Systems, Inc
	Description	CXCloudAgent_2.0_Build-144
	Download size	1.1 GB
	Size on disk	3.1 GB (thin provisioned)
		200.0 GB (thick provisioned)



9. Select the virtual disk format and click Next.

182.07 davs	nt 2.0 DEMO	_	_	_	_	_	
 1 Select creation type 2 Select OVF and VMDK files 3 Select storage 4 License agreements 5 Deployment options 6 Additional settings 7 Ready to complete 	Select storage Select the storage type and datastore Standard Persistent Memory Select a datastore for the virtual machine's	s configuration fil	es and all of its	' virtual disk	S.		-
	Name ~	🖌 Capacity 🗸	Free ~	Туре	✓ Thin pro… ✓	Access ~	
	datastore1 4.35 TB 3.57 TB VMFS5 Supported Single	Single					
vmware [.]							
			В	ack	Next Finis	h Cancel	<u>ן</u>

Select Storage

10. Click Next.

1 Select an OVF template 2 Select a name and folder	Select networks Select a destination network for each source network.			
4 Review details	Source Network	Τ	Destination Network	т
5 Select storage	VM Network		VM Network	~
6 Select networks 7 Ready to complete				1 items
	IP Allocation Settings			
	IP allocation:	St	atic - Manual	
	IP protocol:	IP	/4	

Select Networks

11. Click Finish.

1 Select an OVF template 2 Select a name and folder	Ready to complete Click Finish to start creati	on.
4 Review details	Desviolation from	
6 Select networks	Name	CXCloudAgent_2.0_Build-144-demo
7 Ready to complete	Template name	CXCloudAgent_2.0_Build-144-1_signed-sha1
	Download size	1.1 GB
	Size on disk	3.1 GB
	Folder	Security
	Resource	10.126.77.51
	Storage mapping	1
	All disks	Datastore: datastore1 (23); Format: Thin provision
	Network mapping	1
	VM Network	VM Network
	IP allocation settings	101/4
	IP allocation	Static - Manual
		CANCEL BACK FINIS

Ready to Complete

12. A new VM is added. Click on its name to view the status.

vm vSphere Client Menu v Q Search in all environments	C 💿 v Administr	ator₿localos ∨
	CXCloudAgent_2.0_Build-144-demo	
	Summary Monitor Consigure Permissions Datastores receivorks Updates Powered Off Guest 05: Ubuntu Linux (64-bit) Powered Off Guest 05: Not stated Launch Web Console Not States Not States Launch Remote Console 0.126.77.51	CPU USAGE O HZ MEMORY USAGE O B STORAGE USAGE 3.27 GB
> D Tools	VM Hardware Notes > CPU 8 CPU(s) > Memory 16 08, 0 08 memory active > Hard disk 1 200 08 > Network adapter 1 VM Network (disconnected) Floopy drive 1 Disconnected > Video card 4 M8 VMG device Device on the virtual machine PCI bus that	~
Recent Tasks Alarms		
Task Name v Target v Stat	Initiator v 0	Queued For v Start Ti
import OVF package 10.126.77.51	0% 🕲 Administrator	182 ms 03/16/2
Deploy OVF template	Completed VSPHERE LOCAL/upix5-extension e79e972e e72c-45f5e70a/fe3ef67e5f69	3 ms 03/16/2
import OVF package 🔲 10.126.77.51 🗸	Completed Administrator	93 ms 03/16/2
All • •		More

13. Once installed, power on the VM and open the console.

vm vSphere Client Menu V Q Search in all enviro	nments	C ② ~ Admi	nistrator@localos 🗸	9
III D2 III Q2 ✓ Q0 10.126.77.54		CXCloudAgent_2.0_Build-144-demo		
CommonPool C	Actions - CXCloudAgent, 2.0, Buil Power Guest OS Snapshots Open Remote Console Migrate Clone Fault Tolerance VM Policies Template Compatibility Export System Logs Est Settings	Wetter Oversion S Uburtu Linux (64-bit) Govers Off Compatibility: ESXI 5.0 and later (VM version 8) VMware Tools: Not running, not installed More and More and Power Off Ctrl + all + cl Power Off Disconnected Power Off Ctrl + all + cl Power Of	CPU USAN O HZ MEMORY O B 3.27 C	GE USAGE E USAGE BB
Recent Tasks Alarms	Move to folder			*
Task Name v Target Import OVF package I 10126.77.51	Rename Edit Notes		Queued For v 182 ms	Start Time 03/16/2022
Deploy OVF template	Tags & Custom Attributes Add Permission	VSPHERE LOCAL lvpuid-extension-a79a972b e72c-4dfb a70o-fe3bef67a5fb9	3 ms	03/16/2022
Import OVF package	Alarms Remove from Inventory Delete from Disk Lipidate Manager	Administrator	93 ms	03/16/2022
< All Y	vSAN	•		More Tasks

Open Console

14. Navigate to Network Configuration.

Oracle Virtual Box 5.2.30 Installation

This client deploys CX Cloud Agent OVA though the Oracle Virtual Box.



Oracle VM

- 1. Open the Oracle VM UI and select File > Import Appliance.
- 2. Browse to import the OVA file.

