



CHAPTER 15

Managing Collectors

This section explains how to configure collectors on the source router and gather statistics on availability, latency, and jitter from the network.

It contains the following topics:

- [Understanding Collector Management Page](#)
- [Working with IPSLA Collectors](#)

Understanding Collector Management Page

This section briefly describes all the collector-related tasks that you can perform on the Collector Management page, and also provides the various collector status and their validation details in [Table 15-2](#).

[Table 15-1](#) outlines the tasks that you can perform from the Collector Management page (**Monitor > Performance Settings > IPSLA > Collectors**).

Table 15-1 Collector Management Page

Field/Buttons	Description
Collector Group Selector	<p>Lists all the operation-based (system-defined) and user-defined collector groups in IPSLA Monitoring.</p> <p>The list of operation-based groups are as follows:</p> <ul style="list-style-type: none"> • CallSetupPostDialDelay • DHCP • DLSW • DNS • Echo • EthernetJitter • EthernetJitterAutoIPSLA • EthernetPing • EthernetPingAutoIPSLA • FTP • GatekeeperRegistration • HTTP • ICMPJitter • PathEcho • RTP • TCPConnect • UDPEcho • UDPJitter • Video
List Collectors	Select one or more source devices and click this button to view the collectors associated with the source devices.
Filter	<p>Filters the list of collectors in IPSLA Monitoring.</p> <p>For more information, see Filtering Collectors.</p>
View	<p>Allows you to view the collector details.</p> <p>For more information, see Viewing the Collector Details.</p>
Graph	<p>Allows you to view the collector statistics or compare the latency of collectors based on the granularity.</p> <p>For more information, see Viewing Collector Graphs.</p>
Edit	<p>Allows you to edit the following collector details:</p> <ul style="list-style-type: none"> • Collector Information such as Name and Description, and Source Interface. • Scheduling Details such as End Time Details, Days of Week, and Time. <p>For more information, see Editing a Collector.</p>

Table 15-1 Collector Management Page

Field/Buttons	Description
Delete	Deletes collectors from IPSLA Monitoring. For more information, see Deleting Collectors .
Export	Exports collector configuration information into a CSV file. For more information, see Exporting Collector Configuration Information .
Monitor	Generates real-time graph for a collector in Running status. For more information, see Monitoring a Collector .
Start	Starts the stopped collectors. For more information, see Starting the Collectors .
Stop	Stops collectors in the Running status. For more information, see Stopping the Collectors .
Import	Imports collector configuration information from CSV file into IPSLA Monitoring space. For more information, see Importing Collector Configuration Information .
Reconfigure	Allows you to reconfigure Failed state. For more information see Reconfiguring Collectors .
Create	Allows you to create collectors for managing IPSLA functionality. For more information, see Defining Collectors .
Refresh (Icon)	Allows you to refresh the collector list.

Collector Status and Validation

[Table 15-2](#) lists the various collector status, their description, and validation of the status with respect to the tasks.

Table 15-2 Collector Status and Validation

Collector Status	Description	Tasks
Scheduled	Collector is scheduled for a future date and time.	Allows you to edit or delete the collectors. You cannot start, stop, or monitor the collectors.
Configuring	Configuration of the collector is in progress.	Allows you to edit or delete the collectors. You cannot start, stop, or monitor the collectors.
Running	Collector is configured at the source router and the polling is in progress.	Allows you to stop, monitor, or edit the collectors. You cannot start the collectors.

Table 15-2 Collector Status and Validation

Collector Status	Description	Tasks
Stopped	Collectors that are manually stopped and not being polled by IPSLA Monitoring.	Allows you to start, delete, or edit the collectors. You cannot stop or monitor the collectors.
Completed	Collector has reached its End Time and polling will not be performed again for this collector by IPSLA Monitoring.	Allows you to delete the collectors. You cannot start, stop, edit, or monitor the collectors.
Config Failed	Configuration of the collector failed on the source router. This may be caused by one of the following: <ul style="list-style-type: none"> • Low memory allocated for IP SLA on the source router. • Source router does not support the operation that you have selected while creating the collector. For example, for ICMP Jitter operation, you must select a source router with IOS version > 12.4.	Allows you to edit or delete the collectors. You cannot start, stop, or monitor the collectors.
Dormant	Collector is inactive on the source device. As a result, IPSLA Monitoring does not poll for the statistical data during this period.	Allows you to edit or stop the collectors. You cannot start, delete, or monitor the collectors.
Source Not Responding	Collector will move to this status while configuring/reconfiguring/polling statistics of a collector due to: <ul style="list-style-type: none"> • Invalid credentials • Device is not reachable 	Allows you to edit or delete the collectors. You cannot start, stop, or monitor the collectors.
MEP Missing	Maintenance End Point Missing. Collector will move to this status when the Maintenance end Point is detected to be missed during polling and reconfiguring (start / edit / device reload).	Allows you to monitor and view the collectors. It also allows you to view graphs for the collectors. You cannot start, stop, export or edit the collectors. MEP missing collectors can be deleted but cannot be monitored. This state is applicable only for Auto IPSLA Ethernet collectors.

Table 15-2 Collector Status and Validation

Collector Status	Description	Tasks
Updating	Editing a collector is in progress.	Allows you to delete the collectors.
Resuming	Intermediate status between Dormant and Running.	You cannot start, stop, or monitor the collectors.
Stopping	Intermediate status between Running and Stopped.	
Completing	Intermediate status between Running and Completed.	
Dormant Pending	Intermediate status between Running and Dormant.	
Deleting	Collector deletion is in progress. You cannot delete the collectors which are running.	
Reconfiguring	Intermediate status between Config Failed and Running.	
	Or When the collector is missing on the source router.	

Filtering Collectors

The Filter option available in the IPSLA Collector Management dialog box, allows you to filter the Collectors based on certain fields and value. The filter operation uses “contains” as the default criteria to filter the Collectors based on the string provided in the filter text area. The Collector filter operation is not case sensitive.

