

HP Network Node Manager iSPI Performance for Quality Assurance Software

For the Windows ® , HP-UX, Linux, and Solaris operating systems

Software Version: 9.10

[Reports](#) [Online Help](#)

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Contents

Reports Online Help.....	1
Contents.....	7
HP Network Node Manager iSPI Performance for Quality Assurance Software Reports.....	11
Launching the HP Network Node Manager iSPI Performance for Quality Assurance Software Reports.....	11
HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline .. Sleeve Report.....	12
NNM iSPI Performance for QA Baseline Sleeve Report Options.....	12
HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar .. Report.....	13
NNM iSPI Performance for QA Calendar Report Options.....	13
HP Network Node Manager iSPI Performance for Quality Assurance Software Chart Detail Report.....	14
NNM iSPI Performance for QA Chart Detail Report Options.....	14
HP Network Node Manager iSPI Performance for Quality Assurance Software Heat Chart. Report.....	15
NNM iSPI Performance for QA Heat Chart Report Options.....	15
HP Network Node Manager iSPI Performance for Quality Assurance Software Managed .. Inventory Report.....	15
HP Network Node Manager iSPI Performance for Quality Assurance Software Most Changed Reports.....	16
NNM iSPI Performance for QA Most Changed Report Options.....	16
HP Network Node Manager iSPI Performance for Quality Assurance Software Peak Period Report.....	17
NNM iSPI Performance for QA Peak Period Report Options.....	17
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Report.....	18
HP Network Node Manager iSPI Performance for Quality Assurance Software Top. N Report Options.....	18
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Chart Report.....	19
NNM iSPI Performance for QA Top N Chart Report Options.....	19
HP Network Node Manager iSPI Performance for Quality Assurance Software Report Options.....	21

HP Network Node Manager iSPI Performance for Quality Assurance Software Report Time Controls	22
HP Network Node Manager iSPI Performance for Quality Assurance Software Report Topology Filters	23
HP Network Node Manager iSPI Performance for Quality Assurance Software Dashboard Reportlets	26
Viewing NNM iSPI Performance for QA Dashboard Reportlets	26
HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Metric Snapshot with Range Reportlet	26
HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sleeve Chart Reportlet	27
HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sparkline Reportlet	27
HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sparkline with Range Reportlet	28
HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar Reportlet	28
HP Network Node Manager iSPI Performance for Quality Assurance Software Gauge Reportlet	28
HP Network Node Manager iSPI Performance for Quality Assurance Software Heat Chart Reportlet	29
HP Network Node Manager iSPI Performance for Quality Assurance Software Metric Snapshot Reportlet	29
HP Network Node Manager iSPI Performance for Quality Assurance Software Most Changed Reportlet	30
HP Network Node Manager iSPI Performance for Quality Assurance Software Multimetric Chart Reportlet	30
HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Bar and Line Chart Reportlet	31
HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Bar Chart Reportlet	31
HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Chart Reportlet	32
HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Table Reportlet	33
HP Network Node Manager iSPI Performance for Quality Assurance Software Sparkline Reportlet	33
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Chart Reportlet	34

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Line. Chart Reportlet	34
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Stacked Chart Reportlet	35
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Table Reportlet	36
HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Table with Bars Reportlet	37
HP Network Node Manager iSPI Performance for Quality Assurance Software Topology .. Filters	38
HP Network Node Manager iSPI Performance for Quality Assurance Software Metrics. ...	40
HP Network Node Manager iSPI Performance for Quality Assurance Software Metrics: ... MPLS Specific	45
HP Network Node Manager iSPI Performance for Quality Assurance Software Topology .. Filters	45
Use Case for HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar Report	47
Summary	47
Application	47
Overview	47
Actor	47
Pre Condition	48
Viewing QA Calendar Report	48
Assumptions	48
Initialization	48
View QA Calendar Report	48
Analyzing the QA Calendar Report	49
GUIs Referenced	50
System Interface	50
Use Case for HP Network Node Manager iSPI Performance for Quality Assurance Software Chart Detail Report	50
Summary	50
Application	50
Overview	50
Actor	51

Pre Condition	51
Viewing QA Chart Detail Report	51
Assumptions.....	51
Initialization.....	51
View Chart Detail Report	52
Analyzing the QA Chart Detail Report	52
GUIs Referenced.....	53
System Interface.....	53
Use Case for HP Network Node Manager iSPI Performance for Quality Assurance.....	
Software Heat Chart Report.....	53
Summary.....	53
Application.....	53
Overview.....	54
Actor.....	54
Pre Condition.....	54
Viewing QA Chart Detail Report	54
Assumptions.....	54
Initialization.....	54
View QA Heat Chart Report	55
Analyzing the QA Heat Chart Report	55
GUIs Referenced.....	56
System Interface.....	56
Glossary.....	57

HP Network Node Manager iSPI Performance for Quality Assurance Software Reports

NNM iSPI Performance for QA Reports enable you to the following:

- Monitor the network performance, and drill-down to the root-cause of the problem
- Analyze the trend of the network performance for a specific time period
- Forecast any problem that may arise over a period of time
- Troubleshoot any problem in the network

NNM iSPI Performance for QA enables you to view the following reports:

- [Baseline Sleeve Report](#)
- [Calendar Report](#)
- [Chart Detail Report](#)
- [Heat Chart Report](#)
- [Managed Inventory Report](#)
- [Peak Period Report](#)
- [Most Changed Report](#)
- [Top N Report](#)
- [Top N Chart Report](#)

Multitenant architecture is also integrated with Network Performance Server and restricts a user to view only selective probes and reports. For example, while generating Top N report, a user can view the report of the nodes that can be accessed by the user.

Related Topic

[Launching the QA Reports](#)

Launching the HP Network Node Manager iSPI Performance for Quality Assurance Software Reports

Follow the steps as discussed below to view a QA report:

1. Navigate to the HP Network Node Manager iSPI Performance for Metrics console using any of the following methods:
 - Click **Actions** → **Reporting-Report Menu** in the NNMi console
 - Log in to NPS using `http://<fully-Qualified-serverName>:9300/p2pd/NPS.html` portal.
2. On the NPS home page, select **Reports** tab in the navigation panel.

3. Click **iSPI Quality Assurance**
4. Click **Quality Assurance**
5. Click **QAMetrics**
6. Select the report type
7. To modify the default settings of the report:
 - Set the time controls for the report. See the topic [Time Controls](#)
 - Set the topology filters for the report. See the topic [Topology Filters](#)
 - Set the options specific to the report. See the topic [Options](#)

For more information see the *HP Network Node Manager iSPI Performance for Metrics Online Help*

Before you start viewing the QA reports, ensure that Network Performance Server (NPS) is up and running.

HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sleeve Report

Baseline sleeve report enables you to analyze or forecast when the metric is likely to violate the threshold value.

This report enables you to do the following:

- Analyze if the network performance is within the normal range for the selected time range
- Detect if the threshold state of the metric is likely to cross the high or low threshold value
- View the details of the metric as a line chart and tabular format as well. For a specific time grain, you can view the time, baseline metric average, exceptions, lower normal and upper normal standard deviations in percentage

NNM iSPI Performance for QA Baseline Sleeve Report Options

The Baseline Sleeve report displays the following option:

Baseline Metric

Example

If you want to know the trend of the Round Trip Time for the last 31 days, and check if there are any baseline exceptions.

- Expand the **Time Control** in the left navigational panel and select 31 days in the **Last** drop-down list. By default, the time grain is set to 1 day.
- Click **Submit**
- Select the following option in the Baseline Sleeve Report:

Baseline Metric: Round Trip Time (msecs)
- Click **Confirm Selection**

You can view the legend to analyze the report. Also, you can view the table for accurate details.

Related Topics[Report Topology Filters](#)[Report Time Controls](#)[Report Options](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar Report

Quality Assurance (QA) Calendar report enables you to monitor the network performance between the selected nodes, or the set of nodes defined either as node groups, or as sites for a specific time range.

It displays a comparative study of the selected metrics for a specific time range.

Using this report you can:

- Monitor the network performance between multiple sets of nodes, node groups, or sites.
- Analyze the network performance statistics based on various time ranges.
- Compare network performance of two nodes, node groups, or sites based on historical QA data.

NNM iSPI Performance for QA Calendar Report Options

The Calendar report displays the following options:

- Primary Metric¹
- Secondary Metric²

For information on metrics used by NNM iSPI Performance for QA, see [NNM iSPI Performance for QA Metrics](#).

For information on user scenarios on QA Calendar report, see [User Scenarios for NNM iSPI Performance for QA Calendar Report](#).

Related Topics[Report Topology Filters](#)[Report Time Controls](#)[Report Options](#)

¹Enables you to select the main metric based on which you want to generate the report. The primary metric that you select is displayed on the left Y axis of the report.

²Enables you to select the metric that would overlay the primary metric. The secondary metric that you select is displayed on the right Y axis of the report.