Applian	ce to import
Please provid	e choose the source to import appliance from. This can be a local file system to import OVF archive or one of known cloud service lers to import cloud VM from.
Sou	rce: Local File System 🜍
Please Virtua	e choose a file to import the virtual appliance from. VirtualBox currently supports importing appliances saved in the Open lization Format (OVF). To continue, select the file to import below.
	File: /Users/vkukatla/Downloads/2.0 OVA/CXCloudAgent_2.0_Build-144-1_signed-sha1.ova
	Expert Mode Go Back Continue Cancel

Select File

3. Click Import.

	These are the virtual machines co change many of the properties sh	ntained in the appliance and the suggested settings of the imported VirtualBox machines. You ca own by double-clicking on the items and disable others using the check boxes below.	n
	Virtual System 1		
	🎇 Name	CXC	
	Product	CXCloudAgent_2.0_Build-144	
	🗩 Vendor	Cisco Systems, Inc	
	Vendor-URL	http://www.cisco.com	
	Version	2.0	
	Description	CXCloudAgent_2.0_Build-144	
	Guest OS Type	🛃 Ubuntu (64-bit)	
	CPU	8	
	RAM	16384 MB	
	Eloppy		
	Network Adapter	Intel PRO/1000 MT Desktop (82540EM)	
	Storage Controller (IDE)	PIIX4	
/	Storage Controller (IDE)	PIIX4	
	Warnings:		
	- No trusted certificate paths		
	Machine Base Folder: 🚺 /Users/	vkukatla/VirtualBox VMs	~
	MAC Address Policy: Include on	ly NAT network adapter MAC addresses	0
	Additional Options: 🗹 Import h	ard drives as VDI	
	Unverified signature by CISCO SYS	STEMS, INC.!	

Import File

4. Select the VM just deployed and click Start.



VM Console Startup

000	Oracle VM VirtualBox Manager
	Appliance settings
	These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.
	Virtual System 1
	Name CXC
	Product CXCloudAgent_2.0_Build-144
	A few seconds remaining
	🔚 Guest OS Type 🛛 🛃 Ubuntu (64-bit)
	CPU 8
	RAM 16384 MB
	E Floppy
	Network Adapter 🗸 Intel PRO/1000 MT Desktop (82540EM)
	Storage Controller (IDE) PIIX4
	Storage Controller (IDE) PIIX4
	Warnings:
	- No trusted certificate paths
	Machine Base Folder: 🔲 /Users/vkukatla/VirtualBox VMs
	MAC Address Policy: Include only NAT network adapter MAC addresses
	Additional Options: 🗹 Import hard drives as VDI
	Unverified signature by CISCO SYSTEMS, INC.!
	Restore Defaults Go Back Import Cance

Import in Progress 5. Power on the VM. The console displays.

•	CXC [Running]		
e Virtual Machine reports that	the guest OS does not support mouse point	ter integration in the current vider mode.	S 🕅
		N - N N - N - N - N - N - N - N - N	Left
-			•

Open the Console

6. Navigate to <u>Network Configuration</u>.

Microsoft Hyper-V Installation

1. Select Import Virtual Machine.

ii a		Hyper-V Manager	_ D X
File Action View Help			
🗢 🔿 🙍 🖬 🖬			
Hyper-V Manager			Actions
WIN-ALPH2AC9VK	New >]	WIN-ALPH2AC9VK7
	Import Virtual Machine	State C	New 🕨
	Hyper-V Settings	No virtual machines were found on this server.	🕞 Import Virtual Machine
	Virtual Switch Manager		🖆 Hyper-V Settings
	Virtual SAN Manager		🕰 Virtual Switch Manager
	Edit Disk		🔬 Virtual SAN Manager
	Inspect Disk		💋 Edit Disk
	Stop Service		🖳 Inspect Disk
	Remove Server		Stop Service
	Refresh		X Remove Server
	View >		🔉 Refresh
	Help		View 🕨
			7 Help
	<	ш	
	Snapshots		
	Details		
Details			
No item selected.			
Displays the Import Wizard.	I II	/	

Hyper-V Manager

- 2. Browse and select the download folder.
- 3. Click Next.



Folder to Import

4. Select the VM and click Next.

		L	import virtuar macrime
1	Import Virtua	al Machine	
Select Virte	ual Machine		
Before You Begin	Select the virtual machine to import	:	
ocate Folder	Name	<u> </u>	Date Created
elect Virtual Machine	CXCloudAgent_2.0_Build-144		3/3/2022 9:29:22 PM
hoose Import Type			
ummary			
		< Previous Next >	Finish Cancel

5. Select the Copy the virtual machine (create a new unique ID) radio button and click Next.

2	Import Virtual Machine	x
Choose Im	port Type	
Before You Begin	Choose the type of import to perform:	
Locate Folder	O Register the virtual machine in-place (use the existing unique ID)	
Select Virtual Machine	\bigcirc Restore the virtual machine (use the existing unique ID)	
Choose Import Type	 Copy the virtual machine (create a new unique ID) 	
Summary		
	< Previous Next > Finish Cance	ł



- 6. Browse to select the folder for VM files. It is recommended to use default paths.
- 7. Click Next.

2	Import Virtual Machine	
Choose Fo	olders for Virtual Machine Files	
Before You Begin Locate Folder Select Virtual Machine Choose Import Type	You can specify new or existing folders to store the virtual machine files. Otherwise, the imports the files to default Hyper-V folders on this computer, or to folders specified in the machine configuration.	ne wizard he virtual
Choose Destination	C:\ProgramData\Microsoft\Windows\Hyper-V\	Browse
Choose Storage Folders	Snapshot store:	
Summary	C:\ProgramData\Microsoft\Windows\Hyper-V	Browse
	Smart Paging folder:	
	C:\ProgramData\Microsoft\Windows\Hyper-V	Browse
	< Previous Next > Finish	Cancel

Choose Folder

- 8. Browse and select the folder to store the VM hard disk. It is recommended to use default paths.
- 9. Click Next.

