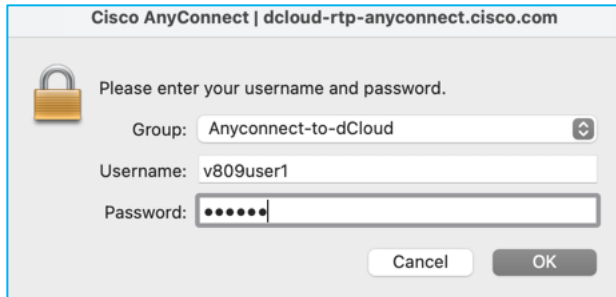


Integration with Cisco DNA Center

Use Cisco AnyConnect to access the lab.



The image shows a Cisco AnyConnect login window titled "Cisco AnyConnect | dcloud-rtp-anyconnect.cisco.com". It contains a padlock icon and the text "Please enter your username and password." Below this, there is a "Group:" dropdown menu with "Anyconnect-to-dCloud" selected. The "Username:" field contains "v809user1". The "Password:" field is masked with dots. At the bottom right, there are "Cancel" and "OK" buttons.

Once connected, use remote desktop to access the JumpHost:

Remote Desktop to Jump Host Credentials:

198.18.133.36

Username: admin

Password: C1sco12345

AnyConnect credentials:

Seat#	Username	Password	URL
1	v293user1	db0475	dcloud-rtp-anyconnect.cisco.com
2	v2426user1	bfd279	dcloud-rtp-anyconnect.cisco.com
3	v2423user1	ed5ded	dcloud-rtp-anyconnect.cisco.com
4	v2541user1	f89180	dcloud-rtp-anyconnect.cisco.com
5	v2057user1	c63afe	dcloud-rtp-anyconnect.cisco.com
6	v809user1	07cda6	dcloud-rtp-anyconnect.cisco.com

7	v1725user1	725cf0	dcloud-rtp-anyconnect.cisco.com
8	v1214user1	4157a1	dcloud-rtp-anyconnect.cisco.com
9	v554user1	970428	dcloud-rtp-anyconnect.cisco.com
10	v1546user1	ddfb7d	dcloud-lon-anyconnect.cisco.com
11	v907user1	94af40	dcloud-lon-anyconnect.cisco.com
12	v462user1	2f1520	dcloud-lon-anyconnect.cisco.com
13	v996user1	d00d06	dcloud-lon-anyconnect.cisco.com
14	v1793user1	78c4de	dcloud-lon-anyconnect.cisco.com
15	v900user1	f15c3d	dcloud-lon-anyconnect.cisco.com
16	v1602user1	9f85f0	dcloud-lon-anyconnect.cisco.com

Task 1: Add ThousandEyes App to Cisco DNA Center

Step1. Login to Jump Host:

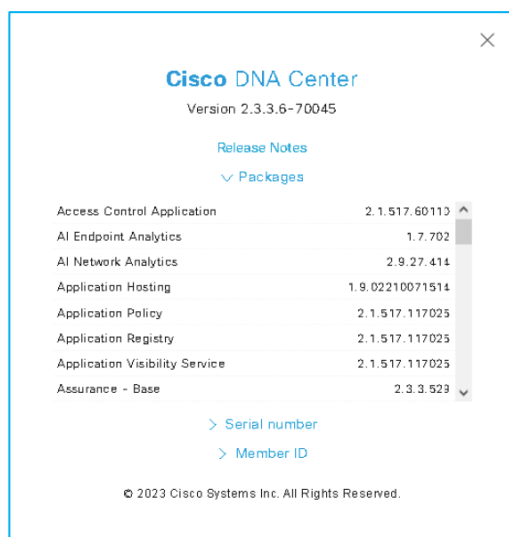
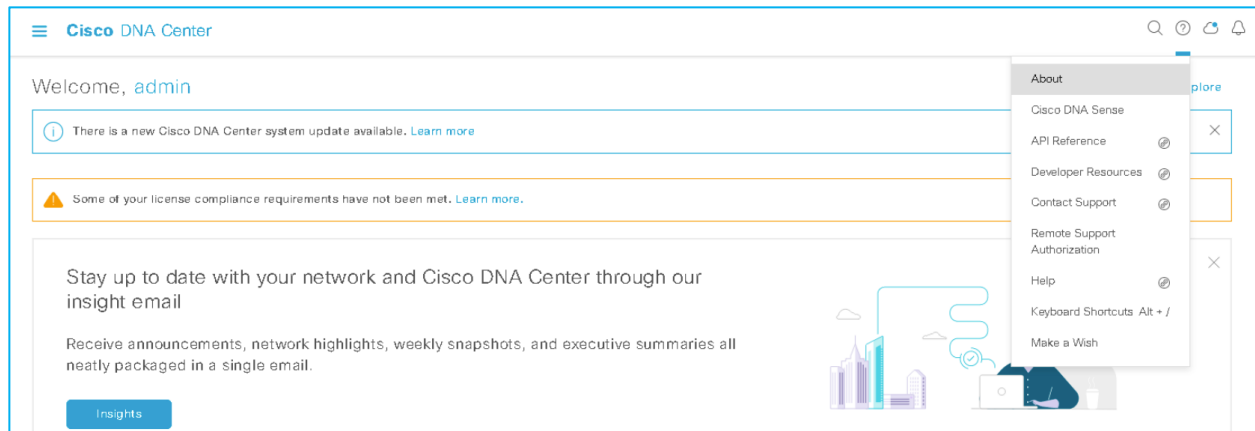
Step2. Login to Cisco DNA Center using Google Chrome browser:

Cisco DNA Center Credentials:

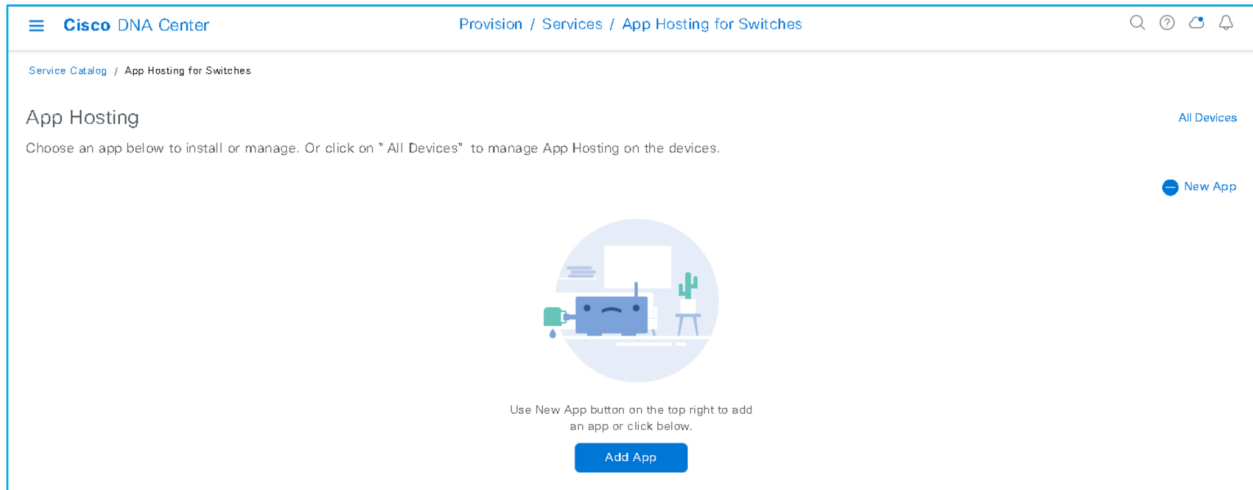
Username: admin

Password: C1sco12345

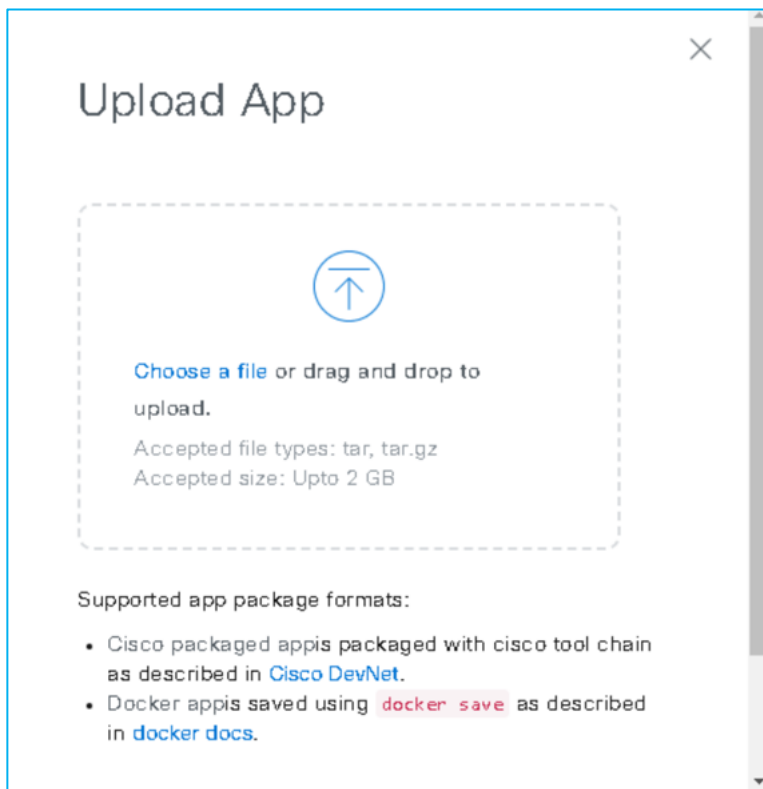
Step3. Verify **Application Hosting** Package is installed by Clicking on **About > Packages**.



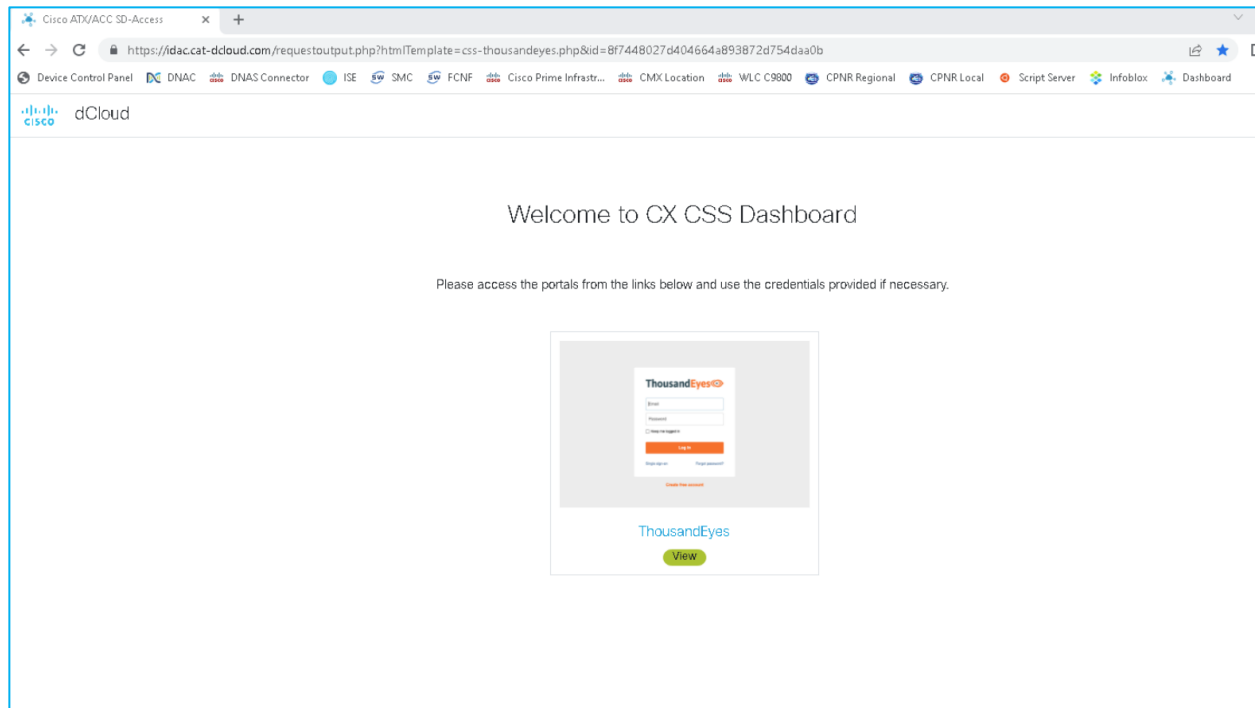
Step4. Click on **Menu > Provision > App Hosting for Switches** and click on **Add App**