You can filter the Collectors based on any of the following fields:

- All
- Collector Name
- Source
- Target
- Operation
- Status
- VRF

Example:

If you want to filter the Collectors based on Collector Name and with value `chen`:

1. From the Filter Drop down, select Collector Name.
2. In the Filter text area enter `chen`
3. Click **Filter**

By default the filter operation uses “contains” to filter the Collectors.

All those Collectors whose names contain the value `chen` are filtered and provided in the results:

```
ChenColl
HTTPChenColl
```

Collector License Information

The number of collectors that you create in IPSLA Monitoring depends on the device license limit. For example, if you have a license for 100 devices, you are allowed to create up to 300 collectors to manage IPSLA Monitoring functionality as shown in [Table 15-3](#).

Table 15-3 Collector License Information

Device License	Licensed Number of Collectors
50	150 Collectors
100	300 Collectors
200	300 Collectors
500	1250 Collectors
1000	1500 Collectors
2500	3000 Collectors
5000	5000 Collectors
10000	5000 Collectors
Incremental Licenses	
Incremental combination from 250 — 450 device count	1000 Collectors
Incremental combination from 550 — 950 device count	1250 Collectors
Incremental combination from 1050 — 1450 device count	1500 Collectors
Incremental combination from 1500 — 2500 device count	3000 Collectors
Incremental combination from 2500 — 5000 device count	5000 Collectors

The IPSLA Monitoring Collector license limit applies only to historical collectors and not to real-time collectors. However, you are allowed to create real-time collectors even after the license limit is reached. There is no limit to the number of real-time collectors that you could create to manage IPSLA Monitoring functionality.



Note

The AutoIPSLA generated collectors are accounted for license.

Working with IPSLA Collectors

A collector is defined as an entity that encompasses a source router, a target device, an operation, and the collector schedule. IPSLA Monitoring allows you to create one or more collectors by selecting one source device, multiple target devices and operations.

The number of collectors you create depends on the device license. For more information on the device license, see [Table 15-3](#).

After you create the collectors, they are configured on the source router by IPSLA Monitoring functionality to collect the network performance statistics.

Creating collectors involves

- [Specifying Source Devices](#)
- [Specifying Target Devices](#)
- [Specifying IPSLA Operations](#)
- [Defining Collectors](#)

This section also contains information on:

- [Viewing the Collector Page](#)
- [Viewing the Collector List](#)
- [Viewing the Collector Details](#)
- [Editing a Collector](#)
- [Deleting Collectors](#)
- [Viewing Collector Graphs](#)
- [Exporting Collector Configuration Information](#)
- [Importing Collector Configuration Information](#)
- [Monitoring a Collector](#)
- [Stopping the Collectors](#)
- [Starting the Collectors](#)
- [Reconfiguring Collectors](#)



Note You cannot start, stop, edit, delete, or monitor AutoIPSLA- generated collectors

Specifying Source Devices

IPSLA Monitoring source is a device from which you initiate operations for measuring network performance statistics. Each source must be IPSLA capable and an SNMP agent.

The following MIBs are used by IPSLA Monitoring to retrieve required information:

- RttMonMIB
- SystemMIB

The source devices are listed under Source Device Selector on the Collector Configuration page.

This list contains only IP SLA capable devices under the respective MDF categories and also in “All Devices” folder.

Specifying Target Devices

IPSLA Monitoring targets are destination devices for which you want to gather network performance statistics. A target can be any IP-addressable device or a Cisco device running the IP SLA Responder on which the source router performs IP SLA operations. Target devices with IP SLA Responder capability provide more accurate measurements than the other target devices.

**Note**

The IP SLA Responder is supported only in Cisco IOS 12.1(2)T or later. We strongly recommend that you use software release 12.1 or later.

Specifying IPSLA Operations

IP SLA operations are used to create collectors that are configured on the source router to measure network performance statistics.

IPSLA supports the following IP SLA operations:

- Echo Operations
 - Echo
 - Path Echo
 - UDP Echo
- Jitter Operations
 - ICMP Jitter
 - UDP Jitter
- Services Operations
 - DNS
 - DHCP
 - HTTP
 - FTP
 - DLSw
 - TCP Connect
- VoIP-related Operations
 - Gatekeeper Registration Delay
 - Call Setup Post Dial Delay
 - RTP
- Metro Ethernet Operations
 - Ethernet Ping
 - Ethernet Jitter

- Ethernet Ping Auto IP SLA
- Ethernet Jitter Auto IP SLA
- Video Operations

For more information, see [Managing Operations](#).

Defining Collectors

IPSLA provides a single wizard-based approach that leads you through the procedure to create multiple collectors. This wizard process involves the following four steps:

- [Configuring Collectors](#)
- [Selecting Collectors](#)
- [Scheduling Collectors](#)
- [Viewing the Collector Summary](#)

You must complete all the four tasks in this sequence to create collectors. If you exit the wizard at any stage using **Cancel**, the details you have specified will be lost and the collectors will not be created.

Configuring Collectors

The Collector Configuration page allows you to configure collectors. You can configure collectors by specifying the collector information, a source device, target devices, and operations.

You can also configure collectors by specifying the VRF Name.

The collectors are created, based on the number of target devices and operations that you have selected. If you have selected M target devices and N operations, then $M*N$ collectors are created.



Note

Target device is not applicable for VoIP Gatekeeper Registration Delay, VoIP Post Dial Delay, Ethernet Ping Auto IPSLA, DHCP, Ethernet Ping, Ethernet Jitter and Ethernet Jitter Auto IP SLA operations. If you select target device a message appears indicating that they do not support target device.

The Maintenance End Point (MEP) number is referred to and considered as the Target device for Ethernet Ping and Ethernet Jitter operations.

The number of historical collectors you create to manage IPSLA Monitoring functionality, depends on your device license. For more information on the license, see [Collector License Information](#).

However, we recommend that you create collectors based on the polling interval for better performance of the IPSLA Monitoring server.

To configure collectors:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears.

Step 2 Click **Create**.

The Collector Configuration page appears.

Step 3 Specify the following details in the Collector Info section:

- The collector name in the Collector Name field.
- A brief description of the collector in the Description field.

