# cisco.



Monitoring SDWAN Services Monitoring Cisco SD-WAN Services in Cisco MSX 2



# **Monitoring Cisco SD-WAN Services in Cisco MSX**

Cisco MSX new GUI includes a Cisco MSX Dashboard and a Tenant Workspace, that are visible only if users have subscribed to the Cisco MSX Enterprise Access (EA) service pack.

This chapter contains the following sections:

# **Monitoring SD-WAN Service Status on the Cisco MSX GUI**

The new GUI has the following workspaces:

• **Operator workspace**: Lists all the tenants and the services these tenants have subscribed to. The Operator Workspace has dashlets such as Tenants and Services. The tenant-centric portal is role-based and is accessible by operators.

#### Figure 1: Operator Workspace

	ahaha cisco	Cisco MSX	MSX Eng Superuser
=.	Operator Workspace	Operator Workspace	
ы	Tenant Workspace 🗸 🗸		
	Services 0	41 Tenants	4 Services
	Sites 0		$\sim$
	Devices 0	2 issues	2 issues
	Service Controls Offer Catalog		Notes -
	Billing		
≡	Devices	41 TENANTS Search Tenants Q	-
0	Scheduled Jobs	Alexy cloudconnectAPITestTenant	Amar cloudconnect10051122949

• **Tenant Workspace**: Allows tenants to access information related to their subscribed services. The following are the menus that are available in the tenant workspace:

#### Figure 2: Tenant Workspace

	uluulu cisco	Cisco MSX			Super User 🥑 🚨
ал 11	Operator Workspace <u>Tenant Workspace</u> cote	Services color: Tenant Workspace			۲
	Services 1 Sites 2 Devices 9 Service Controls Offer Catalog Billing	1 Service	2 Sites		9 Devices
		SD-WAN Last Updated: Nov 15, 2021, 9:52:29 AM	$\frown$	•	Activity Feed Vew Full Event Log Nov 15, 2021, 10:02:39 AM Pevice */ms-dmz-isr4331-01* Head to *UP: So-WAN \$\$ system
<b>م</b>		с	isco SD-WAN Control Plane View Details		Nov 15, 2021, 10:02:39 AM Device "VuliaDemo" Health Status SD-WAN Laystem Nov 15, 2021, 9:52:39 AM Device "vms-dmz-isr4331-01"
M		2 SITES 2 Good View All Sites	9 DEVICES © Good View All Devices		Health Status updated to SD-WAN L system Nov 15: 2021; 9:52:29:4M Device VisilaBorno' Health Status updated to "UNKNOWN" SD-WAN L system
*					Nov 15, 2021, 9:52:36 AM

- Services: Display all services subscribed by a tenant, service status, other service metrics, and control plane status. For more information on service statuses in the Tenant Workspace, see Understanding Cisco SD-WAN Service Statuses.
- Sites: Display an overview of the tenant's sites, site status, and allows access to site details.
- Devices: Displays an overview of the tenant's devices, device status, and allows access to device details.



Note Displays both mapped or unmapped sites or devices.

For more information on device statuses in the Tenant Workspace, see Monitoring Cisco SD-WAN Device Status.

- Service Controls: Display the custom service controls that are used by the services. For Cisco MSX SD-WAN service pack, you can view traffic policies used by a tenant and perform bulk import of device templates.
- Offer Catalog: Display existing subscriptions and allows subscribing to new services.
- Billing: Display billing information about the tenant's subscriptions. For more information on billing, see Managing Billing.
- Activity Feed: The Cisco MSX portal allows a tenant to view several events pertaining to the subscriptions, sites, devices, template, and services. The events that are logged in the **Events Log** window are also used in the Activity Feed. To view the Activity Feed, choose **Tenant Workspace > Services** window. These contextual event feeds are also displayed on the **Sites Detail** window and **Devices Detail** window.

