在SD-WAN上配置SD-AVC

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简介

本文档介绍如何在软件定义广域网(SD-WAN)上配置软件定义应用可视性与可控性(SD-AVC)。

先决条件

要求

Cisco 建议您了解以下主题:

- SD-WAN
- SD-AVC

Cisco vManage的虚拟机必须具备以下最低资源:

- RAM:32 GB
- •存储:500 GB
- vCPU:16

使用的组件

本文档中的信息基于以下软件和硬件版本:

- Cisco vManage版本20.3.x或更高版本。
- vManage版本20.6.3
- vBond版本20.6.3
- vSmart版本20.6.3

•集成服务路由器(ISR)4321/K9版本17.5.1a

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原 始(默认)配置。如果您的网络处于活动状态,请确保您了解所有命令的潜在影响。

背景

什么是SD-AVC?

Cisco SD-AVC是Cisco Application Visibility Control(AVC)的组件。AVC将应用识别和性能监控功能 集成到路由设备中,这些功能传统上作为专用设备提供。它作为集中式网络服务工作,可与网络中 的特定设备协同工作。

有关详细信息,请参阅<u>SD-AVC功能和优点</u>。

什么是思科云连接器?

Cisco Cloud Connector是思科提供的云服务,可改善流量分类。它使用有关公共Internet站点和服务使用的服务器地址的最新可用信息来改进SD-AVC流量分类。

配置

启用云连接器

1.打开<u>Cisco API控制台</u>,然后单击 My Apps & Keys.

注意:设备托管的SD-AVC网络需要访问Cisco SD-AVC云服务器域:**api.cisco.com、 cloudsso.cisco.com、prod.sdavc-cloud-api.com。**

2.单击 Register a New App 如图所示.

cisco	Cisco API Conso	ble	Documentat	tion	Interactive APIs	My Apps 8	& Keys	► Iş
My Apps & Keys								
		Applications	Keys				Registe	er a New App

3.在 Name of your application 字段中,输入应用程序的描述性名称。

- 4.检查 Client Credentials 复选框。
- 5.检查 Hello API 复选框。
- 6.选中此复选框以同意服务条款。

7.单击 Register.Cisco API Console页面显示客户端ID和客户端加密的详细信息。请将此页保持打开以

完成此图中所示的过程。

My Apps & Keys

Applications	Keys	Register a New App

SDWAN_SDAVC_Test

Registered: 8/10/22 5:21 pm Grant Type: Client Credentials

API	KEY	CLIENT SECRET	STATUS
Hello API	ttg	aUW	active

Edit This App Delete This App Add APIs

在vManage上启用SD-AVC云连接器

1.在vManage GUI部分,导航至 Administration > Settings > SD-AVC Cloud Connector 并点击 Edit.

2.对于SD-AVC云连接器,请单击 Enabled 单选按钮.在"启用云连接器"部分生成的这些字段中输入值 ,如图所示。

- 客户端ID
- •客户端密码
- 单位名称
- 相关性
- •遥测(可选)

Cisco vManage Select Resource Group	Administration - Settings		
.单击 Save 并验证此图中所示的通知。			
Save Cancel			
Telemetry	Disabled		
Affinity	USA	~	
Organization Name	SDWAN_SDAVC_Test		
Client Secret	aUW		
Client ID (i)	ttg		
SD-AVC Cloud Connector (i)	Enabled O Disabled		
SD-AVC Cloud Connector		Enabled	
		-	

在vManage上启用SD-AVC

1.导航至 Administration > Cluster Management > Service Configuration.点击 (...) More Actions 选择 Edit.

■ Cisco vManage	Select Resource Group+	Administration - Cluster Management			
		Service Configuration Ser	rvice Reachability		
Add vManage					ø
Hostname	IP Address	Configure Status	Node Persona	UUID	
vmanage	172.12.1.4	Ready	COMPUTE_AND_DATA		
					Edit

注意:请勿使用VPN 0隧道/传输或VPN 512接口启用SD-AVC。可以使用vpn 0中的集群接口。

2.在vManage IP Address部分,点击IP地址。在VPN 0中选择非隧道IP地址。输入您的凭证,检查

Enabled SD-AVC 复选框,然后单击 Update,如图所示.

