

Monitoring with Cisco ThousandEyes

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Feature history for extended visibility with Cisco Catalyst SD-WAN and ThousandEyes

The feature history table provides information about when specific features were introduced.

Table 1: Feature History

Feature Name	Release Information	Description
Extended Visibility with Cisco Catalyst SD-WAN and Cisco ThousandEyes	Cisco IOS XE Release 17.6.1a Cisco vManage Release 20.6.1	You can deploy Cisco ThousandEyes Enterprise agent natively as a container application on supported Cisco IOS XE Catalyst SD-WAN devices to integrate Cisco Catalyst SD-WAN with Cisco ThousandEyes. You can install and activate the Cisco ThousandEyes Enterprise agent through SD-WAN Manager. By integrating Cisco Catalyst SD-WAN with Cisco ThousandEyes, you can gain granular insights into network and application performance with full hop-by-hop path analysis across the Internet, and isolate fault domains for expedited troubleshooting and resolution.
Cisco ThousandEyes Support for Cisco 1000 Series Integrated Services Routers	Cisco IOS XE Catalyst SD-WAN Release 17.7.1a Cisco vManage Release 20.7.1	You can deploy Cisco ThousandEyes Enterprise agent natively as a container application on Cisco ISR 1100X-6G devices. You can install and activate the Cisco ThousandEyes Enterprise agent through SD-WAN Manager.
Cisco ThousandEyes Support for Cisco Catalyst 8500 Series Edge Platforms and Cisco ASR 1000 Series Aggregation Services Routers	Cisco IOS XE Catalyst SD-WAN Release 17.8.1a Cisco vManage Release 20.8.1	You can deploy Cisco ThousandEyes Enterprise agent natively as a container application on Cisco Catalyst 8500 Series Edge Platforms and Cisco ASR 1000 Series Aggregation Services Routers. You can install and activate the Cisco ThousandEyes Enterprise agent through SD-WAN Manager.
Extended Device Support for the Cisco ThousandEyes Agent in Cisco ISR 1100 Series	Cisco IOS XE Catalyst SD-WAN Release 17.16.1a Cisco Catalyst SD-WAN Manager Release 20.16.1	Support for the Cisco ThousandEyes Enterprise agent is extended to additional routers in Cisco ISR 1100 Series.
Extended Device Support for the Cisco ThousandEyes Agent to Industrial Routers	Cisco IOS XE Catalyst SD-WAN Release 17.18.2 Cisco Catalyst SD-WAN Manager Release 20.18.2	Support for the Cisco ThousandEyes Enterprise Agent is extended to include industrial routers in SD-WAN deployments.

Extending visibility for Cisco Catalyst SD-WAN and Cisco ThousandEyes

Cisco ThousandEyes is a SaaS application that:

- delivers end-to-end visibility across internal, external, and carrier networks,

- monitors network performance in real time to provide actionable insights, and
- optimizes application delivery and end-user experience through continuous analysis of network paths and services.

Deploy and configure the ThousandEyes Agent

From Cisco IOS XE Release 17.6.1, you can deploy and configure the Cisco ThousandEyes Enterprise agent on Cisco IOS XE Catalyst SD-WAN devices to enable extensive monitoring of the WAN traffic for enhanced visibility within and beyond the Cisco Catalyst SD-WAN fabric. The Cisco ThousandEyes Enterprise agent is an embedded Docker-based application that runs on Cisco IOS XE Catalyst SD-WAN devices as a docker-type container application using the IOX Docker application-hosting capability.

Services in the Cisco Networking Cloud

From Cisco Catalyst SD-WAN Manager Release 20.14.1, you can navigate to Cisco services hosted in the Cisco Networking Cloud, such as Cisco ThousandEyes. Enable the cross platform navigator in **Administration** > **Settings** > **Cross Platform Navigator**.

For more information on Cisco ThousandEyes and on configuring tests and viewing results in the Cisco ThousandEyes portal, see the *Cisco ThousandEyes Getting Started* documentation.

Supported devices for running Cisco SD-WAN and Cisco ThousandEyes

The table provides Cisco IOS XE Catalyst SD-WAN devices that support deployment of the Cisco ThousandEyes Enterprise agent as a container application.

