

Connectors in Active-Active

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Connector Active-Active

You can pair two Cisco Spaces: Connectors in an active-active mode to enable the uninterrupted flow of data to Cisco Spaces.

- 1. You retrieve a token from Cisco Spaces and configure the token on two different Connectors. Each Connector must have a unique IP address.
- 2. Both Connectors receive configurations from Cisco Spaces.
- 3. The Connectors can then connect to devices and send data back to Cisco Spaces.
- 4. Cisco Spaces then manages the redundant data.
- 5. If one Connector is down, the other Connector continues to send data.

Restrictions

- On the Cisco Spaces dashboard, there is no configuration required for two Connectors to be an active-active pair.
- Both Connectors connect to all Controllers and send traffic to Cisco Spaces. The traffic from Controllers to Cisco Spaces hence increases.
- To be an active-active Connector pair, two Connectors must run OVA version 2.3 or higher.
- There is no failover support for Hyperlocation, and IoT Service. Reprovision these services after a failover.

Note FastLocate is re-established after failover with a delay of three to four minutes.

- With CSCvv38762, there is no failover support for IoT Service. Reprovision these services after a failover.
- There is no support for monitoring the Connector active-active feature.
- With CSCvv34216, a Connector active-active pair has only one Connector managing the **Controller Channel** and the other Connector managing the **AP Channel**.

Figure 1: Connector managing Controller Channel only. AP Channel statistics is zero.

cisco Cisco DNA Spa	aces Connector									falcon-ha2 🔻
Connector										• ~
Connector	🚯 Copy Key Hash 🛛 🛛 Resta	irt Coni	nector							Running 😐
Usemame:	dnasadmin			Server T	ne:	Wed Aug 19 20	020 19:55:49 GMT-0700 (Pacific	Version:	ova-2.3.460	
Hostname:	falcon-ha2					Daylight Time)		Docker Version:	v2.0.446	
Tenant ID:	11217			NTP Stat	12:	status+active (running)			
MAC Address:	00:0c:29:fc:ba:85					since=Wed 20	20-08-19 20:29:44 UTC			
IP Address:	172.20.239.77			Proxy St	tus:	Proxy is configu	ured			
Gateway:	172.20.239.1			Proxy:		http://proxy.esl	l.cisco.com:80			
Netmask:	255.255.255.0			Cloud Re	achable:	True				
DNS Server:	171.70.168.183			AAA Sta	US:	AAA+Disabled				
Domain:	cisco.com			Connect	r Name:	172-20-239-7	6-HA1			
Cloud Control Channel		٠	Cloud Data Channel			•	Controller Channel			
Connected At:	Wed Aug 19 2020 19:38:41		Connected At:		Wed Aug 19 2020 1	9:38:41	TDL Incoming Msg Rate	0.00 events/second		
	GMT-0700 (Pacific Daylight Time)				GMT-0700 (Pacific D Time)	Daylight	TDL Incoming Msg Count	45		
Status:	Connected		Status:		Connected		IP Address 0	Connected At 0	Msg Rate/Second 0	Status 🌣
			Outgoing message rate	e:	58 events/second		172.20.239.66	Wed, Aug 19th, 2020	58	ACTIVE
Access Point Channel		٠								
gRPC Incoming Msg Rate:	0 events/second									
gRPC Outgoing Msg Rate:	0 events/second									
gRPC Incoming Msg Count:	0									
gRPC Outgoing Msg Count:	0									
gRPC Active Connections:	0									

Figure 2: Connector managing AP Channel only. Controller Channel statistics is zero.