HP Network Node Manager iSPI Performance for Quality Assurance Software Chart Detail Report

Quality Assurance (QA) Chart Detail report enables you to perform a trend analysis for the network performance based on historical QA probe data.

The Chart Detail report displays a comparative analysis of the selected metrics for each time unit.

For example, if you need to compare how the Round Trip Time was affected by variance in the Two Way Packet Loss for each day of the week, you can generate the weekly Chart Detail report for the selected sites.

You can also select two or more QA nodes, or the set of nodes defined either as node groups, or as sites to generate Chart Detail report.

Using this report you can:

- Analyze the trend of network performance for multiple nodes, node groups, or sites based on one unit of time. Each unit of time is called as a **Display Grain**. Each Display Grain is measured as follows:
 - Five minutes for Hourly report
 - One hour for daily report
 - One day for weekly report
 - One day for monthly report
- Detects any ups and downs in the network performance.
- Detect any persistent problem in the network performance .
- Compare network performance of more than two nodes, node groups, or sites based on historical QA data.

NNM iSPI Performance for QA Chart Detail Report Options

The Chart Detail report displays the following options:

- Metric(s) shown on Y1 axis
- Metric(s) shown on Y2 axis

To add another metric, click Options and then click  **Add new metric** against the Metric field.

To remove a metric, click Options and then click  **Remove metric** against the required metric

You can select a maximum of six reports on each axis.

Select one of the following options:

- Chart and Table
- Chart
- Table

For information on metrics used by NNM iSPI Performance for QA. see [NNM iSPI Performance for QA Metrics](#).

For information on user scenarios on QA Chart Detail report, see [User Scenarios for NNM iSPI Performance for QA Chart Detail Report](#).

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

[Report Options](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Heat Chart Report

Quality Assurance (QA) Heat Chart report enables you to view how the network performance gets affected by a varying metric for a selected time range.

This report compares the performance of one metric. A Heat Chart report plots the metric measurement based on how the metric varies for a time range.

QA Heat Chart report uses different colors to display different measures of a metric. The legends display the different ranges of metric measurement, making it easier for you to spot the concern area.

Using this report you can detect the time range when the network performance was affected adversely because of the fluctuating metric value.

NNM iSPI Performance for QA Heat Chart Report Options

The Heat Chart report displays the following option:

Metric¹

For information on metrics used by NNM iSPI Performance for QA. see [NNM iSPI Performance for QA Metrics](#).

For information on user scenarios on QA Heat Chart report, see [User Scenarios for NNM iSPI Performance for QA Heat Chart Report](#).

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

[Report Options](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Managed Inventory Report

Quality Assurance Managed Inventory report enables you to view the topology elements used in a selected time range.

Using this report you can:

¹Select the metric based on which you want to generate the report.

- View the utilization for each topology element used in your network.
- Analyze if any of the elements are over-utilized or underutilized for a specific time range.
- Track the utilization of topology elements to resolve an existing network problem.
- Track the number of QA probes and QA probe types run in your network.

For more information on topology elements, see [NNM iSPI Performance for QA Topology Filters](#).

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Most Changed Reports

Quality Assurance (QA) Most Changed report enables you to compare performance for two different (consecutive) time periods and rank the nodes, node groups, or sites by the amount of change. The sort order is most-changed to least-changed, by default.

Using this report you can:

- Measure the performance fluctuations for the selected nodes, node groups, or sites.
- Detect the top N nodes, node groups, or sites having a common network performance problem.

NNM iSPI Performance for QA Most Changed Report Options

The Most Changed report displays the following options:

- Top N¹
- Metric²
- Grouping By³

For information on metrics used by NNM iSPI Performance for QA, see [NNM iSPI Performance for QA Metrics](#).

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

[Report Options](#)

¹Select a rank between top or bottom 5, 10, and 25 all descending, and all in ascending for the selected network element

²Enables you to select the metric based on which you want to generate the report. The metric that you select is used to rank the of the report.

³Enables you to group the report data based on a specific parameter. Click to add a sub-group.

HP Network Node Manager iSPI Performance for Quality Assurance Software Peak Period Report


Peak Period report allows you to assess the performance of the network during the peak or busiest hours and enables to do the following:

- Identify the nodes that have the highest or lowest performances or utilization levels during the peak period based on the ranking order
- Compare the performance of multiple nodes during the peak period.
- View this report periodically to see when the network performance is at the extremes and needs attention
- View the metric value in the report

NNM iSPI Performance for QA Peak Period Report Options


The Peak Period report displays the following options:

- Top / Bottom N
- Metric
- Grouping by Time Period

To add another metric, click Options and then click  **Add new metric** against the Metric field. This report supports upto six metrics.

To remove a metric, click Options and then click  **Remove metric** against the required metric

You can select multiple grouping attribute.

To add a new grouping attribute, click Options select the required **Grouping By** option, and then click  **Add new grouping**

To remove a grouping, click Options and then click  **Remove grouping** against the required **Grouping By** option

For information on metrics used by *NNM iSPI Performance for QA*. see [NNM iSPI Performance for QA Metrics](#).

Example

If you want to know the time period when the RTT is high for the last one day.

In the Time Control workspace, select the Start Date and the End Date for which you need to view the Peak Period Report.

Select the following options in the Peak Period Report:

- Top /Bottom N - Select `Top 10` from the drop-down list
- Grouping By Time Period - `Hour`
- Select Metric(s) - `Round Trip Time (msecs) (max)`

Click **Confirm Selection**

Related Topics[Report Topology Filters](#)[Report Time Controls](#)[Report Options](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Report

This report ranks the selected network path, by the metric you select. Use this report to spot the network path where the QA probes reveal an extreme metric value. You can use this report to go back in time and investigate sampled data for process that are exhibiting unusual utilization levels.

Some of the network elements that you can use to generate this report are as follows:

- Destination Node
- QA Probe Name
- QA Probe Type
- Source Site
- Destination Site
- Class of Service
- QA Probe UUID
- Node UUID

Using this report you can:

- Detect the network path having a common network performance problem
- Detect the underlying reason of a persistent problem with a network path. You can compare the performance for multiple network elements using this report.

Example

Some of the destination sites in your network are performing poorly. Using this report, you can group the QA probes reporting highest Round Trip Time (RTT) for each of the destination sites. The QA probe reporting the highest RTT is ranked first.

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Report Options

The Top N report displays the following options:

- Top/Bottom N¹
 - Metric²
-

¹Select a rank between top or bottom 5, 10, 25, 50, 100, all descending, and all in ascending for the selected network element.

²Select the metric based on which you want to generate the report. The metric that you select is used to rank the report.

- Display Time Series Chart¹
- Grouping By²

Tip:

- By default, Top N Report is displayed without Time Series Chart.
Click **Display Time Series Chart** to view the chart with the detail table.
- Check this report once a day to see which process may need special attention.
- Check this report periodically throughout the day to see which process are performing at the extremes and may need special attention.

For information on metrics used by HP Network Node Manager iSPI Performance for Quality Assurance Software, see [NNM iSPI Performance for QA Metrics](#)

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Chart Report

Top N chart report ranks the network performance based on the topology elements and the metrics you select.

This report enables you to do the following:

- Track the network performance by comparing which metric is revealing an extreme metric value when compared to the other metrics.
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics.
- Analyze the historical data for the network path that exhibits unusual utilization levels. To view the historical data, you need to select the time period accordingly


NNM iSPI Performance for QA Top N Chart Report Options

The Top N Chart displays the following options:

- Top / Bottom N
- Grouping By
- Select Metric(s)

¹Select **Yes** to view the detail chart with the table. Select **No** to hide the chart and display only the table. The created Top N Report displays with the Time Series Chart.


²Enables you to group the report data based on a specific parameter. Click **Add new grouping** to add another group.

To add another metric, click **Options** and then click  **Add new metric** against the Metric field. You can select a maximum of six metrics on each axis to generate the report.

To remove a metric, click **Options** and then click  **Remove metric** against the required metric

You can select multiple grouping attribute. To add a new grouping attribute:

Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping, click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Tip:

Check this report once a day to keep track of the network performance

Check this report periodically throughout the day to identify the network path that needs special attention.

To change the Time Controls defaults, see [Change Time Controls](#).

To change the Topology Filters defaults, see [Set Topology Filters](#).

To change the Report Options defaults, see [Change Report Options](#).

For information on metrics used by HP Network Node Manager iSPI Performance for Quality Assurance Software, see [NNM iSPI Performance for QA Metrics](#).

Example:

You intend to view a report to compare and find out the average round trip time taken, and the average two way packet loss of the Top 10 ranking QA probes for the past 1 hour.

- Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**

Select the following options in the Top N Chart Report:

- Top /Bottom N - Top 10
- Grouping By - QA Probe Name
- Select Metric(s) - Round Trip Time (msecs) (avg), and Two Way Packet Loss (%) (avg)

Click **Confirm Selection**

You can compare the performance of the two selected metrics for the Top 10 ranking QA probes.

