



Troubleshooting SD-AVC

This section provides several SD-AVC troubleshooting scenarios. If this information does not provide a solution, contact Cisco TAC for assistance.

- [Troubleshooting Overview, page 1](#)
- [Troubleshooting SD-AVC Network Service Issues, page 4](#)
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- [Troubleshooting SD-AVC Connectivity Issues, page 10](#)
- [Troubleshooting Protocol Pack Issues, page 12](#)

Troubleshooting Overview

The following tables describe troubleshooting for issues with:

- SD-AVC network service
(operates on a dedicated host)
- SD-AVC agent
(operates on each participating device in the network)
- Connectivity
(between network service and one or more devices in the network)

Table 1: Troubleshooting: SD-AVC Network Service

Problem	How it appears	Troubleshooting
SD-AVC network service: installation failure	SD-AVC not active, sd-avc status shows installation failure.	<p>Summary</p> <p>Diagnose with sd-avc status and then service sd-avc trace.</p> <p>Possible issues:</p> <ul style="list-style-type: none"> • Not enough memory: see system requirements • Not enough disk space: see system requirements <p>Troubleshooting Details</p> <p>Troubleshooting Commands for Network Service Issues, on page 4</p> <p>System Requirements: SD-AVC Network Service Host</p>
SD-AVC network service: activation failure	SD-AVC not active, sd-avc status shows activation failure.	<p>Summary</p> <p>Diagnose with sd-avc status and then service sd-avc trace.</p> <p>Possible issue: Something may be using CPU resources. Ensure that nothing is using CPU resources.</p> <p>Troubleshooting Details</p> <p>Troubleshooting Commands for Network Service Issues, on page 4</p> <p>Activation Failure Caused by Shared CPU Resources, on page 7</p>
SD-AVC network service: configuration failure	SD-AVC not active, sd-avc status shows configuration failure.	<p>Summary</p> <p>A VRF is attached to the interface used as the management interface on the device hosting the SD-AVC network service. Remove the VRF assignment from the management interface using:</p> <pre>interface interface no ip vrf forwarding</pre> <p>Troubleshooting Details</p> <p>Configuration Failure Caused by VRF, on page 9</p>

Table 2: Troubleshooting: SD-AVC Agent Operating on Devices in the Network

Problem	How it appears	Troubleshooting
NBAR2 is not activated on the device	On the Dashboard > Application Visibility page, the Timeline graph of bandwidth shows no activity.	<p>Summary NBAR2 is not active: Activate NBAR2 on the device.</p> <p>Troubleshooting Details NBAR2 Not Activated on Interfaces, on page 9</p>

Table 3: Troubleshooting: Connectivity between SD-AVC Network Service and Devices in the Network

Problem	How it appears	Troubleshooting
UDP	Warning in: Dashboard > Application Visibility page > Network Monitoring pane > Connection	<p>Summary Check UDP connectivity.</p> <p>Troubleshooting Details Problem with UDP Communication with Devices, on page 10</p>
TCP	Warning in: Dashboard > Application Visibility page > Network Monitoring pane > Update	<p>Summary Check TCP connectivity.</p> <p>Troubleshooting Details Problem with TCP Communication with Devices , on page 11</p>

Problem	How it appears	Troubleshooting
FTP	Warning in: Dashboard > Application Visibility page > Network Monitoring pane > Update	<p>Summary</p> <ol style="list-style-type: none"> 1 Check FTP connectivity: show ip nbar classification cache sync summary 2 Verify FTP connectivity between the SD-AVC network service and the network device. This includes checking ACL, firewalls, and so on. 3 On the device, ensure that FTP connectivity is possible from the routable interface to the SD-AVC network service. To enable FTP connections from a specific interface, use: ip ftp source-interface <i>interface-name</i> <p>Troubleshooting Details Problem with FTP Communication with Devices, on page 11</p>

Table 4: Troubleshooting: Protocol Packs

Problem	How it appears	Troubleshooting
Failure to load Protocol Pack on a device	When deploying Protocol Packs to one or more devices, results page shows error, such as "out of sync."	<p>Summary</p> <p>Load the Protocol Pack manually on the device to determine whether the Protocol Pack is valid.</p> <p>Troubleshooting Details Failure to Deploy Protocol Pack to Device, on page 12</p>

Troubleshooting SD-AVC Network Service Issues

Troubleshooting Commands for Network Service Issues

The following commands are helpful for troubleshooting SD-AVC network service issues. Execute the commands on the network service host device. The output may indicate any installation or configuration problems.