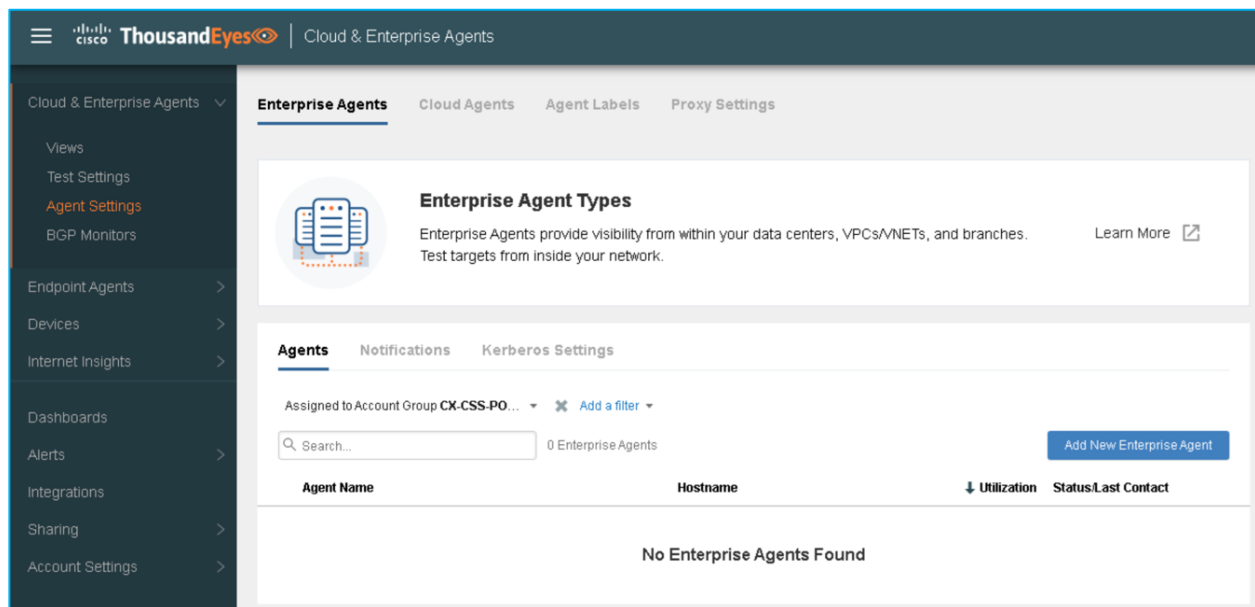
Step5. To upload the App, you need to download and obtain the file from ThousandEyes portal.



Step5.1. Login to ThousandEyes portal by clicking on **Dashboard** bookmark shortcut on Google Chrome browser and click on **View**.



Step5.2. Go to Cloud & Enterprise Agents > Agent Settings > Enterprise Agents tab > Add New Enterprise Agent



Step5.3. Go to Cisco Application Hosting tab > Download-TAR file for Catalyst 9000 Series Switches.

Add New Enterprise Agent

Appliance
Custom Appliance
Cisco Application Hosting
Linux Package
Docker
Cloud Templates

Account Group Token
Copy

Catalyst Switches
Nexus Switches
Routers

Cisco IOS XE Docker Appliance
Catalyst 9000 Series Switches
Download - TAR
Installation Guide

App ID
Agent Hostname (Optional)

Enter application name
Enter name

Network Configuration
Static
DHCP

VLAN ID
Name Server IP

Number between 0 - 4095
e.g. 192.168.55.161

IP Address
e.g. 192.168.55.161 (Optional)

e.g. 192.168.55.161

Netmask
Gateway IP

Enter Netmask number
e.g. 192.168.4.1

Copy, adapt, and run the following commands:

Step6. Select the TAR file and click on **Upload**.

Choose a file or drag and drop to upload.
Accepted file types: tar, tar.gz
Accepted size: Upto 2 GB

