



Managing IP Service Level Agreement (IP SLA) Configurations

In Prime Network, devices that are configured using Y.1731 (an ITU-T recommendation that provides mechanisms for service-level OAM functionality in Ethernet networks) are detected, scanned for configurations, and monitored. A device configured using Y.1731 has probes, which are root objects or containers that hold single or multiple instances of Service Level Agreement (SLA) probes configured by the user. To see which devices support Y.1731, refer to [Cisco Prime Network 5.1 Supported VNEs](#).

Y.1731 Performance Management Mechanisms

The OAM functions for performance monitoring according to Y.1731 allow measurement of the following performance parameters.

- **Frame Loss Ratio**—Expressed as a percentage. This ratio is defined as the number of frames not delivered divided by the total number of frames during a time interval.
- **Frame Delay**—A one-way delay for a frame, where one-way frame delay is defined as the time elapsed since the start of transmission of the first bit of the frame by a source node until the reception of the last bit of the same frame by the destination node.
- **Frame Delay Variation**—The measure of the variations in the frame delay between a pair of service frames. The service frames belong to the same CoS (Class of Service) instance on a point-to-point Ethernet (ETH) connection or multipoint ETH connectivity.
- **Throughput**—The average rate of successful traffic delivery over a communication channel. Typically used under test conditions, such as out-of service tests, when there is no traffic for the tested Ethernet connection.

The following topics provide an overview of the Y.1731 technology and describe how to view and monitor Y.1731 configurations in the Vision client. If you cannot perform an operation that is described in these topics, you may not have sufficient permissions; see [Permissions Required to Perform Tasks Using the Prime Network Clients, page B-1](#).

- [Viewing Y.1731 Probe Properties, page 22-1](#)
- [Configuring Y.1731 Probes, page 22-4](#)

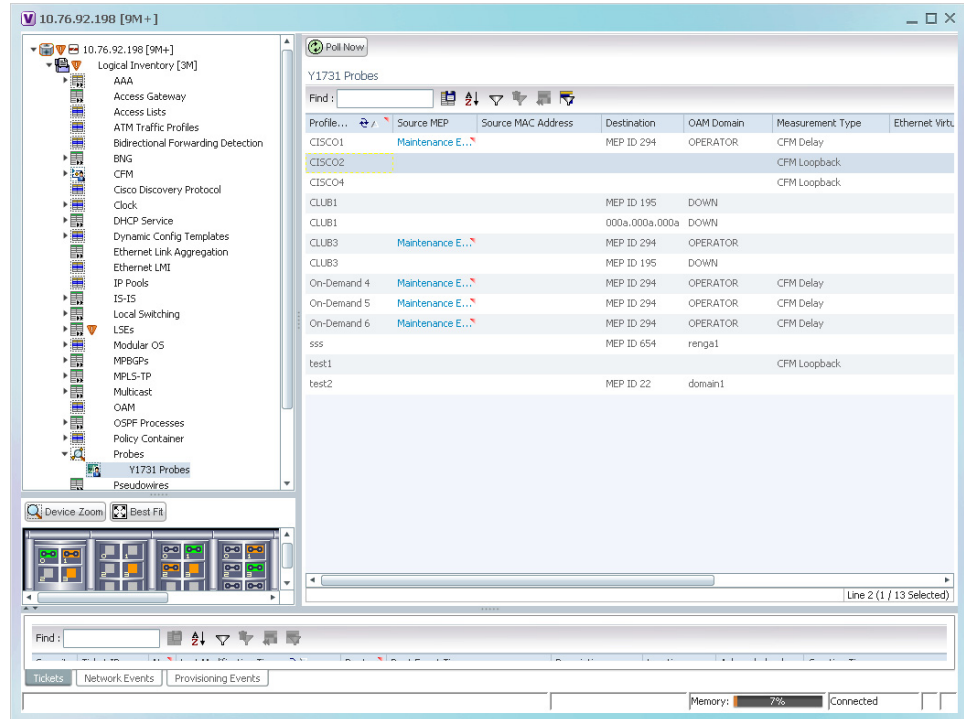
Viewing Y.1731 Probe Properties

To view Y.1731 probes and their properties for a device:

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- Step 1** Right-click on the device and choose **Inventory**.

Step 2 In the **Inventory** window, choose **Logical Inventory > Probes > Y1731 Probes**. A list of Y.1731 probes is displayed in the Y.1731 Probes content pane as shown in [Figure 22-1](#).

Figure 22-1 Y.1731 Probes Content Pane



[Table 22-1](#) describes the fields that are displayed in the content pane.

Table 22-1 Y.1731 Content Pane

Field Name	Description
Profile Name	The name of the profile created for performance monitoring of the SLA configuration.
Source MEP	The maintenance endpoint (MEP) interface ID where the probe is getting initiated.
Source MAC Address	The source interface MAC address where the probe is getting initiated.
Destination	The interface ID or MAC address, which will help the probe to reach its destination.
OAM Domain	The name of the OAM domain.
Measurement Type	The type of performance operation, which could be cfm-delay-measurement or cfm-loopback.
Ethernet Virtual Connection	The name or identifier of the ethernet virtual connection, which connects two User-Network Interfaces (UNI). This is applicable only for the Cisco CPT devices.
Packet Size	The size of the service packet. This includes padding size when required.