Table 5: Summary

Command	Description
service sd-avc status	Status of SD-AVC network service installation, configuration, and activation
service sd-avc trace	Memory or disk problems
show virtual-service list	Activation errors
show virtual-service global	CPU and memory usage

Command Details: service sd-avc status

Execute the command on the network service host device.

Output indicates status of SD-AVC installation, configuration, and activation.

- Installation error:
 Service SDAVC is uninstalled, not configured and deactivated
- Activation error:
 Service SDAVC is installed, configured and Activate Failed

Command Details: service sd-avc trace

Execute the command on the network service host device.

Output indicates memory or disk problems.

- **Memory problem (shown in bold below):**

```

service sd-avc trace
2017/11/27 02:06:42.384 [errmsg] [3071]: UUID: 0, ra: 0, TID: 0 (noise):(2):
%VMAN-2-MACH_PARSE_FAILURE: Virtual Service[SDAVC]::Parsing::XML parsing failure::Unable
to parse VM machin
e definition::Requests 3072 MB of memory which exceeds the maximum of 1024
2017/11/27 02:06:42.383 [errmsg] [3071]: UUID: 0, ra: 0, TID: 0 (noise):(2):
%VMAN-2-MEMORY_LIMIT_WARN: Virtual service (SDAVC) defines 3072 MB of Memory exceeding
the maximum 1024 MB.
...
            
```
- **Disk problem (shown in bold below):**

```

2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
per-VM mac address binding from FDB
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get mac
binding from persistent DB file
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Could not retrieve
HA disk info for VM 'SDAVC'
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Unable to locate
fdb attributes for vm(SDAVC)
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
per-VM storage info list from FDB
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
storage pool from persistent DB file
2017/11/27 03:36:52.499 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Virtual Service
failure log[SDAVC]::Install::The installation of the virtual service failed
            
```

Command Details: show virtual-service list

Execute the command on the network service host device.

Output indicates activation status (**failed** in this example):

```
Virtual Service List:
Name                Status                Package Name
-----
SDAVC                Activate Failed       avc_iosxe_221533.ova
```

Command Details: show virtual-service global

Execute the command on the network service host device.

Output indicates virtual service CPU and memory usage:

Example showing a service using 5% of CPU:

```
show virtual-service global
Maximum VCPUs per virtual service : 1
Resource virtualization limits:
Name                Quota                Committed            Available
-----
system CPU (%)      75                   5                    70
memory (MB)         3072                 800                  2272
bootflash (MB)     20000                6764                 10672
```

Installation Failure Caused by Memory or Disk

Component(s)

Device hosting the SD-AVC network service

Background

Memory or disk allocation issues can prevent successful installation of the SD-AVC network service.

Troubleshooting

- 1 Use **service sd-avc status** on the network service host device to check status of installation. If installation is unsuccessful, the output shows "Service SDAVC is uninstalled."

```
service sd-avc status
Service SDAVC is uninstalled, not configured and deactivated
```

- 2 Use **service sd-avc trace** on the network service host device to indicate whether the installation problem is due to **memory** or **disk**.

- **Memory** problem:

```
service sd-avc trace
2017/11/27 02:06:42.384 [errmsg] [3071]: UUID: 0, ra: 0, TID: 0 (noise):(2):
%VMAN-2-MACH_PARSE_FAILURE: Virtual Service[SDAVC]::Parsing::XML parsing
failure::Unable to parse VM machin
e definition::Requests 3072 MB of memory which exceeds the maximum of 1024
2017/11/27 02:06:42.383 [errmsg] [3071]: UUID: 0, ra: 0, TID: 0 (noise):(2):
%VMAN-2-MEMORY_LIMIT_WARN: Virtual service (SDAVC) defines 3072 MB of Memory exceeding
the maximum 1024 MB.
...
```

• **Disk problem:**

```

2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
per-VM mac address binding from FDB
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
mac binding from persistent DB file
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Could not
retrieve HA disk info for VM 'SDAVC'
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Unable to locate
fdb attributes for vm(SDAVC)
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
per-VM storage info list from FDB
2017/11/27 03:36:52.500 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to get
storage pool from persistent DB file
2017/11/27 03:36:52.499 [vman] [3222]: UUID: 0, ra: 0, TID: 0 (ERR): Virtual Service
failure log[SDAVC]::Install::The installation of the virtual service failed
    
```

Solutions

Table 6: Resolving Memory or Disk Errors

Problem	Solution
Memory error	Increase the device memory to the amount specified in System Requirements: SD-AVC Network Service Host .
Disk error	Increase the size of the harddisk or bootflash (for CSR) device according to the requirements specified in System Requirements: SD-AVC Network Service Host .

