# ARISTA

# **Deployment Guide**

# **CloudVision<sup>®</sup> Sensor**

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# Overview

CloudVision<sup>®</sup> Universal Network Observability<sup>™</sup> (CV UNO) is a multi-domain network observability platform that integrates application visibility with CloudVision's network telemetry. This integration helps provide insights into the applications and workload performance across data centers, campuses, and wide area networks.

CV UNO is enabled on top of CloudVision as-a-Service (CVaaS) platform and offers cloud-based onboarding and feature delivery, using secure state-streaming to an Arista-managed cloud-native architecture.

The CV sensor is an integral component of CV UNO. The sensor is a VM deployed on-premises that facilitates viewing application data in CloudVision. The sensor collects, normalizes, and curates flow and SNMP data from various data sources. It also polls data from vCenter and subscribes to vCenter events, allowing you to view them in CloudVision. This data is forwarded to NetDL, the network data lake that combines diverse datasets and performs a machine-learning-based analysis on them. Using this data, CV UNO assists in quickly determining the source of an anomaly as being network or application based. If it is a network anomaly, CV UNO determines where the issue occurs and why.

The following image provides a high-level overview of the functionality of the CV Sensor:



Familiarize with the following terminology in this document:

- CV Sensor refers to the collector that streams the data from one or more data sources. The Sensor is responsible for starting different data sources, collecting third-party device data, and streaming it to CVP.
- Data Source refers to the target device in the onboarding workflow. For example: vCenter, Flow, DMF, SNMP(Cisco router/switch), and so on.
   vCenter Data source includes:

- State Provider Virtual Machines (VMs), Hosts, Distributed Virtual Switches (DVS), etc
- Counters Provider system counters, network counters, etc
- Tags Provider vCenter tags
- Events Provider vCenter events
- o DMF Data source includes: DMF Provider
- o SNMP Data sources include:
  - SNMP Provider: SNMP Walk for Fetching System, LLDP, and Interfaces Information.
- o Flow Data source
  - IPFIX Provider
  - NetFlow Provider
  - sFlow Provider
- Provider A worker or goroutine responsible for pulling or receiving a single type of data, and sending it to CVP. For example: State Provider, IPFIX Provider, DMF Provider, etc.

# Deploying the CV Sensor

To view data from external data sources in CloudVision, you must deploy the CV Sensor and onboard it as a data source so that it can listen to external data sources. The CV Sensor is deployed as an OVA appliance and is intended to run on top of an ESXi server.

When you deploy the sensor using the sensor OVA, it generates a VM with the following specifications:

- Number of CPU cores: 12
- Memory: 16 Gibibytes (GiB)
- Disk Space: 124 Gibibytes (GiB)

**Note**: Ensure that your system/host has sufficient resources available to accommodate the sensor OVA deployment.

**Note**: You must also onboard any external *data sources* to CloudVision so that the sensor can stream or poll them for their data.

To deploy the CV Sensor, follow the steps described here:

- 1. Generate a Service Account Token
- 2. Add the Sensor in the UI
- 3. Get the latest Sensor OVA
- 4. Deploy Sensor OVA
- 5. Add Data Source

# Generating a Service Account Token

To generate a service account token:

- 1. Login to CVaaS cluster using the URL www.arista.io
- 2. Navigate to Settings -> Access Control -> Service Accounts -> New Service Account.
- 3. Create a new service account for UNO Sensor (see image):
  - a. Service Account Name (example, UNO-service-account)
  - b. Description
  - c. Status: Enabled
  - d. Roles: Select the pre-defined role **sensor-enrollment**.
- 4. Click the **Create** button. The newly added account (UNO-service-account) appears in the list of Service Accounts.

## **New Service Account**

* Service Account Name	
UNO-service-account	
* Description	
Service Account for UNO	
* Status	* Roles
Enabled ~	sensor-enrollment ×
	Cancel

- 5. Click on the newly created Service Account (UNO-service-account).
- 6. To generate the Service Account Token:
  - a. Enter a **Description** and select a **Valid Until** field.
  - b. Select an **expiry date** that is at least after a year from the current date.
  - c. Click the Generate button.