Table 22-1 Y.1731 Content Pane (continued)

Field Name	Description
Packets Per Burst	The number of packets transmitted per burst.
Burst Period	The time taken to send the packets from the source to their destination. This period is usually specified in terms of seconds or milliseconds.

Step 3 Right-click a probe and choose **Properties** to view its properties. The following additional information is displayed in the Probe Properties window for certain devices, such as Cisco CPT devices.

Table 22-2 Probe Properties Window





Field Name	Description
Delay Measurement Configurations	
Statistics Type	The statistics type, which is Round Trip Delay or Round Trip Jitter.
Aggregate Bin Count	The aggregate count of bins to store the counter values of the result of each performance parameter.  Note The counter value refers to the counter of number of results that fall within a particular range specified for each performance attribute.
Aggregate Bin Boundaries	The bin boundary for the bins. For some devices, such as Cisco CPT devices, the bin boundary is specified as comma separated intervals; for other devices, such as the Cisco ASR 9000, it is an integer. Bin boundaries are specified in terms of milliseconds.
Bucket Size	The number of buckets required to store the performance attribute results gathered during a specified period. By default, a separate bucket is created for each probe, which will contain the results relating to measurements made by the probe.
Aggregation Period	The period of time (in seconds) during which the aggregation takes place on the performance data.
Aggregate Burst Cycles	The total number of burst cycles on which the aggregation has to happen.
Loss Measurement Configurations	
Statistics Type	The statistics type, which is Round Trip Delay or Round Trip Jitter.
Aggregate Bin Count	The aggregate count of bins to store the counter values of the result of each performance parameter.  Note The counter value refers to the counter of number of results that fall within a particular range specified for each performance attribute.

Table 22-2 Probe Properties Window (continued)

Field Name	Description
Aggregate Bin Boundaries	The bin boundary for the bins. For some devices, such as Cisco CPT devices, the bin boundary is specified as comma separated intervals; for other devices, such as the Cisco ASR 9000, it is an integer. Bin boundaries are specified in terms of milliseconds.
Bucket Size	The number of buckets required to store the performance attribute results gathered during a specified period. By default, a separate bucket is created for each probe, which will contain the results relating to measurements made by the probe.
Aggregation Period	The period of time during which the aggregation must take place on the loss data.
Aggregate Burst Cycles	The total number of burst cycles on which the aggregation must take place.
Availability Algorithm	The type of algorithm to be used to measure proportion of time when there was a prolonged high loss, which can be any one of the following:
Consecutive Frames	<p>The number of consecutive frames that must be used to calculate frame loss.</p> <p> Note Frame loss is calculated by comparing loss measurement data of the specified number of consecutive frames.</p>
Consecutive Frames For Loss Ratio	<p>The number of consecutive frames that is used to calculate loss ratio.</p> <p> Note The Frame Loss Ratio is calculated as a ratio between the number of packets sent and the number of packets lost, which is then expressed in terms of percentage.</p>

Configuring Y.1731 Probes

The following IP SLA-related commands can be launched from the inventory by right-clicking the appropriate node and choosing **Commands > Configuration**. Your permissions determine whether you can run these commands (see [Permissions for Vision Client NE-Related Operations, page B-4](#)). To find out if a device supports these commands, see the [Cisco Prime Network 5.1 Supported Cisco VNEs](#).

Command	Navigation	Description
Configure Probe EndPoint Association	<i>Right-click Y1731 Probes node > Commands > Configuration > Configure Probe EndPoint Association</i>	Use this command to configure endpoint association for a probe.
Create Profile	<i>Expand the node Probes > Right-click Y1731 Probes node > Commands > Configuration > Create Profile</i>	Use this command to configure a new profile for the probe.
Create On Demand Probe Configuration	<i>Expand the node Probes > Right-click Y1731 Probes node > Commands > Configuration > Create On Demand Probe Configuration</i>	Use this command to create an on demand probe configuration.
Deassociate Profile	<i>Right-click Y1731 Probes node > Commands > Configuration > Deassociate Profile</i>	Use this command to deassociate a profile from a probe.
Delete Profile	<i>Right-click Y1731 Probes node > Commands > Configuration</i>	Use this command to delete a profile.
Show SLA Operations Detail	<i>Expand the node Probes > Right-click Y1731 Probes node > Commands > Show > Show SLA Operations Detail</i>	When service providers sell connectivity services to a subscriber, a Service Level Agreement (SLA) is reached between the buyer and seller of the service. The SLA defines the attributes offered by a provider and serves as a legal obligation on the service provider. As the level of performance required by subscribers increases, service providers need to monitor the performance parameters being offered. Use this command to view the SLA operation details.
Show SLA Profiles	<i>Expand the node Probes > Right-click Y1731 Probes node > Commands > Show > Show SLA Profiles</i>	Use this command to view a list of the SLA profiles.
Configure IP SLA parameters	<i>Right-click Y1731 Probes node > Commands > Configuration</i>	Use this command to configure an IP SLA parameter for the probe.

Command	Navigation	Description
Delete IP SLA parameters	<i>Right-click an ASR9K ></i> Commands > Configuration > IPSLA >Delete IP SLA	Use this command to delete the IP SLA parameters for a probe.
Show IP SLA	<i>Right-click an ASR9K device ></i> Commands > Configuration > IPSLA >Show IP SLA	Use this command to view the IP SLA schedule details.