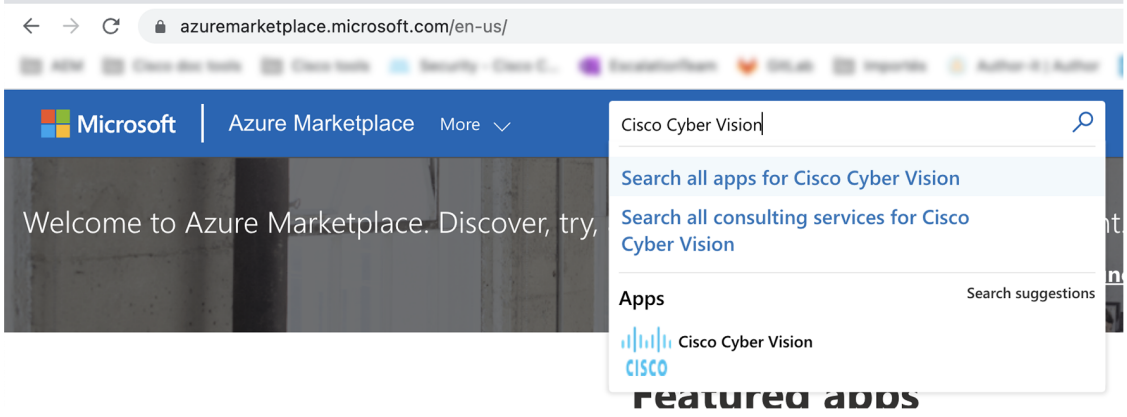
Deploy the Cisco Cyber Vision Center

Access Azure portal

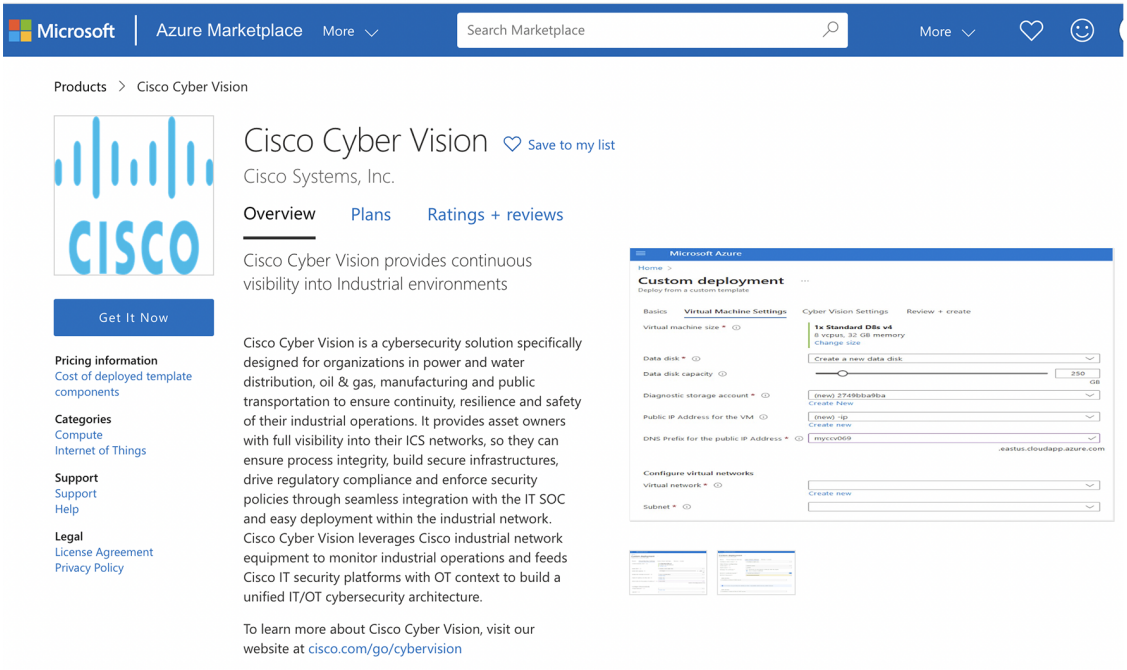
Procedure

Step 1 Access Azure Marketplace at https://azuremarketplace.microsoft.com/.

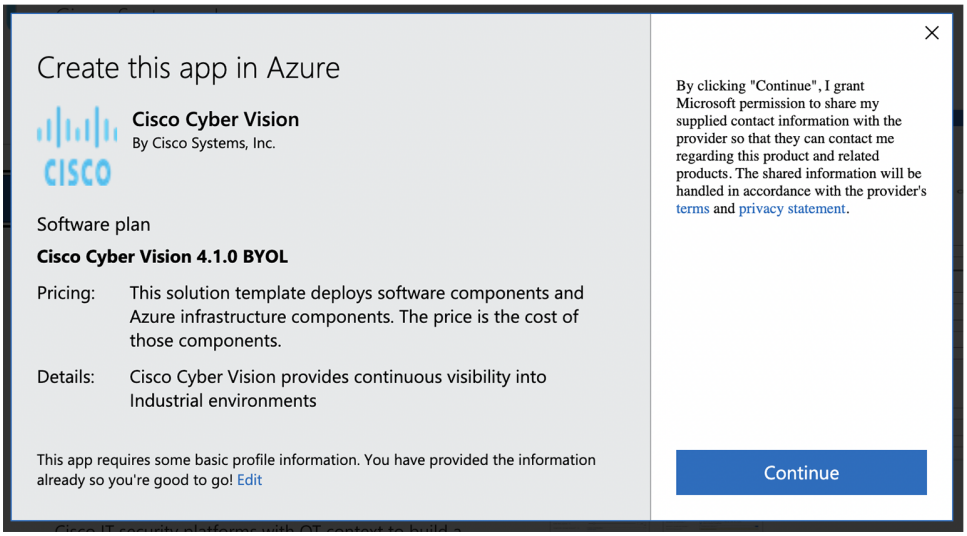
Step 2 Search for Cisco Cyber Vision.



Step 3 Click **Get it now**.



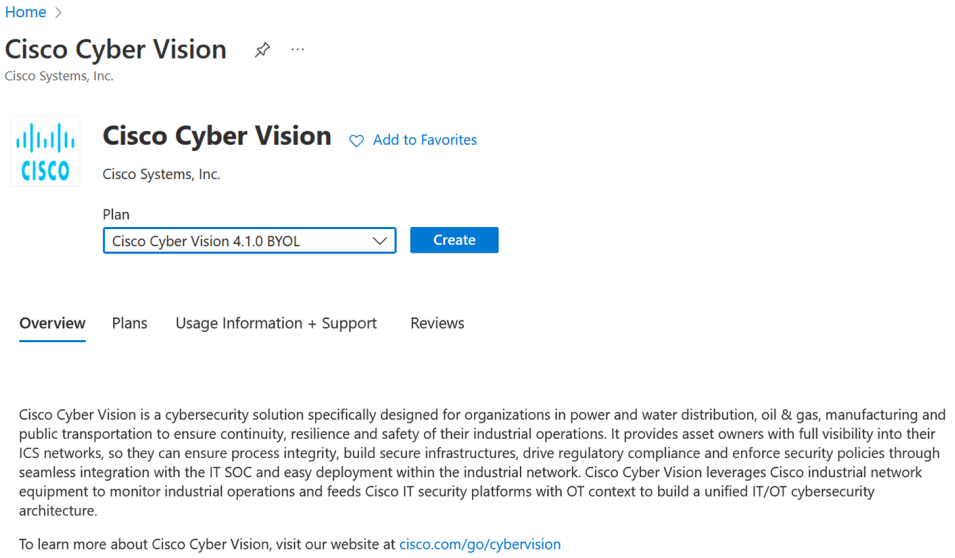
The popup Create this app in Azure appears.



Step 4 Click **Continue**.

The Azure portal to create a Cisco Cyber Vision machine opens.

Step 5 Click **Create**.



Basics

Procedure

Step 1 Create or select an existing resource group.

Step 2 Select a region.

Step 3 Type a virtual machine name.

Note Passwords must not include reserved words or unsupported characters.