Related Topics

[Report Topology Filters](#)

[Report Time Controls](#)

[Report Options](#)

HP Network Node Manager iSPI Performance for Quality Assurance Software Report Options

The following table discusses the various report options available for NNM iSPI Performance for QA reports:

Report Options

Option	Description
Primary Metric	<p>Select the main metric based on which you want to generate the report.</p> <p>Each report must be based on at least one metric.</p> <p>If the report is based upon only one metric, this option is displayed as Metric</p>
Secondary Metric	<p>Some reports enables you to select up to two metrics. The secondary metric is dependent upon the primary metric.</p> <p>Example</p> <p>You selected Period Length as the primary metric and Positive Jitter Upstream as secondary metric. The report displays positive upstream jitter for the period length you specify using the Topology Filters</p>
Top / Bottom N	<p>Select number and order of network elements for the report</p> <p>Available only for Top N, Top N Chart, and Most Changed reports</p>
Grouping By	<p>Select the attribute based on which you want to group the report data.</p> <p>NNM iSPI Performance for QA reports display the following grouping attribute:</p> <ul style="list-style-type: none"> • QA Probe Name • QA Probe Type • Node Name • Destination Node • Source Site • Destination Site • Class of Service • QA Probe UUID • Node Name • Node UUID
Display Time Series Chart	<p>By default all reports display time series chart. Select No if you want to disable this option.</p>

Option	Description
Chart /Table Report	Select any one of the following option to view the report on a particular format: <ul style="list-style-type: none"> • Chart • Table • Chart and Table
Metric(s) Shown on Y1 Axis	This report option is applicable for chart detail report.
Metric(s) Shown on Y2 Axis	This report option is applicable for chart detail report.

For more information on the available metrics, see [NNM iSPI Performance for QA Metrics](#).

HP Network Node Manager iSPI Performance for Quality Assurance Software Report Time Controls

The following table lists the Time Controls that you can use to change the default time range and create a report based on the modified time range:

Select the **Relative Start** option as **Yes** or **No** and the Time Control view changes dynamically based on the selection.

If you select the **Relative Start** option as **Yes**, the following filters appear:

Time Range Filters

Name	Description
Last	Select the number of days prior to the current date to view the report. For example, if you intend to view the report for the Last 1 week, you must select 7 days from the drop-down list.
Grain	The time grain for which you intend to view the report. When you set a time range for a report, a predefined display grain is applied to the report.
Time Zone	Select the required time zone for which you intend to view the report.

Select the **Auto Refresh** option to refresh the report data based on the time range that you selected. By default, the Auto refresh option is set to **No**. You can use this option only after you have generated the report at least once.

You can select the required options, and click **Submit**.

If you select the **Relative Start** option as **No**, the following filters appear:

Time Range Filters

Name	Description
Start	Select the start date from which you intend to view the report.

Name	Description
Date	
Time	Select the start time from which you intend to view the report.
End Date	Select the end date until which you intend to view the report.
Time	Select the end time until which you intend to view the report.
Interval	Select the interval at which you intend to view the trend in the report.
Grain	Select the time grain for which you intend to view the report.
Time Zone	Click the drop-down list to select the required time zone for which you intend to view the report.

You can select the required options, and click **Submit**.

For more information on the Report Time Control, see the topic *Change Time Controls* in the *HP Network Node Manager iSPI Performance for Metrics Online Help*

HP Network Node Manager iSPI Performance for Quality Assurance Software Report Topology Filters

The following table lists the Topology Filters that you can use to search information from the topology table and generate customized reports:





Topology Filters for NNM iSPI Performance for QA

Filter	Description
QA Probe Name	QA probe names that the HP Network Node Manager iSPI Performance for Quality Assurance Software discovered in the network.
QA Probe Type	Type of the discovered QA probe. The NNM iSPI Performance for QA discovers the following types of QA probes can be of the following types: <ul style="list-style-type: none"> • UDP • UDP Echo • TCP Connect • ICMP Echo • VoIP
Node Name	Node from which at least one QA probe was initiated
Destination Node	Node on which at least one QA probe was run

Filter	Description
Source Site	Site from which at least one QA probe was initiated
Destination Site	Site on which at least one QA probe was run
Site Name	Source or destination site for the QA probes. Displays QA Probes where either the source or the destination site matches the site name(s) selected.
Class of Service	Pre-assigned class of service values for the discovered QA probes
Node ODBID	ODBID for the discovered nodes
Interface ODBID	ODBID for an interface
QA Probe UUID	Universally Unique Identifier for the discovered QA probes
Node UUID	Universally Unique Identifier for a source node available in the network.
Period Length	Fixed time range for the type of the report selected. For example, if you selected Weekly report, the period length displays data for past seven days. The period length is calculated as the sum of seconds in the time range. For more information on this attribute, see <i>HP Network Node Manager iSPI Performance for Metrics Online Help</i>
Management Server	The name of the NNMI management server for which you want to view the report.

Each topology filter shows the following customization icons:



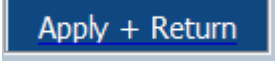
Customization Icons

Icon	Description
	Click this icon to hide the topology filter
	Click this icon to display the Search and Select box.
	Click to display the Single Value Select box Allows you to select a single topology filter
	Click to display the Multiple Value Select box Allows you to select more than one topology filters. Use

Icon	Description
	CTRL+Click or SHIFT+Click to select multiple topology filters

You can refine the search by selecting a particular option in the topology filter.

Click any of the following after you select the topology filters for your report:

-  **Apply**
-  **Reset**
-  **Apply + Return**



For more information on customizing topology filters, see the topic *Set Topology Filters* in the *HP Network Node Manager iSPI Performance for Metrics Software Online Help*

HP Network Node Manager iSPI Performance for Quality Assurance Software Dashboard Reportlets

In a large enterprise network NNM iSPI Performance for QA produces voluminous data as it involves many topology elements and nodes. It takes some time to launch the reports. However, you may be interested to quickly view the key details of a report, and understand the performance of the network. You can create custom dashboards using the reportlets. Dashboard Reportlets enable you to get a gist of the network performance instantaneously by displaying the important details of the report.

Viewing NNM iSPI Performance for QA Dashboard Reportlets

Follow the steps as discussed below to view a NNM iSPI Performance for QA reportlet:

1. Navigate to the HP Network Node Manager iSPI Performance for Metrics console using any of the following methods:
 - Click **Actions > Reporting-Report Menu**, in the NNMi console
 - Log in to NPS using `http://<fully-Qualified-serverName>:9300/p2pd/NPS.html` portal.
2. On the NPS home page, select **Dashboard Reportlets** tab in the navigation panel.
3. Click **iSPI Quality Assurance**
4. Click **Quality Assurance**
5. Click **QAMetrics** to view the HP Network Node Manager iSPI Performance for Quality Assurance Software reportlets.
6. Select a reportlet.
7. Click on  **Show toolbar**
8. Click  **Toggle Options**
9. Select the options from the drop-down list, and click **Confirm Selection**

HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Metric Snapshot with Range Reportlet

This report enables you to do the following:

- View the aggregated metric performance for the selected time range
- Build a performance history for the selected baseline metric and analyze how the metric performance changes over time.
- Compare the performance for multiple metrics over a specified time range.

Though you can generate snapshot report for a single metric, you can save the snapshot report for various metrics and compare the performance of each metric over a time range.

This reportlet supports one metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sleeve Chart Reportlet



This reportlet enables you to do the following:

- Determine if the baseline metric value is nearing the high or low threshold values configured for the metric.
- Allows you to save multiple sleeve reports for a time range, and analyze the performance of the metric.

This reportlet supports one metric.

Example

If you want to know the trend of the Round Trip Time for the last 24 hours, and check if there are any baseline exceptions.

7. 1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Baseline Sleeve Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 24 hours in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following option in the Baseline Sleeve reportlet:
 - Baseline Metric: Round Trip Time (msecs)
6. Click **Confirm Selection**

You can view the legend to understand the lines in the report.

HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sparkline Reportlet

This reportlet allows you to do the following:

- View the trend of how the selected baseline metric value has changed for the selected time range
- Analyze the fluctuations in the performance for the selected metric
- Allows to view the trend of the metric

HP Network Node Manager iSPI Performance for Quality Assurance Software Baseline Sparkline with Range Reportlet

This reportlet allows you to do the following:

- Analyze the trend of how the metric value has changed for the selected time range
- Compare the current performance of the metric with the expected performance range. It measures the performance in percentage.

This reportlet supports one metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar Reportlet



This reportlet enables you to compare the performance of the primary metric and how it affects the performance of the secondary metric.

The primary metric that you select is displayed on the left Y axis of the report. The secondary metric that you select is displayed on the right Y axis of the report. The default time range is set to one hour, and the default display grain is set to 5 minutes.

You can view the performance of the network path for the selected time range. This reportlet supports two metrics.