# **Understanding Cisco SD-WAN Service Statuses**

The service panel in the Tenant workspace allows tenants to see the next steps that can be performed for their subscribed services. After the services are set up and the network has connectivity, the panel also shows the services-related metrics.

Tenants can monitor the status of the SD-WAN service in the Service tab and the SD-WAN service panel. This overall service status is calculated based on the service lifecycle status.

The following table illustrates the SD-WAN service lifecycle status:

Color	SD-WAN Service Status	Description
Blue	Ready to Provision	SD-WAN control plane is not attached or created.
Purple	Provisioning Deprovisioning	Provisioning: Cisco MSX is attaching, or creating the SD-WAN control plane. Deprovisioning: Cisco MSX is deleting, or detaching the SD-WAN control plane.
Green	Provisioned	Cisco MSX has attached or created the SD-WAN control plane.
Orange	Failed	Provisioning or deprovisioning of the control plane failed.

# **Monitoring Cisco SD-WAN Device Status**

The **Devices** menu option in the **Tenant Workspace** provides the devices' overall status. The **Devices** menu displays both mapped (latitude and longitude defined) or unmapped devices.

Using this procedure, you can view the SD-WAN device statuses.

# Procedure

**Step 1** Log in to the Cisco MSX portal using your credentials.

**Step 2** From the left hand pane, choose **Tenant Workspace > Devices**.

The Devices Overview window is displayed with overall status of the devices.

Figure 3: Device Overview window

ш									
				1 Service		4 Sites		24 Devices	
1910				$\frown$		$\frown$			
	Devices		(	0		3		3	
				issues		issues		issues	
=		Services:		Device Model	s: •	τ ≂2			Ó
0				DEVICE	MODEL	SERVICE	SERIAL NUMBER	OS VERSION	
*				ott-physical-vedge-09-110G440 Critical	vedge-1000	SD-WAN	110G440170219	18.2.0	
4									
44				ISR4431/K9-FOC21050KU0 Good	vedge-ISR-4431	SD-WAN	ISR4431/K9-FOC21050KU0	Unknown	

Step 3To view the status of a device, hover the mouse over the device and click to view the device summary.The device view expands and its overall status is displayed along with its health and lifecycle status.Figure 4: Device Expanded View

		- Contraction Contraction Contraction
St Model: v Type:	I-ASR1001-X-JAE203306BV tatwis: Good Medge-ASR-1001-X Close SD-WAN Arce: SD-WAN	This device is managed directly by SD-WAN. To see details about the device as well as make changes to it, click the service home button to enter the service specific controls.

- **Note** For more information on the Cisco MSX device status for SD-WAN devices, see Understanding Cisco SD-WAN Device Statuses.
- **Step 4** Click **Device Details** to view additional details of the device such as reachability, control plane name, last sync time, IP address, device template details.

Device template shows the device template and its related information that was applied to that particular device. Related information includes device model, chassis number, system IP, hostname, and device template name.

For more information about the sync time, see Understanding Cisco SDWAN Synchronization.

## **Understanding Cisco SDWAN Synchronization**

Cisco MSX synchronizes device inventory and configurations with the Cisco SD-WAN. During the sync time, Cisco MSX polls the controller, checks for updates, and updates the device details in Cisco MSX. This synchronization occurs every n minutes. By default, the sync time is 60 minutes.

The data presented on the device window is refreshed every (n) minutes depending on the time set.

## **Configuring the Sync Time**

You can use the Task Scheduler Administration API to configure the sync time. As an operator, you can use PUT API (/api/v1/taskscheduler/{taskID} and update the value of recurrenceCronExpression to modify this duration.

# **Understanding Cisco SD-WAN Device Statuses**

The overall device status (indicated by the *Status* option on the left-hand side of the **Devices** window) is categorized as **In Progress**, **Critical**, **Poor**, **Fair**, **Good**, and **Unknown**.



