IP SLAs TWAMP Responder

This module describes how to configure an IETF 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.

- Prerequisites for IP SLAs TWAMP Responder, on page 1
- Restrictions for IP SLAs TWAMP Responder, on page 1
- Information About IP SLAs TWAMP Responder, on page 1
- How to Configure an IP SLAs TWAMP Responder, on page 3
- Configuration Examples for IP SLAs TWAMP Responder, on page 5
- Additional References, on page 7

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.
- TWAMP client and session sender is not supported.
- Up to ten control sessions can be configured and established for one TWAMP responder.
- TWAMP Light mode is not supported.

Information About IP SLAs 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

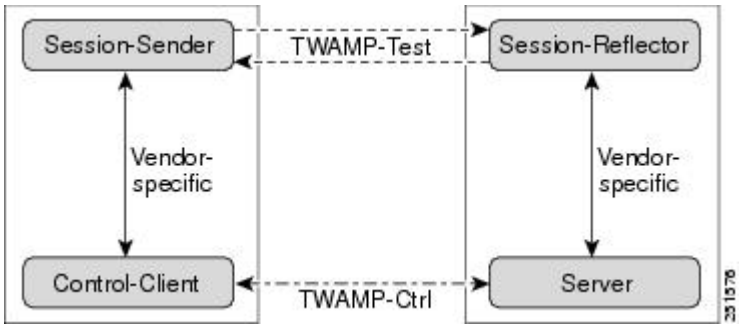
protocol is used to set up performance measurement sessions. The TWAMP-Test protocol is used to send and receive performance-measurement probes.

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 endpoints. The server listens on the TCP port. The session-refector 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 following figure shows the four entities that make up the TWAMP architecture.

Figure 1: TWAMP Architecture

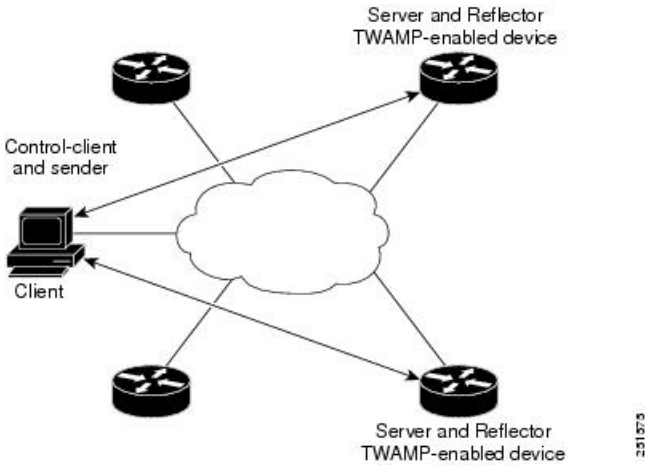


IP SLAs TWAMP Responder v1.0

A TWAMP responder interoperates with the control-client and session-sender on another device that supports TWAMP. In the IP SLAs TWAMP Responder v1.0 feature, the session-reflector and TWAMP server that make up the responder must be colocated on the same device.

In the following figure, 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



How to Configure an IP SLAs TWAMP Responder

Configuring the TWAMP Server

Note For IP SLAs TWAMP Responder v1.0, the TWAMP server and the session-reflector are configured on the same device.

SUMMARY STEPS

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

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `switch> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:**	Enters global configuration mode.

	Command or Action	Purpose
	`switch# configure terminal`	
Step 3	**feature sla twamp-server** **Example:** `switch(config)# feature sla twamp-server`	Configures the device as a TWAMP server.
Step 4	**ip sla server twamp** **Example:** `switch(config)# ip sla server twamp`	Enters the TWAMP server configuration mode.
Step 5	**port** *port-number* **Example:** `switch(config-twamp-srvr)# port 9000`	(Optional) Configures the port to be used by the TWAMP server to listen for connection and control requests.
Step 6	**timer inactivity** *seconds* **Example:** `switch(config-twamp-srvr)# timer inactivity 300`	(Optional) Configures the inactivity timer for a TWAMP control session.
Step 7	**end** **Example:** `switch(config-twamp-srvr)# end`	Returns to privileged EXEC mode.

Configuring the Session-Reflector

Note For IP SLAs TWAMP Responder v1.0, the TWAMP server and the session-reflector are configured on the same device.

SUMMARY STEPS

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

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `switch> enable`	Enables privileged EXEC mode. • Enter your password if prompted.

	Command or Action	Purpose
Step 2	**configure terminal** **Example:** `switch# configure terminal`	Enters global configuration mode.
Step 3	**feature sla responder** **Example:** `switch(config)# feature sla responder`	Configures the device as a TWAMP server.
Step 4	**ip sla responder twamp** **Example:** `switch(config)# ip sla server twamp`	Enters the TWAMP responder configuration mode.
Step 5	**timeout** *seconds* **Example:** `switch(config-twamp-ref)# timeout 300`	(Optional) Configures a timeout for a TWAMP test session.
Step 6	**end** **Example:** `switch(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.

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

```
ip sla responder
ip sla responder twamp
ip sla server twamp
```

Verifying the IP SLA TWAMP Responder Configuration

To display IP SLA TWAMP Responder configuration information, perform one of the following tasks:

Command	Purpose
show ip sla twamp standards	Displays the RFC standards in use by the IP SLA TWAMP responder.
show ip sla twamp session	Displays sender and receiver information about the IP SLA TWAMP session.
show ip sla twamp connection [**detail**|**requests**]	Displays information about IP SLA TWAMP connection. You can specify the following options: • **Details** - Displays the current client connection details. Details include: Client IP Address, Client Port, VRF, Mode, Connection State, Control State, and Number of Test Requests. • **Requests** - Displays the current connection requests.

The following example shows the current RFC Standards in use in the IP SLA TWAMP Responder.

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

The following example shows sender and receiver information about the IP SLA TWAMP session.

```
switch# show ip sla twamp session
IP SLAs Responder TWAMP is: Enabled
Recvr Addr: 30.30.30.1
Recvr 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
```

The following example displays the current client connection details.

```
switch# 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

Standards and RFCs

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