Node Persona (i)			
0	Compute + Data (Up to 5 nodes each)	Compute (Up to 5 nodes)	<u>ششا</u> Data (Up to 10s c	of nodes)
vManage IP Addre	SS			
172.12.1.4				~
Username				
admin				
Password				
••••••				
Enable SD-	AVC			
			Cancel	Update
。确认更新后	,单击 ок 以便重新启起	动设备,如图所示。		
A Inor reb	der to apply these change poted.	es the device will need to be		
Doy	you want to make these cl	hanges?		

4.在vManage重新启动后,导航至 Administration > Cluster Management > Service Reachability.出现SD-AVC Reachable.

≡ Cisco vManage	Select Resource Group•	Ad	ministration · Cluster Management		
		Servie	ce Configuration Service Reachability		
Current vManage :					
Q Search					
IP Address	Application Server	Statistics Database	Configuration Database	Messaging Server	SD-AVC
	reachable	reachable	reachable	reachable	reachable

策略配置

启用SD-AVC后,您需要创建本地化策略并启用应用可视性。

1.导航到vManage GUI,然后选择 Configuration > Policies > Localized Policy > Add Policy.

2.导航至 Policy Overview,.如果 Policy Settings 部分,请检查 Application 复选框并单击 Save Policy.

Localized Policy > Add Policy	
	🥝 Create Groups of Interest 💫 🥥 Configure Forwarding Classes/QoS 🧼 🤣 Configure Access Control Lists 🧼 🧶 Configure Route Policy 🔶 Policy Overview
Enter name and description for your loca	lized master policy
Deline Namo	
Policy Name policy_test	
Policy Description policy_test	
Policy Settings	
Netflow Netflow IPv6 Applic	tion Application IPv6 Cloud QoS Cloud QoS Service side Implicit ACL Logging
Log Frequency	How often packet flows are logged (maximum 2147483647)
FNF IPv4 Max Cache Entries	Enter the cache size (range 16 - 2000000)
FNF IPv6 Max Cache Entries	Enter the cache size (range 16 - 2000000)
Enter name and description for your local Policy Name policy_test Policy Description policy_test Policy Settings Policy Settings Netflow Netflow IPv6 Applic Log Frequency FNF IPv4 Max Cache Entries FNF IPv6 Max Cache Entries	Create Groups of Interest Configure Forwarding Classes/Qos Configure Access Control Lists Configure Route Policy Policy Overvie Itzed master policy Itzed master policy Itzed master policy Itzed master policy Itzed reacte flows are logged (maximum 2147483647) Enter the cache size (range 16 - 200000) Enter the cache size (range 16 - 200000) Configure Route Policy Configure Access Control Lists Configure Route Policy Policy Overvie Itzed Policy Overvie Configure Route Policy Polic

Back	Preview	Save Policy	Cancel

3.导航至 Configuration > Templates.确定cEdge的模板名称,单击 (...) More Actions 选择 Edit 如图所示.

≡ Ci	sco vManage 🤇	Select Resource Grou	p ▼		c	Configuration • Temp	olates					\bigcirc	0	4
						Device Feature								
Q s	Gearch Template 🗸												2	7
Templat	e Type Non-Default 🗸											Total Rows: 5	Ø	٥
Name	Description	Туре	Device Model	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated	Template Sta	tus		
		CLI	vSmart		global	0	Disabled	1		09 Aug 2022 7:24	In Sync	Edit		
		CLI Feature	vSmart ASR1001-X	SDWAN Edge	global	0	Disabled Disabled	1		09 Aug 2022 7:24 22 Jun 2022 9:27	In Sync In Sync	Edit View Delete Copy		
		CLI Feature Feature	vSmart ASR1001-X vEdge Cloud	SDWAN Edge	global global global	0 13 10	Disabled Disabled Disabled	1 1 0		09 Aug 2022 7:24 22 Jun 2022 9:27 29 Jul 2022 9:09:	In Sync In Sync In Sync	Edit View Delete Copy Enable Dr Attach De	ift Mode vices	
		CLI Feature Feature Feature	vSmart ASR1001-X vEdge Cloud ISR 1100 4GLTE*	SDWAN Edge SDWAN Edge SDWAN Edge	global global global global	0 13 10 10	Disabled Disabled Disabled Disabled	1 1 0 0		09 Aug 2022 7:24 22 Jun 2022 9:27 29 Jul 2022 9:09: 01 Aug 2022 7:55	In Sync In Sync In Sync In Sync	Edit View Delete Copy Enable Dr Attach De Change R Export CS	nft Mode vices isource G V	iroup