Import Virtual Machine Choose Folders to Store Virtual Hard Disks Before You Begin Locate Folder Select Virtual Machine Choose Import Type Choose Destination Choose Storage Folders Summary
Before You Begin Where do you want to store the imported virtual hard disks for this virtual machine? Locate Folder Where do you want to store the imported virtual hard disks for this virtual machine? Select Virtual Machine Choose Import Type Choose Destination Choose Storage Folders Summary Summary
Before You Begin Where do you want to store the imported virtual hard disks for this virtual machine? Locate Folder Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Select Virtual Machine Browse Choose Import Type Choose Destination Choose Storage Folders Summary
< Previous Next > Finish Cancel

Folder to Store Virtual hard Disks

10. The VM summary displays. Verify all inputs and click Finish.

Import Virtual Machine X			
Import Wizard			
You are about to perform the following Description:	operation.		
Virtual Machine: Import file: Import Type: Virtual machine configuration folder: Snapshot folder: Smart Paging file store: Virtual hard disk destination folder:	CXCloudAgent_2.0_Build-144 C:\Users\vishnu\Downloads\2.0\CXCloudAgent_2.0_Build-144\ Copy (generate new ID) C:\ProgramData\Microsoft\Windows\Hyper-V\ C:\ProgramData\Microsoft\Windows\Hyper-V C:\ProgramData\Microsoft\Windows\Hyper-V C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\		
To complete the import and close this v	vizard, dick Finish.		
	Import Virtual I Import Wizard You are about to perform the following Description: Virtual Machine: Import file: Import Type: Virtual machine configuration folder: Snapshot folder: Smart Paging file store: Virtual hard disk destination folder: To complete the import and close this weight		

Summary

- 11. Once the import is completed successfully, a new VM is created on Hyper-V. Open the VM setting.
- 12. Select the network adaptor on the left pane and choose the available Virtual Switch from the drop-down.

CACIOUDAGENT_2.0_Build=144			
* Hardware	^	🏺 Network Adapter	
1 Add Hardware			
N BIOS		specify the configuration of the network adapter or remove the network adapter.	
Boot from CD		Virtual switch:	
Memory		Not connected V	
		Not connected	
8 Virtual processors		Enable virtual LAN identification	
IDE Controller 0			
Hard Drive		The VLAN identifier specifies the virtual LAN that this virtual machine will use for all network communications through this network adapter.	
disk-0.vhdx			
🗉 🔟 IDE Controller 1		2	
💿 DVD Drive			
None		Bandwidth Management	
SCSI Controller		Enable bandwidth management	
E Q Network Adapter	=	Specify how this network adapter utilizes network bandwidth. Both Minimum	
Not connected		Bandwidth and Maximum Bandwidth are measured in Megabits per second.	
None		Minimum bandwidth: 0 Mbps	
COM 2			
None		Maximum bandwidth: 0 Mbps	
Diskette Drive		To leave the minimum or maximum unrestricted, specify 0 as the value.	
None			
A Management		To remove the network adapter from this virtual machine, click Remove.	
1 Name		Remove	
CXCloudAgent_2.0_Build-14	4	Kellove	
All services offered		Use a legacy network adapter instead of this network adapter to perform a	
Snanshot File Location		network-based installation of the guest operating system or when integration services are not installed in the guest operating system.	
C: \ProgramData \Microsoft \V	Vin		
Smart Paging File Location C:\ProgramData\Microsoft\W	Vin		
Automatic Start Action			
Restart if previously running	\sim		

Virtual Switch

13. Select Connect to start the VM.

and the second s		Hyper-V Manager		_ D X
File Action View Help				
Hyper-V Manager	Minturel Marchines			Actions
WIN-ALPHZAC9VK7	Virtual Machines			WIN-ALPH2AC9VK7 🔺 🔶
	Name	State	CPU Usage Assigned Me	^m New ►
		Connect		Import Virtual Machine
		Settings		🖆 Hyper-V Settings
		Start		Virtual Switch Manager
		Snapshot		🔬 Virtual SAN Manager
		Move		💋 Edit Disk
		Export		🖳 Inspect Disk
		Rename		Stop Service
		Delete		X Remove Server
		Enable Replication	_	🔉 Refresh
		Help		View 🕨 🗎
				🕜 Help
				CXCloudAgent_2.0_Bui A
	Snapshots		\odot	onnect
				Settings
	CXCloudAgent_2.0_Build-144		() Start	
				🛼 Snapshot
	Created: 3/11/2022 2:50:41 PM Clustered: No			Move
	Notes: None			Export
				Rename
				Delete
	Summary Memory Networking Replication		Enable Replication	
	<	Ш	2	Help 🗸
Launches the Virtual Machine Conne	ction application.			

Starting VM

14. Navigate to <u>Network Configuration</u>.

Network Configuration

CX Cloud Agent



VM Console

1. Click Set Password to add a new password for cxcadmin OR click Auto Generate Password to get a new password.

Cisco CX Cloud Agent Configuration				
Before you can log into Cisco CX Cloud Agent, you must set a new password for cxcadmin, which is the Cisco CX Cloud Agent username. The password must meet the following requirements:				
- Contains a minimum of 8 characters - Includes:				
- One uppercase character - One lowercase character				
- One number - One of the following special characters: ! @ # \$ % ^ & * () _ + - Is not a dictionary word				
Set Password > <auto generate="" password=""></auto>				

Set Password

2. If Set Password is selected, enter the password for cxcadmin and confirm it. Click Set Password and go to Step 3.

	Set Password
In the Password and Co excadmin. When you are	onfirm Password fields, enter and confirm a new password for e finished, select Set Password
Press the Tab key to	select Set Password.)
Username:	cxcadnin
Password :	
Confirm Password:	
	Cont. Documents
	Coct rasswora?

New Password

OR If Auto Generate Password is selected, copy the password generated and store it for future use. Click Save Password and go to Step

Autogenerat	ed Password
Password: \$XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
Make sure to store this password in a safe into Cisco CX Cloud Agent.	place. This password is required to log
After you have stored the password in a sa to the previous screen, select Cancel.	fe place, select Save Password. To return

Auto Generated Password

3. Click Save Password to use it for authentication.



Save Password

4. Enter the IP Address, Subnet Mask, Gateway, and DNS Server and click Continue.



Network Configuration

5. Confirm the entries and click Yes, Continue.

	Confirmation	
Are these entries	correct?	
IP Address: Subnet Mask: Gateway: DNS:	192.168.0.100 255.255.255.0 192.168.0.1 192.168.0.64	
<pre><yes, continue=""> < No, Go Back ></yes,></pre>		

Confirmation

6. To set the proxy details, click Yes, Set Up Proxy or click No, Continue to Configuration to complete the configuration and go to Step 8.