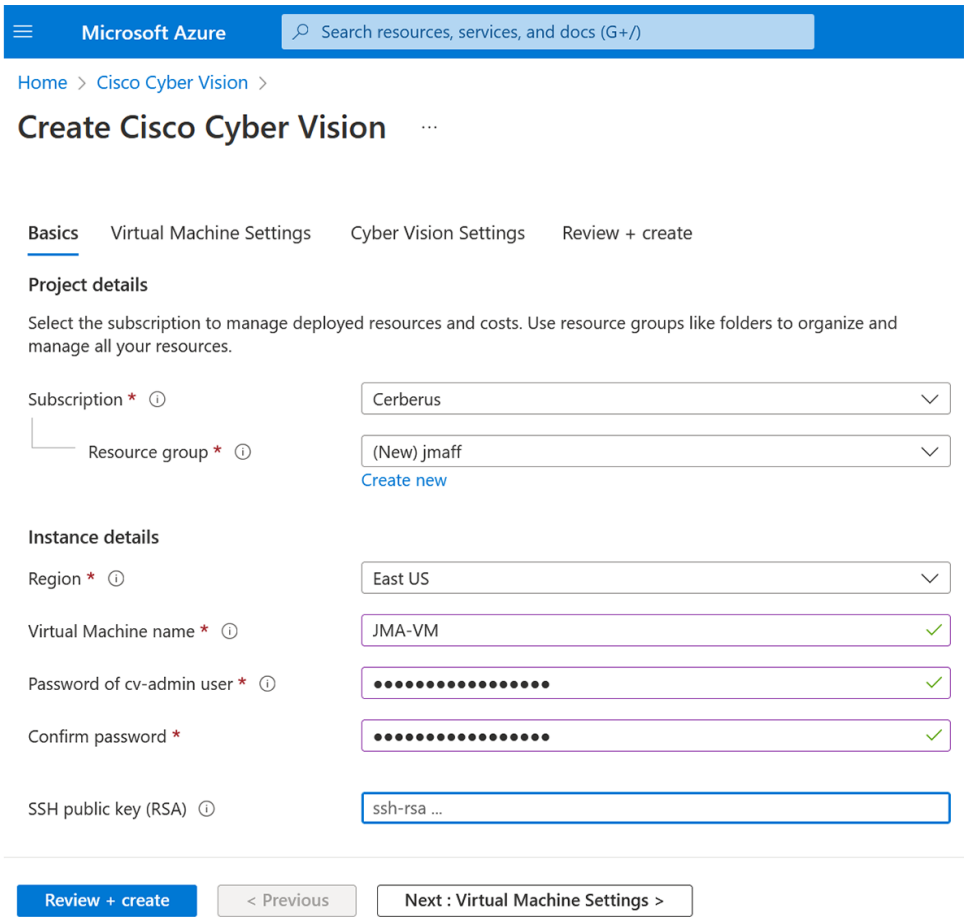
Password must comply with three of the following conditions: 1 lower case character, 1 upper case character, 1 number, and 1 special character that is not '\' or '-'.

The value must be 12 to 123 characters long.

Step 4 Type a password and confirm it.

Step 5 You have the option of entering an SSH key.

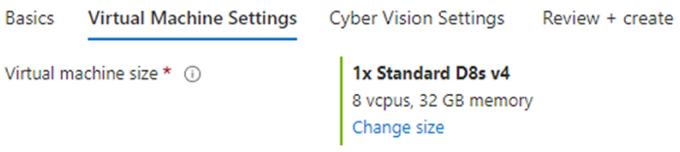
Step 6 Click **Next: Virtual Machine settings**.



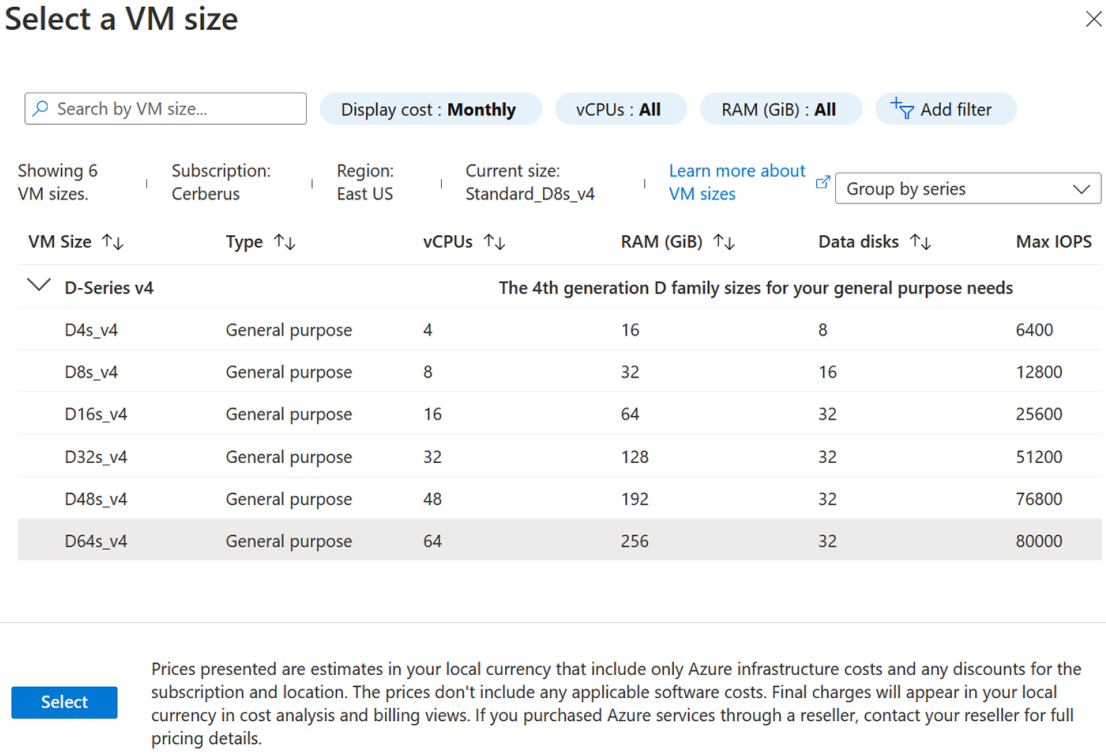
Virtual Machine settings

Procedure

Step 1 You can change the VM size clicking **change size**.

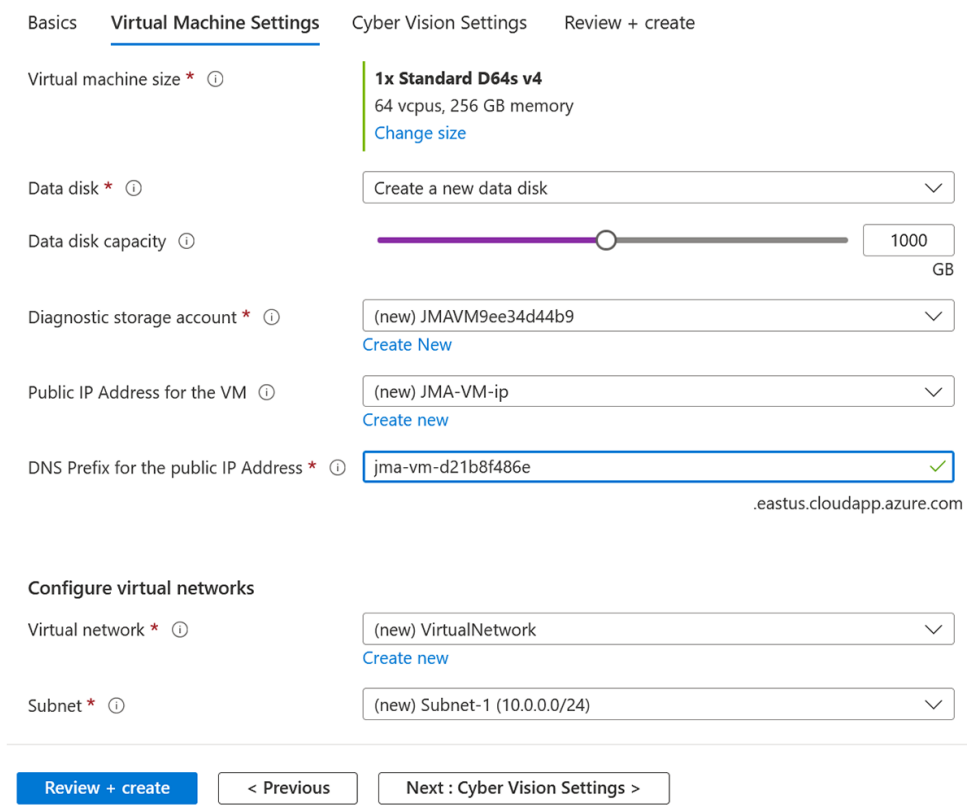


The following screen appears.



