Configuring Network Devices

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Configuring Network Devices to Use SD-AVC

After the SD-AVC Network Service has been set up, use the information in this section to check the prerequisites for Cisco devices in the network to operate with the SD-AVC Network Service. Then activate and configure SD-AVC on the devices. This activates an SD-AVC agent that operates on the devices to communicate with the SD-AVC Network Service.

After configuration is complete, verify the status of each device using the SD-AVC Dashboard:

Dashboard > **Application Visibility** page > **Network Monitoring**

For High Availability SD-AVC, which employs more than one SD-AVC Network Service, see SD-AVC High Availability.

System Requirements: Network Devices Using SD-AVC

The following table describes the supported platforms and requirements for network devices to operate with SD-AVC. When operating with SD-AVC, network devices run the SD-AVC agent, which manages communication between the devices and the SD-AVC Network Service.

Table 1: Network Device Requirements

Platform	OS
Cisco ASR1001-X Aggregation Services Router	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)

Platform	OS
Cisco ASR1002-X Aggregation Services Router	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco ASR1001-HX Aggregation Services Router	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco ASR1002-HX Aggregation Services Router	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco 1100 Series Integrated Service Routers	Cisco IOS XE Fuji 16.7.1 or later
Cisco ISR4000 Series Integrated Services Routers: 4221, 4321, 4331, 4431, 4451	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco Integrated Services Virtual Router	Cisco IOS XE Fuji 16.7.1 or later
Cisco CSR1000V Cloud Services Router	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco Route Processor RP2, operating on Cisco ASR1004, ASR1006, or ASR1013	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)
Cisco Route Processor RP3, operating on Cisco ASR1004, ASR1006, or ASR1013	Cisco IOS XE Everest 16.6.2 or later Cisco IOS XE Fuji 16.7.1 or later (See note 1.)

Note

1 Cisco IOS XE Everest 16.6.1 is supported, but with limited SD-AVC functionality. Features added in the SD-AVC 2.0.0 release are not supported.

Connectivity

For connectivity requirements and procedures, see Configuring Connectivity.

Configuration Prerequisites: Network Devices Using SD-AVC

Network devices participating with SD-AVC run an SD-AVC agent (see SD-AVC Architecture).

SD-AVC functionality depends on receiving application statistics from each participating network device. Application statistics are collected on each interface (on participating devices) on which one of the following is enabled: Cisco Performance Monitor, Easy Performance Monitor (ezPM), PfR policy, or Protocol Discovery. Each of these activates NBAR2 on the interface.

Depending on the Cisco solution in place, application statistics must be collected as follows:

- **IWAN solution**: (No additional user configuration required) Collection of application statistics is enabled by the use of Easy Performance Monitor (ezPM) and PfR policy.
- **Application Assurance solution**: (No additional user configuration required) Collection of application statistics is enabled by the use of Performance Monitor or Easy Performance Monitor (ezPM), and PfR policy.
- **EasyQoS**: (Requires user configuration) Configure Protocol Discovery on WAN-side interfaces.

Activating the SD-AVC Agent

Use the following procedure on a device in the network to activate the SD-AVC agent, enabling the device to communicate with the SD-AVC Network Service.

Note See system requirements for network devices operating with SD-AVC .

Note The term, SD-AVC Network Service, refers to the virtual service that operates on a host device and performs SD-AVC functions, such as aggregating application data. The **avc sd-service** command used in this procedure does not refer to the SD-AVC Network Service.

1. Activate SD-AVC.

   avc sd-service
   Example:

   ```
   (config)#avc sd-service
   ```

2. Configure the segment (group of devices that share the same purpose, such as routers within the same hub).

   segment cisco
   Example:

   ```
   (config-sd-service)#segment cisco
   ```

3. Enter controller mode to configure the agent to use the SD-AVC Network Service (not related to the **avc sd-service** command used in an earlier step).

   controller
   Example:

   ```
   (config-sd-service)#controller
   ```

4 Enter the service-IP used when the SD-AVC Network Service (running on a host device) was set up.

address *service-ip*

Note For a high availability (HA) configuration, more than one SD-AVC Network Service is specified in this step. See: SD-AVC High Availability

Example:

```
(config-sd-service-controller)#address 10.56.196.146
```

5 Configure VRF.

vrf vrf_mgmt
Example:

```
(config-sd-service-controller)#vrf vrf_mgmt
```

The device is now configured to operate with SD-AVC, and begins:

- Sending collected application data to the SD-AVC Network Service
- Receiving application rules packs periodically from the SD-AVC Network Service

6 Using the SD-AVC Dashboard confirm that the router appears as a device in the network.

Configuration Example

The following is an example of the CLI steps used to configure the SD-AVC agent on a device.

```
(config)#avc sd-service
(config-sd-service)#segment cisco
(config-sd-service)#controller
(config-sd-service-controller)#address 10.56.196.146
(config-sd-service-controller)#vrf vrf_mgmt
```

Deactivating the SD-AVC Agent

Use the following procedure on a device in the network to deactivate the SD-AVC agent and clear any SD-AVC agent configuration details that have been entered. This stops SD-AVC functionality on the device, and the device stops communicating with the SD-AVC network service.

1 Deactivate SD-AVC and remove SD-AVC agent configuration.

no avc sd-service
Example:

```
(config)#no avc sd-service
```