Proxy Setup

7. Enter the Proxy Address, Port Number, Username, and Password.

Proxy	Conf igur	ation		
Please enter proxy details for	the netw	ork.		
(Use Up/Down keys to navigate Proxy button)	to next f	ield. Press T	ab to jump	to Setup
Proxy Address:				
Port Number:				
Username:				
Password:				
<begin configuration<="" td=""><td>> <</td><td>No, Go Bac</td><td>k ></td><td></td></begin>	> <	No, Go Bac	k >	



8. Click Begin Configuration. The configuration can take several minutes to complete.



Configuration in Progress

9. Copy the Pairing Code and return to CX Cloud to continue the setup.



Pairing Code

10. If the Pairing Code expires, click Register to CX Cloud to obtain the code again.



Code Expired

11. Click ок.



Registration Successful

12. Return to the Connecting CX Cloud Agent to CX Cloud section and perform the listed steps.

Alternative Approach to Generate Pairing Code Using CLI

Users can also generate a pairing code by using CLI options.

To generate a pairing code through the use of CLI:

- 1. Log in to the Cloud Agent via SSH using the cxcadmin user credential.
- 2. Generate the pairing code using the command *cxcli agent generatePairingCode*.



Generate Pairing code CLI

3. Copy the Pairing Code and return to CX Cloud to continue the setup. For more information, refer to Connecting to Customer Portal.

Configure Cisco DNA Center to Forward Syslog to CX Cloud Agent

Prerequisite

Supported Cisco DNA Center versions are from 1.2.8 to 1.3.3.9 and from 2.1.2.0 to 2.2.3.5.

Configure Syslog Forwarding Setting

To configure Syslog Forwarding to CX Cloud Agent in Cisco DNA Center using UI, perform these steps:

- 1. Launch Cisco DNA Center.
- 2. Go to Design > Network Settings > Network.
- 3. For each site, add the CX Cloud Agent IP as the Syslog Server.

Cisco DNA Center	DESIGN	POLICY	PROVISION	ASSURANC	E PLATFO	RM		
Network Hierarchy Network	etwork Settings	Image R	tepository	Network Profiles	Auth Ter	mplate		
EQ Find Hierarchy		Network	Device Cree	dentials IP A	ddress Pools	SP Profiles	Wireless	
◇ 縁 Global◇ 縁 Bangalore		Setup netwo	ork properties I red, DNA Cente	ike AAA, NTP, Sysl er will deploy using	og, Trap and Ne these settings	etFlow using the "	Add Servers"	link. Once devices
ii BGL16		SYSLO	G Server	Ŧ				
		Cisco DI	NA Center as sy	slog server				
		172.23.183	3.190	+				

Syslog Server

Notes:

- Once configured, all devices associated with that site are configured to send syslog with level critical to CX Cloud Agent.

- Devices must be associated to a site for enabling the syslog forwarding from the device to CX Cloud Agent.

- When a syslog server setting is updated, all devices associated with that site are automatically set to default critical level.

Enable Information Level Syslog Settings

To make Syslog Information level visible, perform the these steps:

1. Navigate to Tools > Telemetry.

0	Q	
TOOLS		-
Discovery		
Inventory		
Topology		
Image Repository		
Command Runner		
License Manager		
Template Editor		
Telemetry		
Data and Reports		

Tools Menu

2. Select and expand the Site View and select a site from site hierarchy.

Cisco DNA Center			Telemetry	/			o a	Ш	0	0	1
Telemetry Assessment and Configu	iration										
Site View Profile View											
Sites Hierarchy ~ Global	Ac	tions ~ 0					Show	IIA		~	
> Bangalore		Device Name -	Address	Туре	Family	Version		Profi	de		
		513E-A-25-C9606R-1	10.201.183.90	Cisco Catalyst 9606	Switches and Hubs	16.11.1		Disab	le Telem	wery	
		Device_6_0_1_1	6.0.1.1	Cisco Catalyst 9407R	Switches and Hubs	16.8.1a		Disab	le Telen	etry	

Site View

- 3. Select the required site and select all devices using the Device name check box.
- 4. From the Actions drop-down, select Optimal Visibility.

Telemetry Assessment and Configuration	1							
Site View Profile View								
Sites Hierarchy 	Actions 🗸 🔍					Show	All	~
> Bangalore	Maximal Visibility Optimal Visibility	Address	Туре	Family	Version		Profile	
	Disable Telemetry	10.201.183.90	Cisco Catalyst 9606	Switches and Hubs	16.11.1		Disable Telem	etry

Actions

Security

CX Cloud Agent assures the customer of end-to-end security. The connection between CX Cloud and CX Cloud Agent is encrypted. CX Cloud Agent's Secure Socket Shell (SSH) supports 11 different ciphers.

Physical Security

Deploy CX Cloud Agent OVA image in a secured VMware server firm. The OVA is shared securely through Cisco software download center. Bootloader (single user mode) password is set with a randomly unique password. Users must refer to <u>FAQ</u> to set this bootloader (single-user mode) password.

User Access

CX Cloud users can only get authentication and access the Cloud Agent APIs.

Account Security

On deployment, the cxcadmin user account is created. Users are forced to set a password during the initial configuration. cxcadmin user/credentials are used to access both the CX Cloud Agent APIs and to connect the appliance over SSH.

The cxcadmin user has restricted access with the least privileges. The cxcadmin password follows the security policy and is one-way hashed with an expiry period of 90 days. The cxcadmin user can create a cxcroot user using the utility called remoteaccount. The cxcroot user can gain root privileges. Passphrase expires in two days.