Platform	Device Model	Architecture	Release
Cisco Catalyst 8300 Series Edge Platforms	C8300-1N1S-6T	x86_64	Cisco vManage Release 20.6.1 Cisco IOS XE Catalyst SD-WAN Release 17.6.1a and later
	C8300-1N1S-4T2X		
	C8300-2N2S-6T		
	C8300-2N2S-4T2X		
Cisco Catalyst 8200 Series Edge Platforms	C8200-1N-4T	x86_64	
	C8200L-1N-4T		
Cisco 4000 Series Integrated Services Routers	ISR4461	x86_64	
	ISR4451		
	ISR4431		
	ISR4351		
	ISR4331		
	ISR4321		
	ISR4221X		

Platform	Device Model	Architecture	Release
Cisco 1000 Series Integrated Services Routers	ISR1100X-6G	x86_64	Cisco vManage Release 20.7.1 Cisco IOS XE Catalyst SD-WAN Release 17.7.1a and later
Cisco Catalyst 8500 Series Edge Platforms	C8500-12X	x86_64	Cisco vManage Release 20.8.1 Cisco IOS XE Catalyst SD-WAN Release 17.8.1a and later
	C8500-12X4QC		
	C8500L-8S4X		
Cisco ASR 1000 Series Aggregation Services Routers	ASR 1001-HX	x86_64	
	ASR 1001-X		
	ASR 1002-HX		
	ASR 1002-X		
	ASR 1006-X (RP3)		
Cisco 1000 Series Integrated Services Routers	C1111X-8P	aarch64	Cisco Catalyst SD-WAN Manager Release 20.16.1 Cisco IOS XE Catalyst SD-WAN Release 17.16.1a
	C1121X-8P		
	C1121X-8PLTEP		
	C1121X-8PLTEPW		
	C1126X-8PLTEP		
	C1127X-8PLTEP		
	C1131X-8PW		
	C1131X-8PLTEPW		
	C1161X-8P		
	C1161X-8PLTEP		
Cisco 8100 Series Secure Routers	C8151-G2 C8161-G2	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.1a
Cisco 8200 Series Secure Routers	C8235-E-G2, C8231-E-G2 C8235-G2 C8231-G2	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.1a

Platform	Device Model	Architecture	Release
Cisco 8300 Series Secure Routers	C8355-G2 C8375-E-G2	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.1a **Note** C8375-E-G2 is supported from Cisco IOS XE Catalyst SD-WAN 17.15.3
Cisco 8400 Series Secure Routers	C8400-G2	aarch64	Cisco IOS XE Catalyst SD-WAN 17.15.3
Cisco IR1800 Rugged Series Routers	IR1833 IR1835	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.2 Cisco Catalyst SD-WAN Manager Release 20.18.2
Cisco IR1101 Rugged Series Routers	IR1101	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.2 Cisco Catalyst SD-WAN Manager Release 20.18.2
Cisco IR8100 Heavy Duty Series Routers	IR8140H IR8140H-P	aarch64	Cisco IOS XE Catalyst SD-WAN Release 17.18.2 Cisco Catalyst SD-WAN Manager Release 20.18.2
Cisco IR8300 Rugged Series Routers	IR8340	x86_64	Cisco IOS XE Catalyst SD-WAN Release 17.18.2 Cisco Catalyst SD-WAN Manager Release 20.18.2

ThousandEyes Enterprise Agent supported versions and system requirements

We recommend you to update to the latest version of the ThousandEyes Enterprise agent. Download the latest version of the ThousandEyes Enterprise agent from the Cisco ThousandEyes Agent page.

Storage and DRAM Requirements

- External Storage: On devices that are equipped with external storage (SSD M.2 NVMe), the Cisco ThousandEyes Enterprise agent is installed in the external storage. The minimum external storage capacity that is required to install the Cisco ThousandEyes Enterprise agent is 8 GB. If the device does not have sufficient external storage capacity, upgrade the storage capacity to meet the minimum requirement.

  Although the minimum external storage capacity that is required is 8 GB, we recommend that you provision the device with an external storage capacity of 16 GB or more. With the minimum external

storage capacity, you may need to manually clean up files while upgrading the software image on the device.

- Bootflash: On devices that are not equipped with external storage, the Cisco ThousandEyes Enterprise agent is installed on the bootflash. The minimum bootflash capacity that is required to install the Cisco ThousandEyes Enterprise agent is 8 GB. If the device does not have sufficient bootflash capacity, upgrade the storage capacity to meet the minimum requirement.



Note On the ISR1100X-6G, the Cisco ThousandEyes Enterprise agent is installed on the bootflash. For this particular device model, the minimum bootflash capacity that is required to install the agent is 16 GB.