#### Edit Service Account: UNO-service-account

Created by sandeep.pawar

* Description		* Status	* Roles	
Service Account for UNO		Enabled ~	${\rm sensor-enrollment} \ \times$	$\checkmark$
Generate Service Acc	ount Token			
* Description			* Valid Until	
Service Account for UNC	)		Dec 31, 2	026 00:00:00 🛱 Generate
Service Account Toke	ns			
间 Delete Tokens			C' Refresh	间 Delete All Expired Tokens
Token ID ↑	Description		Created By	Valid Until
Filter	Filter		Filter	Filter
		No data to display		
				Cancel

**Note**: When the token is generated, copy and securely save it in a location where it can be accessed during sensor deployment.

## Adding the Sensor to the UI

To add the sensor to the CVaaS UI:

- 1. Navigate to Devices -> Device Registration -> Data Sources
- 2. Click the **+ Add Sensor** button
- Enter a desired sensor name (for example, sensor1). Make sure to use the same name while deploying the sensor.
   Note: Do not use *default* as the sensor name.
- 4. Click the **Add** button.

No additional information is required except for the Sensor Name.

	Devices	Device Registration Add Sensor	×
Q <b>m</b>	Inventory Endpoint Overview	Onboard Devices Data Sources Virtual Router Deployments Re A sensor collects state from data sources and streams to CloudVision.	
	Wired Authentication	Data Sources	
Ć) P	Device Registration Compliance Overview	Unobard third-party devices and management systems.     Step One     Star Turo	
- 	Connectivity Monitor	Sensor Name   Hostname  Koto Step Three  Koto Step Three	
먊 ()	Endpoint Search	+ O cv-sensor12 cv-sensor12.sjc.aristanetworks.c	
Ŭ	Comparison Multi-Cloud Dashboard	Step Five     Step Five     Troubleshooting	
	Network Segmentation	+ O mac -	
	Pathfinder Devices	+ v non-default uno-cvplay- sensor1.sjc.aristanetworks.com	
		+ Orajshree-test -	
6		(+) O read-only-access-test -	
¢		Cancel	Add

# Getting the Latest Sensor OVA

Download the UNO Sensor if you already have the OVA file or contact your Arista support representative for download instructions.

# Deploying the Sensor OVA

To deploy the Sensor OVA:

- 1. Navigate to the vCenter where you intend to deploy the sensor OVA. Right-click on the ESXi server.
- 2. Proceed to **Deploy OVF Template** and enter the URL of the latest Sensor OVA (see images below).

	Actions - tst-esx-92 sic aristanetworks com		ĺ	) New vCenter	server updates ar	e available	VIEV	W UPDATES	;		
	Second - tareax-az.ajc.anatanetworks.com										
—— VSphere Client	🔂 New Virtual Machine										
	🔂 Deploy OVF Template	tst-esx-92.sjc.aristanetworks.com						n   : 4	ACTIONS		
	🕭 New Resource Pool		Summar	y Monito	Configure	Permiss	ions	VMs	Resource	e Pools	\$
<ul> <li>         ・</li></ul>	E New vApp			_	Hypervisor: Model <sup>:</sup>		VMw Prol i	are ESXi ant DL36	i, 6.7.0, 60 Gen <sup>g</sup>	13006 9	66
VINO-DEV-SE	៊ី Import VMs				Processor Type:	pe:	Intel(	el(R) Xeon(R) CPU E5-2		E5-2	62
☐ TEST-FOL > []] UNO-DEV	Maintenance Mode			0	NICs:	essors:	32 6				
> 🔀 tst-esx-91	Connection ►				Virtual Machines: State: Uptime:	nes:	10 Connected 72 days				
v istesx-92	Power ►										
🔂 DMF-U 🔂 events	Certificates •	► Hewlett Packard Enterprise									
ලි log-vn	Storage ►										
D msster	🔮 Add Networking		<ol> <li>ESXi Shell for the host has been enabled</li> <li>SSH for the host has been enabled</li> </ol>								
ඕ surenc බ් Ubunt	Host Profiles										
in uno-cv	Export System Logs		Hardware								
🗇 uno-se	Reconfigure for vSphere HA		Manufacturer HP								
	😋 Assign License		M	odel		ProLiant D	L360 G	ien9			
✓ Recent Tasks AI	Settings										
Task Name T		Details	Ŧ	Initiator		T Queue For	ed <b>T</b>	Start Tim	e	ψ Ψ	
Refresh dvPort state	Move To			VSPHERE.LC	CAL\Administrator	r 1 ms		09/30/2	024, 11:27:	.28	C
Refresh dvPort state	Tags & Custom Attributes			VSPHERE.LC	CAL\Administrator	1 ms		09/30/2	024, 11:27:	28	(
Refresh dvPort state	Demonstration la contemp			VSPHERE.LC	CAL\Administrator	2 ms		09/30/2	024, 11:27:	28	C
Refresh dvPort state	Remove from inventory			VSPHERE.LC	CAL\Administrator	r 2 ms		09/30/2	024, 11:27:	:27	(
Refresh dvPort state	Add Permission			VSPHERE.LC	CAL\Administrator	r 2 ms		09/30/2	024, 11:27:	27	C