Network Security

The CX Cloud Agent VM can be accessed using ssh with cxcadmin user credentials. Incoming ports are restricted to 22 (SSH), 514(Syslog).

Authentication

Password based authentication: Appliance maintains a single user - 'cxcadmin' which enables the user to authenticate and communicate with the CX Cloud Agent.

Root privileged actions on the appliance using ssh cxcadmin user can create cxcroot user, using a utility called remoteaccount. This utility displays an RSA/ECB/PKCS1v1_5 encrypted password which can be decrypted only from SWIM portal
 (https://swims.cisco.com/abraxas/decrypt). Only authorized personnel have access to this portal. cxcroot user can gain root privileges using this decrypted password. Passphrase is valid only for two days. cxcadmin user needs to recreate the account and get the password from SWIM portal post password expiry.

Hardening

CX Cloud Agent appliance follows CIS hardening standards.

Data Security

CX Cloud Agent appliance does not store any customer personal information.

Device credential application (running as one of the pods) stores encrypted Cisco DNA Center server credentials inside secured database. Cisco DNA Center collected data is not stored in any form inside the appliance. The data collected is uploaded to the backed soon after the collection is complete, and the data is purged from the agent.

Data Transmission

The registration package contains the required unique $\frac{X.509}{2}$ device certificate and keys to establish secure connection with lot Core. Using that agent establishes a secure connection using MQTT over TLS v1.2

Logs and Monitoring

Logs do not contain any form of sensitive information. Audit logs capture all security-sensitive actions performed on the CX Cloud Agent appliance.

Security Summary

Security Features	Description
Bootloader	Bootloader (Single user mode) password is set with a randomly unique password. User must
Password	refer <u>FAQ</u> to set his bootloader (single user mode) password. SSH:
User	Access to appliance using cxcadmin user requires credentials created during installation.
Access	 Access to appliance using cxcroot user requires credentials to be decrypted using SWIM portal by authorized personnel.
	 cxcadmin: This is a default user account created. User can execute CX Cloud Agent application commands using cxcli and has least privileges on the appliance, cxcroot user
User	and its encrypted password is generated using cxcadmin user
Accounts	 cxcroot: cxcadmin can create this user using the utility 'remoteaccount'. User can gain root privileges with this account.
cxcadmin	 Password is one-way hashed using SHA-256 and stored securely.
password	 Minimum eight (8) characters, that contains three of these categories: upper cases,
policy	lower case, numbers, and special characters
cycroot	 cxcroot password is RSA/ECB/PKCS1v1_5 encrypted.
nassword	 The passphrase generated needs to be decrypted in SWIM portal.
policy	 The cxcroot user and password is valid for max two days and can be regenerated using cxcadmin user.
ssh login	 Minimum eight (8) characters, that contains three of these categories: upper cases,
password	lower case, numbers, and special characters.
policy	 5 failed log in attempts will lock the box for 30min. The password expires in 90 days.
Ports	Open Incoming Ports – 514(Syslog) and 22 (SSH)
Data	No Customer information stored.
Security	No Device data stored.

Cisco DNA Center server credentials encrypted and stored in the database.

Frequently Asked Questions

CX Cloud Agent

Deployment

Q - With "Re-install" option, can the user deploy the new Cloud Agent with new IP Address?

A - Yes

Q - What are the available file formats for installation?

A - OVA and VHD

Q - What is the environment on which the installable can be deployed?

A - OVA

VMWare ESXi version 5.5 or later

Oracle Virtual Box 5.2.30 or later

VHD

Windows Hypervisor 2012 to 2016

Q - Can CX Cloud Agent detect IP address in a DHCP environment?

A - Yes, in case of DHCP environment, the IP address assignment during IP configuration is taken care. However, the IP address change expected for the CX Cloud Agent at any point in future is not supported. Also, the customer is recommended to reserve the IP for the Cloud Agent in their DHCP environment.

Q - Does CX Cloud Agent support both IPv4 and IPv6 configuration?

A - No, only IPV4 is supported.

Q - During IP configuration, is IP address validated?

A - Yes, IP address syntax and duplicate IP address assignment will be validated.

Q - What is the approximate time taken for the OVA deployment and IP configuration?

A - The OVA deployment depends on the speed of the network to copy the data. The IP configuration takes approximately 8-10 minutes that includes Kubernetes and container creations.

Q - Is there any limitation with respect to any hardware type?

A - The host machine on which OVA is deployed must meet the requirements provided as part of

the CX portal setup. The CX Cloud Agent is tested with VMware/Virtual box running on a hardware with Intel Xeon E5 processors with vCPU to CPU ratio set at 2:1. If a less powerful processor CPU or larger ratio is used, the performance can degrade.

Q - Can we generate the pairing code anytime?

A - No, the pairing code can be generated only if the Cloud Agent is not registered.

Q - What are the bandwidth requirements between DNACs (for upto 10 clusters or 20 non-clusters) and Agent?

A -The bandwidth is not a constraint when the Agent and DNAC are in the same LAN/WAN network in the customer environment. The minimum required network bandwidth is 2.7 Mbits/sec for inventory collections of 5000 devices +13000 Access Points for an Agent to DNAC connection. If syslogs are collected for L2 insights, minimum required bandwidth is 3.5 Mbits/sec covers for 5000 devices +13000 Access Points for inventory, 5000 devices syslogs and 2000 devices for scans - all run in parallel from Agent.

Releases and Patches

Q - What are the different kinds of versions listed for the upgrade of CX Cloud Agent?

A - Shown here are the set of the released versions of CX Cloud Agent that are listed:

- A.x.0 (where x is the latest production major feature release, example:1.3.0)
- A.x.y (where A.x.0 is mandatory and incremental upgrade to be initiated, x is the latest production major feature release, and y is the latest upgrade patch that is live, example: 1.3.1).
- A.x.y-z (where A.x.0 is mandatory and incremental upgrade to be initiated, x is the latest production major feature release, and y is the latest upgrade patch that is live, and z is the spot-patch that is an instant fix for a very short span of time, example: 1.3.1-1)

where A is a long-term release spread across 3-5 years span.