Although the minimum bootflash capacity that is required is 8 GB, we recommend that you provision the device with an bootflash capacity of 16 GB or more. With the minimum bootflash capacity, you may need to manually clean up files while upgrading the software image on the device.

- DRAM: The minimum DRAM capacity that is required to install the Cisco ThousandEyes Enterprise agent is 8 GB. If a device does not have the minimum DRAM capacity that is required to install the Cisco ThousandEyes Enterprise agent, upgrade the DRAM to meet the minimum requirement.
- Co-residency: Cisco ThousandEyes Enterprise agent can be deployed with other applications if the device has the resources (CPU, memory, and storage) to run the other applications. If the available resources are not sufficient to run the other applications, IOX generates an error message and does not run the other applications.
- To host the Cisco ThousandEyes Enterprise agent, a Cisco IOS XE Catalyst SD-WAN device must have a minimum of 8 GB DRAM. To host additional applications such as UTD and DRE on the same device, provision the device with at least a 16 GB DRAM.

Prerequisites for extending visibility with SD-WAN Manager and Cisco ThousandEyes

To extend network visibility using SD-WAN Manager and Cisco ThousandEyes, ensure you meet these prerequisites.

- Before deploying the Cisco ThousandEyes Enterprise agent, create an account on the Cisco ThousandEyes portal and obtain an account group token. The token authenticates the agent with Cisco ThousandEyes and associates it with the correct account.

  For information on obtaining the account group token, see *Where Can I Get the Account Group Token?* on Cisco ThousandEyes Documentation portal.
- The Cisco ThousandEyes Enterprise agent requires DNS name resolution and HTTP/HTTPS connectivity to discover and register with the Cisco ThousandEyes portal. Ensure that this connectivity exists before deploying the agent by configuring the appropriate firewall rules, NAT settings, upstream routing, and other related settings.

  For more information on the required firewall configuration, see *Firewall Configuration for Enterprise Agents* on Cisco ThousandEyes Documentation portal.

Restrictions for Extending Visibility with SD-WAN Manager and Cisco ThousandEyes

AppRoute data policies do not affect probes sourced from Virtual Port-Group interfaces

Cisco ThousandEyes Enterprise agent probes are sourced from Virtual Port-Group interfaces and are not affected by AppRoute data policies.

Browser-based application tests not supported

The Cisco ThousandEyes Enterprise agent, hosted natively as a container application on Cisco IOS XE Catalyst SD-WAN devices, does not support browser-based application tests, such as page load test and transaction test.

Limitations of ThousandEyes Instance Modification

For every configuration change to the ThousandEyes instance, you must uninstall or deactivate and then reinstall and reactivate it for the changes to take effect.

For Cisco IOS XE Catalyst SD-WAN devices prior to Cisco IOS XE Release 17.6.1, you can install the Docker Enterprise agent image either directly from ThousandEyes servers, or by uploading it using SCP, FTP, TFTP, or USB storage, depending on internet accessibility. It depends on whether the router has direct internet access or not.

For Cisco IOS XE Catalyst SD-WAN devices after Cisco IOS XE Release 17.6.1, you can install the Enterprise Agent using bootflash, in addition to the previous methods.

Configure a Cisco ThousandEyes Enterprise Agent using a Configuration Group

Configure Cisco ThousandEyes Enterprise Agent settings using the ThousandEyes feature in a configuration group.

Before you begin

On the **Configuration** > **Configuration Groups** page, choose **SD-WAN** as the solution type.

Procedure

Step 1 From the SD-WAN Manager menu, choose **Configuration** > **Configuration Groups**.

Step 2 Create and configure a ThousandEyes feature in Other profile.

a. Configure ThousandEyes parameters.

Table 2: Parameters

Parameter Scope	Scope Description
Device Specific (indicated by a host icon)	Use a device-specific value for the parameter. For device-specific parameters, you cannot enter a value in the feature template. You enter the value when you attach a Cisco Catalyst SD-WAN device to a device template. When you click Device Specific, the Enter Key box opens. This box displays a key, which is a unique string that identifies the parameter in a CSV file that you create. This file is an Excel spreadsheet that contains one column for each key. The header row contains the key names (one key per column), and each row after that corresponds to a device and defines the values of the keys for that device. You upload the CSV file when you attach a Cisco Catalyst SD-WAN device to a device template. To change the default key, type a new string and move the cursor out of the Enter Key box. Examples of device-specific parameters are system IP address, host name, GPS location, and site ID.
Global (indicated by a globe icon)	Enter a value for the parameter and apply that value to all devices. Examples of parameters that you might apply globally to a group of devices are DNS server, syslog server, and interface MTUs.

b. Configure the ThousandEyes settings.

