



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 TWAMP Responder

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

Restrictions for TWAMP Responder

For the TWAMP Responder to function, the TWAMP server and the session-reflector must be configured on the same Cisco device.

Information About TWAMP Responder

TWAMP

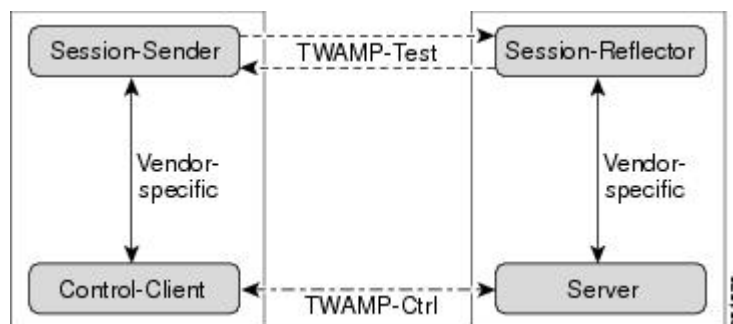
The IETF Two-Way Active Measurement Protocol (TWAMP) defines a standard for measuring round-trip network performance between any two devices that support the TWAMP protocols. The TWAMP-Control protocol is used to set up performance measurement sessions. The TWAMP-Test protocol is used to send and receive 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 sets up, starts, and stops TWAMP-Test sessions.
- The session-sender instantiates TWAMP-Test packets that are sent to the session-reflector.
- The session-reflector reflects a measurement packet upon receiving a TWAMP-Test packet. The session-reflector does not collect packet statistics in TWAMP.
- The TWAMP server is an end system that manages one or more TWAMP sessions and is also capable of configuring per-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 four entities that make up the TWAMP architecture.

Figure 1: TWAMP Architecture

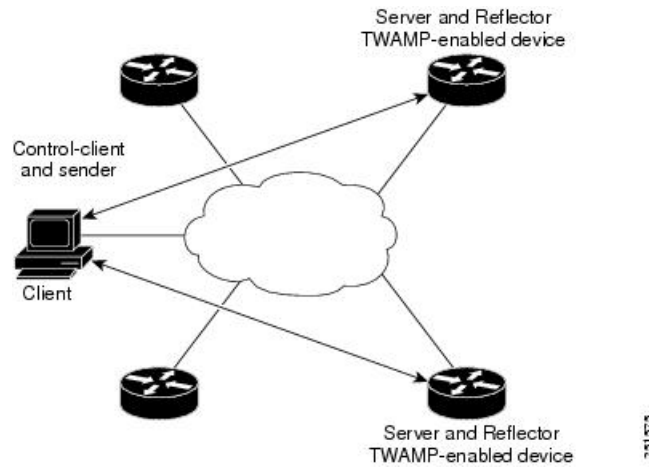


TWAMP Responder

A TWAMP responder interoperates with the control-client and session-sender on another device that supports TWAMP. In the TWAMP Responder feature, the session-reflector and TWAMP server that make up the responder must be co-located on the same device. TWAMP for IPv6 is also supported.

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: TWAMP Responders in a Basic TWAMP Deployment



How to Configure a TWAMP Responder

Configuring the TWAMP Server



Note For IP SLAs TWAMP Responder, the TWAMP server and the session-reflector are configured on the same device.

Procedure

Step 1 `configure terminal`

Example:

```
Device# configure terminal
Enters global configuration mode.
```

Step 2 `feature sla twamp-server`

Example:

```
Device(config)# feature sla twamp-server

Enables the TWAMP server part of the SLA.
```

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 900
```

(Optional) Configures the inactivity timer for a TWAMP control session. Default inactivity timer is 900 seconds; minimum timer is 1 second; and maximum timer is 6000 seconds.

Step 6 `end`**Example:**

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

Returns to privileged EXEC mode.

Configuring the Session-Reflector



Note For TWAMP Responder, the TWAMP server and the session-reflector are configured on the same device.

Procedure

Step 1 `configure terminal`**Example:**

```
Device# configure terminal
```

Enters global configuration mode.

Step 2 `ip sla responder`**Example:**

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

Enables the IP SLA responder for general IP SLAs operations—sending and receiving of IP SLAs control packets.

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. Enabling the responder allows the generation of packet loss statistics on the device sending IP SLAs operations.

Step 4 **timeout** *seconds*

Example:

```
Device(config-twamp-ref)# timeout 900
```

(Optional) Configures an inactivity timer for a TWAMP test session. Default inactivity timer is 900 seconds; minimum timer is 1 second; and maximum timer is 604800 seconds.

Step 5 **end**

Example:

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

Exits to privileged EXEC mode.

Configuration Examples for TWAMP Responder

TWAMP Responder Example

The following example shows how to configure the TWAMP server and the session-reflector for TWAMP Responder 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 TWAMP responder to function, a control-client and the session-sender must be configured in your network.

```
Device# configure terminal
Device(config)# feature sla twamp-server
Device(config)# ip sla server twamp
Device(config-twamp-srvr)# exit
Device(config)# ip sla responder
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
```

TWAMP Responder Show Commands Example

```

Device# show ip sla twamp ?
connection Display TWAMP connections
session Display TWAMP Sessions
standards Display TWAMP standards implemented

Device# show ip sla twamp standards
Feature Organization Standard
TWAMP Server IETF RFC5357
TWAMP Reflector IETF RFC5357

Device# show ip sla twamp session
IP SLAs Responder TWAMP is: Enabled
Recv Addr: 30.30.30.1
Recv Port: 7147
Sender Addr: 30.30.30.2
Sender Port: 50790
Sender VRF: default
Session Id: 30.30.30.1:15918249420668138422:DF55BEE9
Connection Id: 21

Device# show ip sla twamp connection ?
detail Current Connection Details
requests Current Connection Requests

Device# show ip sla twamp connection detail
Connection Id: 21
Client IP Address: 30.30.30.2
Client Port: 58316
Client VRF: default
Mode: Unauthenticated
Connection State: Connected
Control State: Active
Number of Test Requests - 0:1

```

Additional References

Related Documents

Related Topic	Document Title
IP SLAs commands	Cisco Nexus 7000 Series NX-OS IP SLAs Command Reference

Standards and RFCs

Standard/RFC	Title
RFC 5357.	<i>Two-Way Active Measurement Protocol (TWAMP)</i>
RFC 4656	<i>One-way Active Measurement Protocol (OWAMP)</i>

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 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 TWAMP Responder

Feature Name	Releases	Feature Information
TWAMP Responder	Cisco NX-OS Release 8.3(1)	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 SLA TWAMP responder and a non-Cisco TWAMP control device in your network.