Example

You intend to view the reportlet for the change in Round Trip Time (msecs) (avg) based on the change in Two Way Packet Loss(%) (avg) for the last 24 hours. To enable this, you must follow these steps:

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Calendar** reportlet.
2. Expand the **Time Control** in the left navigational panel and select `24 hours` in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:
 - Primary Metric: `Two Way Packet Loss (%) (avg)`
 - Secondary Metric: `Round Trip Time (msecs) (avg)`
6. Click **Confirm selection**

HP Network Node Manager iSPI Performance for Quality Assurance Software Gauge Reportlet

This reportlet allows you to do the following

- Gauge or measure the metric performance for a time period. You can only select metrics with the unit as percentage.

- Measure the performance for a selected time range and metric. Also, detects any abnormality in the performance.
- Displays a needle or pointer to indicate the performance in percentage. Note that the needle does not appear if there is no data for the metric.

This reportlet supports one metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Heat Chart Reportlet

This reportlet allows you to do the following:

- Assess and rate the performance of the metric for the selected time range
- Aggregate the metric performance based on the hourly display grain
- Detect the time range when the network performance got affected due to a fluctuating metric value.

This reportlet supports one metric. Different colors are used to display different measures of a metric. The legends display the different ranges of metric measurement, making it easier for you to spot the concern area.

HP Network Node Manager iSPI Performance for Quality Assurance Software Metric Snapshot Reportlet



This reportlet enables you to do the following:

- View the performance history for the selected metric and analyze how the metric performance changes over time.
- Save the snapshot report for various metrics and compare the performance of each metric over a time range.

This reportlet supports one metric.

Example

You intend to view the reportlet for the Round Trip Time (msecs) (avg) for the last 7 days

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Metric Snapshot** reportlet.
2. Expand the **Time Control** in the left navigational panel and select `7 days` in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following option from the drop-down list:

Metric: Round Trip Time (msecs) (avg)

6. Click **Confirm Selection**

HP Network Node Manager iSPI Performance for Quality Assurance Software Most Changed Reportlet

This reportlet enables you to do the following:

- Analyze the fluctuation of the metric set for each topology element
- Enables to view the report based on the Change value. Change value is obtained based on the difference in utilization of the metric between the previous period and current period. The topology elements are listed based on the descending order of this Change value. You can also view the Change value in percentage.

You can enhance the report usability using the following features:

- Top N
- Grouping By

You can select multiple grouping attribute. To add a new grouping attribute:

Click Options, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping, click Options and then click  **Remove grouping** against the required **Grouping By** option



This reportlet supports one metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Multimetric Chart Reportlet

This reportlet enables you to compare the performance of the selected metrics for each display grain. The default display grain is one hour. Also, detects any persistent problem in the network performance. This reportlet supports up to six metrics per axis.

Example

You intend to compare the Round Trip Time (msecs) (avg) and the Packet Loss Source to Destination (%) (avg) for the last 24 hours. To enable this, you must follow these steps:

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Multimetric Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 24 hours in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list

- Metric(s) shown on Y1 axis: Round Trip Time (msecs) (avg)
- Metric(s) shown on Y2 axis: Packet Loss Source to Destination (%) (avg)

6. Click **Confirm selection**

You can refer to the legend below the reportlet to understand the line that depicts the selected metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Bar and Line Chart Reportlet



This reportlet enables you to do the following:

- View the primary metric as a bar chart in the reportlet
- View the secondary metric as a line chart in the reportlet
- View how the performance of the secondary metric is affected by the performance of the primary metric

This reportlet supports two metrics.

Example

You intend to view a reportlet to find out how the two way jitter affects the round trip time for the last 1 hour for every 5 minutes.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Simple Bar and Line Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list
 - Primary Metric: Two Way Jitter (µsecs) (avg)
 - Secondary Metric: Round Trip Time (msecs) (avg)
6. Click **Confirm selection**

You can refer to the legend below the report. The bar chart represents the primary metric, and the line chart represents the secondary metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Bar Chart Reportlet



This reportlet enables you to do the following:

- View the performance of two metrics for the selected time range as bar charts
- View how the performance of the secondary metric is affected by the performance of the primary metric

The metrics are represented in the form of a bar chart.

Example

You intend to view a reportlet to find out how the two way jitter affects the round trip time for the last 1 hour for every 5 minutes.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Simple Bar and Line Chart** reportlet.
 2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
 3. Click on  **Show toolbar**
 4. Click  **Toggle Options**
 5. Select the following options from the drop-down list
Primary Metric: `Two Way Jitter (µsecs) (avg)`
Secondary Metric: `Round Trip Time (msecs) (avg)`
- Click **Confirm selection**

You can refer to the legend below the report. You can find two bar charts in different colors representing the primary and the secondary metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Chart Reportlet



This reportlet enables you to do the following:

- View the performance of two metrics for the selected time range as lines
- View how the performance of the secondary metric is affected by the performance of the primary metric

The metrics are represented in the form of a line chart.

Example

You intend to view a reportlet to find out how the two way jitter affects the round trip time for the last 1 hour for every 5 minutes.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Simple Bar and Line Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**

5. Select the following options from the drop-down list

Primary Metric:Two Way Jitter (μ secs) (avg)

Secondary Metric:Round Trip Time (msecs) (avg)

6. Click **Confirm selection**

You can refer to the legend below the report. You can find two line charts in different colors representing the primary and the secondary metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Simple Table Reportlet



This reportlet enables you to do the following:

- View the performance of two metrics for the selected time range in a tabular format
- View how the performance of the secondary metric is affected by the performance of the primary metric

The time period, and the metrics are represented in the form of a table.

Example

You intend to view a reportlet to find out how the two way jitter affects the round trip time for the last 1 hour for every 5 minutes.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Simple Bar and Line Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list

Primary Metric:Two Way Jitter (μ secs) (avg)

Secondary Metric:Round Trip Time (msecs) (avg)

6. Click **Confirm selection**

You can find the details of the metric performance for every 5 minutes in the table

HP Network Node Manager iSPI Performance for Quality Assurance Software Sparkline Reportlet

This reportlet enables you to do the following:

- Evaluates the trend of how the selected metric value has changed for the selected time range.
- Analyze the variations in the performance for the selected metric.
- Decide whether the expected behavior for the selected metric should be reassessed.

This reportlet supports one metric.

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Chart Reportlet

This reportlet enables you to do the following:

- Ranks the network performance based on the topology elements and the metric you select.
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics.

The Top N Chart displays the following options:

- Top / Bottom N
- Metric
- Grouping By

You can select only one metric, but you can view the trend of the metric based on the topology elements selected. You can select a maximum of ten grouping attributes to generate the report.

To add a new grouping attribute:



- Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping attribute

- Click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Example

You intend to view a reportlet to find out the average round trip time taken by the Top 10 ranking QA probes for the past 1 hour.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Top N Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:
Top/Bottom N : Top 10
Grouping By: QA Probe Name
Metric: Round Trip Time (msecs) (avg)
6. Click **Confirm selection**

You can refer to the legend in the reportlet.

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Line Chart Reportlet

This reportlet enables you to do the following:

- Ranks the network performance based on the topology elements and the metric you select.
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics.

The Top N Line Chart displays the following options:

- Top / Bottom N
- Metric
- Grouping By

You can select only one metric, but you can view the trend of the metric based on the topology elements selected. You can select a maximum of ten grouping attributes to generate the report.

To add a new grouping attribute:



- Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping attribute:

- Click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Example

You intend to view a reportlet to find out the average round trip time taken by the Top 10 ranking QA probes for the past 1 hour.

1. Select **Dashboard Reportlet** tab in the navigational panel, and select the **Top N Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:
Top/Bottom N : Top 10
Grouping By: QA Probe Name
Metric: Round Trip Time (msecs) (avg)
6. Click **Confirm selection**

You can refer to the legend in the reportlet.

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Stacked Chart Reportlet

This reportlet enables you to do the following:

- Ranks the network performance based on the topology elements and the metric you select.
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics.

The Top N Stacked Chart displays the following options:

- Top / Bottom N
- Metric
- Grouping By

You can select only one metric, but you can view the trend of the metric based on the topology elements selected. You can select a maximum of ten grouping attributes to generate the report.

To add a new grouping attribute:



- Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping: attribute

- Click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Example

You intend to view a reportlet to find out the average round trip time taken by the Top 10 ranking QA probes for the past 1 hour.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Top N Chart** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:

Top/Bottom N : Top 10

Grouping By: QA Probe Name

Metric: Round Trip Time (msecs) (avg)

6. Click **Confirm selection**

You can refer to the legend in the reportlet.

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Table Reportlet

This reportlet enables you to do the following:

- Ranks the network performance based on the topology elements and the metric you select
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics
- View the Top N reportlet in a tabular format

The Top N Table reportlet displays the following options:

- Top / Bottom N
- Metric
- Grouping By

You can select only one metric, but you can view the trend of the metric based on the topology elements selected. You can select a maximum of ten grouping attributes to generate the report.

To add a new grouping attribute:



- Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping attribute:

- Click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Example

You intend to view a reportlet to find out the average round trip time taken by the Top 10 ranking QA probes for the past 1 hour.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Top N Table** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:

Top/Bottom N : Top 10

Grouping By: QA Probe Name

Metric: Round Trip Time (msecs) (avg)

6. Click **Confirm selection**

HP Network Node Manager iSPI Performance for Quality Assurance Software Top N Table with Bars Reportlet

This reportlet enables you to do the following:

- Ranks the network performance based on the topology elements and the metric you select
- Identify the network path that reveals an extreme metric value. This can be analyzed by selecting multiple topology elements for the metrics
- View the Top N reportlet in a tabular format with bars indicating the performance

The Top N Table reportlet displays the following options:

- Top / Bottom N
- Metric
- Grouping By

You can select only one metric, but you can view the trend of the metric based on the topology elements selected. You can select a maximum of ten grouping attributes to generate the report.

To add a new grouping attribute:



- Click **Options**, select the required **Grouping By** option and then click  **Add new grouping**

To remove a grouping attribute:

- Click **Options** and then click  **Remove grouping** against the required **Grouping By** option

Example

You intend to view a reportlet to find out the average round trip time taken by the Top 10 ranking QA probes for the past 1 hour.

1. Select **Dashboard Reportlets** tab in the navigational panel, and select the **Top N Table with Bars** reportlet.
2. Expand the **Time Control** in the left navigational panel and select 1 hour in the **Last** drop-down list. Click **Submit**
3. Click on  **Show toolbar**
4. Click  **Toggle Options**
5. Select the following options from the drop-down list:

Top/Bottom N : Top 10

Grouping By: QA Probe Name

Metric: Round Trip Time (msecs) (avg)

6. Click **Confirm selection**

HP Network Node Manager iSPI Performance for Quality Assurance Software Topology Filters

The following table discusses the topology filters that the NNM iSPI Performance for QA uses:

NNM iSPI Performance for QA Topology Elements

Filter	Description
QA Probe Name	QA probe names that the HP Network Node Manager iSPI Performance for Quality Assurance Software discovered in the network.
QA Probe Type	Type of the discovered QA probe. The NNM iSPI Performance for QA discovers the following types of QA probes can be of the following types: <ul style="list-style-type: none"> • UDP • UDP Echo • TCP Connect • ICMP Echo • VoIP
Node Name	Node from which at least one QA probe was initiated
Destination Node	Node on which at least one QA probe was run
Source Site	Site from which at least one QA probe was initiated
Destination Site	Site on which at least one QA probe was run
Site Name	Source or destination site for the QA probes. Displays QA Probes where either the source or the destination site matches the site name(s) selected.
Class of Service	Pre-assigned class of service values for the discovered QA probes
Node ODBID	ODBID for the discovered nodes
Interface ODBID	ODBID for an interface
QA Probe UUID	Universally Unique Identifier for the discovered QA probes
Node UUID	Universally Unique Identifier for a source node available in the network.
Period Length	Fixed time range for the type of the report selected. For example, if you selected Weekly report, the period length displays data for past seven days. The period length is calculated as the sum of seconds in the time range. For more information on this attribute, see <i>HP Network Node Manager iSPI Performance for Metrics Online Help</i>

Filter	Description
Management Server	The name of the NNMi management server for which you want to view the report.

NNMi Topology Elements

Topology Element Name	Description
Interface Name	Name of the interface
Interface UUID	Universally Unique Identifier for a interface
Interface Alias	The Alias value assigned to the interface by the device administrator
Interface Type	The physical link protocol type of the interface Possible values used by HP Network Node Manager iSPI Software include Ethernet and frameRelay. Note: Interfaces on non-SNMP nodes have an interface type of other .
Interface Speed	The interface's bandwidth in bits per second Depending on the device vendor, this value may indicate current speed or potential speed.
SecGroup UUID	Universally Unique Identifier for the security group

For more information on the common metrics used by HP Network Node Manager iSPI Performance for Metrics and NNM iSPI Performance for QA, see HP Network Node Manager iSPI Performance for Metrics *Online Help*.

HP Network Node Manager iSPI Performance for Quality Assurance Software Metrics

The following table discusses the metrics that the NNM iSPI Performance for QA uses:

Metric Name	Description
Reachability (Average, Maximum, and Minimum)	Total percentage of time the destination network element was reachable from the source network element Measures the physical connectivity between two network elements
Round Trip Time (msecs) (Average, Maximum, and Minimum)	Round Trip Time required for the data packet to travel between the selected source and destination network element Displayed if you configure the QA probe precision to

Metric Name	Description
Round Trip Time (µsecs) (Average, Maximum, and Minimum)	milliseconds or microseconds Round Trip Time (msecs) is displayed in milliseconds Round Trip Time (µsecs) is displayed in microseconds
Round Trip Time - Exception (Sum)	Number of round trip time exceptions for the selected network element. Displays the number of times the round trip time for the selected network element crossed the threshold value
Round Trip Time - Exception Rate (Average, Maximum, and Minimum)	Rate of round trip time exceptions for the selected network element. Displays the following value: Sum of Round Trip Time - Exception/Sum of Sample Counts
Positive Jitter Source to Destination (Average, Maximum, and Minimum)	Positive jitter for the data packet to be delivered from the source network element to the destination network element
Positive Jitter Destination to Source (Average, Maximum, and Minimum)	Positive jitter for the data packet to be delivered from the destination network element to the source network element
Negative Jitter Source to Destination (Average, Maximum, and Minimum)	Negative jitter for the data packet to be delivered from the source network element to the destination network element
Negative Jitter Destination to Source (Average, Maximum, and Minimum)	Negative jitter for the data packet to be delivered from the destination network element to the source network element
Two Way Jitter (Average, Maximum, and Minimum)	Jitter for the data packet to travel from the source network element , destination network element and back again
Two Way Jitter- Exception (Sum)	Number of two way jitter exceptions for the selected network element. Displays the number of times the two way jitter amount for the selected network element crossed the threshold value.
Two Way Jitter- Exception Rate (Average, Maximum, and Minimum)	Rate of two way jitter exceptions for the selected network element. Displays the following value: Sum of Two Way Jitter - Exception/Sum of Sample Counts

Metric Name	Description
Positive Jitter from Source to Destination - Exception (Sum)	<p>Number of positive jitter from source to destination exceptions for the selected network element.</p> <p>Displays the number of times the amount of positive jitter from source to destination for the selected network element crossed the threshold value.</p>
Positive Jitter from Source to Destination - Exception Rate (Average, Maximum, and Minimum)	<p>Rate of positive jitter from source to destination exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Positive Jitter from Source to Destination - Exception/Sum of Sample Counts</p>
Positive Jitter from Destination to Source - Exception (Sum)	<p>Number of positive jitter from destination to source exceptions for the selected network element.</p> <p>Displays the number of times the amount of positive jitter from destination to source for the selected network element crossed the threshold value.</p>
Positive Jitter from Destination to Source - Exception Rate (Average, Maximum, and Minimum)	<p>Number of positive jitter from destination to source exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Positive Jitter from Destination to Source - Exception/Sum of Sample Counts</p>
Negative Jitter from Source to Destination - Exception (Sum)	<p>Number of negative jitter from source to destination exceptions for the selected network element.</p> <p>Displays the number of times the amount of positive jitter from destination to source for the selected network element crossed the threshold value.</p>
Negative Jitter from Source to Destination - Exception Rate (Average, Maximum, and Minimum)	<p>Rate of negative jitter from source to destination exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Negative Jitter from Source to Destination - Exception/Sum of Sample Counts</p>
Negative Jitter from Destination to Source - Exception (Sum)	<p>Number of negative jitter from destination to source exceptions for the selected network element.</p> <p>Displays the number of times the amount of negative jitter from destination to source for the selected network element crossed the threshold value.</p>

Metric Name	Description
Negative Jitter from Destination to Source - Exception Rate (Average, Maximum, and Minimum)	<p>Number of negative jitter from destination to source exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Negative Jitter from Destination to Source - Exception/Sum of Sample Counts</p>
Packet Loss Source to Destination Percentage (Average, Maximum, and Minimum)	<p>Percentage of data loss while the data packet was traveling from the source network element to the destination network element</p>
Packet Loss Destination to Source Percentage (Average, Maximum, and Minimum)	<p>Percentage of data loss while the data packet was traveling from the destination network element to the source network element</p>
Two Way Packet Loss (Average, Maximum, and Minimum)	<p>Average of the following:</p> <ul style="list-style-type: none"> • Percentage of data loss while the data packet was traveling from the source network element to the destination network element. • Percentage of data loss while the data packet was traveling from the destination network element to the source network element
Two Way Packet Loss - Exception (Sum)	<p>Total number of two way packet loss exceptions for the selected network element.</p> <p>Displays the number of times the two way packet loss percentage for the selected network element crossed the threshold value.</p>
Two Way Packet Loss-Exception Rate (Average, Maximum, and Minimum)	<p>Rate of two way packet loss exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Two Way Packet Loss - Exception/Sum of Sample Counts</p>
Packet Loss from Source to Destination - Exception (Sum)	<p>Total number of source to destination packet loss exceptions for the selected network element.</p> <p>Displays the number of times the source to destination packet loss percentage for the selected network element crossed the threshold value.</p>
Packet Loss from Source to Destination - Exception Rate (Average, Maximum, and Minimum)	<p>Rate of source to destination packet loss exceptions for the selected network element.</p> <p>Displays the following value:</p>