Activation Failure Caused by Shared CPU Resources

Component(s)

Device hosting the SD-AVC network service

Background

The platform hosting the SD-AVC network service should not have other virtual services operating. Sharing CPU resources with other virtual services can prevent successful activation.

Use **service sd-avc status** on the network service host device to check status of installation. If installation has succeeded, but activation is unsuccessful, the output shows "Activate Failed."

```

service sd-avc status
Service SDAVC is installed, configured and Activate Failed
    
```

Troubleshooting

Use **service sd-avc trace** on the network service host device to troubleshoot. The following output shows a problem (shown in bold) with activation, due to shared CPU.

```
service sd-avc trace
2017/11/26 15:46:49.133 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Failed to find domain
SDAVC - state query
2017/11/26 15:46:49.133 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Domain not found: No
domain with matching name 'SDAVC'
2017/11/26 15:46:49.133 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Error from libvirt:
code=42
2017/11/26 15:46:48.131 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (note): VM (SDAVC) State
Transition: next_state: LIFECYCLE_ACTIVATE_FAILED
2017/11/26 15:46:48.131 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Virtual Service failure
log[SDAVC]::Activate::Internal error::Machine definition customization failed
2017/11/26 15:46:48.131 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Machine definition
customization failed
2017/11/26 15:46:48.131 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Customization of common
XML parameters failed
2017/11/26 15:46:48.131 [vman] [2224]: UUID: 0, ra: 0, TID: 0 (ERR): Customize CPU tunes:
Cannot commit CPU tunes
2017/11/26 15:46:48.131 [errmsg] [2224]: UUID: 0, ra: 0, TID: 0 (noise):(2):
%VMAN-2-CPUSHARES_LIMIT: Virtual Service[SDAVC]::CPU shares limit::The virtual service
definition exceeds the maximum number of CPU shares::Defined: 75, available: 70
```

Use **show virtual-service global** to provide details. In this example, another process is using 5% of the CPU resources (shown in bold).

```
show virtual-service global
Maximum VCPUs per virtual service : 1
Resource virtualization limits:
Name                               Quota      Committed   Available
-----
system CPU (%)                     75         5          70
memory (MB)                        3072      800         2272
bootflash (MB)                    20000    6764        10672
```

Solutions

Deactivate Interface Using CPU Resources

- 1 Check the running configuration using **show run** on the network service host device. If an active interface is using CPU resources, deactivate the interface.

Example

GigabitEthernet1 is using CPU resources.

```
show run | section csr_mgmt
virtual-service csr_mgmt
ip shared host-interface GigabitEthernet1
activate
```

- 2 Deactivate the interface.

Example

```
conf t
virtual-service csr_mgmt
no activate
no ip shared host-interface GigabitEthernet1
```

- 3 Repeat the installation of the SD-AVC network service.

Configuration Failure Caused by VRF

Component(s)

Device hosting the SD-AVC network service

Background

If the host interface that is used as a gateway interface for the SD-AVC network service is attached to a VRF, the SD-AVC network service installation may be successful, but a configuration step may fail.

Troubleshooting

- 1 Check VRF status of the SD-AVC network service gateway interface.

Example showing a VRF configured on the gateway interface GigabitEthernet1:

```
interface GigabitEthernet1
ip vrf forwarding Mgt
ip address 10.56.196.177 255.255.252.0

service sd-avc configure gateway interface gigabitEthernet 1 service-ip 10.56.196.180
% Error: VRF 'Mgt' is configured on gateway. This type of configuration is not supported.
```

Solutions

Remove the VRF assignment from the management interface. Example:

```
interface GigabitEthernet1
no ip vrf forwarding
```

Troubleshooting SD-AVC Agent Issues

NBAR2 Not Activated on Interfaces

Component(s)

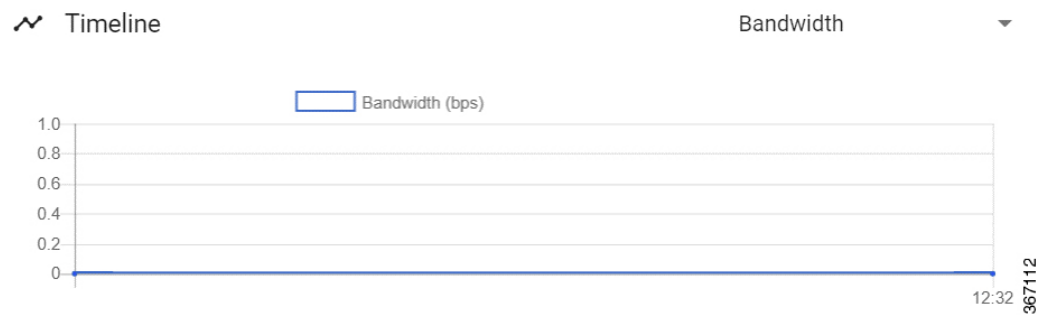
Devices in the network that are using SD-AVC

Background

The NBAR2 component must be active on any interface that processes network traffic, in order to report on traffic handled by the interface. For details, see [Configuration Prerequisites: Network Devices Using SD-AVC](#).