The recommended sizes are:

- For 10,000 components:
  - D8s_v4 - 8 CPU / 32GB RAM minimum
- For more than 10,000 components:
  - D16s_v4 - 16 CPU / 64GB RAM minimum

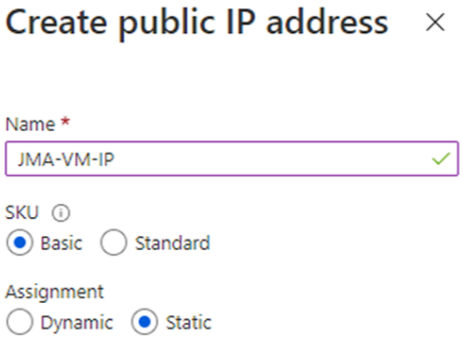


A disk is required to store the data of the Center. The recommended size for a Center is 250GB and 1TB minimum for a Global Center. Choose one of the options below:

a) Select **Create a new data disk** and set the /data file storage using the data disk capacity slider.
b) Select **Attach an existing data disk** if it has been previously created in Azure resources and select it in **Select data disk** dropdown menu.

Step 2 Create a diagnostic storage account for the console serie to be accessible on the Azure VM.

Step 3 Set the resource for the public IP. If the public IP was already created you can select it here. For automatic creation, leave it has "(new)". You can set the IP address as static clicking **Create New**.



Step 4 An FQDN is automatically created. You can change it.

Step 5 A VNet is automatically created.

Step 6 A subnet is created by default. You can select another resource.

Step 7 Click **Next: Cisco Cyber Vision settings**.

Cisco Cyber Vision settings

Configure right now

Configure right now is to configure everything that is available from the setup Center directly from Azure portal like the keyboard layout on the console serie, the Center type (Center and Global Center) and the FQDN.

After creating your VM wait a few moments (usually 10 minutes is enough) for autoprovision and access Cisco Cyber Vision through the domain name.

Procedure

Step 1 Select **Configure right now**.

Step 2 Select **Center** or **Global Center**.

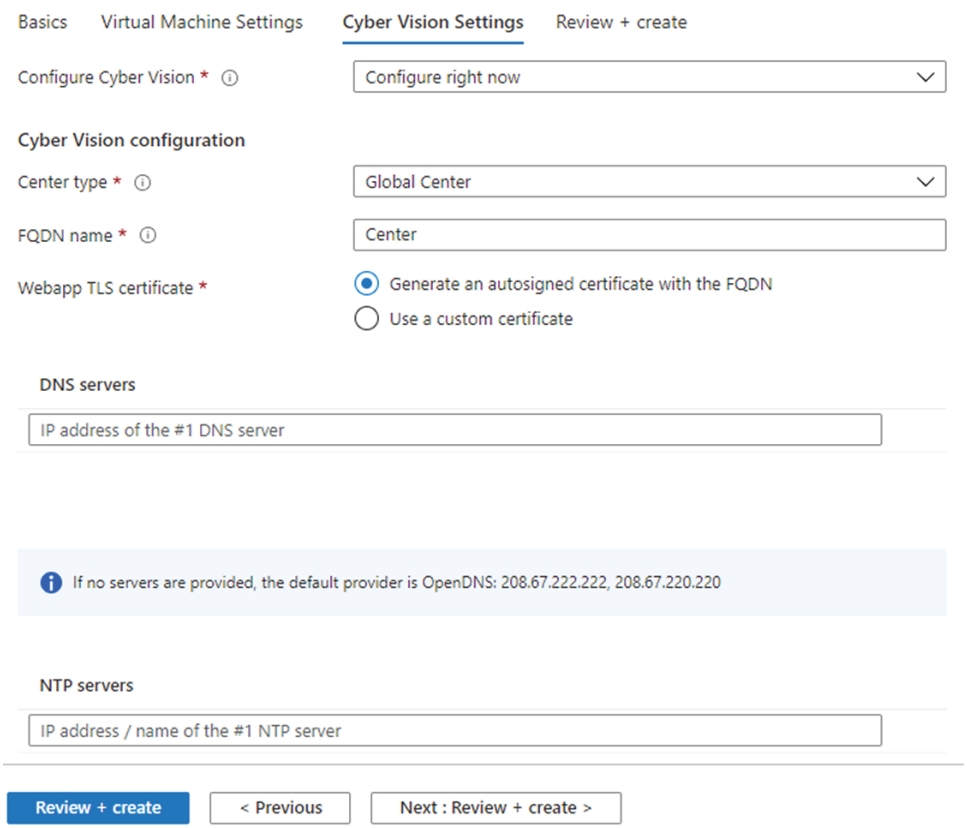
Step 3 Set a FQDN.

Step 4 Select a Webapp TLS certificate option.

This will allow you to use a trusted certificate accessing the IP address from a browser to reach Cisco Cyber Vision session directly. You can generate an autosigned certificate with the FQDN or use a custom certificate adding a P12 and its password.

Step 5 If needed, set DNS servers.

Step 6 Click **Next: Review + Create**.



What to do next

Proceed with Review and create custom deployment, on page 10.

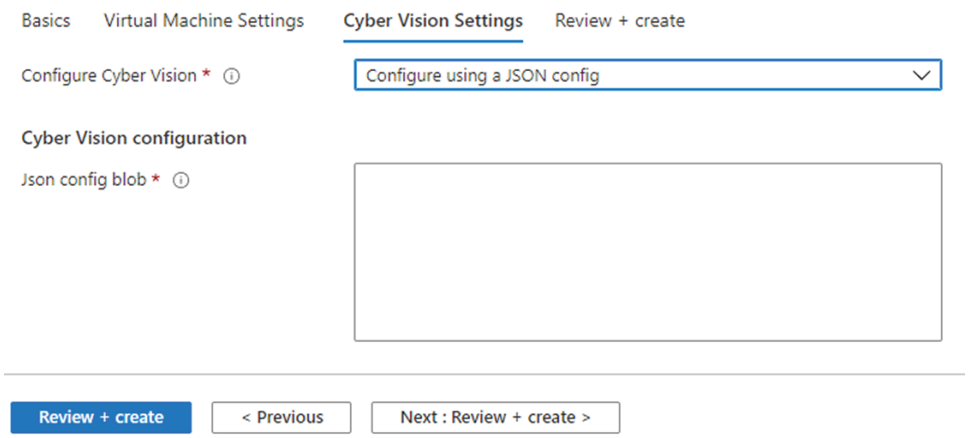
Configure using a JSON config

You can configure the Cisco Cyber Vision Center automatically through a json file. The configuration will be run at the machine boot. The format is the same as the syntax shown in the annex: Annex – Setup Center json file

Procedure

Step 1 Select **Configure using a JSON config**.

Step 2 Fill in the Json config blog using the annex syntax.



Step 3 Click **Next: Review + Create**.

What to do next

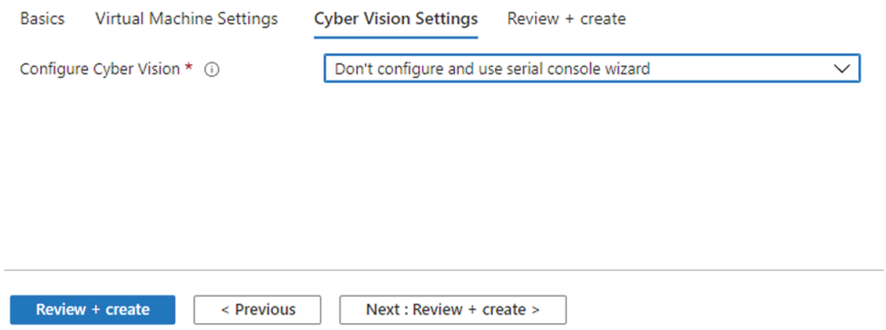
Proceed with Review and create custom deployment, on page 10.

Serial console connection to Azure virtual machine

You can choose not to configure Cisco Cyber Vision for now and use the serial console wizard available in Azure portal instead.

Procedure

Step 1 Select **Don't configure and user serial console wizard**.