3. Specify the **VM name**, **datastore**, and other required details during the deployment (see image below).

$\equiv$ vSphere Client $O_{\!$		
	<	tst-esx-92.sic.aristanetworks.com
<ul> <li>Image: Second sec</li></ul>	<ul> <li>Deploy OVF Template</li> <li>1 Select an OVF template</li> <li>2 Select a name and folder</li> <li>3 Select a compute resource</li> <li>4 Review details</li> <li>5 Select storage</li> <li>6 Ready to complete</li> </ul>	Select an OVF template from remote URL or local file system Ther a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive. The http://remoteserver-address/filetodeploy.ovf   ove C Local file UPLOAD FILES No files selected. No files selected
Recent Tasks         Alarms		
Task Name <b>T</b> Target <b>T</b> Status		
Refresh dvPort state Etst-debug		sjc.ari
Refresh dvPort state		sjoan
Refresh dvPort state UNO-DEV-DS1 OC		CANCEL NEXT Sjc.an
Refresh dvPort state 💼 test-new-dvs 🔗 Co	mpleted	VSPHERE.LOCAL\Administrator 2 ms 09/30/2024, 11:28:02 09/30/2024, 11:28:02 uno-dev-vcenter7.sjc.ari
Refresh dvPort state DSwitch O Co	mpleted	VSPHERELOCAL\Administrator 2 ms 09/30/2024, 11:28:02 09/30/2024, 11:28:02 uno-dev-vcenter7.sjc.ari

# Booting up the Sensor

To boot up the Sensor for the first time after the Sensor deployment is completed:

- 1. Power on the VM and choose to LAUNCH REMOTE or WEB CONSOLE.
- 2. Log in using the credential: Username: **cvpadmin**
- 3. Set a password for the root user.
- 4. When the sensor installation menu is displayed, select the **install** option by typing "i" or "install" (case sensitive).

AlmaLinux 9.4 (Seafoam Ocelot) Kernel 5.14.0-427.33.1.el9_4.x86_64 on an x86_64
Hint: Num Lock on
localhost login: cvpadmin Last login: Mon Sep 30 07:09:44 on tty1 /bin/sh: warning: setlocale: LC_ALL: cannot change locale (en_US.UTF-8) Changing password for user root. New password: Retype new password: passwd: all authentication tokens updated successfully.
Sensor Installation Menu
[q]uit [p]rint [i]nstall [u]pgrade >

The initial configuration screen appears (see image).

- 5. Enter the following details:
  - a. **IP Address of eth0**: Obtain the static IP from the vCenter administrator.
  - b. **DNS Domain Search List**: Multiple entries can be added using a comma separator.
  - c. **CV\_ADDR**: This is a preconfigured field depending on the region, please refrain from making any changes in a production deployment. The expected URLS based on the regions are:
    - i. United States 1a: www.arista.io
    - ii. United States 1c: www.cv-prod-us-central1-c.arista.io
    - iii. Japan: www.cv-prod-apnortheast-1.arista.io
    - iv. Germany: www.cv-prod-euwest-2.arista.io
    - v. Australia: www.cv-prod-ausoutheast-1.arista.io
    - vi. Canada: www.cv-prod-na-northeast1-b.arista.io
    - vii. United Kingdom: www.cv-prod-uk-1.arista.io
  - d. **Sensor Name**: Provide the same name used while adding the sensor on UI (For example, **sensor1**).
- 6. Verify the configuration by typing "v" or "verify."