Q - Where to find the latest released CX Cloud Agent version and how to upgrade the existing CX Cloud Agent?

A - Go to Admin Settings > Data Sources. Click the View Update and perform the instructions shared on screen.

Authentication and Proxy configuration

- Q What is the default user of the CX Cloud Agent Application?
- A cxcadmin
- Q How is the password set for the default user?
- A Password is set during network configuration.
- Q Is there any option available to reset the password after Day-0?

A - No specific option is provided by the agent to reset the password, but you can use the linux commands to reset the password for cxcadmin.

Q - What are the password policies to configure CX Cloud Agent?

- A Password policies are:
 - Password maximum age (length) set to 90 days
 - Password minimum age (length) set to 8
 - Password maximum length 127 characters.
 - At least one upper case and one lower case must be provided.
 - Must contain at least one special character (for example, !\$%^&*()_+|~-=\`{}[]:";'<>?,/).
 - These characters are not be permitted Special 8-bit characters (for example, £, Å ´, ¥, ë, ¬ø, ü)Spaces
 - The password must not be the last recently used 10 passwords.
 - Must not contain regular expression i.e.
 - Must not contain these words or derivatives thereof: cisco, sanjose, and sanfran
- Q How to set Grub password?
- A To set the Grub Password, perform these steps:
 - 1. Run ssh as excroot and provide the token [Contact the support team to get the excroot token]
 - 2. Execute sudo su, provide the same token
 - 3. Execute the command grub-mkpasswd-pbkdf2 and set the GRUB password. Hash of the provided password will be printed, copy the content.
 - 4. vi to the file /etc/grub.d/00_header. Navigate to the end of file and replace the hash output followed by the content password_pbkdf2 root ***** with the obtained hash for the password you got in step 3
 - 5. Save the file with the command :wq!
 - 6. Execute the command update-grub
- Q What is the expiry period for password of cxcadmin?
- A The password expiry in 90 days.
- Q Does the system disable the account after consecutive unsuccessful login attempts?

A - Yes, the account gets disabled after 5 consecutive unsuccessful attempts. The lockout period is 30 minutes.

- Q How to generate passphrase?
- A Perform these steps,
 - 1. Run ssh and login as cxcadmin user
 - 2. Execute the command remoteaccount cleanup -f
 - 3. Execute the command remoteaccount create
- Q Does proxy host support both hostname and IP?

A - Yes, but to use hostname, user must provide the DNS IP during network configuration.

Secure Shell SSH

Q - What are the ciphers supported by ssh shell?

A - chacha20-poly1305@openssh.com, aes256-gcm@openssh.com, aes128-gcm@openssh.com , aes256-ctr, aes192-ctr, aes128-ctr

- Q How to login to console?
- A Follow the steps to login:
 - 1. Login as cxcadmin user.
 - 2. Provide the cxcadmin password.
- Q Are SSH logins logged?
- A Yes, they are logged as part of the var/logs/audit/audit.log.
- Q What is the idle session out time?
- A SSH session timeout occurs if the Cloud Agent is idle for five (5) minutes.

Ports and Services

- Q What are the ports kept open by default on the CX Cloud Agent?
- A These ports are available:
 - Outbound port: The deployed CX Cloud Agent can connect to Cisco backend as indicated in the table on HTTPS port 443 or via a proxy to send data to Cisco. The deployed CX Cloud Agent can connect to Cisco DNA Center on HTTPS port 443.

AMERICAS	EMEA	APJC
cloudsso.cisco.com	cloudsso.cisco.com	cloudsso.cisco.com
api-cx.cisco.com	api-cx.cisco.com	api-cx.cisco.com
agent.us.csco.cloud	agent.emea. <u>csco.cloud</u>	agent.apjc. <u>csco.cloud</u>
ng.acs.agent.us.csco.	ng.acs.agent.emea.csco.cl	ng.acs.agent.apjc.csco.
cloud	oud	cloud

Note: In addition to the domains listed, when EMEA or APJC customers reinstall the Cloud Agent, the domain agent.us.csco.cloud must be allowed in the customer firewall.

The domain agent.us.csco.cloud is no longer needed after successful reinstallation.

Note: Ensure that return traffic must be allowed on port 443.

• Inbound port: For local management of the CX Cloud Agent, 514(Syslog) and 22 (ssh) must be accessible. The customer must allow port 443 in their firewall to receive data from CX Cloud.

CX Cloud Agent Connection with Cisco DNA Center

Q - What is the purpose and relationship of Cisco DNA Center with CX Cloud Agent r?

A - Cisco DNA Center is the Cloud Agent that manages the customer premise network devices. CX Cloud Agent collects the inventory information of the devices from the configured Cisco DNA Center and uploads the inventory information that is available as "Asset View" in CX Cloud.

Q - Where can the user provide Cisco DNA Center details on the CX Cloud agent?

A - During the Day 0 - CX Cloud Agent setup, the user can add the Cisco DNA Center details from CX Cloud portal. In addition, during Day N operations, users can add additional DNA Centers from Admin Settings > Data source.

Q - How many Cisco DNA Centers can be added?

A - Either 10 Cisco DNAC clusters.or 20 DNAC non-clusters.

Q - What role the Cisco DNA Center user can have?

A - The user role can be either admin or observer.

Q – How to reflect the modifications in CX Agent due to changes in connected DNA Center credentials?

A - Execute these command from the CX Cloud Agent console:

cxcli agent modifyController

Contact support for any issues during DNAC credentials update.

Q - How are the Cisco DNA Center details stored in CX Cloud Agent?

A - Cisco DNA Center credentials are encrypted using AES-256 and stored in CX Cloud Agent database. CX Cloud Agent database is protected with a secured user ID and password.

