

IP SLAs TWAMP Responder

The Two-Way Active Measurement Protocol (TWAMP) defines a flexible method for measuring round-trip IP performance between any two devices.

TWAMP enables complete IP performance measurement. TWAMP also provides a flexible choice of solutions because it supports all devices deployed in the network.

This chapter describes how to configure the Two-Way Active Measurement Protocol (TWAMP) responder on a Cisco device to measure IP performance between the Cisco device and a non-Cisco TWAMP control device on your network.

Note IPv6 is supported for IP SLA TWAMP Responder on the RSP3 module.

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Prerequisites for IP SLAs TWAMP Responder

For the IP SLAs TWAMP responder to function, a TWAMP control-client and the session-sender must be configured in your network.

Restrictions for IP SLAs TWAMP Responder

- For IP SLAs TWAMP Responder v1.0, the TWAMP server and the session-reflector must be configured on the same Cisco device.
- Time stamping is not supported for TWAMP test packets that ingress/egress via management interface.
- Time stamping is not supported on interfaces that are not routed or BDI interfaces.

- Time stamping is not supported on MPLS/VPLS interfaces.
- TWAMP client and session sender is not supported.
- Upto nine session-senders can be configured for one TWAMP responder.
- TWAMP Light mode is not supported.

IP SLAs TWAMP Architecture

Two-Way Active Measurement Protocol (TWAMP)

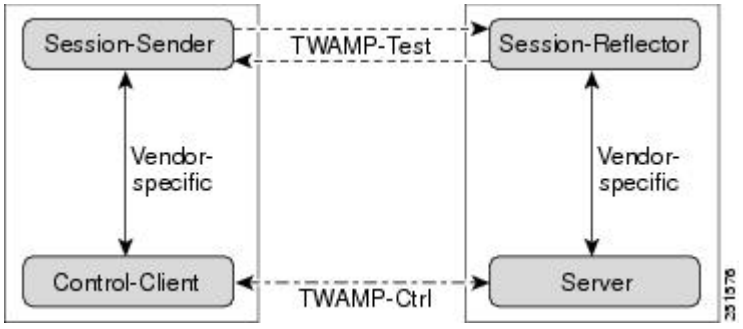
The IETF Two-Way Active Measurement Protocol (TWAMP) defines a standard for measuring round-trip network performance between any two devices that support the TWAMP protocols. The TWAMP-Control protocol is used to set up performance measurement sessions. The TWAMP-Test protocol is used to send and receive performance measurement probes.

The TWAMP architecture is composed of the following four logical entities that are responsible for starting a monitoring session and exchanging packets:

- The control client: It sets up, starts, and stops TWAMP test sessions.
- The session sender: It instantiates TWAMP test packets that are sent to the session reflector.
- The session reflector: It reflects a measurement packet upon receiving a TWAMP test packet. The session reflector does not collect packet statistics in TWAMP.
- The TWAMP server: It is an end system that manages one or more TWAMP sessions and is also capable of configuring each session ports in the end points. The server listens on the TCP port. The session-reflector and server make up the TWAMP responder in an IP SLAs operation.

Although TWAMP defines the different entities for flexibility, it also allows for logical merging of the roles on a single device for ease of implementation. The figure below shows the interactions of four entities of the TWAMP architecture.

Figure 1: TWAMP Architecture

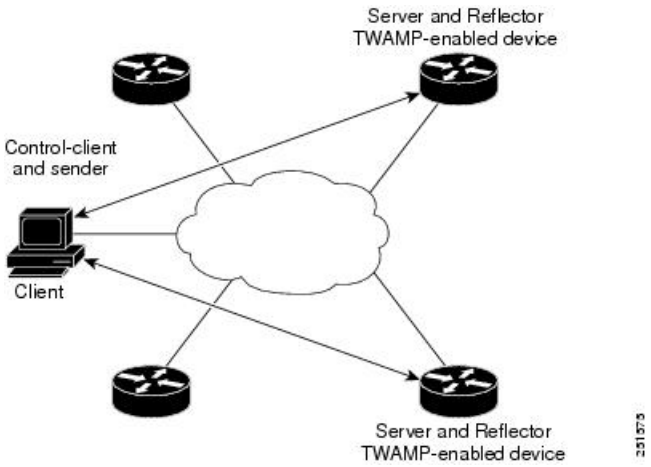


IP SLAs TWAMP Responder

A TWAMP responder interoperates with the control client and session sender on another device that supports TWAMP. In the current implementation, the session reflector and TWAMP server that make up the responder must be co-located on the same device.

In the figure below, one device is the control client and session sender (TWAMP control device), and the other two devices are Cisco devices that are configured as IP SLAs TWAMP responders. Each IP SLAs TWAMP responder is both a TWAMP server and a session-reflector.