7. Once verification is successful, apply the configuration by typing "**a**" or "**apply**".

While the configuration is being applied, you are prompted to add the access\_token in the file /*etc/cvpi/access\_token* as follows. The setup wizard waits for you to create this token file.



- 8. To add the token, SSH to the VM as the root user and use the token generated in <u>Generating a Service Account Token</u> step and enter it in the */etc/cvpi/access\_token* file.
- 9. Copy the service account token and execute the following command on the sensor VM to set it:

echo "paste token here" > /etc/cvpi/access token

The above command writes the copied token to the /etc/cvpi/access\_token file on the Sensor VM. Once you create and save this token file, the setup wizard automatically proceeds with the installation process.

- 10. Type **s** or **save** to save the configuration.
- 11. Once the installation is successful, all the components, including the sensor, will be up and running.
- 12. Verify the status by SSHing to the VM and by using the command: cvpi status all -v3.

For Sensor Streaming to CVaaS, the sensor name configured in earlier steps (sensor1) shows up with a green tick indicating that deployment of Sensor OVA is successful and the Sensor is able to communicate with CVaaS.

🗧 😑 geiger-prod-ne	xt.infra.corp.arista.io/cv/devices/device	-onboarding?apiServer=cvStaging&deviceOnboarding	Tab=onboardDataSourc	ces			*	b ∣
Devices Inventory	Device Registration Onboard physical and virtual de Onboard Devices Data Sources	vices to CloudVision Virtual Router Deployments Re-ZTP Devices	Decommission Devi	ces		Cloud Stag	jing Cluster ∖	✓ ≙ <sup>v</sup> <sub>u</sub>
Endpoint Overview 🔷								
Wired Authentication Data Sources + Add Sensor + Or							- Onboard vi	ia YAML F
Device Registration	Device Registration							
Compliance Overview								
Connectivity Monitor	Sensor Name	Hostname	IP	Version	Last Seen	Data Sources	\$	
Traffic Flows	+ v sensor1	uvm311-sensor1.sjc.aristanetworks.com	10.239.6.231	v1.0.0-4736-g21c7aa3	Oct 7, 2024 11:28:13	77		ø t
Endpoint Search								

# Adding the Data Sources

To add data sources:

- 1. Go to Network -> Device Registration -> Data Sources
- 2. Click the + Onboard Data Source button.
- 3. Choose the sensor from the dropdown list (for example, **sensor1**)
- 4. Select the required device type template, such as Application Connector, DMF, Flow, or VMware vCenter.
- 5. Enter the necessary fields and click **Onboard** to add the data source.

#### **Onboard Data Source**

Each data source is onboarded with an assigned sensor and a configuration template for communication with CloudVision.

* Sensor (i)	
sensor1	~
Template (i)	
Select	~
Application Connector	
DMF	
Flow	
VMware vCenter	
Enabled	
• Yes	
No	
Log Level (i)	
General Information Logging	~

Cancel Onboard

After adding the data sources, check if the data is streaming successfully. A green tick in front of each data source (under sensor1) indicates successful streaming and a red mark indicates an issue with the streaming (see image below).

Devices	Device Registration (? S andeep.pawar Onboard physical and virtual devices to CloudVision
Inventory	Onboard Devices Data Sources Virtual Router Deployments Re-ZTP Devices Decommission Devices
Endpoint Overview	
Wired Authentication	Data Sources     + Add Sensor     + Onboard Data Source     + Onboard via YAML File
Device Registration	Onboard third-party devices and management systems.
Compliance Overview	
Connectivity Monitor	Sensor Name      Hostname
Traffic Flows	
Endpoint Search	□ vvm311- sensor1.sjc.aristanetworks.com 10.239.6.231 v1.0.0-4736- g21c7aa3 Sep 30, 2024 11:55:39 77 𝔅 10
Comparison	Name 🏠 Type 🏠 👻 Device ID 🏠 Last Seen 🍰 Fnabled 🏦
Multi-Cloud Dashboard	
Network Segmentation	✓ vCenter7-2-linked         VMware vCenter         04ba20c2-b4eb-4815-a253-f5610bd0e404         Sep 30, 2024 11:55:37         Yes
Virtual Topologies Pathfinder Devices	✓ uvm143-vcsim1         VMware vCenter         25e8071c-c8e5-5b94-88d0-b0057632e9dd         Sep 30, 2024 11:55:38         Yes         ⊷
	✓ uvm244-vcsim4         VMware vCenter         294113eb-6858-529c-8f74-c17dff2ecba6         Sep 30, 2024 11:55:37         Yes
	Image: With the system         VMware vCenter         2a09b277-44ff-537e-8973-85a47d297ef5         Sep 24, 2024 14:27:56         No         ···