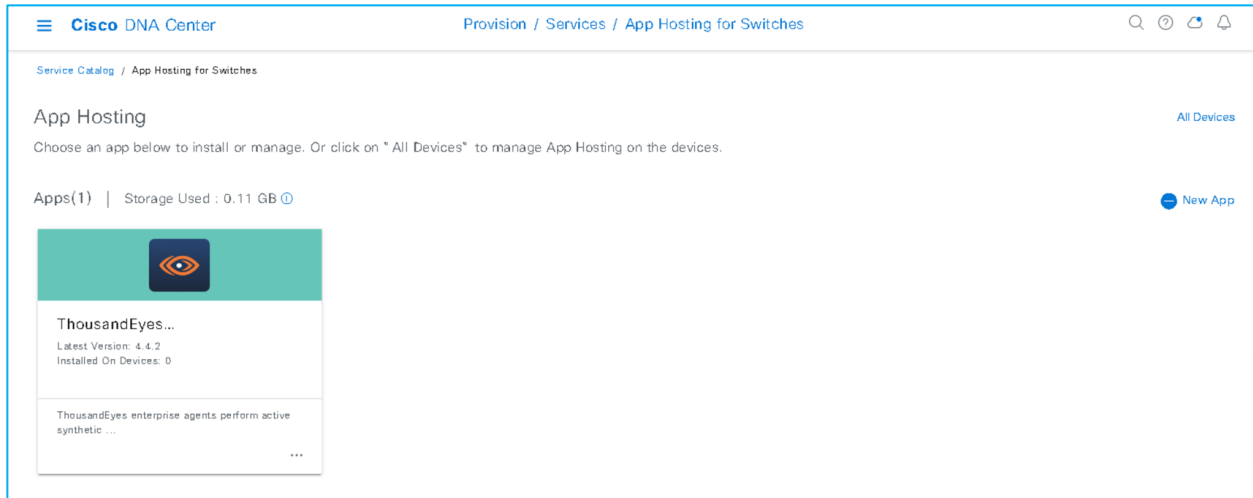
thousandeyes-enterprise-ag... .tar

Supported app package formats:

- Cisco packaged appis packaged with cisco tool chain as described in Cisco DevNet.
- Docker appis saved using docker save as described in docker docs.

Cancel
Upload

Result: You have successfully installed ThousandEyes App on your Cisco DNA Center.

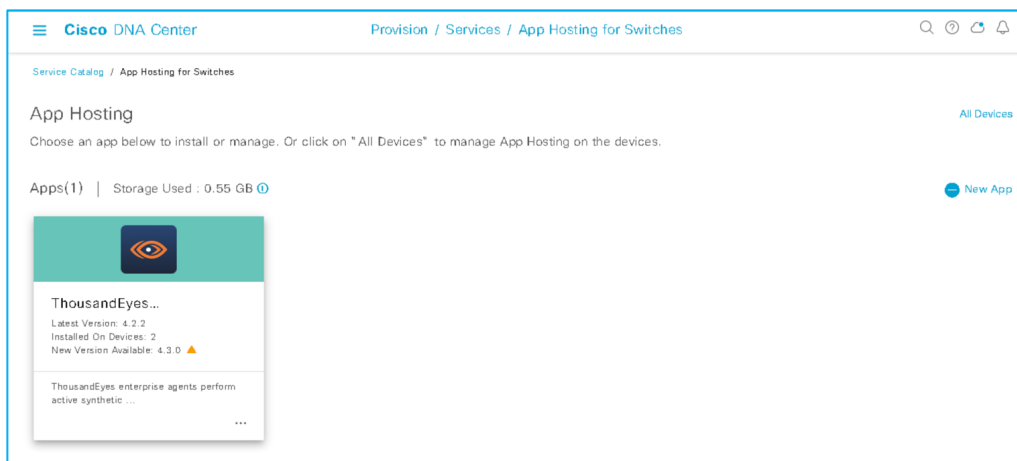


Task 2: Deploy Enterprise Agent via Cisco DNA Center

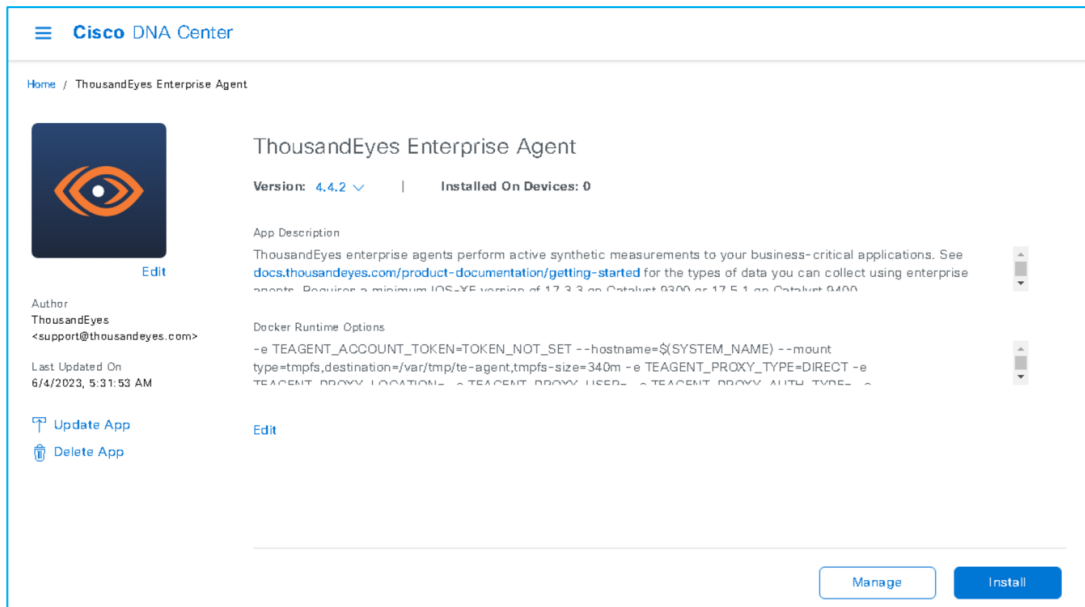
Prerequisites:

- Login credentials to Cisco DNA Center with either Network Admin or Super Admin permissions.
- A VLAN for the Enterprise Agent to use.
- An IP address with a routable subnet with permission to connect to the ThousandEyes cloud, allowing outgoing HTTPS connections directly or through a proxy server.
- Ensure the target devices are reachable and managed by Cisco DNA Center in Inventory.