cisco DNA Spa	ces Connector										falcon-ha1 👻
											0
Connector	B. Const. Key Hards										Duration .
Connector es commoso cogs	Copy Key Hash Co Restart Co	mector									Ranning
Username:	dnasadmin		Server Tir	ne:	Wed Aug 19 2 Daylight Time)	2020 19 5)	9:50:24 GMT-0700 (Pacific		Version:	ova-2.3.460	
Tossename:	11017		NTP State	29:	address= ntp.	o.esl.cisc	co.com		Docker version:	V2.0.440	
MAC Address	00:0::29:#36:61				status=active	e (running	(a)				
IP Address:	172 20 239 76				since=Mon 20	2020-08-	-17 18:41:51 UTC				
Gateway:	172.20.239.1		Proxy Sta	tus:	a: Proxy is configured						
Netmask:	255.255.255.0		Proxy:		http://proxy.et	esl.cisco	5.com:80				
DNS Server:	171.70.168.183		Cloud Her	achabie:	True						
Domain:	cisco.com		Concerning	- Mener	170.00.000	75 1141					
			Connecto	r reame.	172-20-239	-70-HA					
Cloud Control Channel	•	Cloud Data Channel			•	Con	ntroller Channel				
Connected At:	Wed Aug 19 2020 19:40:33	Connected At:		Wed Aug 19 2020 1	9:40:35 Decimbe	TD	DL Incoming Msg Rate	0.00 event	s/second		
	Time)			Time)	Dayngin	TD	OL Incoming Msg Count	0			
Status:	Connected	Status:		Connected		IP	Address 0	Connected	At 0	Msg Rate/Second 0	Status 0
		Outgoing message	rate:	257 events/second		17	72.20.239.66	Wed, Aug	19th, 2020	61	ACTIVE
						-					
Access Point Channel	•										
gRPC Incoming Msg Rate:	195.81 events/second										
gRPC Outgoing Msg Rate:	0 events/second										
gRPC Incoming Msg Count:	139618										
gRPC Outgoing Msg Count:	0										
gRPC Active Connections:	9										

Connector Active-Active vs Cisco CMX High Availability

The Connector active-active feature is similar to traditional high availability. But, high availability concepts such as virtual IP address, primary, and secondary are not implemented in this feature. The following is a comparison of the Connector active-active feature with the high availability feature of Cisco CMX.

Table 1: Connector Active-Active (High Availability) model

	Connector Active-Active IoT Services App, Detect and Locate App	Cisco CMX Layer 2 VIP High Availability
IP addressing	Both Connectors are configured with a unique IP address.	Two Cisco CMX devices are configured with a single IP address.
Operational state	Both Connectors are configured in the active state.	One Cisco CMX is the hot primary while the other is in cold standby.
Data before failover	Both Connectors have the same data set and it is the responsibility of Cisco Spaces to manage the data redundancy.	Both the hot primary and the cold standby have the same data set.
Failover support	In the event of a failure, FastLocate, Hyperlocation, and IoT Services need to be reprovisioned.	If the hot primary fails, the cold standby takes over seamlessly.
Version restriction	The same OVA version of 2.3 or higher is mandatory for a Connector active-active pair.	Same version of Cisco CMX is recommended for high availability.

Configuring Connectors in Active-Active

This task shows you how to configures two Connectors as active-active.

Before you begin

Install two different Cisco Spaces: Connectors of OVA version 2.3 or higher. Configure each Connector with a unique IP address.

SUMMARY STEPS

- 1. Login to Cisco Spaces>Setup>Wireless Networks and in the Configure Spaces Connector area, click Create a new token.
- **2.** Enter a name for the Connector and click **Generate Token**. Copy the token displayed and save it for future reference.
- 3. Log in to the first Connector and configure the saved token there.
- 4. Log in to the second Connector and configure the saved token there.
- 5. On each Connector, observe that the value of the tenant ID is the same.

- 6. On the Cisco Spaces dashboard, observe both the Connector IP addresses.
- 7. On each Connector, observe that all controllers added are present.
- 8. On the Controller CLI, observe that all Connectors are in the NMSP state.

DETAILED STEPS

Step 1 Login to Cisco Spaces>Setup>Wireless Networks and in the Configure Spaces Connector area, click Create a new token.

Figure 3: Create a New Token

	A Spaces 🥌	Active APs 34 of 100	
Connect y	your wireless network		
Conne Spaces Con	ect via Spaces Connector metter is an easy way to get your wireless network connected to Cisco DNA Spaces. No need to upgrade Wineless LAN Controllers or reconfigure your wireless net	merk.	^
1 Ir 0 2 C	Install Spaces Connector OVA were a sense of the sense of	Need Help? Access the balow links to view detailed help. View Configuration Steps System Requirements	8
	0 / 2 convector(c) active Create a new totem 2 OpenRoaming hotspots added OpenRoaming Controller Configuration	Frequently Asked Questions	ß

Step 2Enter a name for the Connector and click Generate Token. Copy the token displayed and save it for future reference.*Figure 4: Connector Name*

Create a new token
Please provide a name for the connector
Connector Name
Enter the connector name
The token will automatically configure your connector and allow it to connect to Cisco DNA Spaces Generate Token

Step 3 Log in to the first Connector and configure the saved token there.

Figure 5: Connector Name

*III:II: cisco DNA Spaces Connector		Click to configure the saved toke	dnas458Mc10 -
Configure Token Without the token, connector will not be able to be started		this Connector	Setup
 Privacy Settings Setup your MAC sait and Username sait 	Configure Token:	×	Setup Skip
	* Token :		
		Cancel Save	

Step 4 Log in to the second Connector and configure the saved token there.