6. Click the sensor to access the streamed data source details and for any status message indicating if the sensor has started or there is an error message under *Sensor Details*.

Devices Inventory Endpoint Overview	Device Registration         Onboard physical and virtual devices to CloudVision         Onboard Devices       Data Sources         Virtual Router Deployments       Re-ZTP Devices       Decommission Devices	Paraleep.pawar uno-scale
Wired Authentication	Data Sources > sensor1 < > Sensor Details	
Device Registration	Status Sensor ID Hostname IP Address Version Streaming Start	
Compliance Overview	✓ Streaming sensor1 uvm311-sensor1.sjc.aristanetworks.com 10.239.6.231 v1.0.0-4736-g21c7aa3 Sep 27, 2024 20:01:49	
Connectivity Monitor	Last Seen         Data Sources           Sep 30, 2024 11:56:49         77	
Traffic Flows		
Endpoint Search	Sensor Logs	) Refresh
Comparison	Time	
Multi-Cloud Dashboard	i line wessage	
Network Segmentation	Sep 28, 2024 18:30:48 Sensor clock is in sync, starting Sensor	
Virtual Topologies	Sep 28, 2024 18:30:48 Sensor clock is not in sync, stopping Sensor	
Pathfinder Devices	Sep 27, 2024 20:01:50 Sensor started at 2024-09-27 14:31:49 UTC	

Similarly, you can click on each onboarded data source to display the respective data source status messages (whether the data source has started or if there are any errors).

Devices	Device Registration Onboard physical and virtual devices to CloudVision							C sandeep.pawar uno-scale
Inventory	Onboard Devices Data Sou	rces Virtual Router Deployments	Re-ZTP Devices	Decommission Devi	ces			
Endpoint Overview								
Wired Authentication	Data Sources > ser	Isor1 > vCenter7-2-linked ~	> Data Source	e Details			Edit Config	Edit Config as YAML
Device Registration	Status Name	Device ID		Туре	Sensor	Log Level		Streaming From
Compliance Overview	✓ Streaming vCenter7-2-linked 04ba20c2-b4eb-4815-a253-f5610bd0e404 VMware vCenter sensor1 Unspecified Log							Sep 28, 2024 18:30:58
Connectivity Monitor	Last Seen Sep 30, 2024 11:57:27							
Traffic Flows								
Endpoint Search	Data Source Logs							O Refresh
Comparison	This data source has unspec	cified logging enabled.						
Multi-Cloud Dashboard	Time	Message						
Network Segmentation								
Virtual Topologies	Sep 28, 2024 18:31:15	Inventory - vms: 13, hosts: 1, vdss:	1, vdsportgroups: 2, c	ompute resources: 1,	data centers	s: 1		
Pathfinder Devices	Sep 28, 2024 18:31:14	The datasource configuration is corr	rect					
	Sep 28, 2024 18:31:13	vCenter url is reachable, URL: https:	://uno-vcenter7-2.sjc.	aristanetworks.com				

Now, you can view the onboarded data sources and confirm that data streaming has started.

## Adding VMware vCenter as a Data Source

To add VMware vCenter as a Data source:

Select the **VMware vCenter** template to onboard vCenter as a Data Source in CloudVision. Use the *read-only credentials* to onboard your vCenters. CloudVision does not perform any write operations in vCenter.

**Note**: If you choose the option **Skip Certificate Verification** as *no* for vCenter data sources, provide the CA certificates if the vCenter servers are using certificates issued by a private or internal CA. These certificates are required for successful TLS verification between the Sensor and vCenter servers.