Though the Collector Name field allows you to enter more than 15 characters, the source device and trap PDUs display only the first 15 characters for IOS versions that are lower than 12.4. However, the IPSLA Monitoring database, contains the complete collector name.

Step 4 Select the source device from the Source Devices list.

For more information on selecting Source Device, see [Table 15-4](#).

Table 15-4 Using Source Device List

Folder Name	Description
Search Input	Enter your search expression in this text field. You can enter a single device name or multiple device names in this field. You can enter the following as search inputs to search multiple devices: <ul style="list-style-type: none"> • Comma-separated list of complete device names. • Device names with wildcard characters * and ? to search for multiple devices that match the text string entered in this input field. • Combination of comma-separated lists of device names, and device names with wildcard characters.
All	Lists all devices that are available to manage IPSLA Monitoring functionality.
Selection	Lists all devices that you have selected in the All or Search Results tab or through a combination of both
Search Results	Displays the Simple search results. From the search result, you can: <ul style="list-style-type: none"> • Select all devices • Clear all devices • Select a few devices
All Devices	Lists all devices in the application in alphabetical order of their device names. The device names are defined when you add the devices in DCR.
Device Type Groups	Lists all devices in groups and subgroups, based on their Device Category, Series, and Model. By default, the device grouping is based on their Device Categories, such as Routers, Switches, and Hubs
User-defined Groups	Lists IPSLA devices that satisfy the group rules. These group rules are defined by you when you create the User-defined groups.

Step 5 Select the Use VRF check box to enter Virtual Routing and Forwarding details.

When you select the Use VRF check box, the Select VRF button is activated.

Step 6 Either:

- Enter the VRF details in the VRF field.

If you enter an invalid VRF name or a VRF name that does not exist in the selected source, the collectors go to the ConfigFailed state.

Or

- Click **Select VRF** to select the VRF from the existing list of VRFs configured in the device.

When you Select VRF, the VRF List pop-up box appears. The VRF List displayed is based on the Source device that you selected in Step 4.

For more information on selecting the VRF from the VRF List pop-up box, see [Table 15-5](#)

Table 15-5 VRF List

Elements	Description
Get Latest From Device	Fetches the latest list of VRFs from that source device.
OK	Allows you to select the VRF from the VRF List. You can select only one VRF from the VRF List.
Cancel	Exits the VRF List dialog box.

If the VRF List is blank, the VRF List dialog box displays the following message:

The VRF list is blank. Click Continue to refresh the list from the device.

You can configure collector using VRF only for the following operations:

- ICMP echo
- UDP echo
- ICMP path echo
- ICMP jitter
- UDP jitter
- TCP Connect
- HTTP
- FTP
- DNS
- Video

Step 7 Select one or more target devices from the Target Devices list.

For more information on selecting the Target device, see [Table 15-6](#).

Table 15-6 Using the Target Devices List

Folder Name	Description
Search Input	Enter your search expression in this text field. You can enter a single device name or multiple device names in this field. You can enter the following as search inputs to search multiple devices: <ul style="list-style-type: none"> • Comma-separated list of complete device names. • Device names with wildcard characters * and ? to search for multiple devices that match the text string you have entered in this input field. • Combination of comma separated list of device names, and device names with wildcard characters.
All	Lists all devices that are available to manage IPSLA Monitoring functionality.
Selection	Lists all devices that you have selected in the All or Search Results tab or through a combination of both.
Search Results	Displays the Simple search results. From the search result, you can: <ul style="list-style-type: none"> • Select all devices • Clear all devices • Select a few devices
All Devices	Lists all devices in the application in alphabetical order of their device names. The device names are defined when you add the devices in DCR.
Device Type Groups	Lists all devices in groups and subgroups based on their Device Category, Series, and Model. By default, the device grouping is based on their Device Categories, such as Routers, Switches, and Hubs.
User-Defined Groups	Lists IPSLA devices that satisfy the group rules. The group rules are defined by you when you create the User-defined groups
Subnet Groups	Lists the subnet-based groups.
Medianet Endpoint Connected Groups	Lists the group of devices connected Medianet Endpoints.
Responder Enabled Devices	Lists all responder-enabled Target devices. UDP Jitter operation uses Responder Enabled Target devices.
Adhoc Target	Lists all external Target devices that are added to manage IPSLA Monitoring functionality.

Step 8 Select one or more operations from the Operations list.

Step 9 Enter a valid IP address in the Source Interface field.

This is the IP address of the Source Device Interface to which the packets are returned from the destination.

The Source Interface field is an optional field and does not apply to Ethernet operations.

Step 10 Click **Next**.

The Select Collector page appears.

Selecting Collectors

The Select Collector page allows you to select or deselect collectors that you want to create. By default, all collectors are selected.

A warning appears if the device that you specified on the Collector Configuration page, has wrong credentials or is not reachable.

To select collectors:

-
- Step 1** Select the required collectors from the Select Collectors pane that you want to create.
For more information on the Select Collector page, see [Table 15-7](#).

Table 15-7 *Select Collector Page*

Field	Description
Source Details	
Source Address	IP address of the Source device you have selected.
IOS Version	IOS version of the Source device.
Max Collectors	Maximum number of collectors that the Source device supports.
New Collectors Capacity	Number of collectors you can configure on the Source device.

- Step 2** Click **Next**.

The Schedule page appears.

You can also filter the collector list using the Filter field. For more information, see [Table 15-8](#).

Table 15-8 *Filtering Collectors on Select Collector Page*

Filter Criteria	Description
All	Lists all collectors to manage IPSLA Monitoring functionality.
Collector Name	Enter the complete Collector name or a part of it.
Target	Enter the complete Target name or a part of it.
Operation	Enter the complete Operation name or a part of it.

Scheduling Collectors

The Schedule page allows you to specify the collector type, schedule the start and end times for the collectors to configure, and specify the polling time intervals.

To schedule collectors:

Step 1 Select either of the following from the Collector Type section:

- **Historical/Statistical**—Gathers data and stores it in the IPSLA Monitoring database for future analysis. This is the default setting.

