HP Network Node Manager iSPI for IP Telephony Software

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

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Online Help for Avaya Port Network Load Statisitics Reports

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Contents

Avaya IP Telephony Port Network Load Statistics Reports

The iSPI for IP Telephony provides the Avaya IPT PN Load Stats extension pack. You can use this extension pack to generate reports for the port network load statistics on your network region.You can generate the reports based on the following types of load statistics:

- Incoming Trunk Load
- Intercom Load
- Outgoing Trunk Load
- Tandem Trunk Load
- Total Load

The extension pack retains the detailed data in the Network Performance Server (NPS) for a period of 14 days and retains the summary data for a period of 70 days.

Prerequisites to Enable Avaya IP Telephony Port Network Load Statistics Reporting

You must make sure that the following prerequisites are satisfied to enable Avaya IP Telephony Port Network Load Statistics reporting:

- Install the NNM iSPI Performance for Metrics (iSPI Performance for Metrics) in your deployment environment before installing the iSPI for IP Telephony.
- Enable Avaya reporting in the iSPI for IP Telephony. See the Online Help for the iSPI for IP Telephony > **Help for Administrators** > **Reporting Configuration** > **Configure Avaya Reporting** > **Enabling Port Network Load Report** section for additional information.
- Verify that the iSPI Performance for Metrics is running before opening the reports provided by the Avaya IPT PN Load Stats extension pack.

Specifying Time Controls

You can specify the time-specific details using which you want the report to be generated on the Time Controls page. This page lets you specify the following time control details:

1. Click **Time Control** from the left panel on the NNMi Performance page. This displays the following options:
   - **Relative Start**: sets the date and time for report generation. based on the time frame specified in the **Last** drop-down list. Select **Yes** to enable this option. If you select **No**, you can specify the **Start Date**, **Time** (start time), the **End Date**, **Time**(end time), and the **Interval** to be used to generate the reports.
   - **Last**: set the time frame for which the report must be generated from this drop-down list. You can select one of the following options:
     - 1 Minute
     - 5 Minutes
     - 15 Minutes

- 30 Minutes
- 1 Hour
- 2 Hours
- 12 Hours
- 24 Hours
- 7 Days
- 31 Days
- Other: Select this option to specify the time frame of your choice.

2. **Grain**: set the interval at which the report must represent data.
3. **Time Zone**: Select the time zone based on which you want to generate the report, from this drop-down list. You can select the time zone of your choice even if you choose to enable the **Relative Start** option.
4. **Auto Refresh**: set the auto refresh rate for the report to a specific interval or disable the auto refresh feature for the report.
5. Click **Submit** to apply the changes.

Specifying Topology Filters

Topology filters allow you to scope or filter the port network load statistics metric reports based on the various combinations of the port network load statistics attribute values available in the accumulated port network load statistics metric data .You can use the Topology Filter page to specify the topology filters that you require.

To access the Topology Filter page and specify the topology filters, do as follows:

1. From any report that is displayed, click **Topology Filters** from the menu. This displays the Topology Filter page.
2. Select the topology filter as required from the list of topology filters using any of the following methods:
   - If you want to select only one value for a topology attribute, click the **Single value select** icon,  and then select a value of your choice.
   - If you want to select multiple values, click the **Multi value select** icon  , and then select values of your choice (by using the Control **Ctrl-** key.
   - If you want to search and select a value from a list of values, click the **Search and Select** icon  .
     - If you want to search and select a value for a topology filter from a list of values, click the **Search and Select** icon  . This displays the following options:
       - **Keywords**: selecting the **Keywords** check box helps you search for values based on the keywords that you specify in the box provided. You can specify multiple keywords

separated by white spaces. Click the **Options** link to and select from the available options to specify how the specified keywords must be used to perform the search. You can select the **Case insensitive** check box if you do not want the keywords to be searched based on case sensitivity.

- **Results**: This list displays the topology filter values that match the specifications you provided after you click the **Search** button. You can select the values that you want and click the **Insert** button to.move the selected values to the **Choices** list. The report uses the topology filter values in the Choices list to generate the report.
- **Choices**:This list displays the topology filter values that you have selected to generate the report. You can select values that you do not want to be used and then click the **Remove** button to move the values back to the Results list.

Note: You can use the **Select All** link to select all the listed values. You can use the **Deselect All** link to clear all the selected values.

3. Select the **Not** option to specify that the selected topology filter must not be considered when generating the report.
4. Click **Apply** and then click **Confirm Selection** to select the topology filter and generate the report.