Q - What kind of encryption will be used while accessing Cisco DNA Center API from CX Cloud Agent?

A - HTTPS over TLS 1.2 is used for the communication between Cisco DNA Center and CX Cloud Agent.

Q - What are the operations performed by CX Cloud Agent on the integrated Cisco DNA Center Cloud Agent?

A - CX Cloud Agent collects data that Cisco DNA Center has about the network devices and uses the Cisco DNA Center command runner interface to talk to end devices and execute CLI commands (show command). No config change commands are executed

Q - What are default data collected from Cisco DNA Center and uploaded to backend?

A-

- Network Entity
- Modules

- Show version
- Config
- Device image information
- Tags

Q - What are the additional data collected from Cisco DNA Center and uploaded to Cisco backend?

- A You get all the information here.
- Q How is the inventory data uploaded to backend?
- A CX Cloud Agent uploads the data via TLS 1.2 protocol to Cisco backend server.
- Q What is the frequency of inventory upload?
- A Collection is triggered as per the user-defined schedule and is uploaded to the Cisco backend.
- Q Can the user re-schedule inventory?
- A Yes, an option is available to modify the schedule information from Admin Settings> Data Sources.
- Q When does the connection timeout occur between Cisco DNA Center and Cloud Agent?
- A Timeouts are categorizes as follows:
 - For initial connection, timeout is max 300 seconds. If connection is not established between Cisco DNA Center and Cloud Agent within max 5 minutes, then the connection terminates.
 - For recurring, typical, or updates: response timeout is 1800 seconds. If the response is not received or not able to read within 30 minutes, then the connection terminates.

CX Cloud Agent Used Diagnostic Scan

Q - What are the commands executed on the device for scan?

A - Commands that need to be executed on the device for the scan are dynamically determined during the scanning process. The set of commands can change over time, even for the same device (and not in control of Diagnostic Scan).

Q - Where are the scan results stored and profiled?

A - The scanned results are stored and profiled in Cisco backend.

Q - Are the duplicates (By hostname or IP) in Cisco DNA Center, added to Diagnostic Scan when Cisco DNA Center source is plugged in?

- A No, duplicates will be filtered and only the unique devices will be extracted.
- Q What happens when one of the command scans fails?
- A The device scan will be completely stopped and will be marked as unsuccessful.

CX Cloud Agent System Logs

Q - What health information is sent to the CX Cloud?

A - Application logs, Pod status, Cisco DNA Center details, audit logs, system details, and hardware details.

Q - What system details and hardware details are collected?

```
A - Sample output:
```

```
system_details":{
"os details":{
"containerRuntimeVersion":"docker://19.3.12",
"kernelVersion":"5.4.0-47-generic",
"kubeProxyVersion":"v1.15.12",
"kubeletVersion":"v1.15.12",
"machineID":"81edd7df1c1145e7bcc1ab4fe778615f",
"operatingSystem":"linux",
"osImage":"Ubuntu 20.04.1 LTS",
"systemUUID":"42002151-4131-2ad8-4443-8682911bdadb"
},
"hardware details":{
"total_cpu":"8",
"cpu_utilization":"12.5%",
"total_memory":"16007MB",
"free_memory":"9994MB",
"hdd size":"214G",
"free hdd size":"202G"
}
}
}
```

Q - How is the health data sent to backend?

A - With CX Cloud Agent, the health service (servicability) streams the data to Cisco backend.

- Q What is the CX Cloud Agent's health data log retention policy in the backend?
- A The CX Cloud Agent's health data log retention policy in the backend is 120 days.
- Q What are the types of uploads available?
- A Three types of uploads available,
 - 1. Inventory upload
 - 2. Syslog upload
 - Agent Health upload: 3 things as part of health upload Services health every 5 minutesPodlog – every 1 hourAudit log – every 1 hour

Troubleshooting

Issue: Not able to access the configured IP.

Solution: Execute ssh using configured IP. If connection times out, the possible reason is IP misconfiguration. In this case, reinstall by configuring a valid IP. This can be done via portal with the reinstall option provided in the Admin Setting page.

Issue: How to verify if the services are up and running after the registration?

Solution: Execute the command shown here and verify if the pods are up and running.

- 1. ssh to the configured IP as cxcadmin.
- 2. Provide the password.
- 3. Execute the command *kubectl get pods*.

The pods can be in any state such as running, Initializing, or Container creating but after 20 minutes, the pods must be in running state.

If state is *is not running* or *Pod Initialaizing*, check the pod description with the command shown here

kubectl describe pod <podname>

The output will have the information on the pod status.

Issue: How to verify whether SSL Interceptor is disabled at customer Proxy? **Solution**: Execute the curl command shown here to verify the server certificate section. The response has the certificate details of concsoweb server.

curl -v --header 'Authorization: Basic xxxxxx' https://concsoweb-prd.cisco.com/

* Server certificate:

* subject: C=US; ST=California; L=San Jose; O=Cisco Systems, Inc.; CN=concsowebprd.cisco.com

- * start date: Feb 16 11:55:11 2021 GMT
- * expire date: Feb 16 12:05:00 2022 GMT
- * subjectAltName: host "concsoweb-prd.cisco.com" matched cert's "concsoweb-prd.cisco.com"
- * issuer: C=US; O=HydrantID (Avalanche Cloud Corporation); CN=HydrantID SSL CA G3
- * SSL certificate verify ok.

>GET / HTTP/1.1

Issue: kubectl commands failed and shows the error as "The connection to the server X.X.X.X:6443 was refused - did you specify the right host or port" **Solution**:

- Verify for resource availability. [example: CPU, Memory]
- Wait for the Kubernetes service to start

Issue: How to get the details of collection failure for a command/device

Solution:

- Execute kubectl get pods and get the collection pod name.
- Execute kubectl logs <collectionPodName> to get the command/device specific details.