If NBAR2 is not active on an interface processing network traffic:

- The device will not report on any traffic on that interface.
- On the **Dashboard > Application Visibility** page, the **Timeline** graph of bandwidth will show no activity.



- The device will not receive application rules packs from the SD-AVC network service.

Troubleshooting

Verify that NBAR2 is active on interfaces that process network traffic.

Solutions

If necessary, activate NBAR2 on the interface(s).

Troubleshooting SD-AVC Connectivity Issues

Problem with UDP Communication with Devices

Component(s)

SD-AVC network service

Devices in the network that use SD-AVC

Background

The SD-AVC Network Service uses UDP over port 50000 to communicate with the devices that it manages.

Troubleshooting

- 1 If a **Connection** warning appears in the SD-AVC Dashboard, for a specific device in the network, check connectivity on UDP port 50000. Warnings appear here:

Dashboard > Application Visibility page > Network Monitoring pane > Connection

- 2 If no problem is found, contact Cisco TAC.

Solutions

Ensure that UDP connectivity is possible on port 50000 between the affected device and the SD-AVC network service.

Problem with TCP Communication with Devices

Component(s)

SD-AVC network service
Devices in the network that use SD-AVC

Background

The SD-AVC network service uses TCP over ports 20-21 (FTP) to communicate with the devices that it manages.

Troubleshooting

- 1 If an **Update** warning appears in the SD-AVC Dashboard, for a specific device in the network, check connectivity on TCP ports 20-21. Warnings appear here:
Dashboard > Application Visibility page > Network Monitoring pane > Update
- 2 If no problem is found, contact Cisco TAC.

Solutions

Ensure that TCP communication is possible over ports 20-21 (FTP) between the affected device and the SD-AVC network service.

Problem with FTP Communication with Devices

Component(s)

SD-AVC network service
Devices in the network that use SD-AVC

Background

The SD-AVC network service uses FTP to communicate with the devices that it manages.

A device with partial connectivity, but problems specific to FTP may show up as a warning in the SD-AVC Dashboard. An **Update** warning may appear while the **Connection** status is green.

Troubleshooting

- 1 If an **Update** warning appears in the SD-AVC Dashboard while the **Connection** status is green, for a specific device in the network, check the FTP connection status. Warnings appear here:
Dashboard > Application Visibility page > Network Monitoring pane

- 2 On the device with the connectivity issue, use **show ip nbar classification cache sync summary** to check the FTP connection status. "Connection: DISCONNECTED" in the output below shows an FTP connectivity problem.

```
show ip nbar classification cache sync summary
```

```
Connection Status:
  Connection: DISCONNECTED
  Last disconnection: Never
  Mode       : Standalone
  connectivityTimeout (sec)       : 300
  connectivityCheckInterval (sec) : 60
  connectivityCheckInterval was changed: FALSE
  Active controller:
    Type : Primary
    IP   : 10.56.196.232
    Status: Disconnected
    Last connection: Never
    bypass : FALSE
    force down: FALSE
```

Solutions

Ensure that FTP communication is possible between the affected device and the SD-AVC network service.

- 1 Verify that nothing is preventing FTP network connectivity between the SD-AVC network service and the network device. This includes checking ACL, firewalls, and so on.
- 2 On the device with the **Update** warning, ensure that FTP connectivity is possible from the routable interface to the SD-AVC network service. To enable FTP connections from a specific interface, use:

```
ip ftp source-interface interface-name
```

Example:

```
ip ftp source-interface GigabitEthernet1
```

Troubleshooting Protocol Pack Issues

Failure to Deploy Protocol Pack to Device

Component(s)

SD-AVC network service

Cisco NBAR2 Protocol Packs

Background

Use the SD-AVC network service to deploy Protocol Packs to one or more devices. See [Deploying Protocol Packs to Devices](#). When deploying Protocol Packs to one or more devices, if the deployment fails, the results page may show an error.

Troubleshooting

- 1 Load the Protocol Pack manually on the device indicated by the error to verify that the Protocol Pack is valid and can be loaded onto the device. This rules out any problems with the Protocol Pack file.

```
(config)#ip nbar protocol-pack bootflash:pack_file_name.pack
```

- 2 If no problem is found, contact Cisco TAC.