Note: You can click **Reset** to clear all the topology filters you selected.

You can specify the topology filters based on the following attributes.

Attribute	Description
Communications Manager IP Address	The IP address of the Communication Manager server that uses the port network.
Port Network Number	The port network number configured on the Communication Manager server.
SGUUID	The UUID of the security group that is associated with the Communications Manager. **Note:** Do not use this attribute to filter or group your reports. This is an internal attribute used for row-level security of user roles.

Note:::On the Topology Filters page, if you do not find a specific attribute value that you want to include in the filter selection from the **Selection** list, verify the following details:

- The Topology Filters page lists the attribute values in the **Selection** list. The list of attribute values are displayed based on all the metric records available in the database at a given point of time.
- By default, the Topology Filters page lists only 5000 distinct values in the **Selection** list for a specific attribute. If you are unable to find a specific value in the list, you can click the **Search and Select** icon to select the value of your choice.

Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports

To access the Avaya IP Telephony Port Network Incoming Trunk Load Reports from the NNMi console:

1. Log on to the NNMi console.
2. Click **Actions** > **Reporting-Report Menu** from the menu bar. This launches the NNM iSPI Performance Report Menu page.
3. Click the **Avaya IP Telephony** > **Avaya_IPT_PN_Load_Stats** > **Incoming_Trunk_Load** to view a list of the supported summary report formats.
4. You can click any report format to launch the specific report based on the default metrics (**Intra PN Usage**) as the primary metric and the **Intra PN Peg** as the secondary metric with no Topology Filter selected.

After launching a report, you can configure the report based on your requirements by specifying the following details and regenerating the report:

- Specify time controls
- Specify topology filters
- Specify metrics

Specifying Metrics for Reports

You can use the **Options** link to specify the Incoming Trunk Load metrics or the Incoming Trunk Load attribute distinct count, based on which you want to generate the report.

To access the Report Options page and specify the metrics, do as follows:

1. From any report that is displayed, click **Options** from the menu. This displays the Report Options page.
2. Select the primary metric and the secondary metric from the respective drop-down lists as required for the report.
3. Click **Confirm Selection** to generate the report.

Click here to see the metrics that you can select to generate reports.

Metric	Description
[1]Intra PN Usage	The Intra PN usage in centum call seconds for the port network for the incoming trunk load.
[1]Intra PN peg	The Intra PN peg for the port network for the incoming trunk load
[1]Incoming Usage	The incoming usage for the port network for the incoming trunk load
[1]Incoming peg	The incoming peg for the port network for the incoming trunk

Metric	Description
	load
[1]Outgoing Usage	The outgoing usage for the port network for the incoming trunk load.
[1]Outgoing peg	The outgoing peg for the port network for the incoming trunk load.
Attribute Distinct Count	**Description**
Communications Manager IP Address (countDistinct)	The distinct count of the Communications Manager IP Address, where Communications Manager IP Address represents the name of the attribute.
Port Network Number (countDistinct)	The distinct count of the Port Network Number, wherePort Network Number represents the name of the attribute.
SGUUID (countDistinct)	The distinct count of the SGUUID, where SGUUID represents the name of the attribute.

[1]You can select any of the following options for the metric:

- Average (avg)
- Minimum (min)
- Maximum (max)

Note: The distinct count of attributes represents the sum of the occurrences of unique values for the attributes. For example, if you select the Communications Manager IP Address (countDistinct) metric, and three distinct communication managers had participated during the time specified, the report lists the value for the Communications Manager IP Address (countDistinct) as 3.

Types of Reports

This extension pack helps you to generate the following types of reports based on the metrics that you specify:

- Chart Detail
- Heat Chart
- Top N
- Most Changed
- Calendar
- Top N Chart
- Peak Period

Chart Detail Report

This report plots the selected incoming trunk load metrics on a chart at each display grain interval within the specified time frame. This report helps you to do a detailed analysis of the trend of

aggregated metric values (aggregated at selected display grain interval) over a period of time. Based on your requirements, you can select a pair of metrics for which you want to analyze the data.

Note: You can generate a Chart Detail Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Chart Detail Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Chart Detail report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 12) to specify the primary metric and the secondary metric for the report. You can select one of the following options from the **Chart or Table** drop-down list to specify the format in which you want the report to be displayed:
   - **Chart**: specifies the report to be displayed as a chart. The Chart Detail report uses this option by default.
   - **Table**: specifies the report to be displayed in a tabular format. The table lists the rows based on the specified display grain (time interval) and displays the corresponding values for the primary and the secondary metrics.
   - **Chart and Table**: specifies the report to be displayed both in a chart and a tabular format.
5. Click **Confirm Selection** to generate the report.