**ote** The device status in the legacy GUI is not the same as the status in the new Cisco MSX GUI. The overall device status is calculated based on the device lifecycle status (indicated by the *Lifecycle* bubble on the right-hand side), and the connectivity status. However, in some cases, overall device status also includes the device health status (indicated by the *Health* bubble on the right-hand side). The Device health status is considered only when the devices have system\_ip configured or have VNFs successfully deployed and connected.

The following figure illustrates overall device status, including device health, connectivity, and lifecycle statuses for an SD-WAN device.

	Vealth: Likeycle: Up Orboarded
ott-dmz-asr1001-01-ASR1001-X-JAE203306BV Status: Good Model: vedge-ASR-1001-X Type: Cisco SD-WAN Service: SD-WAN	This device is managed directly by SD-WAN. To see details about the device as well as make changes to it, click the service home button to enter the service specific controls

Within Cisco MSX, any status type are numbered from 1 to 7, with the highest number 7 indicating the status as '**Critical**' and the lowest number 1 indicating the status as 'Good'. An overall status looks into the available statuses (lifecycle or device health or both) for a device and picks the highest number and maps it to the below overall statuses.

<b>Overall Status</b>	vs Severity	Number i	n Cisco MSX
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Overall Status	In Progress	Critical	Poor	Fair	Unknown	Good
Severity	9	7	6	5	3	1
Number						

The following table illustrates the mapping of SD-WAN lifecycle status and their severity level which defines the overall device status:

SD-WAN Device Lifecycle Status Shown in the Devices Window	What These Lifecycle Status Indicate	Severity Number (Determines the Overall Status in the GUI)	Overall Status Indication Based on the Severity Number
Configuring	Incomplete: Device is not ready to be provisioned because the data filled was incorrect or incomplete.	3	Unknown
	The device will be in this status until the details are corrected, and the template file is imported again into Cisco MSX.		
Configuring	Ready to Provision: Device is connected and bulk data is imported. All provisioning details are completed and device is ready to provision.	3	Unknown
Provisioning	Provisioning: Provisioning process pushes the configuration data into the Control Plane such that the site is set up for day one configurations. The provisioning process on the Control Plane takes approximately 5 to 10 minutes.	3	Unknown
Provisioning Failed	Provisioning Failed: The Site Status changes to 'Provisioning Failed' if the configuration data imported does not match with the values on the Control Plane.	6	Poor
Provisioned	Provisioned: Site was provisioned successfully.	1	Good
Onboarded	Deployed: ENCS site is deployed and vEdge is able to communicate to the Control Plane.	1	Good
Onboarding	Deploying: ENCS site deployment with a vEdge is in progress.	3	Unknown
Onboarding Failed	Deployment Failed: Could not bring up vEdge using ENCS.	6	Poor
Deleting	Deleting: Deleting a device is in progress.	3	Unknown
Deleting Failed	Deleting Failed: Deleting the device failed.	6	Poor

Depending on wheter you are provisioning a physical, vEdge cloud, or vEdge SP Cloud, the site statuses and the next steps varies. For more information on these site statuses for these device types, see the sections below:

# **Device Statuses for Physical Device**

The table below shows the status of Physical device (vEdge or IOS XE) with various validation messages shown on Cisco MSX, along with next steps.