Figure 2: IP SLAs TWAMP Responders in a Basic TWAMP Deployment



Configure an IP SLAs TWAMP Responder

Note Effective Cisco IOS-XE Everest 16.6.1, time stamping for sender (T1, T4) and receiver (T3, T2) is performed by the hardware, instead of the software. This time stamping is done bythe hardware to improve the accuracy of jitter and latency measurements.

Note Software time stamping is implemented for TWAMP IP SLA packets on the RSP3 module.

Configuring the TWAMP Server

Note In the current implementation of IP SLAs TWAMP Responder, the TWAMP server and the session reflector must be configured on the same device.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip sla server twamp**
4. **port** *port-number*
5. **timer inactivity** *seconds*
6. **end**

DETAILED STEPS

Procedure

Step 1 **enable**

Example:

```
Device> enable
```

Enables privileged EXEC mode.

- Enter your password if prompted.

Step 2 **configure terminal**

Example:

```
Device# configure terminal
```

Enters global configuration mode.

Step 3 **ip sla server twamp**

Example:

```
Device(config)#  ip sla server twamp
```

Configures the device as a TWAMP server and enters TWAMP server configuration mode.

Step 4 **port** *port-number*

Example:

```
Device(config-twamp-srvr)# port 9000
```

(Optional) Configures the port to be used by the TWAMP server to listen for connection and control requests.

Step 5 **timer inactivity** *seconds*

Example:

```
Device(config-twamp-srvr)# timer inactivity 300
```

(Optional) Configures the inactivity timer for a TWAMP control session.

Step 6 **end**

Example:

```
Device(config-twamp-srvr)# end
```

Returns to privileged EXEC mode.

Configuring the Session Reflector



Note In the current implementation of IP SLAs TWAMP Responder, the TWAMP server and the session reflector must be configured on the same device.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ip sla responder twamp**
4. **timeout** *seconds*
5. **end**

DETAILED STEPS

Procedure

Step 1 **enable**

Example:

```
Device> enable
```

Enables privileged EXEC mode.

- Enter your password if prompted.

Step 2 **configure terminal**

Example:

```
Device# configure terminal
```

Enters global configuration mode.

Step 3 **ip sla responder twamp**

Example:

```
Device(config)# ip sla responder twamp
```

Configures the device as a TWAMP responder and enters TWAMP reflector configuration mode.

Step 4 **timeout** *seconds*

Example:

```
Device(config-twamp-ref)#  timeout 300
```

(Optional) Configures an inactivity timer for a TWAMP test session.

Step 5 **end**

Example:

```
Device(config-twamp-ref)# end
```

Exits to privileged EXEC mode.

Configuration Examples for IP SLAs TWAMP Responder

IP SLAs TWAMP Responder v1.0 Example

The following example and partial output shows how to configure the TWAMP server and the session-reflector for IP SLAs TWAMP Responder v1.0 on the same Cisco device. In this configuration, port 862 is the (default) port to be used by the TWAMP server to listen for connection and control requests. The default port for the server listener is the RFC-specified port and can be reconfigured, if required.

Note In order for the IP SLAs TWAMP responder to function, a control-client and the session-sender must be configured in your network.

```
Device> enable
Device# configure terminal
Device(config)#  ip sla server twamp
Device(config-twamp-srvr)#  exit
Device(config)#  ip sla responder twamp
Device(config-twamp-ref)# end
Device> show running-config
.
.
.
ip sla responder
ip sla responder twamp
ip sla server twamp
port 862
```

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IP SLAs commands	Cisco IOS IP SLAs Command Reference

Standards and RFCs

Standard/RFC	Title
RFC 5357	*Two-Way Active Measurement Protocol (TWAMP)*
RFC 4656	*One-way Active Measurement Protocol (OWAMP)*

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for IP SLAs TWAMP Responder

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1: Feature Information for IP SLAs TWAMP Responder

Feature Name	Releases	Feature Information
IP SLAs TWAMP Responder v1.0		This feature enables you to configure the TWAMP server and the session-reflector on a Cisco device for measuring the round-trip performance between an IP SLAs TWAMP responder and a non-Cisco TWAMP control device in your network. The following commands were introduced or modified: **ip sla responder twamp**, **ip sla server twamp**, **port (twamp)**, **show ip sla standards**, **show ip sla twamp connection**, **show ip sla twamp session**, **show ip sla twamp standards**, **timer inactivity**, **timeout (twamp)**.. In Cisco IOS XE Release 12.2SE, support was added for Cisco ASR 1000 series, Cisco ISR 4000 series, and Cisco CSR 1000v.