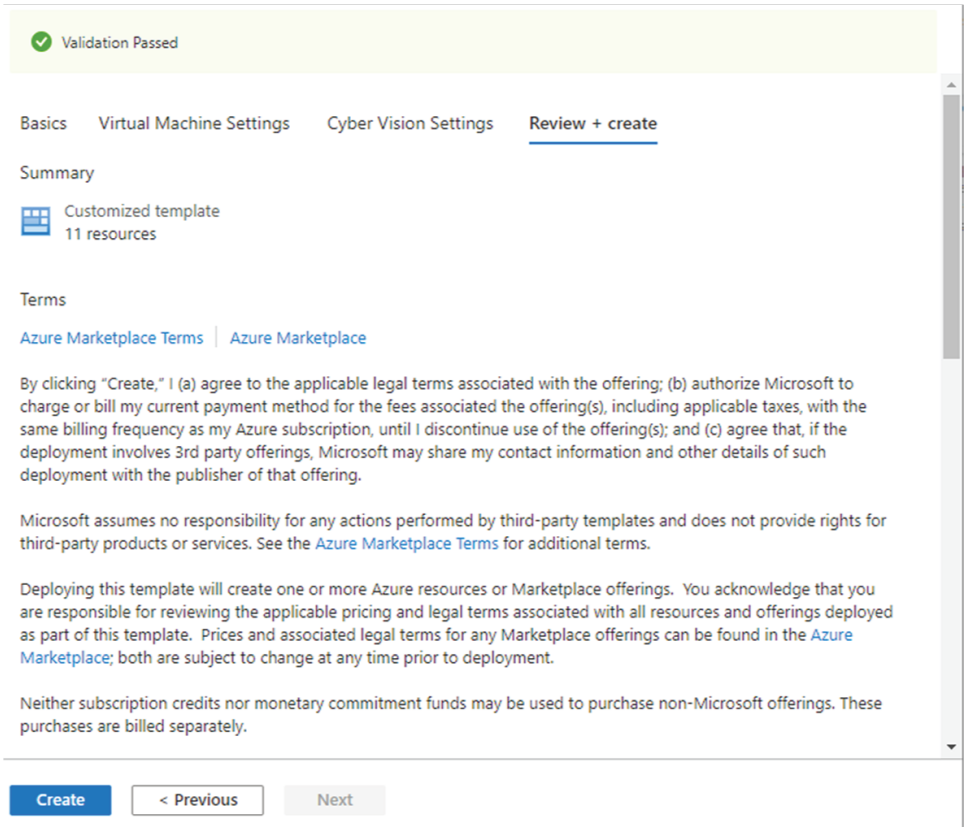


Step 2 Click **Next: Review + create**.

Review and create custom deployment

Data entered and configuration is being checked. The mention "Validation Passed" should be displayed.

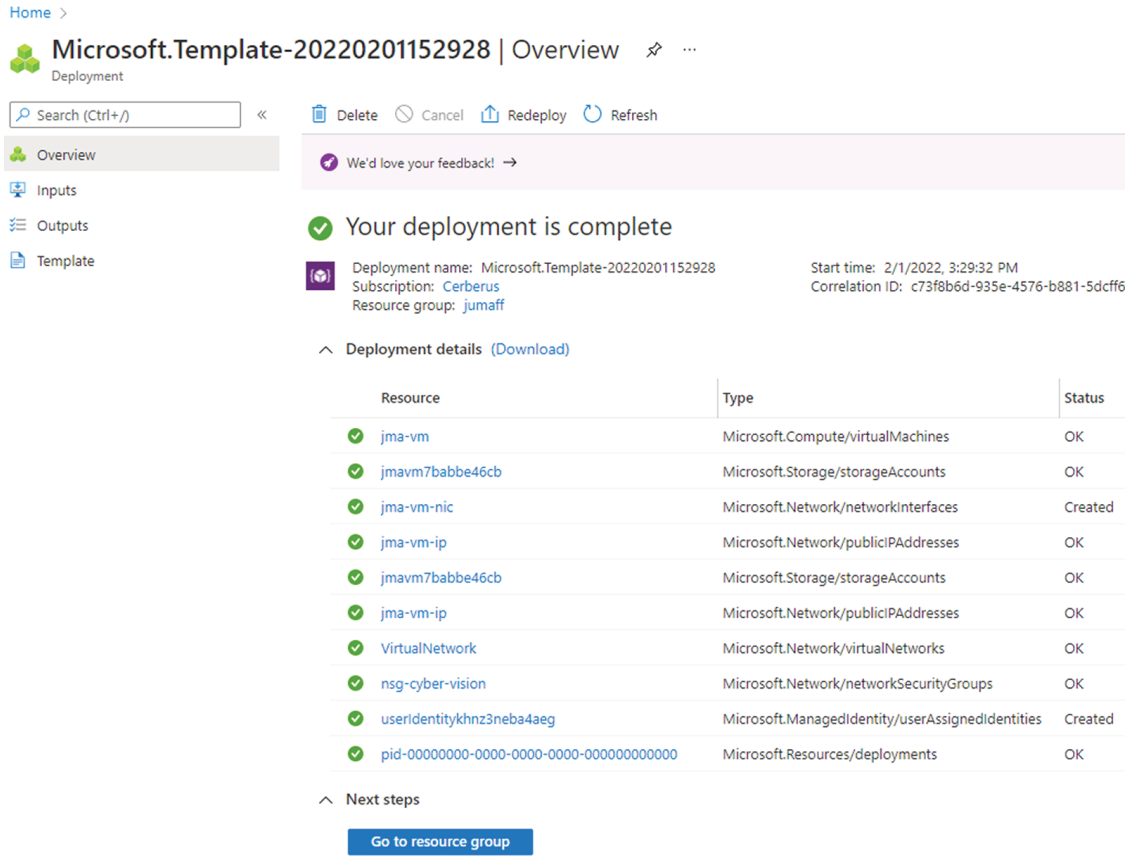
During this step, you will find the terms and configurations summary of the custom deployment.



1. Click **Create** to create the custom deployment.

The deployment follow up is displayed showing the resources creation: virtual network, security group, public ip, storage account for the serial console, VM, etc. This step can take a few moments.

Deployment completed:



If you have used the serial console to configure the Azure virtual machine, proceed with the Basic Center configuration, on page 11.

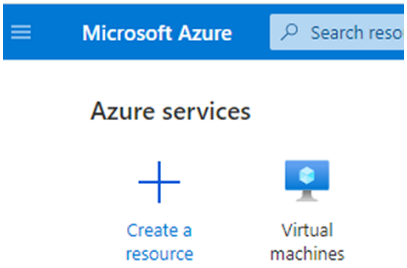
Basic Center configuration

Access the Basic Center Configuration

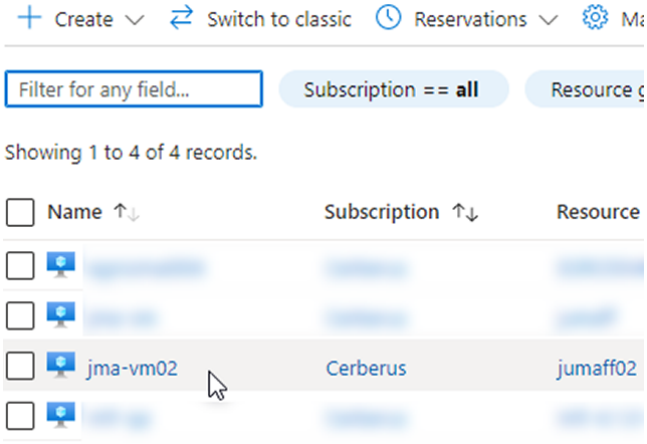
To access the Basic Center Configuration and setup the Cisco Cyber Vision Center or Global Center:

Procedure

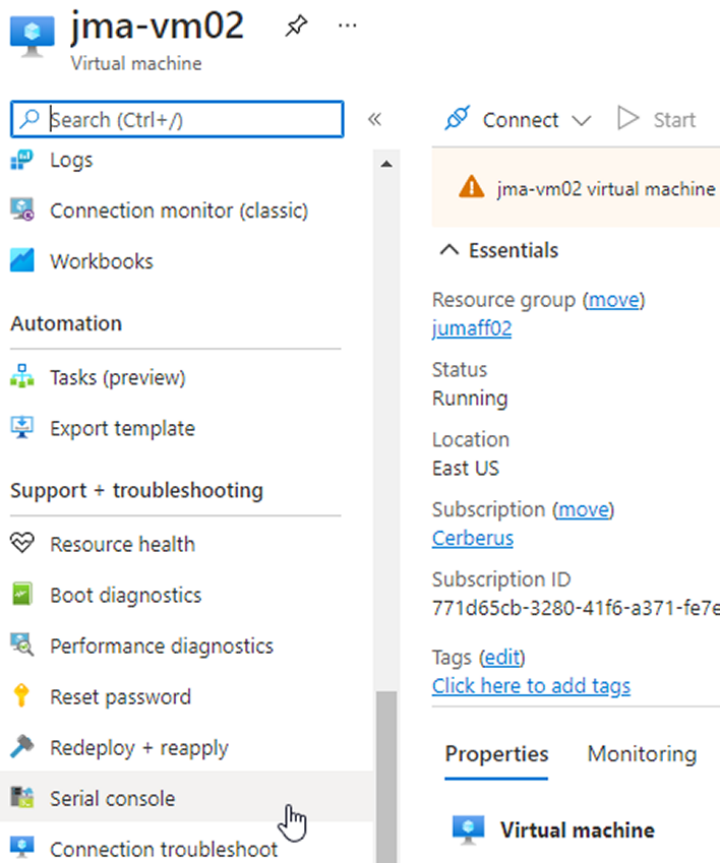
Step 1 In the Azure portal, navigate to Home > Virtual Machines.



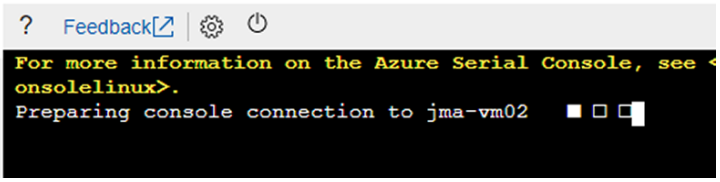
Step 2 Click the VM to configure via the serial console.



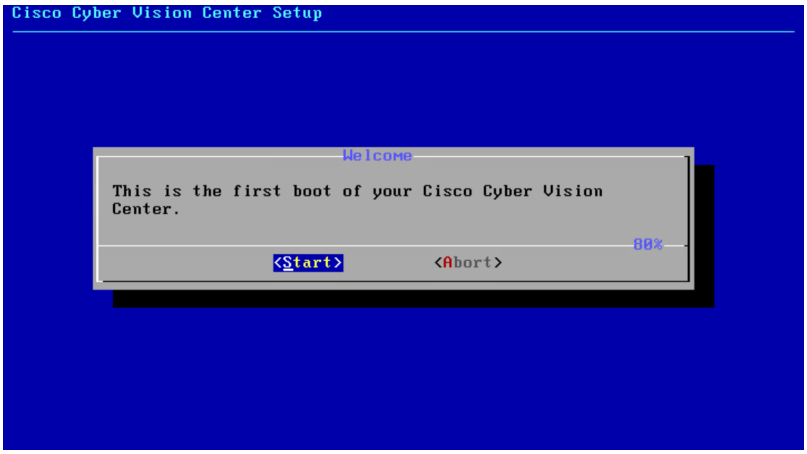
Step 3 Click **Serial console** in the left dropdown menu.



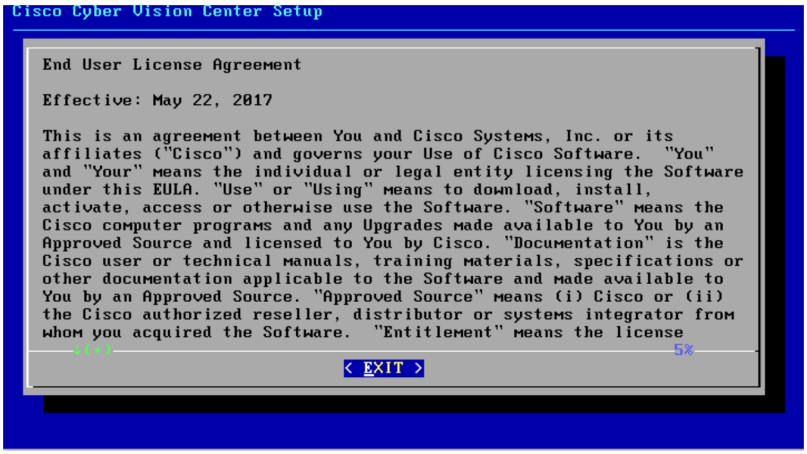
The serial console is displayed and the connection to the VM is establishing.

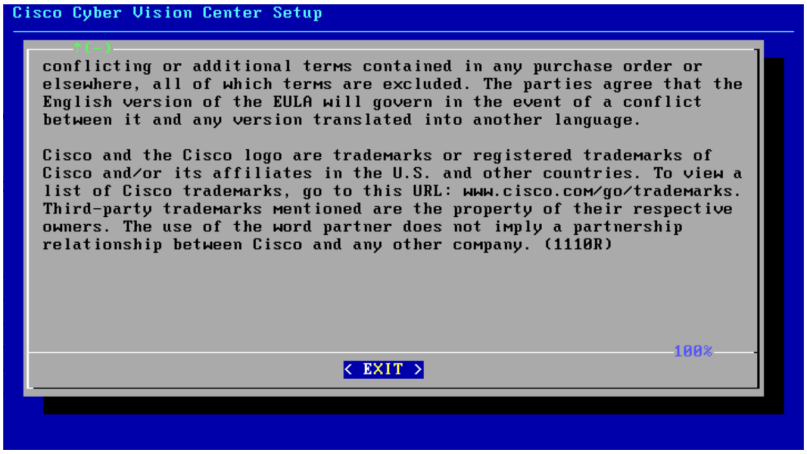


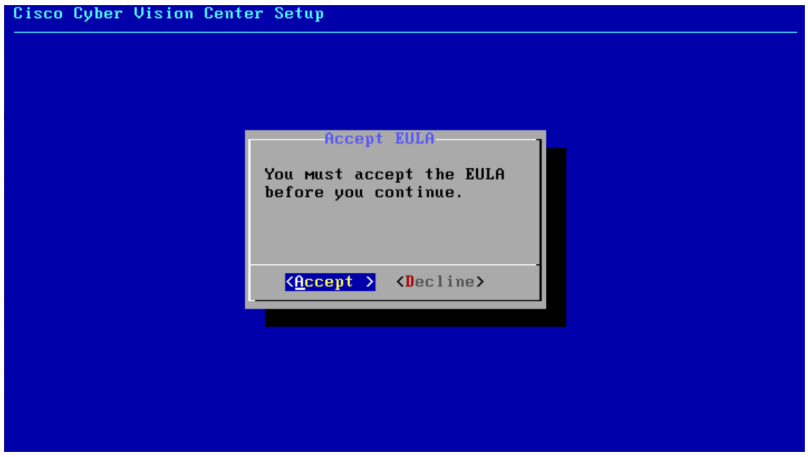
Step 4 The Center wizard is displayed on your screen as you power on the Center. Enter Start to start configuring the Center.



Accept the End User License Agreement





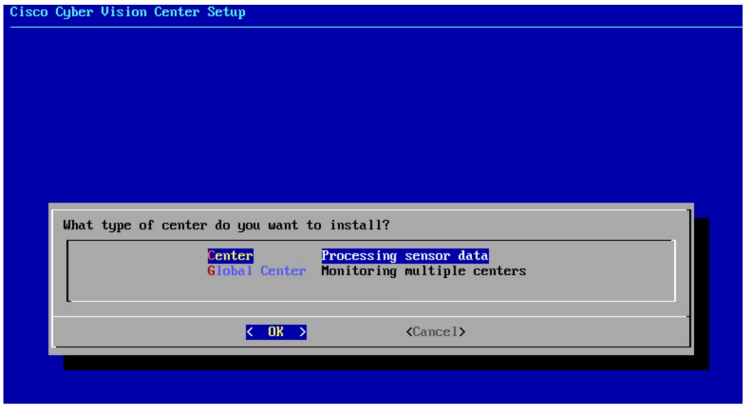


Select the Center type

During this procedure you will choose which type of Center to install. There are two types of Centers:

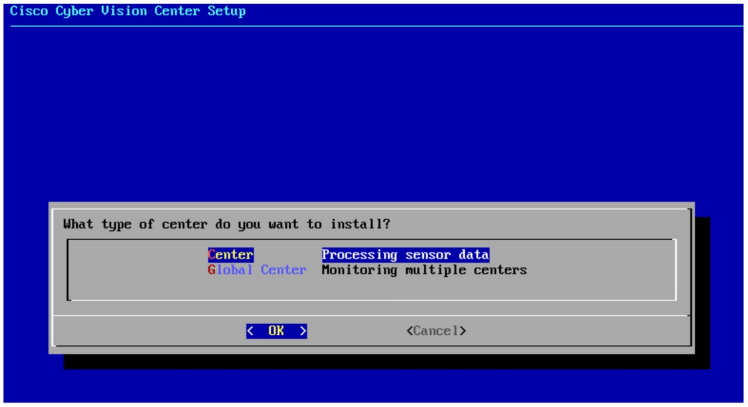
- A **Center** receives metadata from sensors and store them into an internal database (Postrgresql). It can be standalone or synchronized with a Global Center. A Center with sync is similar to a standalone Center from a functionality point of view, except for the link to a Global Center. You must install Centers with sync **after** the Global Center. This will enable the system to enroll and start pushing events to the Global Center.
- A **Global Center** introduces a centralized architecture which collects all industrial insights and events from synchronized Centers and aggregates it on a single global point of view. It will also allow you to manage the knowledge database (KDB) and upgrade the whole platform.

Select the type of Center you want to install.



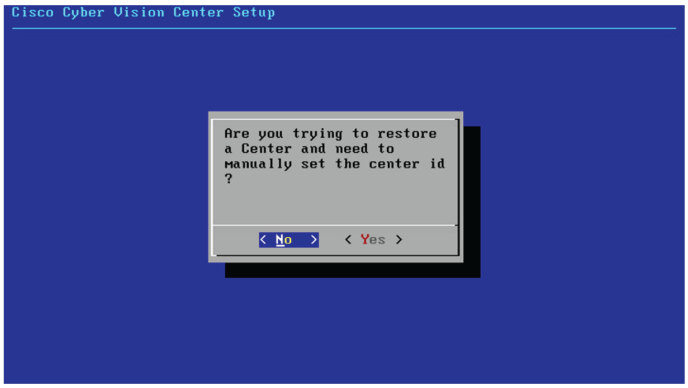
Center

If installing a Center, select the first option.



Then, you will have the opportunity to set the Center id. It can be used in case of Center restoration to reuse the same id previously set in the Global Center. Thus, some data can be retrieved.

If you're installing the Center for the first time, this id will be automatically generated. Select No. You will be directed to the next step.

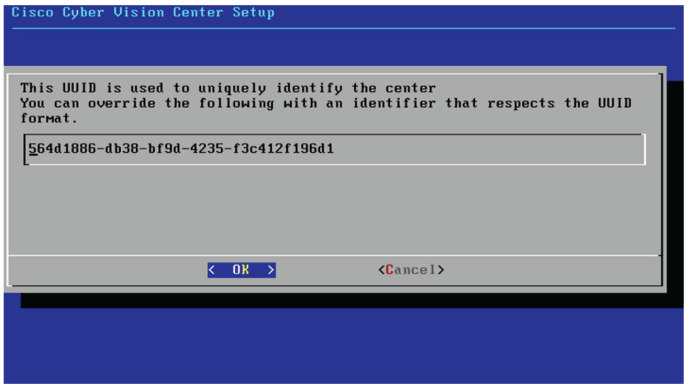


If you're reinstalling the Center and want to restore it, select Yes.

Use the following command from the Global Center's CLI to get a list of all Center's id:

```
sbs-db exec "select name, id from center"
```

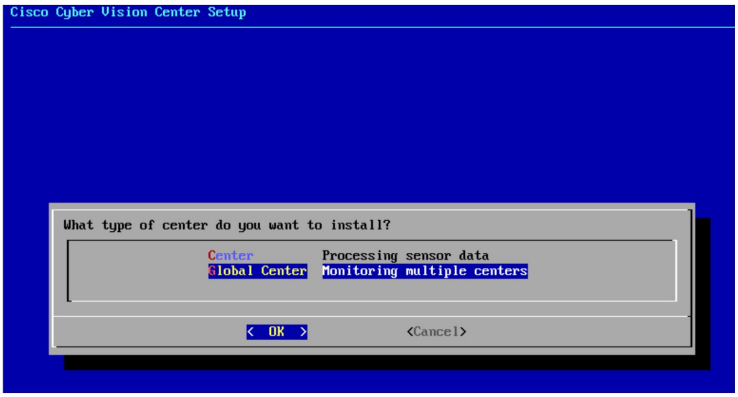
Type the id into the basic Center configuration UUID field.



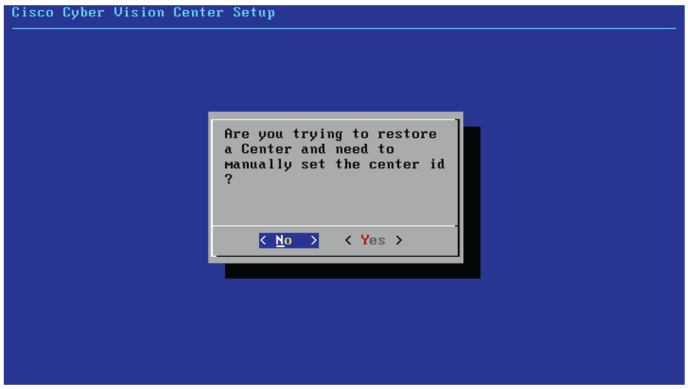
Click OK. You will be directed to the next step.

Global Center

If installing a Global Center, select the second option.



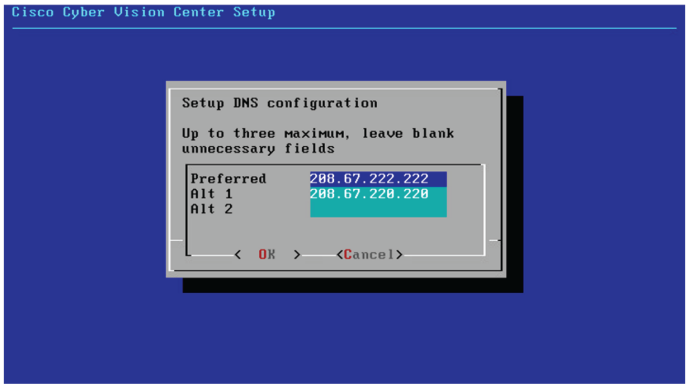
As this step does not apply to a Global Center, select No.



You will be directed to the next step.

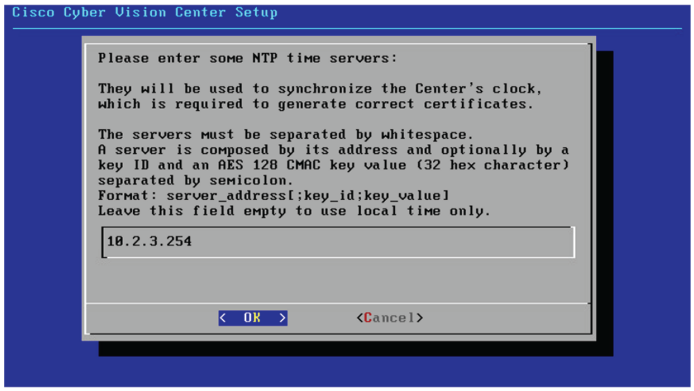
Configure the Center's DNS

Type a DNS server address and optional fallbacks.

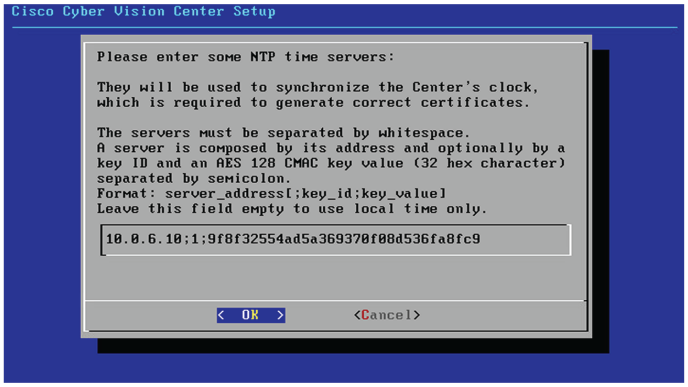


Synchronize the Center and the sensors to NTP servers

Enter IP addresses of local or remote NTP servers (gateway configuration needed) to synchronize the Center and the sensors with a clock reference. Each address must be separated by a space.