## Table 1: Device Statuses for Physical Device

Summary	Status	Description	Next Steps
Bitrown	Convected to SD-WAIL Correct Plane Provision	The device is in the process of being shipped to customer site. At this point, Cisco MSX portal does not show physical devices on the map as these still do not have any address or map coordinates for the sites to plot them on the map. The site is plotted as 'Unmapped sites' on Cisco MSX map.	Connect the device. After the device is installed on the premise, connect the device, it goes through the ZTP (Zero Touch Provisioning) process and gets connected to the Control Plane.
я <sup>к</sup>	Connected to Ready to Possilioned 50-WIA Control Providion	The device has established connectivity to the Control Plane, but does not have the provisioning data to provision a device.	Import bulk data. For information, on how to import, see Importing Multiple Site Data from Cisco SD-WAN into MSX.
Connected	Para		After importing, Cisco MSX displays various validation messages to indicate the errors or missing information in the template file. You can click <b>View Details</b> in the validation message to display the Site Import Summary with the error list. <b>Note</b> We recommend that you download the error list as the information this screen is temporary and will disappear after you exit this page.
liconplete	Converted to SD-WAN Converted Pane Provision Provision	Incomplete: Device is not ready to be provisioned because the data filled was incorrect or incomplete. The device will be in this status until the details are corrected, and the template file is imported again into Cisco MSX.	• For device with 'Incomplete' status, see Provisioning Details under Device Summary. This section lists the fields that have missing data. Enter the missing details in the Site template file and import again.
Ready to Provision	Connected to 50-WAN Control Plane Provision	• Ready to Provision: Device is connected and bulk data is imported. All provisioning details are complete and device is ready to provision.	• For device with 'Ready to Provision' status, see Provisioning Details under Device Summary, click <b>Provision</b> <b>Device</b> to initiate the provisioning process.
Up	Connected to 50-1444 Control Provision	<ul> <li>Up: Device was provisioned successfully.</li> <li>Critical: Device was up and was provisioned, but after a while it lost connectivity to the SD-WAN Control Plane.</li> </ul>	If the status is 'Critical', troubleshoot SD-WAN control plane connectivity issue. For more information, see Troubleshooting Cisco SD-WAN Reachability Issues.

Summary Status	Description	Next Steps
Site Status Provisioning Provisioning Provisioning Failed Provisioning Failed	<ul> <li>Provisioning: Provisioning process pushes the configuration data into the Control Plane such that the device is set up for day one configurations. The provisioning process on the Control Plane takes approximately 5 to 10 minutes.</li> <li>Provisioning Failed: The Device Status changes to 'Provisioning Failed' if the configuration data imported does not match with the values on the Control Plane. See Next Steps for more details.</li> </ul>	<ul> <li>Provisioning could fail because of one of the following reasons.</li> <li>Data could not be validated as the template on Cisco MSX modified since the last upload. Correct the entries that are missing or incorrect. For information, on how to edit these entries, see Step 5 in Importing Multiple Site Data from Cisco SD-WAN into MSX.</li> <li>If the information does not match with the data on the control plane, provisioning fails, and the missing or incorrect fields are highlighted in the Device Summary. Correct the entries that are missing or incorrect. For information, on how to edit these entries, see Step 5 in Importing Multiple Site Data from Cisco SD-WAN into MSX.</li> <li>Unexpected errors on the Control Plane. If the state of the device appears as Out-of-Sync under the Basic Details, check the Event Log to get more details on the errors. For more information, see Viewing Event Logs.</li> </ul>
Connected to SO-HAR Control Place	Offline: A device is in the process of being shipped has been uploaded and provisioned on the Control Plane. When the device is connected and has reachability to the Control Plane, the template on the Control Plane is applied on the device.	Connect the device.

# Device Statuses for vEdge SP Cloud

The table below show the statuses for vEdge SP Cloud with various validation messages shown on Cisco MSX, along with next steps.