Table 3: Settings

Field	Description
Type	Choose a feature from the drop-down list.
Feature Name	Enter a name for the feature.
Description	Enter a description of the feature. The description can contain any characters and spaces.
Account Group Token	Enter the Cisco ThousandEyes Account Group Token.
VPN	Service VPN. The **Global** or the **Device Specific** setting indicates service VPN. When you set the VPN configuration as a **Global** or a **Device Specific** setting, enter the ID of the service VPN in which you want to provision the Cisco ThousandEyes Enterprise agent.
Management IP	Enter an IP address for the Cisco ThousandEyes Enterprise agent. This field is available only when you specify the service VPN.
Management Subnet	Choose a subnet mask from the drop-down list for the Cisco ThousandEyes Enterprise agent. This field is available only when you specify the service VPN. **Note** This IP-prefix address (**Management IP** and **Management Subnet**) must be unique within the fabric and must not overlap with the IP addresses of other branch agents.

Field	Description
Agent Default Gateway	Enter a default gateway address. This IP address is assigned to the virtual port group of the router. This field is available only when you specify the service VPN.
Name Server IP	Enter the IP address of your preferred DNS server. This server can exist within or outside the Cisco Catalyst SD-WAN fabric but must be reachable from the service VPN.
Host Name	Enter the hostname that the agent must use when registering with the Cisco ThousandEyes portal. By default, the agent uses the hostname of the Cisco IOS XE Catalyst SD-WAN device.
Proxy Type	If the Cisco ThousandEyes Enterprise agent must use proxy server for external access, choose one of these as proxy type: • **static** • **pac** • **none** Static proxy settings: • **Proxy Host**: Set the configuration as a **Global** setting and enter the hostname of the proxy server. • **Proxy Port**: Set the configuration as a **Global** setting and enter the port number of the proxy server. PAC settings: • **PAC URL**: Set the configuration as a **Global** setting and enter the URL of the proxy auto-configuration (PAC) file.

What to do next

Also see Deploy a configuration group.

Upload the Cisco ThousandEyes Enterprise Agent software to SD-WAN Manager

Perform this task to make the Cisco ThousandEyes Enterprise Agent software available for installation through SD-WAN Manager.

Before you begin

Download the latest version of Cisco ThousandEyes Enterprise agent software from the Cisco ThousandEyes Agent Settings page.

Procedure

Step 1 From the SD-WAN Manager menu, choose **Maintenance** > **Software Repository**.

Step 2 Click **Virtual Images**.

Step 3 Click **Upload Virtual Image** > **Manager**.

Step 4 In the **Upload VNF's Package to Manager** dialog box, browse to select the downloaded Cisco ThousandEyes Enterprise Agent software file, or drag and drop the file into the dialog box.

Step 5 Enter a description for the file.

Step 6 (Optional) Add desired tags.

Step 7 Click **Upload**.

What to do next

Proceed to install the uploaded Cisco ThousandEyes Enterprise agent software on relevant devices as needed.

Provision Cisco ThousandEyes Enterprise Agent in a Service VPN or Transport VPN (VPN0)

You can provision the Cisco ThousandEyes Enterprise agent in a service VPN for more visibility into the performance of the Cisco Catalyst SD-WAN overlay and underlay networks.

When you host the ThousandEyes agent on a router, you can deploy it in either a Service VPN or the Transport VPN (VPN0), based on your functional requirements and network topology. Deploying the ThousandEyes agent in VPN0 offers a simple routing approach when you need to send probe traffic over a single available underlay WAN link. In environments with multiple WAN links, Cisco recommends deploying the ThousandEyes agent in a Service VPN. This deployment method gives you granular control and enables you to create policies that direct probe traffic over specific underlay WAN paths, effectively simulating real-world traffic flows. If you deploy the ThousandEyes agent in VPN0 in a multi-WAN environment, the router load-balances probe traffic across all available WAN links, which may result in non-actionable monitoring insights.

Before you begin

- Ensure that DNS and NAT are correctly configured so that the Cisco ThousandEyes Enterprise Agent can access and connect to the Cisco ThousandEyes application.
- Upload Cisco ThousandEyes Enterprise agent software to SD-WAN Manager software repository.

Note If multiple versions of the Cisco ThousandEyes Enterprise agent software are present in the SD-WAN Manager software repository, while provisioning the agent, SD-WAN Manager installs and activates the latest version of the agent software.

- For application monitoring use cases, deploy the ThousandEyes agent in the Service VPN and use an SD-WAN data policy to send ThousandEyes probes across transports

Procedure

Step 1 Create feature template for the Cisco ThousandEyes Enterprise agent:

a) From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates**.

b) Click **Feature Templates**, and click **Add Template** to select an appropriate device model.

Note
In Cisco vManage Release 20.7.x and earlier releases, **Feature Templates** is titled as **Feature**.

c) Choose the supported devices to which you want to apply this template.

d) In the **Other Templates** section, click **ThousandEyes Agent**.

e) **Template Name**: Enter a name for the template. Ensure that the template name is unique.

f) **Description**: Enter a description for the template.

g) In the **BASIC CONFIGURATION** section, configure these fields:

Account Group Token	Enter the Cisco ThousandEyes Account Group Token.
VPN	**1.** Set the VPN configuration as a **Global** or a **Device Specific** setting. **2.** Enter the ID of the service VPN in which you want to provision the Cisco ThousandEyes Enterprise agent.
Agent IP Address	Enter an IP address for the Cisco ThousandEyes Enterprise agent. This IP Address should be unique within the fabric and should not overlap with the IP addresses of other branch agents.
Agent Default Gateway	Enter a default gateway address. This IP address is assigned to the virtual port group of the router.

Note
You can create and allocate a service subnet for the agent network. Two usable IP addresses are required to provision the Cisco ThousandEyes Enterprise agent on each Cisco IOS XE Catalyst SD-WAN device. One of the IP addresses must be assigned to the agent and second IP address to the router virtual port group.

h) In the **ADVANCED** section, configure these fields:

Name Server	(Optional parameter from Cisco vManage Release 20.7.1 and Cisco IOS XE Release 17.7.1a) Enter the IP address of your preferred DNS server. This server can exist within or outside the Cisco Catalyst SD-WAN fabric but must be reachable from the service VPN.
Hostname	(Optional) Enter the hostname that the agent must use when registering with the Cisco ThousandEyes portal. By default, the agent uses the Cisco IOS XE Catalyst SD-WAN device's hostname.
Web Proxy Type	(Optional) If the Cisco ThousandEyes Enterprise agent must use proxy server for external access, choose one of the following as proxy type: • **Static** • **PAC** Static proxy settings: • **Proxy Host**: Set the configuration as a **Global** setting and enter the hostname of the proxy server. • **Proxy Port**: Set the configuration as a **Global** setting and enter the port number of the proxy server. PAC settings: • **PAC URL**: Set the configuration as a **Global** setting and enter the URL of the proxy auto-configuration (PAC) file.

i) Click **Save**.

Step 2 Attach the ThousandEyes Agent feature template to device template:

a) From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates**.
b) Click **Device Templates**.

Note
In Cisco vManage Release 20.7.x and earlier releases, **Device Templates** is titled as **Device**

c) Find the device template for the target device.
d) For this template, click **…**, and click **Edit**.
e) Click **Additional Templates**.
f) Click **Update**.
g) Update necessary variables, if any, and click **Next**.
h) Review the configuration and click **Configure Devices**.

Step 3 Repeat Step 2 for each device on which you want to deploy the Cisco ThousandEyes Enterprise agent.

The Cisco ThousandEyes Enterprise agent is deployed on the chosen devices. The agent registers with and establishes secure communication with the cloud-based Cisco ThousandEyes application to receive necessary updates and configuration.

What to do next

You can configure various tests and see resultant network and application telemetry data on the Cisco ThousandEyes portal.

Provision a Cisco ThousandEyes Enterprise Agent in a Service VPN Using CLI

This section also provides example CLI configurations to provision the Cisco ThousandEyes Enterprise agent in a service VPN.

Use the example command sequences described in this section to provision the Cisco ThousandEyes Enterprise agent on Cisco IOS XE Catalyst SD-WAN devices through a device CLI template or an add-on CLI template.

Before you begin

- Ensure that the appropriate DNS and NAT configuration exists to enable the Cisco ThousandEyes Enterprise agent to discover and connect to the Cisco ThousandEyes application.
- Upload Cisco ThousandEyes Enterprise agent software to SD-WAN Manager.

Note If you have uploaded more than one version of the Cisco ThousandEyes Enterprise agent software to the SD-WAN Manager software repository, while provisioning the agent, SD-WAN Manager installs and activates the latest version of the agent software.