Or

- **Monitored/Real-time**—Allows you to monitor network performance in real-time. However, the network performance data is not stored in the IPSLA Monitoring database.

If you select **Monitored/Real-time** as the type, the Start Time Details, End Time Details, and Poller Settings fields are disabled.

Step 2 Define a schedule for the selected collectors in the Start Time Details section. To do this select either:

- **Immediate**—Starts the collector immediately after it is configured. This is the default setting.

Or

- **Date**—Select this from the Calendar icon. The collector will start at the specified date. The default setting for Date is the current date. That is, the date on which you define the collector.

The start time of the collector depends on the time defined in the Poller Settings field.

At the scheduled start time, IPSLA Monitoring configures the collector in the router and the status is reflected in the Collector Management page.

The Date field is disabled if you have selected **Immediate** as the start time.

Step 3 Specify the end date for the collector in the End Time Details section. To do this, select any of the following:

- **Forever**—Runs the collector continuously. This is the default setting. To stop the running collector select **Monitor > Performance Settings > IPSLA > Collectors > Stop**.

- **Duration**—Removes the collector from the source router after the specified length of time has expired. The duration is specified in days. You can also specify **0 days** as the duration. This is the current date.

For example, if you specify **0 days** with polling time intervals 20:00:00 to 23:30:00, the collector stops polling at 23:30:00 hours.

- **Date**—Select this from the Calendar icon. The collector will stop at the specified date. The default setting for Date is the current date. That is, the date on which you define the collector.

The end time of the collector depends on the time defined in the Poller Settings field.

The Duration and Date fields are disabled if you select **Forever** as the end time.

Step 4 Specify the following in the Poller Settings section:

- **Polling Interval**—Specifies the polling frequency from IPSLA Monitoring server to the source router to collect statistics. Select the polling interval from the drop-down list. The default polling interval is 60 minutes. The polling intervals available are 1, 5, 15, and 30, and 60 minutes.

We recommend that you create collectors based on the polling interval for better performance of the IPSLA Monitoring server.

- You can generate Minute reports and graphs only if you have set the Polling Interval to any of these: 1, 5, 15, and 30 minutes.
- You can generate Historical reports and graphs for all Polling Interval such as 1, 5, 15, 30, and 60 minutes.
- **Days of Week**—Select the days of the week when you want the polling to occur.
- **Time**—Specify the From and To time interval for the polling to start. You must specify the time in the format, Hour:Minutes:Seconds. The default From and To times are 00:00:00 and 23:59:59, respectively.

Step 5 Click **Next**.

The Summary page appears.

Viewing the Collector Summary

The Summary page provides information on the collector configuration, schedule, and poller settings. It provides the VRF details, if VRF is used while creating Collector. For more information, see [Table 15-9](#).

To view the collector summary:

Step 1 Click **Finish**.

A message appears that the collectors were created successfully.

Or

Click **Back**.

This allows you to modify the settings defined in the Collector Configuration, Select Collector, or Schedule pages.

Step 2 Click **OK**.

The Collector Management page displays the newly- defined collectors.

Table 15-9 Collector Summary Page

Field	Description
Collector Name	Displays the collector name
Description	
Collector Type	Collector type (such as Historical or Real time).
Configuration Details	
Source Address	IP address of the Source device.
Target Addresses	IP addresses of the Target device.
Operation Names	Name of the operation.
VRF Name	Displays the name of the VRF specified while creating collector. If you have not specified the VRF details, the field will be displayed as “Not Applicable”.
Schedule Details	
Start Date	Start date that you specified while creating collectors.
End Date	End date that you specified while creating collectors.
Poller Settings	
Polling Interval (mins)	Polling time interval that you specified while creating a collector.
Polling Time	Start and end times of the polling times that you specified while creating a collector.
Days of Week Details	Days of the week when polling occurs. These are the days that you specified while creating a collector.

Viewing the Collector Page

The Collector Management page displays collectors. It also displays their details, such as collector name, source, target, operation, start time, end date, collector type, and status.

The Collector Management page has a sliding object selector labelled, Collector Group Selector. Click the red arrow on this selector to maximize or minimize the view of the Collector List.

You can perform the following tasks on this page:

- List Operation-based groups (See [Listing Operation-Based \(System-Defined\) Groups](#))
Lists collectors based on the default operation types.
- List User-defined groups (See [Listing User-Defined Groups](#))
Lists collectors based on the groups defined by users in Group Administration.

- Filter the collector list (See [Filtering the Collector List](#))
Allows you to filter the collector list.
- Sort the collector list (See [Sorting the Collector List](#))
Allows you to sort the collector list.



Note You can also use a combination of operation-based groups and user-defined groups to list the collectors.

Listing Operation-Based Groups

To list collectors, based on Operation-based groups:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears, displaying the list of collectors.
- Step 2** Select the operation you need from the Operation Based Groups folder in the left pane.
For example, to list collectors based on the operation, FTP, select the FTP check box.
- Step 3** Click **List Collectors**.
The collector list for the selected operation appears in the right pane.
-

Listing User-Defined Groups

To list collectors based on User-defined groups:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears, displaying the list of collectors.
- Step 2** Select the required User-defined group from the left pane.
For example, to list collectors based on the location, USCollectors, select the USCollectors check box.
- Step 3** Click **List Collectors**.
The collector list for the selected User-defined group appears in the right pane.
-

Filtering the Collector List

To filter the collector list:

-
- Step 1** Select the filter type from the Filter drop-down list.
- Step 2** Click **Filter**.
- The Filter Collector list appears. See [Table 15-10](#).

Table 15-10 *Filtering Collector List*

Filter Criteria	Description
All	Displays the entire collector list.
Collector Name	Enter the complete Collector name or a part of it.
Source	Enter the complete Source device name or a part of it.
Target	Enter the complete Target device name or a part of it.
Operation	Enter the complete Operation name or a part of it.
Status	Enter the complete Status name or a part of it.
VRF	Enter the complete VRF name.