Issue: kubectl command not working with error "[authentication.go:64] Unable to authenticate the request due to an error: [x509: certificate has expired or is not yet valid, x509: certificate has expired or is not yet valid]"

Solution: Run the commands shown here as cxcroot user

rm /var/lib/rancher/k3s/server/tls/dynamic-cert.json systemctl restart k3s kubectl --insecure-skip-tls-verify=true delete secret -n kube-system k3s-serving systemctl restart k3s

Collection Failure Responses

Collection failure cause can be any constraints or issues seen with the added controller or devices present in the controller.

The table shown here has the error snippet for use cases seen under the Collection microservice during the collection process.

Use Case	Log Snippet in collection microservice
If the requested device is not found in Cisco DNA Center	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": " No device found with id 02eb08be-b13f-4d25-9d63-eaf4e882f7
If the requested device is not reachable from Cisco DNA Center	} { "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "Error occurred while executing command: show version\nError connecting to device [Host: 172.21.137.221:22]No route to host : No route to host
If the requested device is not reachable	} {

from Cisco DNA Center	"command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "Error occured while executing command : show version\nError connecting to device [Host: X.X.X.X]Connection timed out: /X.X.X.X:22 : Connection timed out: /X.X.X.X:22"
If the requested command is not available in device	<pre>} { "command": "show run-config", "status": "Success", "commandResponse": " Error occured while executing command : show run- config\n\nshow run-config\n</pre>
If the requested device does not have SSHv2 and Cisco DNA Center tries to connect the device with SSHv2	<pre>} { "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "Error occured while executing command : show version\nSSH2 closed : Remote party uses incompatible protocol, it is not SSH-2 compatible." }</pre>
If command is disabled in Collection microservice	{ "command": "config paging disable", "status": "Command_Disabled", "commandResponse": "Command collection is disabled", "errorMessage": "" }
If the Command Runner Task failed and task URL is not returned by Cisco DNA Center	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "The command runner task failed for device %s. Task URL is em }
If the Command Runner Task failed to get created in Cisco DNA Center	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "The command runner task failed for device %s, RequestURL: % task details."
If the Collection microservice not receiving response for a Command Runner request from Cisco DNA Center	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "The command runner task failed for device %s, RequestURL: % }
If Cisco DNA Center is not completing the task within the configured timeout (5 mins per command in Collection microservice)	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "Operation Timedout. The command runner task failed for device RequestURL: %s. No progress details." }
If the Command Runner Task failed and file ID is empty for the submitted task by Cisco DNA Center	{ "command": "show version", "status": "Failed", "commandResponse": "", "errorMessage": "The command runner task failed for device %s, RequestURL: % id is empty."
If the Command Runner Task failed and file ID tag is not returned by Cisco DNA Center	} { "command": "show version", "status": "Failed",

	"commandResponse": "", "errorMessage": "The command runner task failed for device %s, RequestURL: % file id details."
	}
	<pre>{ "command": "config paging disable",</pre>
If the device is not eligible for command	"status": "Failed",
	"commandResponse": "",
runner execution	"errorMessage": "Requested devices are not in inventory, try with other devices a
	in inventory"
	}
	{
	"command": "show version",
If the command runner is disabled for the	"status": "Failed",
	"commandResponse": "",
user	"errorMessage": "{\"message\":\"Role does not have valid permissions to access the
	API\"}\n"
	}

Diagnostic Scan Failure Responses

Scan failure and the cause can be from any of the listed components

When the user initiates a scan from the portal, occasionally it results as "failed: Internal server error"

The cause for the issue can be any of the listed components

- Control Point
- Network Data Gateway
- Connector
- Diagnostic Scan
- CX Cloud Agent Microservice [devicemanager, collection]
- Cisco DNA center
- APIX
- Mashery
- Ping Access
- IRONBANK
- IRONBANK GW
- Big Data Broker (BDB)

To see the logs:

- 1. Log into the CX Cloud Agent console
- 2. ssh to cxcadmin and provide the password
- 3. Execute kubectl get pods
- 4. Obtain the pod name of collection, connector, and servicability.
- 5. To verify the collection, connector, and servicability microservice logs
- Execute kubectl logs <collectionpodname>
- Execute kubectl logs <connector>
- Execute kubectl logs <servicability>

The table shown here displays the error snippet seen under Collection microservice and servicability microservice logs that occurs due to the issues/constraints with the components.

Use case

The device can be reachable and supported, but the commands to execute on that device is block-listed on the Collection microservice

If the device which is attempted for scan is not available.

Occurs in a scenario, when there is a sync issue between the components such as portal, diagnostic Scan, CX component, and Cisco DNA Center

If the device that is attempted for scan is busy, (in a scenario) where the same device is been part of other job and no parallel requests are handled from Cisco DNA Center for the device.

If the device is not supported for scan

If the device attempted for scan is unreachable

If Cisco DNA Center is not reachable from Cloud Agent or Collection microservice of the Cloud Agent is not receiving response for a Command Runner request from Cisco DNA Center

Log snippet in collection microser

"command": "config paging disable", "status": "Command_Disabled", "commandResponse": "Command collection is disabled", }

No device found with id 02eb08be-b13f-4d25-9d6 eaf4e882f71a

All requested devices are already being queried b command runner in another session. Please try o devices".

Requested devices are not in inventory, try with o devices available in inventory

"Error occurred while executing command: show udi\nError connecting to device [Host: x.x.x.x:22] route to host : No route to host

{

"command": "show version",

"status": "Failed",

ninnet in Centrel Deint Arent mie

"commandResponse": "", "errorMessage": "The command runner task faile device %s, RequestURL: %s."

}

Line Coos

Failed to execute request
{"message":"23502: null value in column \"schedule\" violates not-null constraint"}
Failed to create scan policy. No valid devices in the request
Failed to execute request.
Failed to submit the request to scan. Reason = {\"message\":\"Device w Hostname=x.x.x.x' was not found\"}