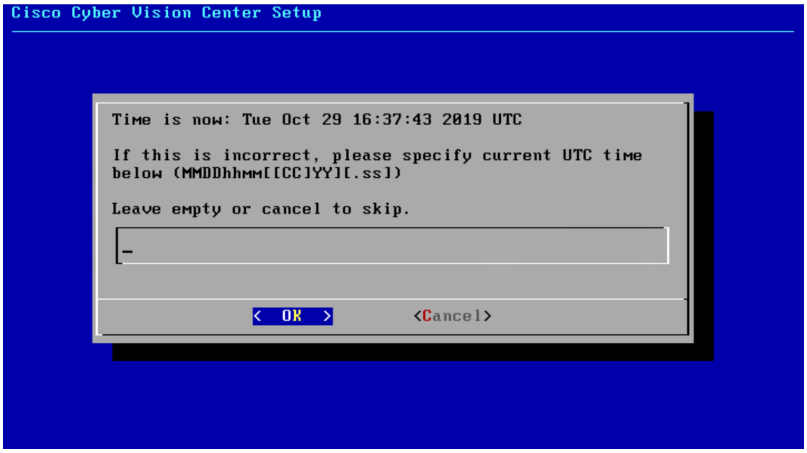
Optionally, add a key ID and an AES A28 CMAC key value separated by a semicolon with the corresponding NTP server.



The synchronization takes a few seconds.

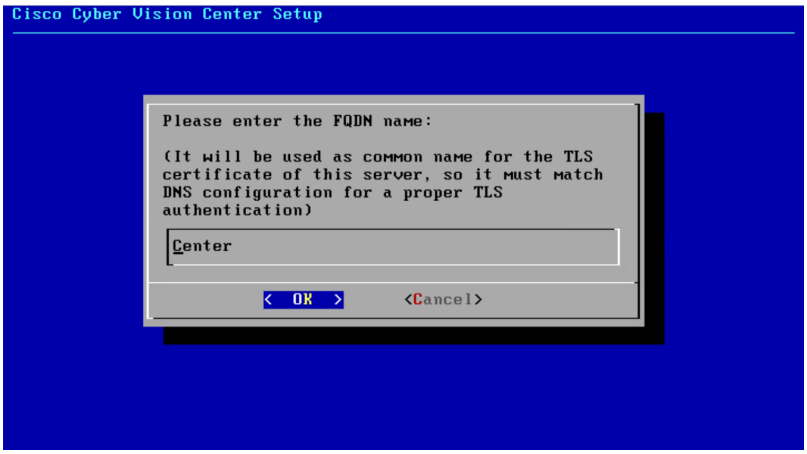
Check that the time is correct, or set the time manually.

Note The time is set in UTC standard.



Give the Center a name

Note This name will be used in the Center certificate.



Enter the Center name provided by your administrator or type 'Default' which is a secure value.

Note This name must match the DNS name you will use to access the Center through SSH or a browser.

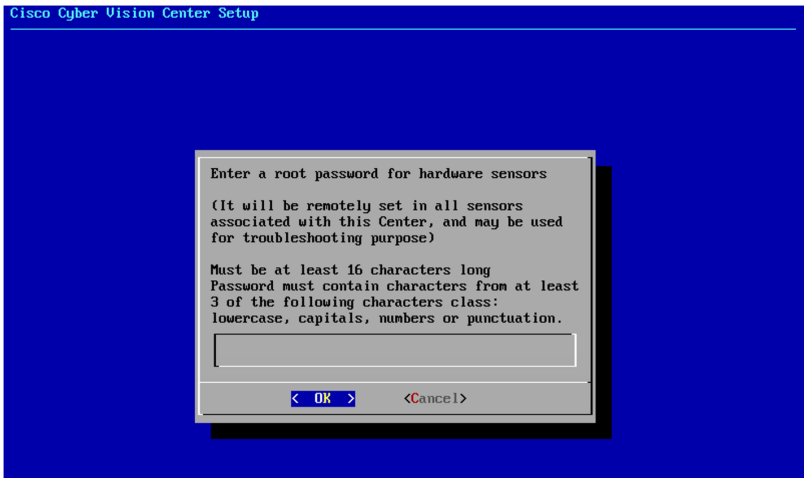
Configure the sensors' password

Not applicable to a Global Center. Instead, you'll be directed to Authorize networks.

Although, if you're installing a Center, proceed as below.

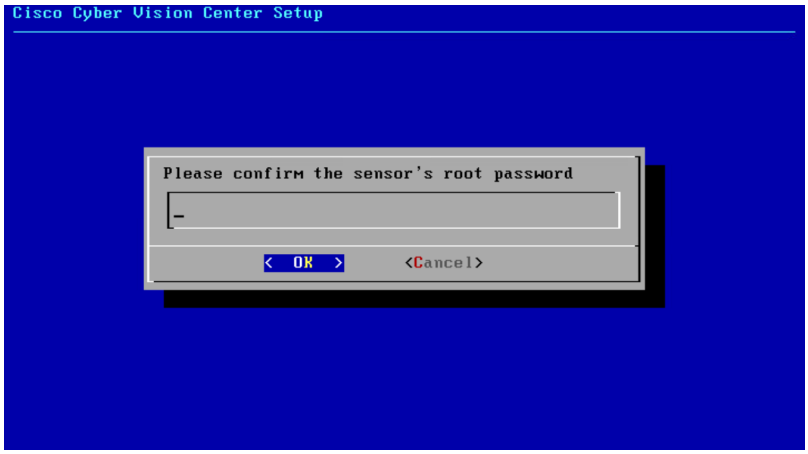
The sensors' root password must be set for security reasons.

This password must be different than the one used for the Center, otherwise you will get an error message.



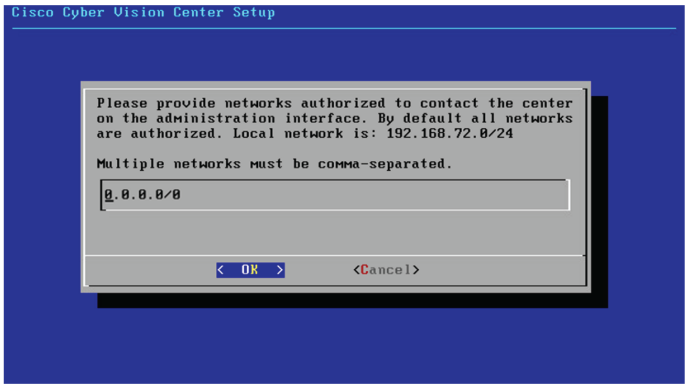
This password will be assigned once you will have enrolled the sensors on the Center. You will need this password for troubleshooting, diagnostics, and updates.

Confirm the password.



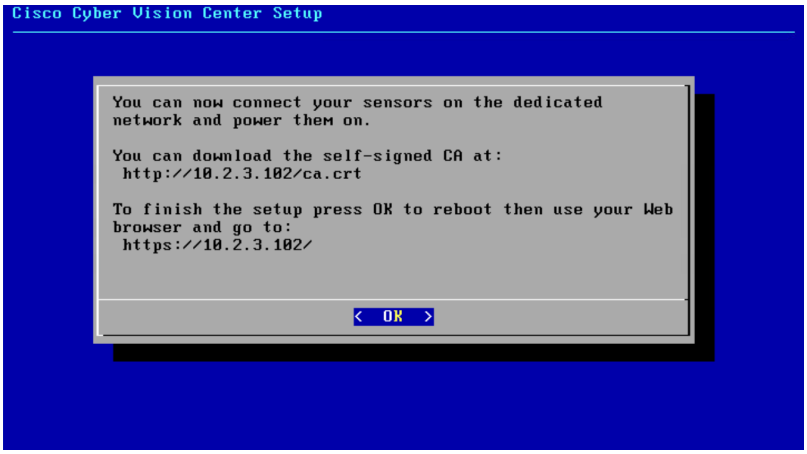
Authorize networks

This step allows you to restrict IP addresses that can connect to the Administration interface. If no IP is entered, all networks are authorized by default.