Metric Name	Description
	Sum of Packet Loss from Source to Destination - Exception/Sum of Sample Counts
Packet Loss from Destination to Source - Exception (Sum)	<p>Total number of destination to source packet loss exceptions for the selected network element.</p> <p>Displays the number of times the destination to source packet loss percentage for the selected network element crossed the threshold value.</p>
Packet Loss from Destination to Source - Exception Rate (Average, Maximum, and Minimum)	<p>Rate of destination to source packet loss exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Packet Loss from Destination to Source - Exception/Sum of Sample Counts</p>
Mean Opinion Scores(MOS) (Average, Maximum, and Minimum)	<p>Grade of quality of the media received after being transmitted and eventually compressed using codecs.</p> <p>Expressed in one number, from 1 to 5, 1 being the worst and 5 the best.</p>
Mean Opinion Scores - Exception (Sum)	<p>Total number of destination to source packet loss exceptions for the selected network element.</p> <p>Displays the number of times the destination to source packet loss percentage for the selected network element crossed the threshold value.</p>
Mean Opinion Scores - Exception Rate (Average, Maximum, and Minimum)	<p>Rate of destination to source packet loss exceptions for the selected network element.</p> <p>Displays the following value:</p> <p>Sum of Mean Opinion Scores - Exception/Sum of Sample Counts</p>
Sample Count	Total number of polled samples
Unresponsive Target (Sum)	This error occurs when the node does not respond to the SNMP request, which results in SNMP time out.
Target Error (Sum)	This error occurs when one of the target QA probes of a node is not found.
Reboot (Sum)	This error occurs when the node restarts in between the polling cycle or the system uptime is reset.

Metric Name	Description
Invalid Data (Sum)	This error occurs due to failure of authentication or returns invalid values while polling for data.

For more information on the common metrics used by HP Network Node Manager iSPI Performance for Metrics and NNM iSPI Performance for QA, see *HP Network Node Manager iSPI Performance for Metrics Online Help*.

HP Network Node Manager iSPI Performance for Quality Assurance Software Metrics: MPLS Specific

The following table discusses the metrics that the NNM iSPI Performance for QA uses, while it is integrated with NNMi Smart Plug-in for MPLS(MPLS iSPI).

Note: These are the additional metrics that QA SPI uses, while integrated with MPLS iSPI. See, [NNMi iSPI Performance for QA Metrics](#) for the list of metrics used by QA SPI.

Metric Name	Description
QA MPLS UUID	Universally Unique Identifier for the discovered QA extension pack integrated to MPLS.
VRF Name	Name of the Virtual Routing and Forwarding (VRFs) table that belong to one of the Virtual Private Networks (VPN) that the MPLS manages
VRF UUID	Universally Unique Identifier for a VRF
VPN Name	Name of the VPN

For more information on the metrics used by NNMi Smart Plug-in for MPLS , see *NNMi Smart Plug-in for MPLS Online Help*.

HP Network Node Manager iSPI Performance for Quality Assurance Software Topology Filters

The following table discusses the topology filters that the NNM iSPI Performance for QA uses:

NNM iSPI Performance for QA Topology Elements

Filter	Description
QA Probe Name	QA probe names that the HP Network Node Manager iSPI Performance for Quality Assurance Software discovered in the network.
QA Probe Type	Type of the discovered QA probe. The NNM iSPI Performance for QA discovers the following types of QA probes can be of the following types: <ul style="list-style-type: none"> • UDP

Filter	Description
	<ul style="list-style-type: none"> • UDP Echo • TCP Connect • ICMP Echo • VoIP
Node Name	Node from which at least one QA probe was initiated
Destination Node	Node on which at least one QA probe was run
Source Site	Site from which at least one QA probe was initiated
Destination Site	Site on which at least one QA probe was run
Site Name	<p>Source or destination site for the QA probes.</p> <p>Displays QA Probes where either the source or the destination site matches the site name(s) selected.</p>
Class of Service	Pre-assigned class of service values for the discovered QA probes
Node ODBID	ODBID for the discovered nodes
Interface ODBID	ODBID for an interface
QA Probe UUID	Universally Unique Identifier for the discovered QA probes
Node UUID	Universally Unique Identifier for a source node available in the network.
Period Length	<p>Fixed time range for the type of the report selected.</p> <p>For example, if you selected Weekly report, the period length displays data for past seven days.</p> <p>The period length is calculated as the sum of seconds in the time range.</p> <p>For more information on this attribute, see <i>HP Network Node Manager iSPI Performance for Metrics Online Help</i></p>
Management Server	The name of the NNMi management server for which you want to view the report.

NNMi Topology Elements

Topology Element Name	Description
Interface Name	Name of the interface
Interface UUID	Universally Unique Identifier for a interface
Interface Alias	The Alias value assigned to the interface by the device administrator
Interface Type	The physical link protocol type of the interface Possible values used by HP Network Node Manager iSPI Software include Ethernet and frameRelay. Note: Interfaces on non-SNMP nodes have an interface type of other .
Interface Speed	The interface's bandwidth in bits per second Depending on the device vendor, this value may indicate current speed or potential speed.
SecGroup UUID	Universally Unique Identifier for the security group

For more information on the common metrics used by HP Network Node Manager iSPI Performance for Metrics and NNM iSPI Performance for QA, see HP Network Node Manager iSPI Performance for Metrics *Online Help*.

Use Case for HP Network Node Manager iSPI Performance for Quality Assurance Software Calendar Report

Module	QA Calendar Report
Use Case Name	Using QA Calendar Report
Use Case Author	HP Software

Summary

This use case gives you an overview of how you can use the Quality Assurance (QA) Calendar report to measure your network performances.

Application

NNM iSPI Performance for QA Reports using NNM iSPI Performance for Metrics Software console

Overview

Traffic was slow between two Sites for past one week

QA Calendar Report enables you to detect any persistent problem in the network.

Actor

- Network Administrator

- Capacity Planner
- Business Manager

Pre Condition

At least two sites should exist for this use case. We select `SiteA` and `SiteB` for this use case.

We need to check the QA Calendar report to analyze how the round trip time got affected by the variance in the two way packet loss over a specified period of time. The round trip time may increase due to high rate of packet loss, causing slow traffic.

Viewing QA Calendar Report

- [Process Initialization](#)
- [Process](#)
- [Report Analysis](#)
- [GUIs Referenced](#)

Assumptions

- User has administrative privileges to NNMI.
- User is analyzing the variations in the Round Trip Time (RTT) as a result of packet loss for SiteA and SiteB.
- Both SiteA and SiteB are created in the NNM iSPI Performance for QASite Configuration form.

Initialization

1. Log on to HP Network Node Manager iSPI Performance for Metrics console using your username and password.
2. On the NPS home page, select **Reports** tab in the navigation panel. Alternatively, click **Actions > Reporting-Report Menu**, in the NNMI console.
3. Click **iSPI Quality Assurance**
4. Click **Quality Assurance**
5. Click **QAMetrics**
6. Select a report type.
7. Modify the default report settings, if required

View QA Calendar Report

This section describes all the typical interactions that take place between the actor and this use case.

Format: If the actor selects `<selection>`, the system will request the actor to enter information.

To view the QA Calendar report, follow the steps as discussed below:

1. [Expand the iSPI Quality Assurance tab.](#)
2. Expand **Time Control**.
 - a. Select the **Relative Start** option as **Yes** to select a time range that is relative to the most recent data, or select **No** option to select a fixed time range.
 - b. If you set **Relative Start** option as **Yes**, you can select one of the following time ranges for the Calendar Report:
 - **Last 24 day** for the report showing information for past one day
 - **Last 7 Days** for the report showing information for past seven days
 - **Last 30 days** for the report showing information for past 30 daysIn this case, you can select **7 days**
 - c. Alternatively, if you set **Relative Start** option as **No**, you can select the **Start Date and Time**, and **End Date and Time** as well.
 - d. Select the **Time Zone**, and click **Submit**.
3. Expand **Topology Filters**, and click **Launch Topology Selector**.
4. Select the source and destination sites, and click **Apply**.
5. In the Calendar Report, click **Options** and select the following metrics:
 - **Two Way Packet Loss (%) (avg)** as the primary metric.
 - **Round Trip Time (msec) (avg)** as the secondary metric.
6. Click **Confirm Selection**.