## Table 2: Device Statuses for vEdge SP Cloud

Summary	Status	Description	Next Steps
Urknown	Connected to So-MAIL Connel Previous Previous	Unknown: Device has been added on Cisco MSX portal and the configurations are downloaded by the service provider. The Unknown state indicates the time period when the Service Provider uses the downloaded configurations to brings up a vEdge cloud to finish deployment. The device during this phase waits for the vEdge to be deployed and connected back to SD-WAN Control Plane.	During this state, bulk data can be imported and provision the SP Cloud through Cisco MSX. For information, on how to import, see Importing Multiple Site Data from Cisco SD-WAN into MSX.
Connected	Connected to SD-WAN Control Plane	Connected: Device deployment is complete and vEdge is able to communicate to the Control Plane, but does not have the provisioning data to provision a device.	• If in 'Connected' status, next step is to import bulk data. For information, on how to import, see Importing Multiple Site Data from Cisco SD-WAN into MSX.
Net Connected	Concetted to SD-WMA Control Plane Provision	• Not Connected: Not Connected indicates a state when a connection was established once and then connection with Control Plane was lost because of Interface being shutdown.	After importing, Cisco MSX displays various validation messages to indicate the errors or missing information in the template file. You can click <b>View Details</b> in the validation message to display the Site Import Summary with the error list.
			<b>Note</b> We recommend that you download the error list as the information on this screen is temporary and will disappear after you exit this page.
			• If the status is 'Not Connected', troubleshoot SD-WAN control plane connectivity issue. For more information, see Troubleshooting Cisco SD-WAN Reachability Issues.
Ready to Provision	Connected to Ready to Provisioned 50-MAX Common Provision	Ready to Provision: In both cases, that is, connected to control plane and not connected to control plane, bulk data can be imported, and the devices are ready to be provisioned.	For device with 'Ready to Provision' status, see <i>Provisioning Details under Device</i> <i>Summary</i> , click <b>Provision Device</b> to initiate the provisioning process.
Ready to Provision	Convected to Ready to Provisioned 50-WAIL Control Plane		

Summary Status	Description	Next Steps		
Connected to Incomplete	Incomplete: Device is not ready to be provisioned because the data filled was incorrect or incomplete. The device will be in this status until the details are corrected, and the template file is imported again into Cisco MSX.	have missing data. Enter the missing details		

The remaining statuses for the vEdge SP cloud are similar to the Physical devices. For more information on the other statuses, see Device Statuses for Physical Device.

# **Device Statuses for vEdge Cloud**

The table below show the site status for vEdge Cloud with various validation messages shown on Cisco MSX, along with next steps.

#### Table 3: Device Statuses for vEdge Cloud

Summary Status	Description	Next Steps		
Destrying Or Parks	ENCS site deployment with a vEdge is in progress.			
Not Connected         Opened         Opened         Opened         Opened         Provide the transmission         Provid	Not Connected: vEdge is deployed but is not able to establish connection with the Control Plane.	<ul> <li>If not connected, troubleshoot SD-WAN control plane connectivity issue. For more information, see Troubleshooting Cisco SD-WAN Reachability Issues.</li> <li>After the connection is established, you can import bulk data from multiple sites and provisioning one device at a time. For more information, seeProvisioning a Device.</li> </ul>		
Optioned         Image: Connected to Schwarzschulzer         Image: Schwarzschulzer </td <td><ul> <li>Deployed: ENCS site is deployed and vEdge is able to communicate to the Control Plane.</li> <li>Deployment Failed: Could not bring up vEdge using ENCS.</li> </ul></td> <td>Troubleshoot the data plane. For more information, see Data Plane Troubleshooting.</td>	<ul> <li>Deployed: ENCS site is deployed and vEdge is able to communicate to the Control Plane.</li> <li>Deployment Failed: Could not bring up vEdge using ENCS.</li> </ul>	Troubleshoot the data plane. For more information, see Data Plane Troubleshooting.		
Connected	Connected: vEdge is deployed and connected to Control Plane. System is now ready for bulk import of data from multiple sites.	After the connection is established, you can import bulk data for provisioning the site. For more information, see Importing Multiple Site Data from Cisco SD-WAN into MSX.		