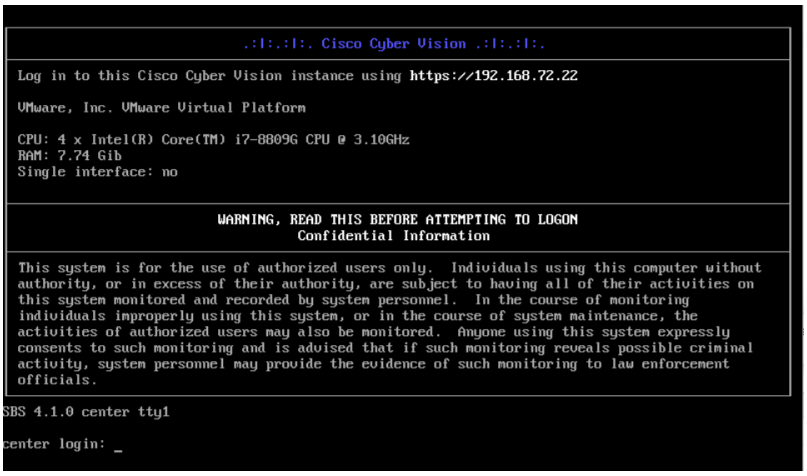


Complete the basic Center configuration

Next is the last screen of the basic Center configuration. It reminds you the addresses set to be used to download the CA certificate and access Cisco Cyber Vision. Save these addresses somewhere, you will need them later to access the user interface.



Enter OK to finish the basic Center configuration.



Note To connect through CLI in serial consol or SSH you must use ‘cv-admin’ as user and the instance ID as password. This user has limited rights and many CLI commands will require permission elevation:

- prefix the command with "sudo".
- or open a root shell using "sudo -i" and enter the command.

Close the Center configuration window before proceeding with the next steps of Cisco Cyber Vision configuration.

To proceed with the Cisco Cyber Vision configuration, open your browser and go to the URL previously indicated to access the user interface.

Note Each Cisco Cyber Vision Center includes its own PKI (Public Key Infrastructure), with a CA (Certification Authority), that will be used to establish the TLS connection with the sensors and to clients. The CA must be installed on each client browser (see the following chapters).

Azure firewall settings

Communication ports list

Herebelow are the rules that provide access from users or other resources to the Global Center or the Center and the list of the ports that need to be added.

- **For Global Center <--> Center communication:**

Protocol	Port	
AMPQ	TCP/5671	
NTP	UDP/123	
Syslog	UDP/TCP 514	
SSH	TCP/22	

- **For CS workstation/ntp server <--> Center communication:**

Protocol	Port
HTTPS	TCP/443
SSH	TCP/22
NTP	UDP/123

- **For Sensor to Center communication:**

Protocol	Port
AMPQ	TCP/5671
Syslog	UDP/10514

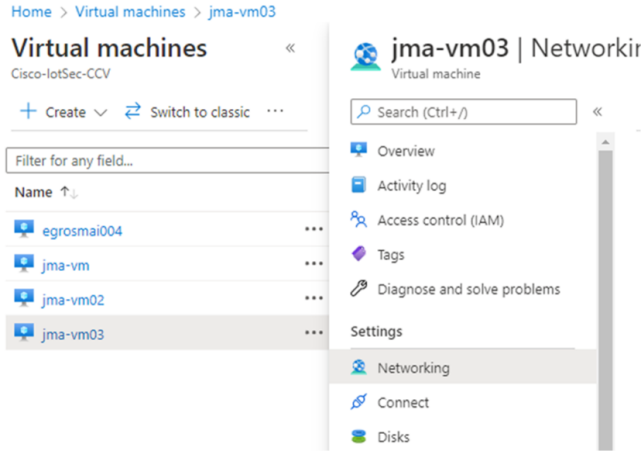
Configure communication ports

To configure a communication port:

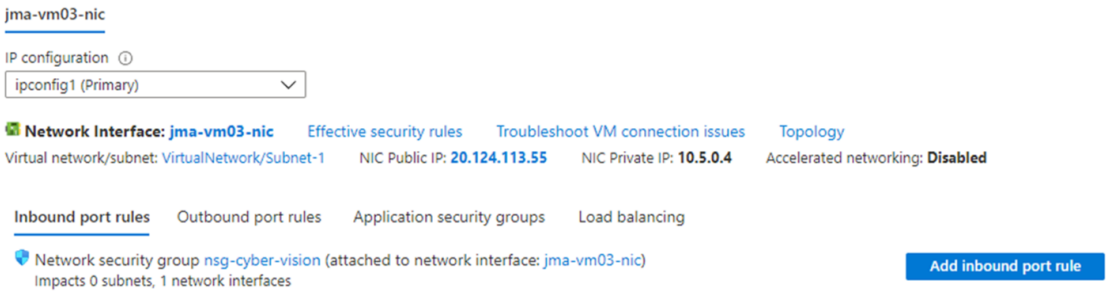
Procedure

Step 1 In the Home page of the Azure portal, access the VM.

Step 2 Click Networking in the Settings section.



Step 3 Click the **Add inbound port rule** button.

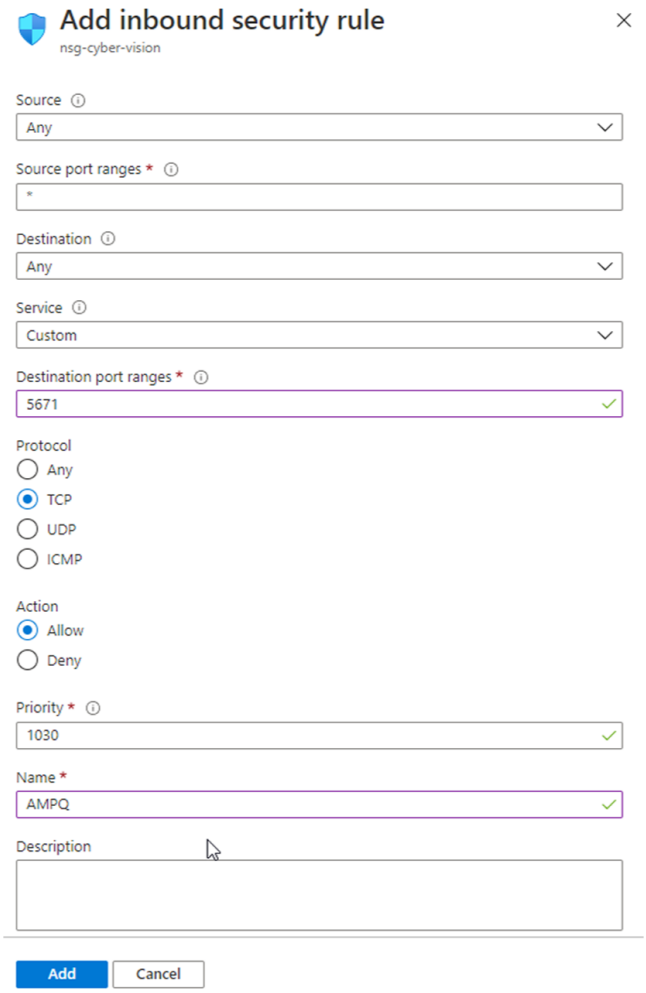


Step 4 Fill in the settings according to the ports listed in Communication ports list, on page 23.

In our example, we're adding the AMPQ communication port for Global Center <--> Center communication.

Set Service as **Custom** if the service is not available in the list.

If the protocol to add is UDP/TCP, set protocol as **Any**.



Step 5 Click **Add**.

The added port appears in the Inbound port rules list.

Priority	Name	Port	Protocol	Source	Destination	Action
1000	AllowSSH	22	TCP	Any	Any	Allow
1010	AllowHTTP	80	TCP	Any	Any	Allow
1020	AllowHTTPS	443	TCP	Any	Any	Allow
1030	AMPQ	5671	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBala...	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

Step 6 Repeat the previous steps to add all the communication ports required.

The final configuration for a Global Center:

Priority	Name	Port	Protocol	Source	Destination	Action
1000	AllowSSH	22	TCP	Any	Any	Allow
1010	AllowHTTP	80	TCP	Any	Any	Allow
1020	AllowHTTPS	443	TCP	Any	Any	Allow
1030	AMPQ	5671	TCP	Any	Any	Allow
1040	NTP	123	UDP	Any	Any	Allow
1060	Syslog	514	Any	Any	Any	Allow
1070	SSH	22	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalance...	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny