Revised: May 13, 2025

Speed Test on SD-Routing Devices, Release 17.16.x

What's new and changed

Cisco IOS XE Release	Feature Name and Description	Supported Platforms
Cisco IOS XE 17.16.1a	**Speed Test Enhancement for SD-Routing Devices** From Cisco IOS XE 17.16.1a, Cisco Catalyst SD-WAN Manager enables site-to-site speed tests to measure bandwidth between devices over DMVPN tunnels. These tests check upload speed from the source device to the destination, and measure download speed from destination to the source device.	• Cisco Catalyst 8000V Edge Software • Cisco Catalyst 8500 Series Edge Platforms • Cisco Catalyst 8300 Series Edge Platforms • Cisco Catalyst 8200 Series Edge Platforms • Cisco 1000 Series Integrated Services Routers • Cisco 4000 Integrated Services Router • Cisco ASR 1000 Series Aggregation Services Routers

Overview of Speed Test on SD-Routing Devices

Managing a network effectively means understanding and improving its performance. Cisco Catalyst SD-WAN Manager gives network administrators the tools they need to measure and enhance performance, making it easier to spot and fix bandwidth issues. The Speed Test feature plays a key role in this process by checking if network links perform as expected and meet required standards. They also help identify bandwidth problems, allowing faster fixes and reducing downtime.

Types of Speed Test

There are two types of speed tests:

- Site-to-Site Speed Test
- Internet Speed Test

Site-to-Site Speed Test

Cisco Catalyst SD-WAN Manager performs a site-to-site speed test to check the speed and available bandwidth between two devices connected through DMVPN tunnels. It designates one device as the source and the other as the destination. It measures upload speed from the source to the destination and download speed from the destination to the source. This test assesses the performance of internal network links and ensures inter-site communications. Site-to-site speed test also supports both IPv4 and IPv6 addresses in SD-Routing.

Internet Speed Test

SD-WAN Manager tests the speed and available bandwidth between a device and an iperf3 server reachable by the network. It designates the device as the client and the iperf3 server as the remote site. You can specify the IP address or domain name and port number for the iperf3 server. It measures upload speed from the source device to the iperf3 server and download speed from the iperf3 server to the source device.

Restrictions for Speed Test

1. Site-to-Site Speed Test supports only DMVPN tunnel interfaces.
2. If two selected tunnels do not belong to the same DMVPN, the speed test will fail.
3. Internet Speed Test supports only non-tunnel interfaces in VRF 0.
4. For Site-to-Site Speed Test, the selected source and destination interfaces must have the same address family. If not, SD-WAN Manager will display an instant error message.
5. SD-WAN Manager does not validate IPv4/IPv6 compatibility when listing tunnel interfaces.
6. The Speed Test feature is not suitable for testing high or super-bandwidth performance. It is recommended to use Cisco Catalyst 8300 Series Edge Platforms or Cisco 1000 Series Integrated Services Routers for evaluating branch site bandwidth.

Prerequisites for Speed Test

- Speed Test requires the System IP and the device host name of the target device.
- Ensure that the Data Stream option is enabled in Cisco SD-WAN Manager. In a Cisco Catalyst multitenant deployment, you must have the provider role to enable this option. To enable this option, perform the following steps.
  1. From the **Cisco SD-WAN Manager** menu, choose **Administration** > **Settings**.
  2. For the **Data Stream** option, click **View**.
  3. Click **Edit** and choose **Enable**.
  4. Click **Save**.

Run Speed Test

Perform the following steps to run a Site-to-Site Speed Test or an Internet Speed Test.

Run Site-to-Site Speed Test

Torun a Site-to-Site Speed Test, perform the following steps:

Step 1 From Cisco SD-WAN Manager menu, choose **Monitor** > > **Devices**.

Step 2 Tochoose a device, click the device name in the **Hostname** column or Alternatively, click the **ellipsis (...)** adjacent to the device name and choose **Speed Test**, and continue from step 5.

Step 3 Click **Troubleshooting** in the left pane.

Step 4 In the **Connectivity** area, click **SpeedTest**.

Step 5 Specify the following:

- • **Source Interface**: From the drop-down list, choose **tunnel interface** on the local device. Note, A Site-to-Site Speed Test can only be performed if the source interface is a tunnel interface.
  - **Destination Device:** From the drop-down list, choose the remote device by its device name.
  - **Destination Interface:** From the drop-down list, choose the tunnel interface on the remote device.

Step 6 Click **Start Test**.

Run Internet Speed Test

To run an Internet Speed Test, perform the following steps:

Step 1 From Cisco SD-WAN Manager menu, choose **Monitor** > **Devices**.

Step 2 Tochoose a device, click the device name in the **Hostname** column or Alternatively, click the **ellipsis (...)** adjacent to the device name and choose **Speed Test**, and continue from step 5.

Step 3 Click **Troubleshooting** in the left pane.

Step 4 In the **Connectivity** area, click **SpeedTest**.

Step 5 Specify the following:

- **SourceInterface**: From the drop-down list, choose the source interface on the local device. Note, Source interfaces for Internet Speed Test should not be a tunnel interface.
- **DestinationDevice**: From the drop-down list, choose **Internet**.
- **iPerf3Server**: (Optional) Enter the domain name or iPerf3 server's IP address in IPv4 format. For example, ping.online.net or 192.168.0.10
- **ServerPort Range**: (Optional) Enter the server port or a port range. For example, 5201 or 5201-5209.

Step 6 Click **Start Test**.

View Speed Test Results

When a speed test is complete, the test results are added to the table in the bottom pane of the page. The specifics of the available columns are listed below.

Parameters	**Description**
Time	The timestamp when the speed test was conducted.
Destination Device	The remote device.
Source Interface	The network interface on the source device used for the test.
Source Interface Address	The IP address of the source device's interface.
Destination Interface	The network interface on the destination device used for the test.
Destination Interface Address	The IP address of the destination device's interface.

Parameters	Description
Down Speed	The download speed between the source and destination. The download speed shows the speed from the destination to the source in Mbps.
Up Speed	The upload speed between the source and destination. the upload speed shows the speed from the source to the destination in Mbps
Down Bandwidth	The configured down bandwidth.
Up Bandwidth	The configured up bandwidth.

Verify Speed Test

After you successfully execute the speed test, the following details are displayed on the **Speed Test** page:

- The middle part of the right pane reports the results of the Speed Test.
- The clock reports the recently obtained circuit speed results.
- When measuring the uploading speed, packets are sent from the source device to the destination device, and the source device receives acknowledgments from the destination.

  When measuring the downloading speed, packets are sent from the destination device to the source device, and the destination device receives acknowledgments from the source.

Troubleshooting Speed Test Issues

The following table provides troubleshooting information for Speed Test.

Table 1: Troubleshooting Scenarios

Error Information	
Failed to resolve iperf server address	DNS server is not configured at edge device or is unable to resolve the iperf server from the configured DNS server at edge device.
Speed test servers not reachable	The speed test server ping failed. The edge device cannot reach the server IP.
iPerf client: unable to connect stream: Resource temporarily unavailable	Unable to connect to the speed test server. Access may be blocked by access-control list (ACL) permissions.
iPerf client: unable to connect to server	The iPerf3 server is not providing the test service at the user-specified port or default port 5201.
Device Error: Speed test in progress	The selected source or destination device is performing a speed test and cannot start a new one.

Error Information	
Device error: Failed to read server configuration	The data stream configuration is missing. Workaround: Running a CLI command at the SD-Routing device and clearing the SD-Routing control connections can fix the issue.
Speed test session has timed out	Speed test has not successfully completed in 180 seconds. This might be because the SD-Routing device has lost the control connection to Cisco SD-WAN Manager during the speed test.
Address Family mismatch between source and destination or no valid IPv4/IPv6 addresses	The error occurs when there is a mismatch in the Address Family between the source and destination, or when there are no valid IPv4/IPv6 addresses available.