The QA Calendar report opens displaying the weekly comparative study between Average Percentage of Two Way Packet Loss and Average Round Trip Time.

Analyzing the QA Calendar Report

The QA Calendar Report displays the following information:

- X axis: Time interval
- Left Y axis: Average percentage of two way packet loss
- Right Y axis: Average round trip time in milliseconds

We can derive the following points by analyzing the report information:

- Within a specific range of time, if the average two way packet loss increases beyond a valid range, the round trip time is also affected adversely.
- When the two way packet loss increases to the highest level, the round trip time also increases to its highest level.

Some of the reasons that may cause high two way packet loss can be signal degradation over the network medium or over-saturated network links.

You can perform the following tasks to find out more about how the high two way packet loss affects the network:

- Compare the Calendar Report information with the Chart Detail report on round trip time for data packets, which is directly affected by two way packet loss.

The Chart Detail report displays the measure of the selected metric for each time unit (in this case one day) as a grain, making it easier for you to understand the ups and downs in the metric performance.

Select **Two Way Packet Loss (%) (avg)** as the primary metric, and **Round trip Time (msec) (avg)** as the secondary metric.

- Analyze the Chart Detail Report information and find out the day on which the two way packet loss was the highest.
- View the Top N report for that day to find the root cause of the problem.

GUIs Referenced

- HP Network Node Manager iSPI Performance for Metrics console
- [NNM iSPI Performance for QA Calendar Report](#)
- [NNM iSPI Performance for QA Chart Detail Report](#)
- [NNM iSPI Performance for QA Top N Report](#)

System Interface

HP Network Node Manager iSPI Performance for Metrics console

Use Case for HP Network Node Manager iSPI Performance for Quality Assurance Software Chart Detail Report

Module	QA Chart Detail Report
Use Case Name	Using QA Chart Detail Report
Use Case Author	HP Software

Summary

This use case gives you an overview of how you can use the Quality Assurance (QA) Chart Detail report to measure your network performances.

Application

NNM iSPI Performance for QA Reports using NNM iSPI Performance for Metrics Software console

Overview

Traffic was slow between two Sites for past one week

QA Chart Detail Report enables you to perform the following:

- Analyze the fluctuations in the network performance over a specific period of time.

- Compare the measures of two metrics and analyze how one metric was affected by the performance of the other metric.

Actor

- Network Administrator
- Capacity Planner
- Business Manager

Pre Condition

At least two sites should exist for this use case. We select `SiteA` and `SiteB` for this use case.

We need to check the QA Chart Detail report to analyze the average two way packet loss and it's effect on the average round trip time for each day of the week.

This report displays each day of the week as a **Display Grain** and measures the performance of the selected metrics for that display grain.

Viewing QA Chart Detail Report

- [Process Initialization](#)
- [Process](#)
- [Report Analysis](#)
- [GUIs Referenced](#)

Assumptions

- User has administrative privileges to NNMi.
- User is analyzing the variations in the Round Trip Time (RTT) as a result of packet loss for SiteA and SiteB.
- Both SiteA and SiteB are created NNMi Performance SPI for Quality Assurance Site Configuration form.

Initialization

1. Log on to HP Network Node Manager iSPI Performance for Metrics console using your username and password.
2. On the NPS home page, select **Reports** tab in the navigation panel. Alternatively, click **Actions > Reporting-Report Menu**, in the NNMi console.
3. Click **iSPI Quality Assurance**
4. Click **Quality Assurance**
5. Click **QAMetrics**
6. Select a report type.
7. Modify the default report settings, if required

View Chart Detail Report

To view the QA Chart Detail report, follow the steps as discussed below:

This section describes all the typical interactions that take place between the actor and this use case.

Format: If the actor selects <selection>, the system will request the actor to enter information.

To view the QA Chart Detail report, follow the steps as discussed below:

1. [Expand the Quality Assurance tab.](#)
2. Expand **Time Control**.
 - a. Select the **Relative Start** option as **Yes** to select a time range that is relative to the most recent data, or select **No** option to select a fixed time range.
 - b. If you set **Relative Start** option as **Yes**, you can select one of the following time ranges for the Chart Detail Report:
 - **Last 1 hour** for the report showing information for past one hour
 - **Last 24 hours** for the report showing information for past one day
 - **Last 7 Days** for the report showing information for past seven days
 - **Last 30 days** for the report showing information for past 30 daysIn this case, you can select **7 days**.
 - c. Alternatively, if you set **Relative Start** option as **No**, you can select the **Start Date and Time**, and **End Date and Time** as well.
 - d. Select the **Time Zone**, and click **Submit**.
3. Expand **Topology Filters**, and click **Launch Topology Selector**. Select *Site A* and *Site B* as the source and destination sites, and click **Apply**.
4. In the Chart Detail report, click **Options** and select the following metrics:
 - **Two Way Packet Loss (%) (avg)** as the primary metric.
 - **Round Trip Time (msec) (avg)** as the secondary metric.
5. Click **Confirm Selection**.

The QA Chart Detail report opens displaying the weekly comparative study between maximum Percentage of Two Way Packet Loss and maximum Round Trip Time.

Analyzing the QA Chart Detail Report

The QA Chart Detail Report displays the following information:

- X axis: Time interval
- Left Y axis: Average percentage of packet loss from source to destination and destination to source site
- Right Y axis: Average round trip time in milliseconds

You can derive the following points by analyzing the report information:

- Within a specific range of time, when the average two way packet loss was the highest, the round trip time between two sites also was the highest. That is, the connectivity between these two sites at this point of time was very bad.
- Within a specific time range, whenever the packet loss decreased, it caused a decrease in the round trip time.
- However, if the two way packet loss increased slightly, it had no effect on the round trip time. During these periods, the round trip time remained steady, though the two way percentage of packet loss varied slightly.

You can perform the following tasks to find out more about how the high packet loss affects the network:

- View the Normalized Heat Chart for Two Way Packet :Loss (%) (avg) to analyze when the packet loss increased beyond the threshold limits, signifying a possible increase in the round trip time for data packets.
- View the [Quality Assurance \(QA\) Top N report](#) for round trip time. You can group the report based on the source and destination sites to find out the route on which the round trip time is high.

GUIs Referenced

- HP Network Node Manager iSPI Performance for Metrics console
- [NNM iSPI Performance for QA Chart Detail Report](#)
- [NNM iSPI Performance for QA Top N Report](#)

System Interface

HP Network Node Manager iSPI Performance for Metrics console

Use Case for HP Network Node Manager iSPI Performance for Quality Assurance Software Heat Chart Report

Module	QA Heat Chart Report
Use Case Name	Using QA Heat Chart Report
Use Case Author	HP Software

Summary

This use case gives you an overview of how you can use the Quality Assurance (QA) Heat Chart report to measure your network performances.

Application

NNM iSPI Performance for QA Reports using NNM iSPI Performance for Metrics Software console

Overview

VoIP connection is disrupted by high level of noise

VoIP is very sensitive to the latency and jitter properties of the network. The level of noise may increase because of high level of jitter or latency in a VoIP connection.

QA Heat Chart report enables you to analyze when the following metrics were beyond the threshold level:

- Average Two Way Jitter
- Average Round Trip Time (RTT)

This report enables you to perform the following:

- Pinpoint the time period when the metric performance crossed the threshold limit.
- Compare the measures of a metric for various date and time ranges and analyze how the high or low measures affected the whole performance of the metric

Actor

- Network Administrator
- Capacity Planner
- Business Manager

Pre Condition

None.

Viewing QA Chart Detail Report

- [Process Initialization](#)
- [Process](#)
- [Report Analysis](#)
- [GUIs Referenced](#)

Assumptions

- User has administrative privileges to NNMI.
- User is analyzing the variations in the Jitter and Round Trip Time (RTT) for the disruptions in the VoIP network.

Initialization

1. Log on to HP Network Node Manager iSPI Performance for Metrics console using your username and password.
2. On the NPS home page, select **Reports** tab in the navigation panel. Alternatively, click **Actions > Reporting-Report Menu**, in the NNMI console.
3. Click **iSPI Quality Assurance**

4. Click **Quality Assurance**
5. Click **QAMetrics**
6. Select a report type.
7. Modify the default report settings, if required

View QA Heat Chart Report

This section describes all the typical interactions that take place between the actor and this use case.

Format: If the actor selects <selection>, the system will request the actor to enter information.

