



CHAPTER 17

Monitoring Y.1731 IPSLA Configuration

The following topics provide an overview of the Y.1731 technology and describe how to view and monitor Y.1731 configurations in Prime Network Vision:

- [Y.1731 Technology - An Overview, page 17-1](#)
- [User Roles Required to Work with Y.1731 Probes, page 17-2](#)
- [Working with Y.1731 IPSLA Configurations, page 17-2](#)

Y.1731 Technology - An Overview

Y.1731 is an ITU-T recommendation that provides mechanisms for service-level Operation, Administration, and Maintenance (OAM) functionality in Ethernet networks. It covers mechanisms for Fault and Performance Management. Performance Management is the most sought-after functionality in this standard.

In Prime Network, devices that are configured using Y.1731 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.

In Prime Network, the Y.1731 technology is supported on the Cisco Aggregation Service Router (ASR) 9000 and Cisco Carrier Packet Transport (CPT) network elements.

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.

User Roles Required to Work with Y.1731 Probes

This topic identifies the roles that are required to work with Y.1731 probes. Prime Network determines whether you are authorized to perform a task as follows:

- For GUI-based tasks (tasks that do not affect elements), authorization is based on the default permission that is assigned to your user account.
- For element-based tasks (tasks that do affect elements), authorization is based on the default permission that is assigned to your account. That is, whether the element is in one of your assigned scopes and whether you meet the minimum security level for that scope.

For more information on user authorization, see the topic on device scopes in the [Cisco Prime Network 3.10 Administrator Guide](#).

Table 17-1 Default Permission/Security Level Required for Y.1731 Probes

| Task | Viewer | Operator | OperatorPlus | Configurator | Administrator |
|----------------------------------|--------|----------|--------------|--------------|---------------|
| View the Y.1731 probe properties | X | X | X | X | X |
| Configure Y.1731 probes | — | — | — | X | X |

Working with Y.1731 IPSLA Configurations

This topic contains the following sections:

- [Viewing the Y.1731 Probe Properties, page 17-2](#)
- [Configuring Y.1731 Probes, page 17-4](#)

Viewing the Y.1731 Probe Properties

To view the 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 17-1](#).

Figure 17-1 Y.1731 Probes Content Pane

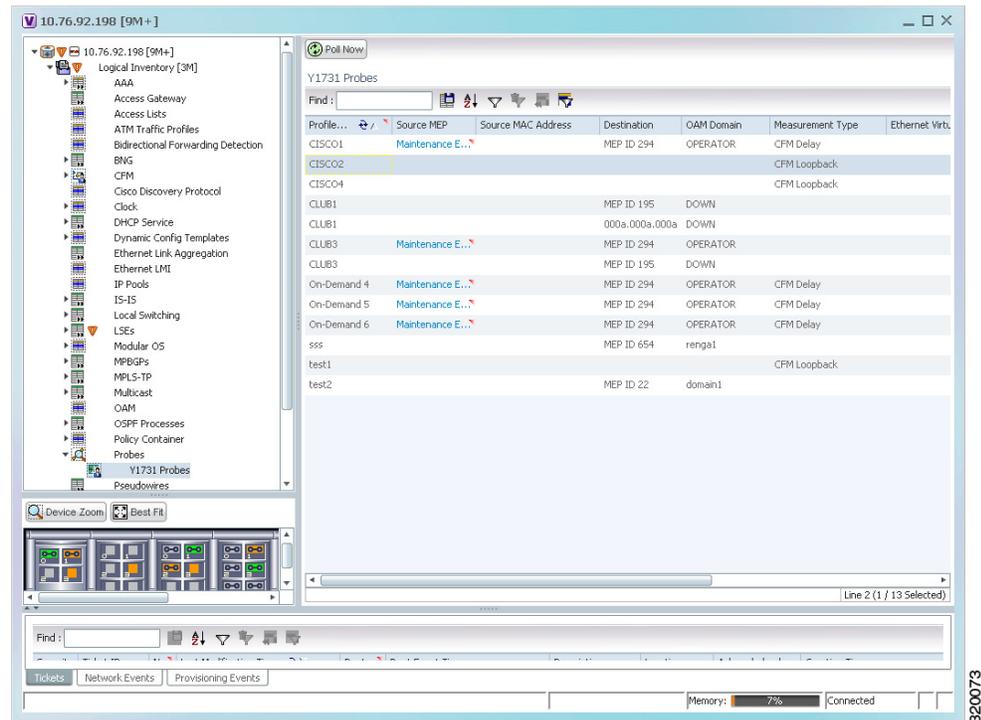


Table 17-2 describes the fields that are displayed in the content pane.

Table 17-2 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. |
| 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 on a probe and choose **Properties** to view its properties. Additionally, the following information is displayed in the Probe Properties window for a Cisco CPT device.

Table 17-3 describes the additional fields that are displayed for a Cisco CPT device in the **Probe Properties** window.

Table 17-3 Probe Properties Window

| Field Name | Description |
|--------------------------|--|
| Measurements | |
| 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 Cisco CPT devices, bin boundary is specified as comma separated intervals; whereas for ASR9K devices, 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. |

Configuring Y.1731 Probes

You can configure Y.1731 probes using a certain set of commands. The following commands can be launched from the inventory by right-clicking the appropriate node and selecting **Commands**. Before executing any commands, you can preview them and view the results. If desired, you can also schedule the commands. To find out if a device supports these commands, see the [Cisco Prime Network 3.10 Supported Cisco VNEs](#).

| Command | Navigation | Description | Supported On |
|--------------------------------------|---|---|------------------------|
| Configure Probe EndPoint Association | <i>Right-click Y1731 Probes node > Commands > Configuration</i> | Use this command to configure endpoint association for a probe. | Cisco ASR 9000 devices |
| Configure Profile | | Use this command to configure a new profile for the probe. | |
| Create On Demand Probe Configuration | | Use this command to create an on demand probe configuration. | |
| Deassociate Profile | | Use this command to deassociate a profile from a probe. | |

| Command | Navigation | Description | Supported On |
|-----------------------------|---|---|------------------------|
| Delete Profile | <i>Right-click Y1731 Probes</i> <i>node > Commands > Configuration</i> | Use this command to delete a profile. | Cisco ASR 9000 devices |
| Show SLA Operations detail | <i>Right-click Y1731 Probes</i> <i>node > Commands > Diagnostics</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 | | Use this command to view a list of the SLA profiles. | |
| Configure IP SLA parameters | <i>Right-click Y1731 Probes</i> <i>node > Commands > Configuration</i> | Use this command to configure an IP SLA parameter for the probe. | Cisco CPT devices |
| Delete IP SLA parameters | | Use this command to delete the IP SLA parameters for a probe. | |
| Show IP SLA | <i>Right-click Y1731 Probes</i> <i>node > Commands > Diagnostics</i> | Use this command to view the IP SLA schedule details. | |