Table 15-11 *Using Source Devices List*

Folder Name	Description
Search Input	<p>Enter your search expression in this text field.</p> <p>You can enter a single device name or multiple device names in this field. You can enter the following as search inputs to search multiple devices:</p> <ul style="list-style-type: none"> • Comma separated list of full device names. • Device names with wildcard characters * and ? to search for multiple devices matching the text string entered in this input field. • Combination of comma separated list of device names, and device names with wildcard characters.
All	Lists all the devices that are available to manage IPSLA Monitoring functionality.
Selection	Lists all the devices that you have selected in the All or Search Results tab or through a combination of both.
Search Results	<p>Displays the Simple search results. From the search result, you can:</p> <ul style="list-style-type: none"> • Select all devices • Clear all devices • Select a few devices
All Devices	Lists all the devices in the application in the alphabetical order of their device names. The device names are defined when you have added the devices in DCR.
Device Type Groups	Lists all devices in groups and subgroups based on their Device Category, Series, and Model. By default, the device grouping is based on their Device Categories such as Routers, Switches, and Hubs.

Table 15-11 *Using Source Devices List (continued)*

Folder Name	Description
User Defined Groups	Lists IPSLA devices that satisfy the group rules. The group rules are defined by you when you create the User-Defined groups.
Subnet Groups	Lists Subnet-based groups
Medianet Endpoint Connected Groups	Lists the group of devices connected with Medianet Endpoints.

Step 3 Select one or more target devices from the Target Devices list.

For more information on selecting the Target device, see [Table 15-12](#).

Table 15-12 *Using the Target Devices List*

Folder Name	Description
Search Input	Enter your search expression in this text field. You can enter a single device name or multiple device names in this field. You can enter the following as search inputs to search multiple devices: <ul style="list-style-type: none"> • Comma separated list of full device names • Device names with wildcard characters * and ? to search for multiple devices matching the text string entered in this input field. • Combination of comma separated list of device names, and device names with wildcard characters.
All	Lists all the devices that are available to manage IPSLA Monitoring functionality.
Selection	Lists all the devices that you have selected in the All or Search Results tab or through a combination of both.
Search Results	Displays the Simple search results. From the search result, you can: <ul style="list-style-type: none"> • Select all devices • Clear all devices • Select a few devices
All Devices	Lists all the devices in the application in the alphabetical order of their device names. The device names are defined when you have added the devices in DCR.
Device Type Groups	Lists all devices in groups and subgroups based on their Device Category, Series, and Model. By default, the device grouping is based on their Device Categories such as Routers, Switches, and Hubs.
User-Defined Groups	Lists IPSLA devices that satisfy the group rules. The group rules are defined by you when you create the User-Defined groups.
Subnet Groups	Lists Subnet-based groups
Medianet Endpoint Connected Groups	Lists the group of devices connected with Medianet Endpoints.
Responder Enabled Devices	Lists all the responder enabled target devices. UDP Jitter operation uses Responder Enabled target devices.
Adhoc Target	Lists all the external target devices added to manage IPSLA Monitoring functionality.

The Target List does not apply to the Gatekeeper Registration Delay, Post Dial Delay operations, Ethernet Jitter Auto IP SLA and Ethernet Ping Auto IP SLA, because they do not support Target devices. For Ethernet Jitter and Ethernet Ping the maintenance endpoint ID (MEPID), which is in the operation, is considered as the target.

Step 4 Select one or more operations from the Operations list.

Step 5 Enter a valid IP address in the Source Interface field.

This is the IP address of the source device interface to which the packets are returned from the destination. The Source Interface field is an optional field.

The Source Interface field is not applicable for Ethernet operations.

Step 6 Click **Next**.

The Select Collector page appears.

Viewing the Collector List

The Collector Management page displays all the operation-based (system-defined) and user-defined collectors, and their details, such as collector name, source, target, operation, start time, end date, collector type, and status.

You can perform the following tasks on this page:

- [Listing Operation-Based \(System-Defined\) Groups](#)
Lists collectors based on the default operation types. The operation-based groups are also referred to as system-defined groups.
- [Listing User-Defined Groups](#)
Lists collectors based on the groups defined by users in Group Administration.
For more information, see [Creating User-Defined Collector Groups](#).
- [Filtering the Collector List](#)
Allows you to filter the collector list.
- [Sorting the Collector List](#)
Allows you to sort the collector list.



Note

You can also use a combination of operation-based groups and user-defined groups to list the collectors.

Listing Operation-Based (System-Defined) Groups

To list collectors based on operation-based groups:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears with the list of collectors.

Step 2 Select the required operation from the Operation Based Groups folder in the left pane.

For example, to list collectors based on the operation, 'FTP', select the FTP check box.

Step 3 Click **List Collectors**.

The collector list for the selected operation appears in the right pane.

You can further filter this list of collectors. For more information, see [Filtering the Collector List](#).

Listing User-Defined Groups

To list collectors based on user-defined groups:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears with the list of collectors by default.

Step 2 Select the required user-defined group from the left pane.

For example, to list collectors based on the location, 'USCollectors', select the 'USCollectors' check box.

For more information on user-defined group, see [Managing Collector Groups](#).

Step 3 Click **List Collectors**.

The collector list for the selected user-defined group appears in the right pane.

You can further filter this list of collectors. For more information, see [Filtering the Collector List](#).

Sorting the Collector List

To sort the collector list, click one of the column titles. By default, the information is sorted based on collector name. Optionally, you can sort the information based on other parameters such as start time, target, or operation type.

Viewing the Collector Details

To view the collector details:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears with the list of collectors.

Step 2 Select the collector for which you want to view the details from the Collector List section.**Step 3** Click **View**.

The Collector Details window appears. For more information, see [Table 15-13](#).

Step 4 Click **OK**.