Summary Status	Description	Next Steps			
Image: Second	Incomplete: Device is not ready to be provisioned because the data filled was incorrect or incomplete. The device will be in this status until the details are corrected, and the template file is imported again into Cisco MSX. Ready to Provision: Device is connected and bulk data is imported. All provisioning details is complete and device is ready to provision.	<ul> <li>For site with 'Incomplete' status, see <i>Provisioning Details under Device Summary</i>. This section lists the fields that have missing data. Enter the missing details in the Site template file and import again.</li> <li>For device with 'Ready to Provision' status, see <i>Provisioning Details under Device Summary</i>, click <b>Provision Device</b> to initiate the provisioning process.</li> </ul>			
Image: Constraint of the second se	<ul> <li>Provisioning: Provisioning process pushes the configuration data into the Control Plane such that the site is set up for day one configurations. The provisioning process on the Control Plane takes approximately 5 to 10 minutes.</li> <li>Provisioning Failed: The Device Status changes to 'Provisioning Failed' if the configuration data imported does not match with the values on the Control Plane. See Next Steps for more details.</li> </ul>	<ul> <li>Provisioning could fail because of one of the following reasons.</li> <li>Data could not be validated as the template on Cisco MSX was modified since the last upload. Correct the entries that are missing or incorrect, and import the site template file again. For information, on how to edit, see step 5 in Importing Multiple Site Data from Cisco SD-WAN into MSX.</li> <li>Note You can directly edit the site template from Cisco MSX any number of time as required.</li> <li>If the information does not match with the data on the control plane, provisioning fails, and the missing or incorrect fields are highlighted in the Device Summary. Correct the entries that are missing or incorrect, and import the site template file again. For information, on how to edit, see step 5 in Importing Multiple Site Data from Cisco SD-WAN into MSX.</li> <li>Unexpected errors on the Control Plane. If the state of the device appears as Out-of-Sync under the Basic Details, check the Event Log to get more details on the errors. For more information, see Viewing Event Logs.</li> </ul>			

Summary Status	Description	Next Steps		
U Constant In Provide	<ul> <li>Up: Device was provisioned successfully.</li> <li>Critical: Device was up and was provisioned, but after a while it lost connectivity to the SD-WAN Control Plane.</li> </ul>	If the status is 'Critical', troubleshoot SD-WAN control plane connectivity issue. For more information, see Troubleshooting Cisco SD-WAN Reachability Issues.		

# **Monitoring SD-WAN Control Plane Status**

In Cisco MSX SD-WAN, Control Plane allows you to centrally manage the devices for a tenant, including provisioning, monitoring, and so on.

## Before you begin

- Set up a control plane for your tenant. For more information, see Setting Up Control Plane for Cisco SD-WAN.
- Complete control plane's post deployment configurations. For more information, see Postdeployment Tasks for SD-WAN Control Plane.

To monitor the status of the SD-WAN control plane:

## Procedure

**Step 1** Log in to the Cisco MSX Portal.

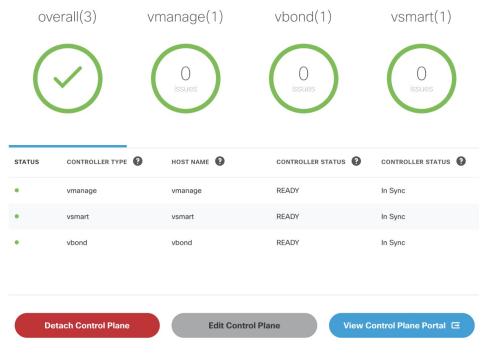
**Step 2** From the left pane, click **Tenant Workspace > Services**.

**Step 3** In the SD-WAN service panel, click on the ellipsis (...) and click **Control Plane Details**.

The following is the Cisco SD-WAN Control plane status after the certification, the security groups, and other configurations are completed.

#### Figure 5: Cisco SD-WAN Control Plane Status

Cisco SD-WAN Control Plane Details



**Note** If your Cisco SD-WAN control plane remains in the 'Not Configured' state or is unable to connect to the control plane due to the authentication issue, see Troubleshooting Control Plane.