To view the QA Heat Chart report, follow the steps as discussed below:

1. [Expand the Quality Assurance tab.](#)
2. Expand **Time Control**.
 - a. Select the **Relative Start** option as **Yes** to select a time range that is relative to the most recent data, or select **No** option to select a fixed time range.
 - b. If you set **Relative Start** option as **Yes**, you can select one of the following time ranges for the Heat Chart Report
 - **Last 24 hours** for the report showing information for past one day
 - **Last 7 Days** for the report showing information for past seven days
 - **Last 30 days** for the report showing information for past 30 days

In this case, you select **7 days**

- c. Alternatively, if you set **Relative Start** option as **No**, you can select the **Start Date and Time**, and **End Date and Time** as well.
 - d. Select the **Time Zone**, and click **Submit**.
3. Expand **Topology Filters**, and click **Launch Topology Selector**. Select the source site and destination site. Click **Apply**.
 4. In the Heat Chart Report, click **Options** and select the **Two Way Jitter (µsecs) (avg)** as the report metric.
 5. Click **Confirm Selection**.

The QA Heat Chart report opens displaying the average two way jitter for past one week.

Each column in the report displays the hours of a day Each cell represents the average two way jitter for that hour

Analyzing the QA Heat Chart Report

By analyzing the heat chart report you can analyze at which point of time the jitter was high during the past one week. A high level of jitter may cause disruption over a VoIP network.

You can perform the following tasks to view the cause of high jitter:

- View the [Quality Assurance \(QA\) Top N report](#) for jitter. You can group the report based on one or more metrics to find out the network route having the highest jitter. Examples of such Top N report groups are:
 - The top N (top five, ten, 15, 25, 50, or 100) source and destination sites to find out the route on which the jitter is highest
 - The top N (top five, ten, 15, 25, 50, or 100) source sites, destination sites, and QA probes to view the QA probes that reported the highest jitter within a specific route.

After analyzing the jitter, you can also analyze the average round trip time for the network for the past one week.

An increase in the round trip time may cause the voice quality to be sound broken or choppy over a VoIP network.

1. Click **Options** and select the **Round Trip Time (msec) (avg)** as the report metric.
2. Click **Confirm Selection**.

The QA Heat Chart report opens displaying the average round trip time for each hour of the day for past one week.

- Each column displays the hours of a day
- Each cell represents the average round trip time for that hour

You can perform the following tasks to view the cause of increasing round trip time:

- Generate Top N reports for the time range when the round trip time was the highest based on the following metrics to reveal the cause of the round trip time:
 - The top N (you may select top five, top ten or top 15) nodes to view the level of latency (round trip time) for each node group.
 - The top N (you may select top five, top ten or top 15) QA probes to view the QA probes that reported the highest latency.
- Generate the QA Chart Detail Report based on the following metrics to check whether the high round trip time was caused by high percentage of packet loss:
 - Two Way Packet Loss (%) (avg) as the primary metric
 - Round Trip Time (msec) (avg) as the secondary metric

GUIs Referenced

- HP Network Node Manager iSPI Performance for Metrics console
- [NNM iSPI Performance for QA Heat Chart Report](#)
- [NNM iSPI Performance for QA Chart Detail Report](#)
- [NNM iSPI Performance for QA Top N Report](#)

System Interface

HP Network Node Manager iSPI Performance for Metrics console

Glossary

C

Class of Service

Class of Service (CoS) is a way of managing traffic in a network by grouping similar types of traffic (for example, e-mail, streaming video, voice, large document file transfer) together and treating each type as a class with its own level of service priority. The priority value can be between 0 and 7 that can be used by Quality of Service (QoS) disciplines to differentiate traffic.

D

delay

The time taken for a packet to travel from the sender network element to the receiver network element.

H

High

The QA probe measure for the network element performance crossed the High threshold value.

I

ICMP

The Internet Control Message Protocol (ICMP) is one of the core protocols of the Internet Protocol Suite. It is chiefly used by networked computers' operating systems to send error messages—indicating, for instance, that a requested service is not available or that a host or router could not be reached.

ICMP Echo

ICMP Echo is a method used to test whether a particular host is reachable across an IP network; it is also used to self test the network interface card of the computer, or as a latency test. It measures the round-trip time and records any packet loss, response packets received, the minimum, mean, maximum and the standard deviation of the round trip time.

IP SLA

Cisco IOS IP SLAs is a feature included in the Cisco IOS Software that can allow administrators the ability to Analyze IP Service Levels for IP applications and services. IP SLA's uses active traffic-monitoring technology to monitor continuous traffic on the network. Using IP SLAs, routers and switches perform periodic measurements. The exact number and type of available measurements depends on the IOS version.

J

Jitter

Jitter is a measure of the variability over time of the latency across a network. A very low amount of jitter is important for real-time applications using voice and video. Jitter can be positive, negative, from source to destination, and from destination to source.

L

Low

The QA probe measure for the network element performance crossed the Low threshold value.

M

Mean Opinion Scores(MOS)

A measurement of the subjective quality of human speech, represented as a rating index. MOS is derived by taking the average of numerical scores given by juries to rate quality and using it as a quantitative indicator of system performance.

N

Negative Jitter

When the delay variance in sending the data packet from the source network element is less than the predefined inter-packet delay. For example, If packets are sent with 10 ms interval, negative jitter means they were received with less than 10 ms interval.

network element

Examples of network elements are routers, switches, and phone connections, etc.

Nominal

The QA probes measure for the network element performance was within healthy range, or no thresholds are being monitored.

Not Polled

Indicates that this network element is not polled intentionally.

O

ODBID

ODBID is a custom attribute that the HP Network Node Manager i-Series Software(NNMI) topology uses to integrate the NNMI topology with Business Service Management(BSM) software suite. The Smart Plug-Ins (SPIs) get this attribute from NNMI during the discovery and keep a reference. You can use ODBID as a report topology filter.

P

Positive Jitter

When the delay variance in sending the data packet from the source network element is more than the predefined inter-packet delay. For example, If packets are sent with 10 ms interval, positive jitter means they were received with more than 10 ms interval.

R

Round Trip Time (RTT)

The time required for a signal pulse or packet to travel from a specific source to a specific destination and back again.

S

Site

A logical organization of networking devices. In the scope of enterprise networks, a site can be a logical grouping of networking devices generally situated in similar geographic location. The location can include a floor, building or an entire branch office or several branch offices which connect to head quarters or another branch office via WAN/MAN. Each site is uniquely identified by its

name. In case of the service provider networks the Virtual Routing and Forwarding (VRF) on a Provider Edge (PE) router or a Customer Edge (CE) routers can be defined as a site.

site rules

Configuration associated to a site are called site rules. For example Node Group, Ordering, Test Name Pattern, etc are the site rules that are used to configure a site. The rules are prioritized inherently. The Node Group rule has the highest priority, the IP Address rule the second highest priority. Test Name Pattern rule has the third highest priority while the VRF Name rule has the the lowest priority among these four rules. Note that none of these rules have any dependency to each other. In other words, while creating a site, you can specify all or any of the the rules.

sites

A logical organization of networking devices. In the scope of enterprise networks, a site can be a logical grouping of networking devices generally situated in similar geographic location. The location can include a floor, building or an entire branch office or several branch offices which connect to head quarters or another branch office via WAN/MAN. Each site is uniquely identified by its name.

standard IPv6 shorthand notation

IPv6 addresses are generally written in the form,
hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh.
In this full notation, pairs of IPv6 bytes are separated by a COLON and each byte in turns is represented as a pair of hexadecimal numbers. For example, E3D7:0000:0000:0000:51F4:9BC8:C0A8:6420.
Shorthand notation in IPv6 removes these bytes with a zero values from the text representation, though the bytes still

remain present in the actual network address). For example,
E3D7::51F4:9BC8:C0A8:6420.

T**TCP Connect**

TCP Connect scans a normal TCP connection to determine if a port is available. This scan method uses the same TCP handshake connection that every other TCP-based application uses on the network.

Two Way Jitter

The two way jitter is the average of the upstream positive, upstream negative, downstream positive, and downstream negative jitter.

U**UDP**

The User Datagram Protocol (UDP) is one of the core members of the Internet Protocol Suite. UDP service type in QA SPI uses the UDP protocol and provides jitter measurements. With UDP protocol, computer applications can send messages, in this case referred to as datagrams, to other hosts on an Internet Protocol (IP) network without requiring prior communications to set up special transmission channels or data paths.

UDP Echo

A UDP Echo is a server program that gives you an echo of a text string that you send using a UDP client.

Unavailable

Unable to compute the performance state of the network element, or the computed value is outside the valid range.

V

VoIP

Voice over Internet Protocol (VoIP) is a general term for a family of transmission technologies for delivery of voice communications over IP networks such as the Internet or other packet-switched networks. VoIP converts an analog voice signal to digital format and compresses the signal into Internet protocol (IP) packets for transmission over the Internet.

VRF

Virtual Routing and Forwarding (VRFs) tables include the routing information that defines the Virtual Private Network (VPN) attached to a Provider Edge (PE) router. Each VRF is on a PE router. All PE routers containing VRFs relevant to the named VPN are grouped in one VPN. A VRF can only belong to a single VPN and is grouped on the basis of the Route Targets.

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