4.导航至 Additional Templates.从 Policy 下拉列表中,选择以前创建的本地化策略。

Additional Templates			
AppQoE	Choose	•	
Global Template *	Factory_Default_Global_CISCO_Templ	•	0
Cisco Banner	Choose	•	
Cisco SNMP	Choose	•	
TrustSec	Choose	•	
CLI Add-On Template	Choose	•	
Policy	policy_test	•	1
Probes	Choose	•	-
Security Policy	Choose	•	

5.保存模板。

验证

使用本部分可确认配置能否正常运行。

1.在cEdge设备中,输入此命令以验证cEdge设备与SD-AVC控制器之间的连接。

ISR4321#show avc sd-service info summary Status : CONNECTED <<<<<<< The device is connected with SD-AVC Device ID: ISR4321 Device segment name: <organization name> Device address:<device ip address> Device OS version:17.03.05 Device Type: ISR4321/K9 Active controller: Type : Primary IP : <system-ip> Status: Connected Version :4.0.0 Last connection: 21:20:28.000 UTC Thu Jul 31 2022 Active SDAVC import files Protocol pack: Not loaded Secondaru protocol pack PPDK_af575ccaebf99b0c4740dfc7a611d6.pack

2.登录vManage CLI并验证容器状态。

vManage# request nms container-manager status

Container Manager is running<<<<<<<<

vManage# request nms-container sdavc status

b'Container: sdavc\nCreated: 7 weeks ago ago\nStatus: Up 7 weeks\n' <<<<<<<<

vManage# request nms container-manager diagnostics

NMS container manager Checking container-manager status Listing all images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
sdwan/cluster-oracle	1.0.1	aa5d2a4523a4	5 months ago	357MB
cloudagent-v2	fb3fc5c0841	fa24f9ef31a7	6 months ago	590MB
sdwan/host-agent	1.0.1	038ad845f080	7 months ago	152MB
sdwan/statistics-db	6.8.10	08fc31a50152	8 months ago	877MB
sdwan/coordination-server	3.6.2	5£4497812153	13 months ago	260MB
sdwan/configuration-db	4.1.7	ad351b31f7b9	13 months ago	736MB
sdwan/messaging-server	0.20.0	a46dc94d4993	13 months ago	71.2MB
sdavc	4.1.0	721c572475f9	14 months ago	1.17GB
sdwan/support-tools	latest	0c3a995f455c	15 months ago	16.9MB
sdwan/service-proxy	1.17.0	4e3c155026d8	15 months ago	205MB
sdwan/ratelimit	master	f2f93702ef35	16 months ago	47.6MB

COMMAND

16 months ago

Listing all containers

```
IMAGE
CONTAINER ID
CREATED
                STATUS
PORTS
```

NAMES

```
270601fc94ec cloudagent-v2:fb3fc5c0841
                                           "python ./main.py"
                                                                6 weeks
ago Up 6 weeks 0.0.0.0:50051-
>50051/tcp
                                                                 cloudagent-v2
53bba5216b24 sdwan/ratelimit:master
                                             "/usr/local/bin/rate..."
                                                                 6 weeks
```