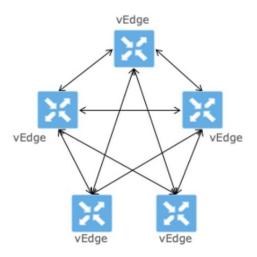
# **Monitoring Tunnel Health**

The tunnel health graph gives an overview of the health of the IPSec tunnels from the SD-WAN device.

The tunnel report in Cisco MSX shows how many of these tunnels are up, which is an indication of whether the device is at risk of losing connectivity.

For example: In the following figure, tunnels are established for vEdge with every other vEdge in the network. If more tunnels are down, it could indicate that vEdge device from where tunnels are established is experiencing degradation. If only a small subset of tunnel links are down, it means other vEdge devices may be possibly experiencing degradation.

#### Figure 6: Tunnel Connectivity Between vEdge Devices



## **Tunnel Health Reporting or Tunnel Health Status Calculations:**

Tunnels Up % = (Number of Tunnels in Up state / Total Number of Tunnels) \* 100

#### For example:

If there are 200 tunnels and 80 tunnels are up, the Tunnel Up % will be (80/200)\*100 = 40%

For other tunnel performance metrics, such as data loss, latency, jitter information, click **View Tunnel details on Control Plane** to launch the tunnel details. For more information on these metrics, see *Cisco SD-WAN documentation*.

To view the control plane status for the SD-WAN service:

## Before you begin

To monitor tunnel health, make sure users have the following permission assigned:

• Under Services, Configurations, and Devices category, select Service Metrics (View) permission permission.

## Procedure

Step 1 Step 2	Log in to the Cisco MSX portal using your credentials. From the left hand pane, choose <b>Tenant Workspace &gt; Services</b> . The <b>Services Overview</b> window is displayed.						
Step 3 Step 4	Click th	In the <b>SD-WAN Home</b> option to display the tenant-specific <b>Site Summary</b> window. The <b>Toggle</b> button on the top right-hand side of the page to toggle between the list and map view with the list of the selected tenant.					
	Note	Both list view and map view displays all the SD-WAN sites for the selected tenant.					
Step 5	Select a site/device from the list of devices. The Site Summary window appears with site information and basic de details, such as chassis number, system IP, site ID, and so on.						

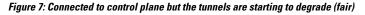
The Site Status in the details page changes based on the various status of SD-WAN devices along with status of tunnel health. For more information on the the site/device lifecycle statuses, see Monitoring Cisco SD-WAN Device Status.

The following table displays the Tunnel Health status that appears below the overall Site Status image based on the Tunnel Up %.

Tunnel Health Status	Tunnel Up %
Good	70-100
Fair	35-69
Critical	0-34

Note If Cisco MSX is unable to determine the tunnel health, the Tunnel Health status changes to an 'Unknown' state.

The following are a few examples of the overall Site/Device Status depending on control plane status and the text beneath the image is based on the tunnel health status.





• Fair : Tunnel performance is fair.

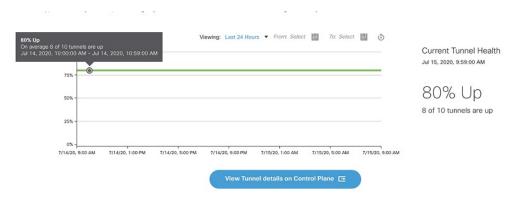
Figure 8: No connectivity to Control Plane but tunnel performance is fair



• Critical: Site has lost connectivity to the control plane. Tunnel performance is fair.

**Step 6** On the **Site Summary** window, scroll down to the Tunnel Health section to view the current tunnel metrics. A graphical representation of all existing tunnels for the device appears.

#### Figure 9: Tunnel Health Graph



Where:

X axis - Time range

#### Y axis - Tunnels Up % (values 0-100)

**Step 7** Select the time interval for displaying the tunnel health for that period. Choose one of the available time intervals from the **Viewing** drop-down list or click **Custom** to choose a time duration of your choice for which the reporting is displayed. Provide the day and time from when the reporting data must be collected until the specified end time. By default, last 24 hours chart is loaded.