Figure 6: Connector Name

"Iltilit cisco Cisco DNA Spaces Connector	Click to configure the saved toke	dnas458Mc10 👻		
Configure Token Without the token, connector will not be able to be started		this Connector		Setup
Privacy Settings Setup your MAC sait and Username sait	Configure Token:	×		Setup Skip
	- 100000	Cancel Save		

Step 5 On each Connector, observe that the value of the tenant ID is the same.

Figure 7: Connector

Connector						o ~
Connector	🚯 Copy Key Hash 🛛 Restart C	Connector				Running 😑
Username: Hostname: Tenan: ID: MAC Address: IP Address: Gateway: Netmak: DNS Server: Domain:	drasadmin ccc-2-2-295 11474 00:0c:28/1144/70 172.20.239.34 172.20.239.1 255.255.255.0 171.70.168.183 clisco.com	Server Trees Tenant ID is the same for both the connectors confleteshafte AAA Status Connector Name:	Wed, JJ 29 2020 163,867 CMI-0700 (Pwells Dyrlynt Timu) subserver repaid Lances com statum-stelle burnning unserverWed 2020-07-280 18221 2017 Pervey & condigend Thttp://proxy-set.ideos.com.80 Thtt AAA-Chautene 172-26-239-34-coo-2.3.295	Version: Docker Version:	ora-23.459 v2.0.441	
Cloud Control Channel		Cloud Data Channel	Controller Channel			

Step 6 On the Cisco Spaces dashboard, observe both the Connector IP addresses.

Figure 8: Cisco Spaces dashboard

E Cisco DNA Spaces			Connector Details		>
 Shares Connectors 			Connector Name:	connector-instance	
			Connector Version:	v2.0.446	
Name corrector-instance	# of Controllers	# of APs	Connector ID:	92895684877970370000	
Version: v2.0.446 IP Address: 10.22.212.220	5	25	Number of Associated Controllers:	5	
Fist Previous 1 Next Last			Control Channel Connection Status:	Active	
			Control Channel Connection Duration:	3 days 18 hours 31 minutes 22 seconds	
			Data Channel Connection Status:	Active	
			Data Channel Connection Duration:	3 days 23 hours 8 minutes 15 seconds	
			Last Modified:	Aug 18, 2020, 3:49:45 AM	
			Last Heard:	Aug 18, 2020, 9:45:14 AM	
			MAC Address:	00:0c:29:fc:57:d6	
			IP Address:	10.22.244.222	
			Data Channel NMSP Messages:	40161516	
			NMSP Messages Recieved:	40161516	
			HA Active:	10.22.212.220, 10.22.244.222	

Step 7 On each Connector, observe that all controllers added are present.

Figure 9: Connector: Controller Channel Area

Controller Channel			
TDL Incoming Msg Rate	0.00 events/second		
TDL Incoming Msg Count	281		
IP Address 🌲	Connected At 🍦	Msg Rate/Second 🌻	Status 🌻
172.20.239.41	Wed, Jul 29th, 2020	29	ACTIVE
172.20.239.41	Wed, Jul 29th, 2020	29	ACTIVE
172.20.239.41	Wed, Jul 29th, 2020	29	ACTIVE

Step 8 On the Controller CLI, observe that all Connectors are in the NMSP state.

Figure 10: Controller command output					
show nmsp status					
NMSP Status					
DNA Spaces/CMX IP Address Rx Data Transport		Active	Tx Echo Resp	Rx Echo Req	Tx Data
10.x.212.xxx	Inactive	13	13	161	6
10.x.212.xxx TLS	Inactive	0	0	17	6
10.x.212.xxx TLS	Active	45070	45070	1378446	574
10.x.244.xx TLS	Inactive	7	7	79	6
10.x.244.xx TLS	Active	56111	56111	1714241	286
10.x.244.xx TLS	Inactive	7	7	104	6
10.x.244.xxx TLS	Active	23056	23056	683908	298

Configuring Connectors in Active-Active (Wired)

This task shows you how to configures two Connectors as active-active.

Before you begin

Install two different Cisco Spaces: Connectors of OVA version 2.3 or higher. Configure each Connector with a unique IP address.

SUMMARY STEPS

1. Login to Cisco Spaces>Setup>Wired Networks and in the Configure Spaces Connector area, click Create a new token.

- **2.** Enter a name for the Connector and click **Generate Token**. Copy the token displayed and save it for future reference.
- 3. Log in to the first Connector and configure the saved token there.
- 4. Log in to the second Connector and configure the saved token there.
- 5. On each Connector, observe that the value of the tenant ID is the same.
- 6. On the Cisco Spaces dashboard, observe both the Connector IP addresses.
- 7. On each Connector, observe that all Connectors added are present.

DETAILED STEPS

Step 1 Login to Cisco Spaces>Setup>Wired Networks and in the Configure Spaces Connector area, click Create a new token.

Figure 11: Create a New Token

1	Install Spaces Connector OVA						
	Download and install Spaces Connector OVA as a virtual machine. Download Spaces Connector $\overrightarrow{\mathcal{C}}$						
(2)	Configure Spaces Connector						
	You will need a token to configure Spaces Connector. You need to connect to optionally configure Spaces Connector to connect via HTTPS proxy.	o https:// <your connector="" ip="">/ from a browser to configure the token. You can</your>					
	1 / 1 connector(s) active	Create a new token View Connectors					
3	Add Switch Associate Switches with Cisco DNA Spaces Connector(s)						
] Switches added	Add Switches View Switches					
4	Import Maps If you have wired devices and sensors plotted Prime/DNAC you can import them in to the location hierarchy						
	2 buildings imported	Import/Sync Maps					
	2 floors imported	Manage Maps					

- **Step 2** Enter a name for the Connector and click **Generate Token**. Copy the token displayed and save it for future reference.
- **Step 3** Log in to the first Connector and configure the saved token there.

Figure 12: Connector Name

cisco DNA Spaces Connector	Click to configure the saved token this Connector	on dnas458Mc10	
Configure Token Without the token, connector will not be able to be started			Setup
() Privacy Settings	Configure Token:	×	Setup Skip
Setup your MAC salt and Username salt	* Token:		
		Cancel Save	

Step 4 Log in to the second Connector and configure the saved token there.

Figure 13: Connector Name



Step 5 On each Connector, observe that the value of the tenant ID is the same.

Figure 14: Connector

Connector						0 v
Connector Connector	Copy Key Hash 🛛 Resta	art Connector				Running 🧶
Usemame: Hostnume: MAC Address: IP Address: Gateway: Netmask: DNS Server: Domain:	drasadmin cco-2-2-205 11474 00:00:287.11:67.70 172.20.239.31 172.20.239.1 255.255.0 173.70:168.183 cisto.com	Server Time Tenant (D is the same for both the connectors 	Wed, AJ 29 2029 16:36:57 (MT-0700 (Pacific Displip)t Thm) mitianes: migraticitics can immer welfwer/welf 2020;67:289 12:11 (UTC Paray Learning)t Holp (Promy sell clices.com 80 Top AAAI: Orautiles 172-20-239-34-coor -2.2.295	Version: Docker Vension:	ova-2.3.459 v2.0.441	
Cloud Control Channel		Cloud Data Channel	Controller Channel			

Step 6 On the Cisco Spaces dashboard, observe both the Connector IP addresses.

Figure 15: Cisco Spaces dashboard

E Cisco DNA Spaces			Connector Details		3
A Shares Connectors			Connector Name:	connector-instance	
			Connector Version:	v2.0.446	
Name	# of Controllers	# of APs	Connector ID:	92895684877970370000	
Versiler: v2.0.446 P. Address: 10.22.212.220	5	25	Number of Associated Controllers:	5	
Trari Previous 1 Nanti Lass			Control Channel Connection Status:	Active	
			Control Channel Connection Duration:	3 days 18 hours 31 minutes 22 seconds	
			Data Channel Connection Status:	Active	
			Data Channel Connection Duration:	3 days 23 hours 8 minutes 15 seconds	
			Last Modified:	Aug 18, 2020, 3:49:45 AM	
			Last Heard:	Aug 18, 2020, 9:45:14 AM	
			MAC Address:	00:0e:29:fc:57:d6	
			IP Address:	10.22.244.222	
			Data Channel NMSP Messages:	40161516	
			NMSP Messages Recieved:	40161516	
			HA Active:	10.22.212.220, 10.22.244.222	

Step 7 On each Connector, observe that all Connectors added are present.

Figure 16: Connector: Controller Channel Area

Controller Channel			
TDL Incoming Msg Rate	0.00 events/second		
TDL Incoming Msg Count	281		
IP Address 🌲	Connected At 🌻	Msg Rate/Second 🌻	Status 🌲
172.20.239.41	Wed, Jul 29th, 2020	29	ACTIVE