Up 6 weeks 6379/tcp, 0.0.0.0:8460-8462->8460ago 8462/tcp

ratelimit 59bf900edf14 sdwan/service-proxy:1.17.0 "/entrypoint.sh /run..." 6 weeks Up 6 ago weeks

service-proxy

62defa38c798 sdwan/messaging-server:0.20.0 "/entrypoint.sh /mes..." 6 weeks ago Up 6 weeks 0.0.0.0:4222->4222/tcp, 0.0.0.0:6222->6222/tcp, 0.0.0.0:8222->8222/tcp messaging-server 3fbf32dd8d73 sdwan/coordination-server:3.6.2 "/docker-entrypoint..." 6 weeks

ago Up 6 weeks 0.0.0.0:2181->2181/tcp, 0.0.0.0:2888->2888/tcp, 0.0.0.0:3888->3888/tcp

coordination-server

c2e7b672774c sdwan/configuration-db:4.1.7 "/sbin/tini -g -- /d..." 6 weeks Up 6 weeks 0.0.0.0:5000->5000/tcp, 0.0.0.0:6000->6000/tcp, 0.0.0:6362ago

>6362/tcp, 0.0.0.0:6372->6372/tcp, 0.0.0.0:7000->7000/tcp, 0.0.0.0:7473-7474->7473-7474/tcp, 0.0.0.0:7687-7688->7687-7688/tcp configuration-db f42ac9b8ab37 sdwan/statistics-db:6.8.10 "/bin/tini -- /usr/l..." 6 weeks ago Up 17 hours 0.0.0.0:9200->9200/tcp, 0.0.0.0:9300->9300/tcp statistics-db 112f3d9b578b sdavc:4.1.0 "/usr/local/bin/scri..." 7 weeks ago Up 7 weeks 0.0.0.0:10503->8080/tcp, 0.0.0.0:10502->8443/tcp, 0.0.0.0:10001->50000/udp sdavc 06b09f3b030c sdwan/host-agent:1.0.1 "python ./main.py --..." 7 weeks ago Up 7 weeks 0.0.0.0:9099->9099/tcp host-agent sdwan/cluster-oracle:1.0.1 "/entrypoint.sh java..." 7 weeks 3484957576ee Up 7 weeks 0.0.0.0:9090ago >9090/tcp cluster-oracle Docker info _____ Client: Debug Mode: false Server: Containers: 10 Running: 10 Paused: 0 Stopped: 0 Images: 11 Server Version: 19.03.12 Storage Driver: aufs Root Dir: /var/lib/nms/docker/aufs Backing Filesystem: extfs Dirs: 149 Dirperm1 Supported: true Logging Driver: json-file Cgroup Driver: cgroupfs Plugins: Volume: local Network: bridge host ipvlan macvlan null overlay Log: awslogs fluentd gcplogs gelf journald json-file local logentries splunk syslog Swarm: inactive Runtimes: runc Default Runtime: runc Init Binary: docker-init containerd version: fd103cb716352c7e19768e4fed057f71d68902a0.m runc version: 425e105d5a03fabd737a126ad93d62a9eeede87f-dirty init version: fec3683-dirty (expected: fec3683b971d9) Kernel Version: 4.9.57-ltsi Operating System: Linux OSType: linux Architecture: x86_64 CPUs: 16 Total Memory: 30.46GiB Name: vManage ID: XXXX:XXXX:XXXX:XXXX:XXXX:XXXX:XXXX Docker Root Dir: /var/lib/nms/docker Debug Mode: false Registry: https://index.docker.io/v1/ Labels: Experimental: false Insecure Registries: 127.0.0.0/8 Live Restore Enabled: false WARNING: No cpu cfs quota support

WARNING: No cpu cfs period support WARNING: bridge-nf-call-iptables is disabled WARNING: bridge-nf-call-ip6tables is disabled WARNING: the aufs storage-driver is deprecated, and will be removed in a future release.

故障排除

本部分提供的信息可用于对配置进行故障排除。

在vManage日志中,验证以下路径:

/var/log/nms/vmanage-server.log
/var/log/nms/containers/sdavc/avc/sdavc_application.log
输入此命令:

request nms container-manager {status | diagnostics}

在cEdge Cisco IOS[®] XE中,输入以下命令:

Router#show avc sd-service info connectivity show avc sd-service info {export | import}

关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言,希望全球的用户都能通过各 自的语言得到支持性的内容。

请注意:即使是最好的机器翻译,其准确度也不及专业翻译人员的水平。

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