Hover over the aggregated data points on the chart to get specific details, including the timestamp when the event occurred. These aggregated data points are system-generated. For more information on these data points, click on the **Learn More** link.

# **Monitoring SD-WAN Reporting Metrics Using Third-Party Network Monitoring Applications**

You can integrate third-party network monitoring applications with SD-WAN on Cisco MSX, for example, LiveAction for real-time network insight. If integrated with SD-WAN, users can launch the application dashboard from the Cisco MSX Portal.

#### **Before You Begin**

Integrate LiveAction with Cisco MSX.

To launch a third-party monitoring portal from the Cisco MSX Portal:

## Procedure

Step 1	Log in to the Cisco MSX portal using your credentials.
Step 2	From the left hand pane, click Dashboard. The Dashboard window is displayed.
Step 3	Click the SD-WAN Home button. The SD-WAN Home window is displayed.
Step 4	Select the tenant from the drop-down. The <b>SD-WAN Home</b> window refresh and displays the control plane status for the selected tenant.

**Step 5** To launch the application dashboard, click **Launch Monitoring Portal**. The application dashboard opens up in a separate browser.

# **Monitoring the Traffic Policy**

# **Monitoring the Traffic Paths**

To confirm traffic path:

# Procedure

Step 1	Log in to the vEdge or cEdge (IOX XE) server.					
Step 2	Turn on application visibility on the vEdge or cEdge. To do so use the following commands: <b>Example:</b>					
	config policy flow-visibility commit					
Step 3	Send traffic through the vEdge or cEdge.					
Step 4	Check the path for vEdge and cEdge:					
	• For vEdge, use the following command:					
	Example:					
	show app cflowd flows   tab					

• For cEdge, use the following command:

Example:

# **Monitoring the Application Queue**

To confirm application queues:

## Procedure

- **Step 1** Log in to the vEdge or the cEdge server.
- **Step 2** Send traffic through the vEdge or cEdge.
- **Step 3** Check the queues for vEdge and cEdge:
  - For vEdge, use the following command:

show policy data-policy-filter

• For cEdge, use the following command:

show sdwan policy data-policy-filter

The output will show all the available application queue.

# **Viewing Event Logs**

To view the event logs:

#### Before you begin

Ensure you have the View Event Log permissions to view the status of the policies in the event log.

## Procedure

 Step 1
 Log in to the Cisco MSX Portal.

 Step 2
 In the main menu, click Event Log. The Event Log screen appears.

 Figure 10: Cisco MSX Event Log

Eve	nt Log							Search Events		٩
	Available tenants:		0	Severity: All	Custom Range	From Date: Select date and time	To Date: Select da			
	SEVERITY	TENANT	SERVICE	OBJECT "clientId":"nfv- service","userId":"41ef9a00- c0fa-11ea-90bc- 33bb5253429","username":"sy c0fa-11ea-90bc- 33bb5253429","enantName":" 33bb5253429","enantName":" 449f-42f2-b4f8-b10ab7bc0266"	DESCRIPTION Can't find device by 2914: Failed to registerDevice to	7328ce03-f852f1b9419c4d50b282ba28bf0 UFP	700f9-sdwan.	user	7/9/20, 9:32 AM	
	0			Schedule_task: 218aa7f7-acfd- bcab-3f36-1e52927a6af0	ce03-48ec-94ad-f31914	[POST:sdwanservice/v1/controlplanemanag 330ca5/synchronize] api. Task Id: [218aa7f) :ution time: [2020-07-09 04:15:00+0000]		superuser	7/9/20, 9:32 AM	

- **Step 3** Select the tenant from the drop-down for which the event log has to be displayed.
- **Step 4** To filter the event log records, select the filter type from the drop-down. To list event logs for a specific duration, select the **Custom Range**check box and specify the dates.



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