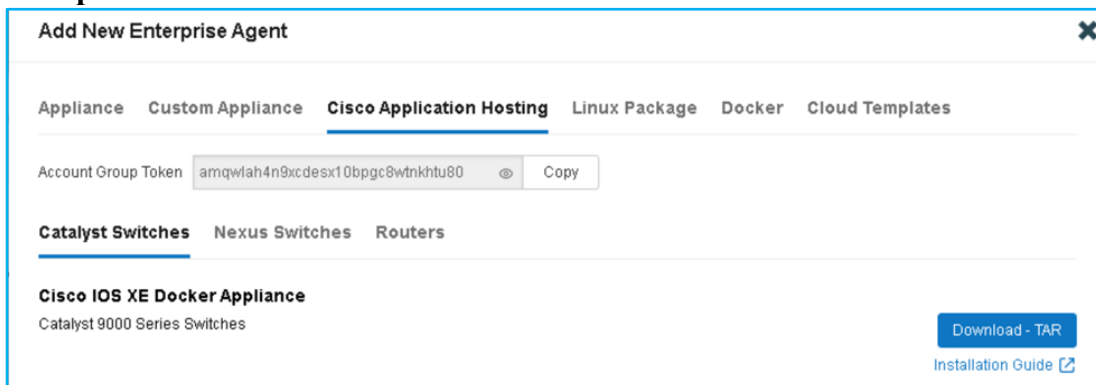
Step1. From Cisco DNA Center go to **Menu > App Hosting for Switches** and click on the ThousandEyes App



Step2. Add the **Account token** under **Docker Runtime Options**.



Step2.1. To obtain the **Account token**, go back to ThousandEyes Portal and copy the **Account Group Token**.



Step2.2. Back on Cisco DNA Center ThousandEyes App, click **edit** to add the **Account token** under **Docker Runtime Options**

Cisco DNA Center

Home / ThousandEyes Enterprise Agent

ThousandEyes Enterprise Agent

Version: 4.4.2
Installed On Devices: 0

App Description

ThousandEyes enterprise agents perform active synthetic measurements to your business-critical applications. See docs.thousandeyes.com/product-documentation/getting-started for the types of data you can collect using enterprise agents. Requires a minimum IOS-XE version of 17.3.3 on Catalyst 9300 or 17.5.1 on Catalyst 9400.

Docker Runtime Options

-e TEAGENT_ACCOUNT_TOKEN=NOT_SET --hostname=\$(SYSTEM_NAME) --mount type=tmpfs,destination=/var/tmp/te-agent,tmpfs-size=340m -e TEAGENT_PROXY_TYPE=DIRECT -e TEAGENT_PROXY_LOCATION= -e TEAGENT_PROXY_USER= -e TEAGENT_PROXY_AUTH_TYPE=

Update App

Delete App

Edit

Manage

Install

Step2.3. Paste the **Account Token** you copied from ThousandEyes portal.

Cisco DNA Center

Home / ThousandEyes Enterprise Agent

ThousandEyes Enterprise Agent

Version: 4.4.2
Installed On Devices: 0

App Description

ThousandEyes enterprise agents perform active synthetic measurements to your business-critical applications. See <https://docs.thousandeyes.com/product-documentation/getting-started> for the types of

Docker Runtime Options

-e TEAGENT_ACCOUNT_TOKEN=amqwiah4n9xcdesx10bpgc8wtmkhtu50 --hostname=\$(SYSTEM_NAME) --mount type=tmpfs,destination=/var/tmp/te-agent,tmpfs-size=340m -e TEAGENT_PROXY_TYPE=DIRECT -e

Update App

Delete App

Cancel

Save

Manage

Install

Step2.4. Click **Install**

Step3. Give the workflow a name: for example, **Edge-agents** and click **Next**.

Get Started

Assign a unique name for your workflow for identification. You can exit the workflow at any stage and resume later.

1 Ensure all prerequisites are fulfilled on the devices before proceeding with enabling app-hosting. [Click here to know more.](#)

Task Name*

Edge-agents

Exit Next

Step4. **Select Site** to select the hierarchy location of the Cat9ks where you want to deploy enterprise agent on and click **Next**.

Select Site

Select the site where you want to enable the app

Search Hierarchy

- Canada
- System Campus
- United_Kingdom
 - London
 - Site1
 - Site2
 - United_States
 - North_Carolina

Review Back Next

Step5. Select Edge1 and Edge2 Switches and click **Next**. Ensure to click **See Details** under Readiness column to see what parameters are checked.

Select Switches

Select switches where you want to enable ThousandEyes Enterprise Agent.

Switches (5)

Filter 1 Selected As of: May 24, 2023 3:07 PM

Device Name	Site	IP Address	Serial Number	Image Version	Device Series	Readiness
<input type="checkbox"/> Border1.dcloud.cisco.com	.../London/Site1	172.16.10.104	FJ82328B0DQ	17.6.1	Cisco Catalyst 9300 Series Switches	Partially Ready See Details
<input checked="" type="checkbox"/> Edge1.dcloud.cisco.com	.../London/Site1	172.16.20.2	FJC2327EDAS	17.6.1	Cisco Catalyst 9300 Series Switches	Ready See Details
<input type="checkbox"/> Edge2.dcloud.cisco.com	.../London/Site1	172.16.20.3	FJC2327U029	17.6.1	Cisco Catalyst 9300 Series Switches	Ready See Details

5 Records Show Records: 25 1 - 5

Exit All changes saved Review Back Next

Step6. Configure App and click **Next**.

Configure App

Configure app specific settings to bootstrap **ThousandEyes Enterprise Agent**.

Network Settings

Interface Name: eth0, VLAN: ThousandEyes, Address Type: Static

Device Name	Device IP	Interface IP	Gateway IP	Prefix	DNS IP
Edge1.dcloud.cisco.com	172.16.20.2	10.100.21.2	10.100.21.1	24	198.18.133.1

Buttons: Review, Back, Next

Static Network Settings

Choose a file or drag and drop to upload.

Accepted files: .csv

ThousandEyesEdge1CSV.csv

Download a CSV template to see an example of the required format and don't change the headers.

Buttons: Cancel, Import

To configure the App use the following settings:

Network Settings:

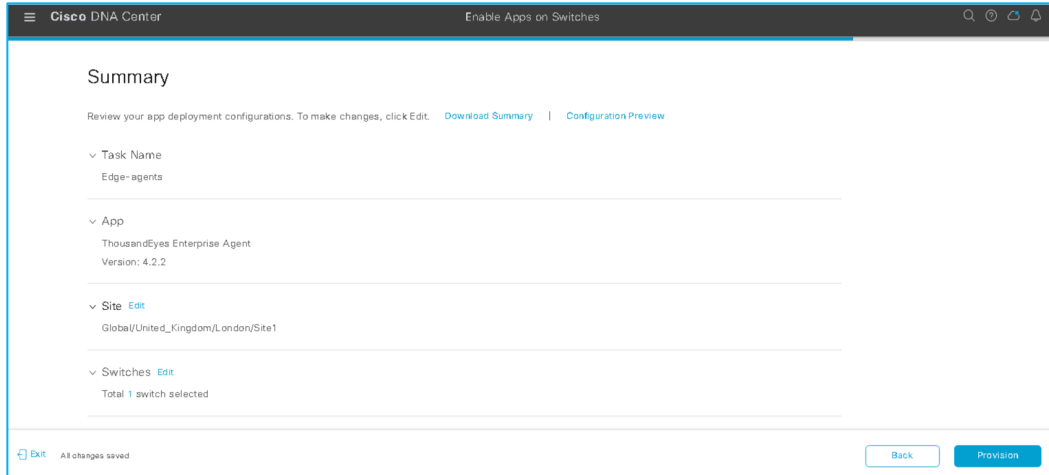
Vlan: ThousandEyes

Address Type: Static

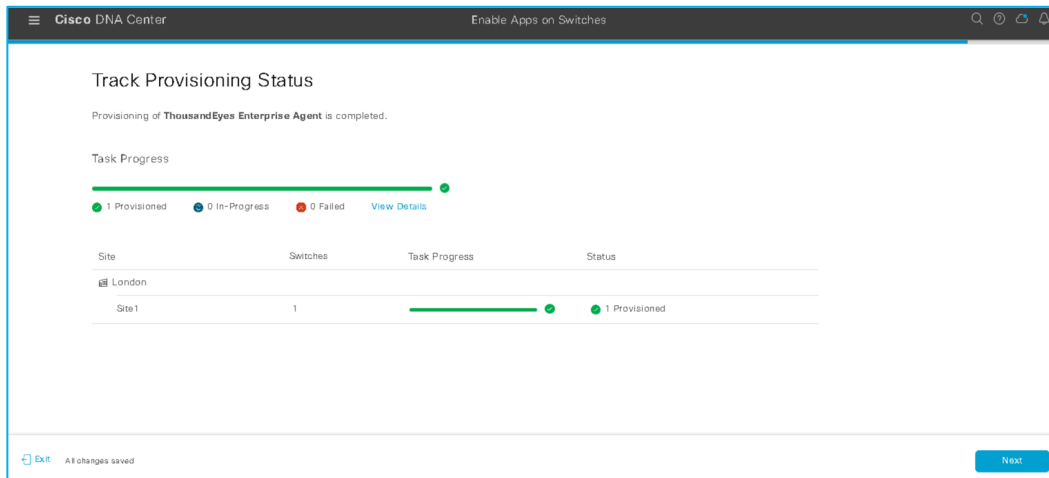
Import: ThousandEyes CSV template from **Desktop > 2.3.5 Automation and Assurance** folder.

Depending on which Edge device(s) you are using to install the app, choose the CSV template.

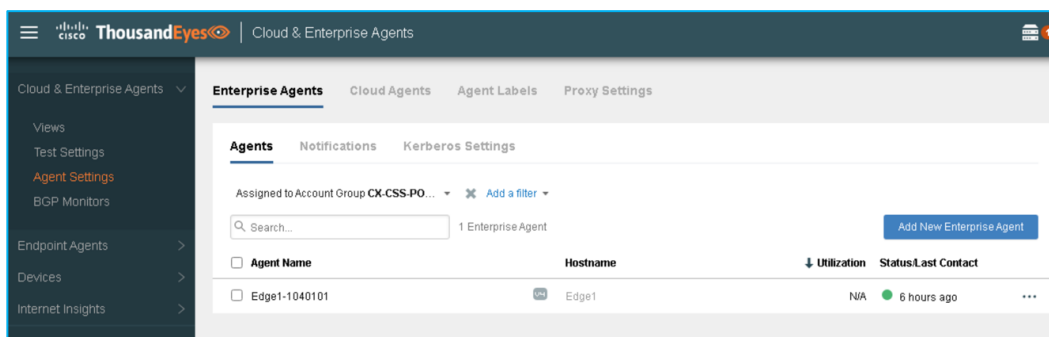
Step6. On the **Summary** page, verify the configuration is correct and click **Provision**.



Step7. Track Provisioning Status to check the progress of provisioning.