Table 15-13 Collector Details

Field	Description
Details	
Name	Collector name specified while defining a collector.
Description	Description of the collector specified while defining a collector.
Operation Name	The name of the operation while defining a collector.
Admin Index	Unique number that represents each collector on the device.
Vrf Name	VRF name of the collector.
Source Interface	Source Interface details.
Last Modified Time	Last modified time of the collector.
Source Device details obtained when a collector was last configured by IPSLA Monitoring function	
Device Name	Name of the device specified while adding the device in DCR.
IOS Version	Displays the IOS version of the source device.
IP SLA Version	Displays the IP SLA version of the source device.
Max Collectors	Maximum number of collectors the source device supports.
New Collectors Capacity	Number of collectors that you can configure on the source router.
Last snmp Set Time	Date and time when the source device was last modified while creating or modifying a collector.
Last reboot Time	Last reboot time of the source device.
Target Details	
Device Name	Name of the device specified while adding the device in DCR.
Responder Enabled	Displays whether the target device is Responder Enabled or not.
Scheduling Details	
Scheduling Type	Displays whether the collector type is Historical or Monitored/Real-time.
Start Date	Displays the start date specified while creating collectors.
End Date	Displays the end date specified while creating collectors.
Polling Details	
Polling Interval (mins)	<p>Polling time interval specified while creating a collector.</p> <p>Note If you create a Video collector with polling frequency as 1 minute or 5 minutes, the same statistics will be populated for every 15 minutes in the video_minute_stats table for that collector. This is applicable when you have created a Video operation with default sample interval.</p>
Polling Time	Start and end time of the polling time specified while creating a collector.
Days of Week	Displays days of the week when polling happens, specified while creating a collector.

Editing a Collector

You can edit the description and the scheduling details of a collector. You cannot edit the details of a source, target, or operation.

**Note**

You are not allowed to edit individual IPSLA Ethernet auto discovered collectors.

To edit a collector:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears with the list of collectors.
- Step 2** Select the required collector from the Collector List section to edit.
- Step 3** Click **Edit**.
The Collector Configuration page displays the configuration details of the selected collector.
- Step 4** Modify the following fields, if required, in the Collector Info section:
- Collector Name
 - Description
- Step 5** Modify the Source Interface field, if required, in the Selected Devices Info section.
You cannot modify the Source Device, Target Device, VRF Name and Operation fields in this section.
- Step 6** Click **Next**.
The Schedule page appears with the scheduling details.
- Step 7** Edit the following fields, if required.
- End Time Details
 - Poller Settings
- For more information on these fields, see [Scheduling Collectors](#).
- Step 8** Click **Next**.
The Summary page appears with the updated information for the selected collector.
For more information on the Summary page, see [Table 15-13](#).
- Step 9** Click **Finish**.
A message appears that the selected collector's information is updated successfully.
- Step 10** Click **OK**.
-

Deleting Collectors

Using the Delete option, you can delete collectors that you no longer need. When you delete a collector, the collector configured on the source router and the data stored in the database are deleted.

After deleting, the collector remains in the Delete Pending state until the data is completely deleted from the IPSLA Monitoring database. It may take several minutes or more to delete a collector that has a large amount of statistics information stored in the IPSLA Monitoring database. You can delete more than one collector at a time.

If you want to delete a collector in the Running status, you must first move the collector to the Stop status before attempting to delete.



Note

You are not allowed to delete individual IPSLA Ethernet auto discovered collectors.

To delete collectors:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears with the list of collectors.
 - Step 2** Select the collectors that you want to delete.
 - Step 3** Click **Delete**.
The Delete Confirmation dialog box appears.
 - Step 4** Click **OK**.
The selected collectors are deleted from IPSLA Monitoring functionality.
-

Viewing Collector Graphs

You can use the Graph option to [view the collector statistics](#) or [compare the latency of the collectors](#) (overlay graphs) based on the granularity and the report period. To generate overlay graphs, you must select collectors in Running, Completed, Dormant, or Stopped status.



Note

You cannot view graphs for AutoIPSLA Ethernet collectors.

To view the collector statistics:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears.
 - Step 2** Select the required collectors from the Collector List.
 - Step 3** Click **Graph**.
The Graph Settings window appears.
 - Step 4** Select the type of graph from the Type drop-down list.
The available graph types are Availability and Latency.

Based on the collector you select, the report type is added in the drop-down list apart from Availability and Latency

For example, if you choose RTP collector, RTP report type gets added in the Type drop-down list.

The outage option is not available when you select more than one collector.

When you select more than one collectors, the Graph Type drop-down list is not displayed.

Step 5 Select one of the following granularity from the Granularity section:

- Minute
- Hourly
- Daily
- Weekly
- Monthly

Step 6 Specify the following in the Report Period section:

- From—Select the start date and time of your report. You can select the date from the calendar icon and the time from the drop-down list.
- To—Select the end date and time of your report. You can select the date from the calendar icon and the time from the drop-down list.
- Outage Option—The outage option is not available when you select more than one collectors.

You can:

- Check the Exclude Planned Outage Periods check box to exclude the outage period details.

Or

- Uncheck the Exclude Planned Outage Periods check box to include the outage period details.

Step 7 Click **OK**.

A Graph appears displaying the statistics for the selected collector.

- If you have checked the Exclude Planned Outage Period check box, the graph will not display the outage details.
- If you have unchecked the Exclude Planned Outage Period check box, the outage period will be watermarked in the graph and highlighted in red.

To know more about the graphs, see the following sections in Reports Management with Cisco Prime LAN Management Solution 4.2 document:

- Availability Reports and Graphs
- Latency (Round-Trip Time) Reports and Graphs
- UDP Jitter Reports and Graphs
- HTTP Reports and Graphs
- ICMP Jitter Reports and Graphs
- Path Echo Reports and Graphs
- RTP Reports and Graphs
- Ethernet Jitter Reports and Graphs
- Video Jitter Reports and Graphs

To overlay Collector graphs:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears.

Step 2 Select the required collectors from the Collector List.

Step 3 Click **Graph**.

The Graph Settings window appears.

Step 4 Select the type of graph from the Type drop-down list.

The available graph types are Availability and Latency.

Based on the collector you select, the report type is added in the drop-down list apart from Availability and Latency.