Or, choose the option **Skip Certificate Verification as yes** if you do not have the CA certificate or wish to continue without CA certificate verification.

#### **Onboard Data Source**

Each data source is onboarded with an assigned sensor and a configuration template for communication with CloudVision.

* Sensor (i)	
sensor1	$\checkmark$
* Template (i)	
VMware vCenter	~
Device ID (i)	
VWVC-BUFMK	
Display Name	
Enabled	
• Yes	
○ No	
Log Level (i)	
General Information Logging	~
* vCenter URL or IP Address	
https://vCenterUrl.com	
* vCenter Username	
vCenter Username	
* vCenter Password	
vCenter Password	ø

#### Skip Certificate Verification

O Yes

No

After adding VMware vCenter as a Data Source in CloudVision, it is recommended to configure the following in the vCenter to enable proper CV UNO functionalities:

- Enable LLDP transmission on Distributed Virtual Switches (DVS)
- Enable Netflow on Distributed Virtual Switches

#### Enabling LLDP in vCenter

To enable LLDP for ESXi hosts managed by a DVS:

- 1) Log in to the vCenter.
- 2) Navigate to Hosts and Clusters  $\rightarrow$  Networking.
- 3) Right-click on the Distributed Virtual Switch used by the ESXi host in question by navigating to Settings → Edit settings → Advanced → Discovery Protocol
- 4) Choose the Discovery Protocol as Link Layer Discovery Protocol, and Both operations.
- 5) Click the **OK** button.

$\equiv$ vSphere Client $$ Q				C			•	9~
<	UNO-DEV-DS1	ACTIONS	1					
□     ▶     ►     Solution       △     DPortGroup 11       △     DPortGroup 12       △     DPortGroup 13       △     DPortGroup 14       △     DPortGroup 15       △     DPortGroup 16	Summary Monitor Confi Manufa Version	Actions - UNO-DEV-DS1	VMs Networks					
Event-Grouping-D-DVUplinks-504	Switch Details	Settings •	🔊 Edit Settings				^	
> (m) test-debug	Networks	Move To	Edit Private VLA	N (	Control	Supported		
<ul> <li>         — test-new-dvs     </li> </ul>	Hosts	Rename	Edit NetFlow			Supported		
A DPortGroup	Virtual machines	Tags & Custom Attributes	Export Configur	ation	scovery Protocol	Supported		
test-new-dvs-DVUplinks-162	Ports		Export Conligur	ation	tion Control Protoc	ol Enhanced support		
ONO-DEV-DST		Add Permission	Restore Configu	iration <sub>a</sub>	tion Timeout	Not supported		
DPortGroup 7		Alarms •		Port mirroring	1	Supported		
DPortGroup 8	Notes	X Delete	~	GMP/MLD sn	ooping	Supported		
DPortGroup 9				Health check		Supported		
DPortGroup-EventTest	Tags		^					
Deortgroup-to-ph103-et3/33/1 UNC-DEV-DS1-DVUplinks-63	Assigned Tag	Category Description	Cus	tom Attrii	butes		^	
▲ UNO-DPG-V101 ▲ UNO-DPG-V102			At	tribute		Value		
l UNO-DPG-V103								
V Recent Tasks Alarms								
Task Name T Target T Status T Details	T Initiator	T Queued T Start Time	↓ ▼ Completion Time	T Serv	er			τ 🔍
Refresh dvPort state 🕅 test dobug	VSPHERE.LOCAL\Admir	nistrator 2 ms 10/07/2024, 10:48	:09	uno-	dev-vcenter7.sjc.ar	istanetworks.com		

Distri Edit S	ibuted Setting	Switch - s	UNO-DE	V-DS1 ×
General	Advanced	Uplinks		
MTU (Byte	s)	1500		
Multicast fi	iltering mode	Basic Y		
Discove	ry protocol			
Туре		Link Layer Discovery Proto	col 🗸	
Operation		Both Y		
Adminis	trator conta	ct		
Name				
Other deta	ils			
			CANCEL	ок

CV Sensor can receive Netflow records from the vCenter. The Sensor consumes the NetFlow records from the vCenter and sends processed flow information to the CVaaS instance.

Follow these configuration steps to enable Netflow:

- Sensor Configuration for Enabling Netflow
- vCenter Configuration for Enabling Netflow

#### Sensor Configuration for Enabling Netflow

On the **Data Sources** screen, click the **Onboard Data Source**. Select the sensor name and then select **Flow** as the Template (see image).

vith CloudVision.	n template for communication
Sensor (i)	
sensor1	~
Template (i)	
Flow	~
Application Connector	
DMF	
Flow	
VMware vCenter	
nabled	
Yes	
No	
og Level 🛈	
General Information Logging	~

Enter a name for the data source and click the **Onboard** button (see image).

Onboard Data Source		×
Each data source is onboarded with an assigned sensor and a configuration templ with CloudVision.	late for com	munication
* Sensor ()		
5615011		•
* Template (i)		
Flow		$\sim$
Device ID (i)		
FLOW-HTOIC		
Display Name		
sensor1-flow		
Enabled		
• Yes		
○ No		
Log Level ①		
General Information Logging		$\sim$
	Cancel	Onboard

#### vCenter Configuration for Enabling Netflow

To enable Netflow on a vCenter, you must configure each Distributed Virtual Switch (DVS). On each of the Distributed Switch in your vCenter, follow the below steps:

1) Right-click the DVSwitch used by the ESXi host by navigating to  $\textbf{Settings} \rightarrow \textbf{Edit NetFlow}$ 

$\equiv$ vSphere Client $Q$				C	Adminis	strator@VSPHERE.LOCAL ∨	0
<	UNO-DEV-DS1	ACTIONS					
	Summary Monitor Config	Actions - UNO-DEV-DS1	VMs Netwo	rks			
Dependence of the second	Manufac	Distributed Port Group					
DPortGroup 13		[ Add and Manage Hosts					
		Edit Notes					
DPortGroup 16		Upgrade •					
<ul> <li></li></ul>	Switch Details	Settings •	🙉 Edit Settir	ngs			^
> Etst-debug	Networks	Move To	Edit Privat	e VLAN	Control	Supported	
> imit test-event-grouping-vas	Hosts	Rename	Edit NetE	ow		Supported	
DPortGroup	Virtual machines		Latition		iscovery Protocol	Supported	
Est-new-dvs-DVUplinks-162	Ports	Tags & Custom Attributes 🕨	Export Co	nfiguration	ation Control Protoc	nl. Enhanced support	
VINO-DEV-DS1		Add Permission	Restore C	onfiguration	ation Timeout	Not supported	
DPortGroup 10		Alarms •		Dest misser		Funnested	
DPortGroup 7     PortGroup 8	Notes		~	Portminoring		Supported	
(A) DPortGroup 9		🔀 Delete		IGMP/MLD :	snooping	Supported	
DPortGroup-EventTest     Control of the second	Tags		^	Health chec	*	Supported	
PortGroup-to-ph103-et3/33/1	Assigned Tag	Category Description					
UNO-DEV-DS1-DVUplinks-63				Custom Att	ributes		^
🙈 UNO-DPG-V101				Attribute		Value	
UNO-DPG-V102							
lillillillillillillillillillillillillil							
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Task Name <b>T</b> Target <b>T</b> Status <b>T</b> Details	T Initiator	▼ Gueued ▼ Start Time	↓ <b>T</b> Completion	Time <b>T</b> Se	rver		Ŧ
Refresh dvPort state Constants Constants	VSPHERE.LOCAL\Admin	istrator 1 ms 10/07/2024, 10:47	:13 10/07/202	4, 10:47:13 un	o-dev-vcenter7.sjc.ar	istanetworks.com	

- 2) Add the necessary details in the form as shown in the image below.
  - a. Collector IP: Use the Sensor IP
  - b. Collector port: 4739
  - c. Sampling Rate: 10000

**Note:** A sampling rate of 10,000 means that one packet will be sampled for every 10,000 packets. To capture more samples and improve visibility on the topology page, reduce the sampling rate to 1000 or less. Remember that reducing the sampling rate may introduce a slight increase in network load.

d. Switch IP address: Unique IPv4 address across VDSs in a vCenter (not necessarily a pingable IPv4 address)

Edit NetFlow Settings
--------------------------

UNO-DEV-DS1  $\times$ 

NetFlow

Collector IP address	172.30.155.252	
Collector port	4739	
Observation Domain ID	0	
Switch IP address	1.2.3.4	í
Advanced settings		
Active flow export timeout (Seconds)	60	-
Idle flow export timeout (Seconds)	15	-
Sampling rate	10000	
Process internal flows only	Disabled ¥	

CANCEL

3) Click **OK** to save the changes.

After enabling NetFlow on all the DV switches, ensure to enable NetFlow on all Distributed Port Groups of the DV switches by:

- Right-click on the DVS → Distributed Port Group → Manage Distributed Port Groups
- 2) Select Monitoring
- 3) Select all of the Distributed port groups (Or select the applicable port groups in your environment)
- 4) Enable the Netflow
- 5) Click the **Finish** button.

After NetFlow is enabled on a port group, it sends NetFlow data to the collector specified in the DVS settings. However, the port group sends NetFlow data only for

ingress packets (entering the port group) and not for egress packets (exiting the port group).

To collect data for all traffic, enable NetFlow for the Uplink port group as well. If you do not enable NetFlow for the uplink port group, the UNO sensor will not receive NetFlow for any traffic going out from the VMs to the physical network.

**Note**: In the bulk port group configuration, it is not possible to enable NetFlow for the Uplink port group. You must enable the uplink port group separately.

To enable the uplink port group:

- Right-click on the Uplink Port group under the Distributed Virtual Switch section → Settings (The port group name should have the DVUPlinks on it).
- 2. Navigate to the **Monitoring** tab
- 3. Enable **Netflow**
- 4. Click the **OK** button to save the changes.

For details on Adding VMware vCenter as a Data Source, refer to: <u>https://faddom.com/network-visibility-in-virtual-environments-part-2/</u>

# Troubleshooting [New Installation]

This section provides information on common issues that may arise during the CV Sensor deployment and suggests possible solutions to address them.

#### How to restart the sensor component?

- 1. SSH to the VM
- 2. Execute the following cvpi commands to restart the sensor:

```
cvpi stop sensor --is-local-action
cvpi start sensor --is-local-action
```

3. After the restart, verify if all components are running correctly:

```
cvpi status all -v3
```

## Where to check for logs?

- 1. SSH to the VM
- 2. The logs are managed by *journald* and can be viewed using *journalctl* commands
- 3. Here is an example of *journalctl* command to view sensor logs:

[root@cvp230 ~]# journalctl IO\_KUBERNETES\_CONTAINER\_NAME=sensor

#### Append -f to journalctl command to follow logs.

Check the logs between a specific time interval using the command:

journalctl IO\_KUBERNETES\_CONTAINER\_NAME=sensor --since
"2024-07-26 12:10:46" --until "2024-07-26 12:11:46

Below are examples of journalctl commands to filter logs:

```
    To check all the error logs of system:

  journalctl -p err -b
  You can change level from err to info, warning, alert, debug

    To check only stdout logs:

  journalctl TRANSPORT=stdout
• To check logs from specific time:
  journalctl --since "2024-01-24 17:15:00"

    To check logs for specific service:

  journalctl -u zookeeper.service --since today
• To check logs for specific process id:
  journalctl PID=3918
• To check last 100 lines of logs:
  journalctl -n 100
• To follow logs
  journalctl -f

    Some helpful grep commands for data source specific logs:

  journalctl IO KUBERNETES CONTAINER NAME=sensor -n 1000 |
  grep Flow Datasource name \Rightarrow logs by datasource name
  journalctl IO KUBERNETES CONTAINER NAME=sensor -n 1000 |
  grep provider=events \Rightarrow logs for events provider
  journalctl IO KUBERNETES CONTAINER NAME=sensor -n 1000 |
  grep datasource=uvm244-vcsim3 \Rightarrow logs for specific
  datasource
  journalctl IO KUBERNETES CONTAINER NAME=sensor -n 1000 |
  grep vcenterId=fda4fd5c-bd4e-4554-925d-f142a3232667 ⇒
  logs for vcenter datasource matching given vcenter uuid
```

Below are some cvpi commands to check logs:

- To check current sensor pod logs cvpi logs sensor
- To check all sensor logs cvpi logs sensor --full
- To pack sensor logs to tar file cvpi debug logs