Procedure

Step 1 Enable IOX on the device.

```
iox
```

Step 2 Configure virtual port group. The virtual port group acts as the gateway for the Cisco ThousandEyes Enterprise agent.

```
interface VirtualPortGroup4
 vrf forwarding 100
  ip address 192.168.61.1 255.255.255.252
```

Step 3 Configure app-hosting paramters for the Cisco ThousandEyes Enterprise agent.

```
app-hosting appid te
app-vnic gateway0 virtualportgroup 4 guest-interface 0
 guest-ipaddress 192.168.61.2 netmask 255.255.255.252
app-default-gateway 192.168.61.1 guest-interface 0
app-resource docker
 prepend-pkg-opts
 run-opts 1 "-e TEAGENT_ACCOUNT_TOKEN=z0kemf"
 run-opts 2 "--hostname ISR4461TE"
 run-opts 3 "-e TEAGENT_PROXY_TYPE=STATIC -e TEAGENT_PROXY_LOCATION=proxy-exmaple.com:80"
```

```
name-server0  192.168.168.183
start
```

Note

- Use the proxy configuration only if the Cisco ThousandEyes agent does not have an Internet access without a proxy. The hostname is optional. If you do not provide the hostname during the installation, the device hostname is used as the Cisco ThousandEyes agent hostname, which appears on the Cisco ThousandEyes portal. From Cisco IOS XE Release 17.7.1a, the DNS name server information is optional.
- If the Cisco ThousandEyes agent uses a private IP address, establish a connection to the device through NAT.

Uninstall the Cisco ThousandEyes Enterprise Agent software

Remove the Cisco ThousandEyes Enterprise Agent software from a device by updating its configuration template so the software is no longer provisioned or managed through SD-WAN Manager.

Procedure

Step 1 From the Cisco SD-WAN Manager menu, choose **Configuration** > **Templates**.

Step 2 Click **Device Templates**.

Note
In Cisco vManage Release 20.7.x and earlier releases, **Device Templates** is titled as **Device**

Step 3 Find the device template for the device from which the Cisco ThousandEyes agent software must be removed.

Step 4 For this template, click **…** and then click **Edit**.

Step 5 Click **Additional Templates**.

Step 6 In the **Additional Templates** section, for **ThousandEyes Agent** choose **None** from the drop-down list.

Step 7 Click **Update**.

Step 8 Update necessary variables, if any, and click **Next**.

Step 9 Review the configuration and click **Configure Devices**.

What to do next

Verify that the agent software has been removed from the affected device(s) by checking device status and software inventory.

Upgrade the Cisco ThousandEyes Enterprise Agent software

Upgrade Cisco ThousandEyes Enterprise Agent software on edge routers through SD-WAN Manager.

This section provides procedure to upgrade the Cisco ThousandEyes Enterprise Agents have the latest enhancements and security updates.

Before you begin

Download a new version of Cisco ThousandEyes Enterprise agent software and upload the software to SD-WAN Manager. See *Upload Cisco ThousandEyes Enterprise Agent Software to Cisco SD-WAN Manager*.

Procedure

Step 1 From the SD-WAN Manager menu, choose **Maintenance** > **Software Upgrade**.

Step 2 Select the Cisco IOS XE Catalyst SD-WAN devices on which you want to upgrade the Cisco ThousandEyes Enterprise agent software.

Step 3 Click **Upgrade Virtual Image**.

Step 4 In the **Virtual Image Upgrade** dialog box, choose the new version of the Cisco ThousandEyes Enterprise agent software from the drop-down list.

Step 5 Click **Upgrade**.

Step 6 On the **Maintenance** > **Software Upgrade** page, select the Cisco IOS XE Catalyst SD-WAN devices on which you upgraded the Cisco ThousandEyes Enterprise agent software.

Step 7 Click **Activate Virtual Image**.

What to do next

Verify agent status and functionality on each router.

Troubleshoot the Cisco ThousandEyes Enterprise Agent on Cisco IOS XE Catalyst SD-WAN devices

Identify and resolve issues with the Cisco ThousandEyes Enterprise Agent running on supported Cisco IOS XE Catalyst SD-WAN devices.

Before you begin

Procedure

Step 1 Connect to Cisco ThousandEyes Enterprise agent.

```
Device#app-hosting connect appid Appid session /bin/bash
```

Step 2 To verify the agent configuration, check the following CFG file: `/etc/te-agent.cfg`.

Step 3 To view the agent logs, check the following file: `/var/log/agent/te-agent.log`.