For example, if you choose RTP collector, RTP report type gets added in the Type drop-down list.

Step 5 Select the granularity period from the Granularity section:

- Minute
- Hourly
- Daily
- Weekly
- Monthly

Step 6 Specify the following in the Report Period section:

- From—Select the start date and time of your report. You can select the date from the calendar icon and the time from the drop-down list.
- To—Select the end date and time of your report. You can select the date from the calendar icon and the time from the drop-down list.

Step 7 Click **OK**.

A Graph appears displaying the latency for the selected collectors, where:

- X-axis represents the range of time period you have selected.
- Y-axis represents the latency of the selected collectors.

Each data point has a tooltip that displays the collector name, operation type, date, and time.



Note

There may be instances where the graphs of different collectors may overlap each other. So to view a particular graph curve, you can click on the legends available. This allows you to view only a particular graph corresponding to that selected legend.

Exporting Collector Configuration Information

You can export a list of collectors and their credentials from IPSLA Monitoring User Interface into CSV file. For detailed information on the format of the CSV file, see [Format of the CSV File](#).

**Note**

You are not allowed to export IPSLA-generated collectors and their credentials.

The exported file is stored at:

Solaris or Soft Appliance:

- `/var/adm/CSCOpX/files/ipm/export/collectors`

Windows:

- `NMSROOT\files\ipm\export\collectors`

To export collector configuration information:

Step 1 Select **Monitor > Performance Settings > IPSLA > Collectors**.

The Collector Management page appears with the list of collectors.

Step 2 Select the collectors that you want to export.

Step 3 Click **Export**.

The Export Collector window appears.

Step 4 Specify the file/directory location and the directory content in the Collector File text box.

or

Click the **Browse** hyperlink to select a folder on the IPSLA Monitoring server.

The Server Side File Browser window displays the default file/directory location and the directory contents.

- Select the required file/directory location and the directory content on the IPSLA Monitoring server.
- Click **OK**.

The Export Collector window appears with the specified information.

Step 5 Click **OK**.

A message appears that the selected collectors are exported successfully.

Step 6 Click **OK**.

Sample Exported Collector File

```

;
Here are the columns of the file.
; Columns 1, 3,5,6, 9-14 are required.
; Columns 2,7,8 are optional.
; Column 4 is not applicable for DHCP, GatekeeperRegistrationDelay,
;           CallSetupPostDialDelay, EthernetPingAutoIPSLA, EthernetJitterAutoIPSLA
;           Operation types and should be left empty.
;           For the Operations Ethernetjitter,Ethernetping represents MEPID.
; Col# = 1: Collector Name
; Col# = 2: Description of the collector
; Col# = 3: Source device name
; Col# = 4: Target device name
; Col# = 5: Operation name
; Col# = 6: Operation Type [1 - Echo, 2 - PathEcho, 9 - UDP Jitter, 22 - Video]
; Col# = 7: Vrf Name
; Col# = 8: Source Interface Address
; Col# = 9: Collector type [1 - Historical, 2 - Realtime]
; Col# = 10: Start date (must be in MM/DD/YYYY)
; Col# = 11: End date (must be in MM/DD/YYYY)
; Col# = 12: Poll Start time (hh:mm:ss)
; Col# = 13: Poll End time (hh:mm:ss)
; Col# = 14: Days of week (must be between 1-127)
; Col# = 15: Poll Interval (must be in milliseconds)
;
; Example for Echo Collector:
; test_Echo_Collector, ,10.77.209.9,10.76.90.106-NAM2,Test_Echo_Operation,1,blue,
; 1,07/29/2008,01/31/2021,00:00:00,00:00:00,127,3600000
;
; Example for DHCP Collector:
; test_DHCP_collector, ,10.77.209.9, ,Test_DHCP_Operation,11, ,
; 1,07/29/2008,01/31/2021,00:00:00,00:00:00,127,3600000
;
; Here are the rows of data.

```

Importing Collector Configuration Information

You can import the collector configuration information from an external location within the IPSLA Monitoring server or reuse the exported collector file information.

You can import the collectors with previous versions of IPSLA Monitoring file format. Collectors will be created without VRF details.

For detailed information on the format of the CSV file, see [Format of the CSV File](#).

To import collector configuration information from a CSV file to IPSLA Monitoring:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
- The Collector Management page appears with the list of collectors.
- Step 2** Click **Import**.
- The Select Import File window appears.
- Step 3** Specify the file/directory location and the directory content in the Collector File text box.
- or
- Click the **Browse** hyperlink.
- The Server Side File Browser window displays the default file/directory location and the directory contents.
- a. Select the required file/directory location and the directory content on the IPSLA Monitoring server.
 - a. Click **OK**.
- The Select Import File window appears with the specified information.
- Step 4** Click **OK**.
- A message appears that the selected collectors are imported successfully.
- Step 5** Click **OK**.
-

Format of the CSV File

The CSV file should have the following fields:

Name of the Field	Description	Example
Collector Name	Specify the name of the collector.	echo_coll1_10.77.209.209_echo
Description	Specify a brief description about the collector. This column is optional.	
Source Device Name	Specify the name of the source device	10.77.209.3
Target Device Name	Specify the name of the target device. The value of this column should be blank for the following operations: <ul style="list-style-type: none"> • DHCP • GatekeeperRegistrationDelay • CallSetupPostDialDelay • EthernetPingAutoIPSLA • EthernetJitterAutoIPSLA If the Operation Type is Ethernet Jitter or Ethernet Ping, the value of this column will be MEPID.	10.77.209.209
Operation Name	You can specify either the system defined or user-defined operations. The name is case-sensitive.	Echo