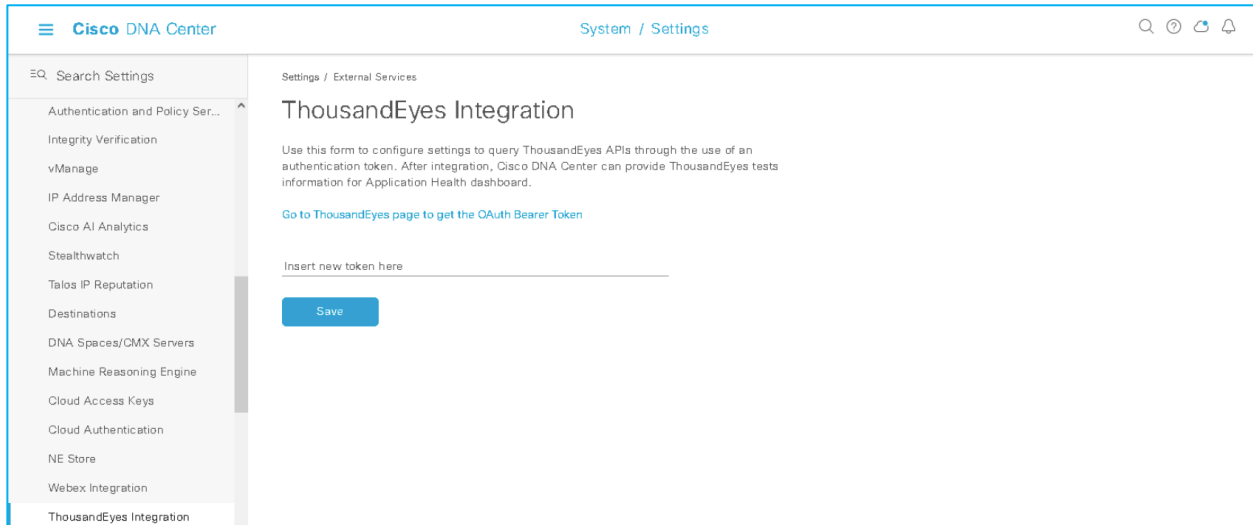
Step8. The Deployed Enterprise Agent will be added to ThousandEyes portal.



Result: You have successfully installed ThousandEyes Agent(s) on Cat9K using Cisco DNA Center Workflow.

Task 3: Configure ThousandEyes Integration

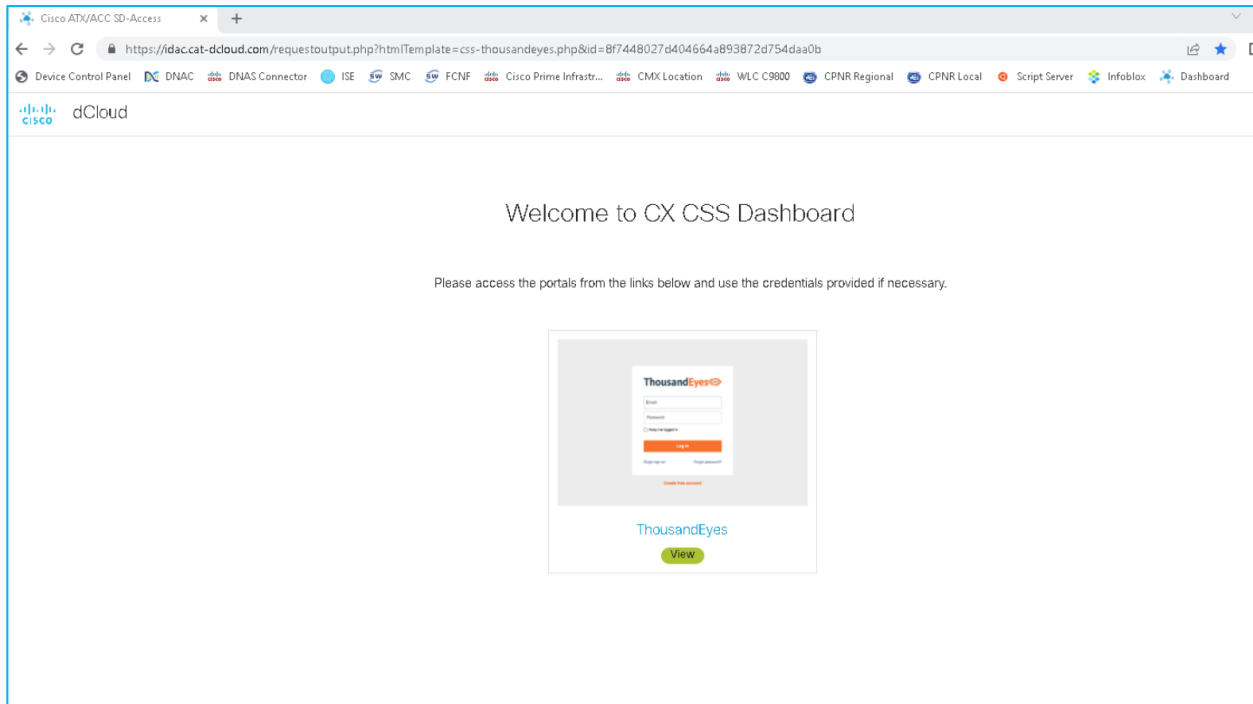
Step1. Cisco DNA Center **Menu > System > Settings > External Services > ThousandEyes Integration**



The screenshot shows the Cisco DNA Center interface. The top navigation bar includes the Cisco DNA Center logo and the path "System / Settings". The left sidebar contains a "Search Settings" field and a list of settings categories, with "ThousandEyes Integration" selected. The main content area is titled "ThousandEyes Integration" and includes instructions: "Use this form to configure settings to query ThousandEyes APIs through the use of an authentication token. After integration, Cisco DNA Center can provide ThousandEyes tests information for Application Health dashboard." Below this, there is a link "Go to ThousandEyes page to get the OAuth Bearer Token" and a text input field labeled "Insert new token here" with a "Save" button.

Step2. In the **Insert new token here** field, enter the authentication token and click **Save**.

Tip: To receive the OAuth Bearer Token, go to ThousandEyes portal by clicking on **Dashboard** bookmark shortcut on Google Chrome browser and click **View**.