Name of the Field	Description	Example
Operation Type	Specify the numeric value associated with the Operation Types. They are: <ul style="list-style-type: none"> • Echo Operations <ul style="list-style-type: none"> - Echo = 1 - Path Echo = 2 - UDP Echo = 5 • Jitter Operations <ul style="list-style-type: none"> - UDP Jitter = 9 - ICMP Jitter = 16 • Services Operations <ul style="list-style-type: none"> - DNS = 8 - DHCP=11 - HTTP = 7 - FTP = 12 - DLSw = 10 - TCP Connect = 6 • VoIP Operations <ul style="list-style-type: none"> - Call Setup Post Dial Delay = 18 - Gatekeeper Registration Delay = 19 - RTP = 14 • Metro Ethernet Operations <ul style="list-style-type: none"> - Ethernet Ping = 1019 - Ethernet Jitter = 1020 - Ethernet Ping Auto IP SLA = 1119 - Ethernet Jitter Auto IP SLA = 1120 • Video Operation = 22 	1
Vrf Name	Specify the VRF name. This column is optional.	
Source Interface Address	Specify the source interface address. This column is optional.	
Collector Type	Specify the numeric value associated with the type of collector. It can be: <ul style="list-style-type: none"> • Historical = 1 • Real-time = 2 	1
Start Date	Specify the start date in the MM/DD/YYYY format.	08/27/2009
End Date	Specify the end date in the MM/DD/YYYY format.	01/31/2021
Poll Start Time	Specify the poll start time in the Hour:Minutes:Seconds format.	0:00:00

Name of the Field	Description	Example
Poll End Time	Specify the poll end time in the Hour:Minutes:Seconds format.	0:00:00
Days Of Week	Specify the days of the week when polling should happen. The numeric value for each day of the week is: <ul style="list-style-type: none"> Monday = 1 Tuesday = 2 Wednesday = 4 Thursday = 8 Friday = 16 Saturday = 32 Sunday = 64 	If you want the IPSLA Monitoring server to poll only on: <ul style="list-style-type: none"> Monday, Tuesday and Friday means, it will be: 19 (Mon+Tue+Fri = 1 + 2 + 16 = 19) Week days, it will be: 31 (Mon+Tue+Wed+Thu+Fri = 1 + 2 + 4 + 8 + 16 = 31) Saturday and Sunday, it will be: 96 (Sat + Sun = 32 + 64 = 96)
Poll Interval	Specify the frequency with which the IPSLA Monitoring server polls the source router to collect the statistics. The value must be in milliseconds.	60000

```

; Example for Echo Collector:
; test_Echo_Collector, ,10.77.209.9,10.76.90.106-NAM2,Test_Echo_Operation,1,blue,
,1,07/29/2008,01/31/2021,00:00:00,00:00:00,127,3600000
;
; Example for DHCP Collector:
; test_DHCP_collector, ,10.77.209.9, ,Test_DHCP_Operation,11, ,
,1,07/29/2008,01/31/2021,00:00:00,00:00:00,127,3600000

```

Monitoring a Collector

You can use the Monitor option to monitor the real-time statistics of a collector in the Running status. The statistical data displayed is not stored in the IPSLA Monitoring database. You can view the real-time graph for both Historical/Statistical and Monitored/Real-Time collectors. You can monitor more than one collector's statistics in real time.

The sample interval, in the report, indicates the frequency at which the values are plotted on the real-time graph. For example, if the sample interval is 60 seconds, the values in the graphs are plotted every 60 seconds. The sample interval depends on the operation used by the collector.



Note

You cannot monitor AutoIPSLA Ethernet collectors.

To monitor a collector:

- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears with the list of collectors.

- Step 2** Select one of the following collectors for monitoring.
- A collector in Running status if the collector type is Historical/Statistical.
 - A collector that has the collector type as Monitor/Real-Time.
- Step 3** Click **Monitor**.
- A Real-Time graph appears.
- To know more about the graphs, see the following sections in Reports Management with Cisco Prime LAN Management Solution 4.2 document:
- Availability Reports and Graphs
 - Latency (Round-Trip Time) Reports and Graphs
 - UDP Jitter Reports and Graphs
 - HTTP Reports and Graphs
 - ICMP Jitter Reports and Graphs
 - Path Echo Reports and Graphs
 - RTP Reports and Graphs
 - Ethernet Jitter Reports and Graphs
 - Video Jitter Reports and Graphs
-

Stopping the Collectors

You can use the Stop option to stop the collectors in Running status. As a result of stopping, the collectors become inactive on the source router and the data polling is stopped.

**Note**

You are not allowed to stop individual IPSLA Ethernet auto discovered collectors.

To stop the collectors:

- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
- The Collector Management page appears with the list of collectors.
- Step 2** Select the collectors check box that you want to stop.
- The selected collectors must be in the Running status.
- Step 3** Click **Stop**.
- The Stop Confirmation dialog box appears.
- Step 4** Click **OK**.
- The selected collectors are stopped.
-

Starting the Collectors

You can use the Start option to start the stopped collectors. As a result of starting, the collector is activated on the source device and IPSLA Monitoring starts polling.


Note

You are not allowed to start individual IPSLA Ethernet auto discovered collectors.

To start the collectors:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears with the list of collectors.
- Step 2** Select the collectors in Stopped status.
- Step 3** Click **Start** to start the stopped collectors.
-

Reconfiguring Collectors

You can reconfigure collectors that are in Config Failed state and Source Not Responding State.

To reconfigure collectors:

-
- Step 1** Select **Monitor > Performance Settings > IPSLA > Collectors**.
The Collector Management page appears with the list of collectors.
- Step 2** Click **Reconfigure** to reconfigure collectors in the Config Failed state and Source Not Responding State.
The Reconfigure Collectors window appears with the list of Config Failed collectors and Source Not Responding State.


Note

The Reconfigure page does not list the collectors that are moved to the Source Not Responding state during polling. This is because these collectors are already configured and running on the device. These collectors will move to Running state during the next polling cycle.

Alternatively, you can select one or more source devices and click this button to view the Config Failed collectors associated with the source devices. Also, you can click **Filter** to filter the collectors based on criteria.

For more information on how to filter collectors, see [Filtering Collectors](#).

- Step 3** Check the collectors and click:
- **Reconfigure**, to reconfigure the collectors.
 - Or
 - **Delete**, to delete the collectors.

You can also click **Cancel** to revert to the Collector Management window without reconfiguring collectors.