The screenshot shows a web browser window displaying the ThousandEyes Dashboard. The address bar shows the URL "https://idaccat-dcloud.com/requestoutput.php?htmlTemplate=css-thousandeyes.php&id=8f7448027d404664a893872d754daa0b". The page header includes the Cisco logo and "dCloud". The main content area says "Welcome to CX CSS Dashboard" and "Please access the portals from the links below and use the credentials provided if necessary." Below this, there is a thumbnail image of the ThousandEyes login page with a "View" button.

Step2.1. On the ThousandEyes portal go to **Account Settings > Users and Roles > User API Tokens**

The screenshot shows the ThousandEyes Account Settings page. The left sidebar contains navigation links: Cloud & Enterprise Agents, Endpoint Agents, Devices, Internet Insights, Dashboards, Alerts, Integrations, Sharing, Account Settings (expanded), Users and Roles, Usage and Billing, Activity Log, and Organization Settings. The main content area is titled 'Account Settings' and shows user information for 'cx-css-615@dccloud.cisco.com'. Below this, there's a 'YOUR ACCESS' section with 'Account Group' (CX-CSS-POD-615) and 'Roles' (CX CSS EN). The 'Login Account Group' is 'CX-CSS-POD-615' and the 'Web Interface' is set to 'Default (System time)'. At the bottom, the 'User API Tokens' section shows a 'Basic Authentication Token' (obfuscated) with a 'Regenerate' button. Below that, the 'OAuth Bearer Token' section has a 'Create' button.

Step2.2. For OAuth Bearer Token, click **Create** and **Copy** the generated token.

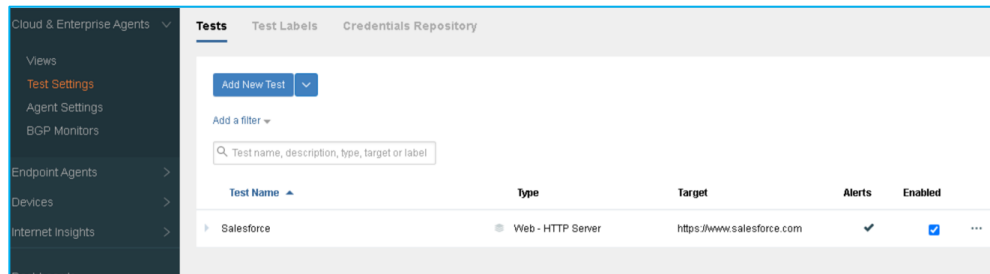
The screenshot shows a modal dialog titled 'OAuth Bearer Token'. It contains the text: 'The newly generated token will be obfuscated after closing this page. Please note it down and store it in a safe place.' Below this, a text box displays the token '39ea0d8b-50e3-4b82-aa2a-0d20d0057c0a' with a 'Copy' button to its right. At the bottom right, there is a 'Got It' button.

Step3. Verify the Integration is successful.

The screenshot shows the Cisco DNA Center 'System / Settings' page. The left sidebar lists various settings categories, with 'ThousandEyes Integration' selected. The main content area is titled 'ThousandEyes Integration' and contains the text: 'Use this form to configure settings to query ThousandEyes APIs through the use of an authentication token. After integration, Cisco DNA Center can provide ThousandEyes tests information for Application Health dashboard.' Below this, it states 'ThousandEyes is enabled. Press Delete to remove the token.' and includes a 'Delete' button.

Task 4: Configure a Network or Web Test and see the test data on Cisco DNA Center Assurance

Step1. From ThousandEyes portal go to **Cloud & Enterprise Agents > Test Settings > Add New Test**



Step2. Create HTTP Server test or a network layer test and select the Edge1 enterprise agent you deployed earlier on the **Agents** drop down menu.

The screenshot shows the 'Basic Configuration' tab for the 'Salesforce' test. The configuration fields are as follows:

- Test Name:** Salesforce
- Test Description:** Optional
- URL:** https://www.salesforce.com (Note: Editing this field will require test credentials to be reentered)
- Interval:** 2 minutes
- Agents:** 1 of 799 selected
- Alerts:** ☒ Enable, 3 of 3 alert rules selected (with a link to 'Edit Alert Rules')

At the bottom are buttons for 'Cancel', 'Run Once', and 'Save Changes'.

Step3. On Cisco DNA Center **Menu > Provision > Inventory** > select the Edge1 switch > **Telemetry > Enable Application Telemetry**

Global Provision / Inventory

☒ All
 ☐ Routers
 ☐ Switches
 ☐ Wireless Controllers
 ☐ Access Points
 ☐ Sensors

Devices (4) Focus: Inventory

Filter devices

1 Selected [Add Device](#) Tag Actions

Device Name	Device Family	Reachability
C9600-WLC	Wireless Controller	Reachable
Edge1.dcloud.cisco.com	Switches and Hubs (WLC Capable)	Reachable
Edge2.dcloud.cisco.com	Switches and Hubs (WLC Capable)	Reachable
SharedServices.dcloud.c	Switches and Hubs (WLC Capable)	Reachable

Actions menu:

- Inventory
- Software Image
- Provision
- Telemetry
 - Enable Application Telemetry
 - Disable Application Telemetry
 - Update Telemetry Settings
- Device Replacement
- Compliance
- More

Step4. Go to **Assurance > Health > Application** dashboard to view the data.

Cisco DNA Center Assurance / Dashboards / Health

Overall Network Client **Applications** Network Services SD-Access

All Buildings Filter (0) 24 Hours

Mar 27, 2022 3:00 AM - Jun 10, 2022 10:02 AM

By default, hourly data is shown up to the last hour. To see the most recent data, please select the 3 Hours view.

Summary:

Category	Value
Business Relevant Applications	8
Data Usage	24.8 MB
Avg Throughput	2.4 Kbps

NETFLOW:

Category	Value
Exporters	1

AGENT TESTS:

Category	Value
Agents	1
Tests	4
Alerts	3
Tests Status	56% Passed
Alerts Status	2 Active