Heat Chart Report

This report displays the hourly values of the selected incoming trunk load metric in a color-coded tabular format. The report lists the hour of the day vertically and the day of the month horizontally. The report also displays the legend for the color coding on top of the report using which you can identify the color code used to represent the specific value ranges for the metric. Based on your requirement, you can select a metric for which you want to see the value range across a specified time frame. You can move the mouse pointer on a cell in the table of the report to see the raw value of the call metric for the specific hour.

Note: You can generate a Heat Chart Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Heat Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Heat Chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied for the report.

4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 12) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Top N Report

Based on your selection of the incoming trunk load attributes and the incoming trunk load metric, this report ranks the incoming trunk load attribute values in the ascending or descending order of the total raw values of the incoming trunk load metric. This report includes all the incoming trunk load instances that had a variation for the specified incoming trunk load attribute. The report displays the rank of the incoming trunk load attribute value along with the incoming trunk load metric value and the percentage of the incoming trunk load metric value with respect to all the values listed. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis. You can use this report to identify the DSP usage attribute values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the DSP usage attributes that exhibit unusual occurrence levels in the calls.

Note: You can generate a Top N Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Top N Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Top N report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied for the report from the **Grouping by:** drop-down list.
   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.

- **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
- **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
- **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
- **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Top N Chart Report

Based on your selection of the attributes and the metric, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric along with a chart that plots the change of values over the specified time frame. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis.

To launch a Top N Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Top N chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter that you want to apply on the report from the **Grouping by:** drop-down list.

   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:

- **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
- **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
- **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
- **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
- **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
- **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
- **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
- **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Most Changed Report

This report compares the variation in the incoming trunk load metric values for two different (consecutive) time periods for specified grouping of incoming trunk load attributes and ranks these groups of incoming trunk load attributes based on the variation. The sort order lists the attributes from the attributes with the most changed values to the attributes with the least changed values. The report displays the value of the incoming trunk load metric for the previous time frame and the current time frame along with the difference and the percentage of change in the value. Based on your requirement, you can select an incoming trunk load metric, specify the incoming trunk load attribute to group by, select the topology filter to scope the report only for certain incoming trunk load attribute values, and specify the time range before generating the report.

You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

Note: You can generate a Most Changed Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Most Changed Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Most Changed report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied to the report from the **Grouping by:** drop-down list.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes.
   - **Top 5**: lists the top five specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 10**: lists the top 10 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists the top 25 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
7. Click **Confirm Selection** to generate the report.

Calendar Report

The Calendar Report uses a traditional, calendar-style layout to show hourly statistics for two incoming trunk load metrics in a single, extended graph spanning over multiple days. By default, this report displays the data for the current month.

Note: You can generate a Calendar Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Calendar Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Calendar report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
   Note: If you select a time range that is less than 24 hours, the report displays the following message: `This report is not designed to operate with a time range of less than 24 hours. Please modify your time selections.`
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to be applied on the report.

4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 12) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Peak Period Report

This report by default, displays the top 10 incoming trunk load instances based on the **Intra PN Usage** metric. You can generate this report for an hour, a day, or a week to analyze the number of incoming trunk load instances on your network. You can select the number of incoming trunk loads you want the report to display from the options provided by the report template.

To launch a Peak Period report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Port Network Incoming Trunk Load Reports" (on page 12) to launch the Peak Period report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Confirm Selection** to generate the report.

Scheduling Reports

This extension pack allows you to schedule your reports to run at specified intervals. You can do as follows to schedule the generation of reports:

To schedule report generation:

1. Click **BI Server** > **Public Folders** from the NNM iSPI Performance Report Menu page. This opens the HP NNM iSPI Performance BI Portal page.
2. Click **Avaya IP Telephony**.
3. Click **Avaya_IPT_PN_Load_Stats**
4. Click **Incoming_Trunk_Load**. This opens the Incoming Trunk Load page.
5. Click **Report Templates suitable for scheduling**. This displays the report templates that you can use to schedule generation of reports:
   - Heat Chart
   - Top N
   - Most Changed
   - Calendar
   - Top N Chart
   - Chart Detail
6. Click a report template. This opens the Time Controls page.
7. Specify the following details for the time controls:
   - **Time Range**: set the time range for report generation. The Server Start Date/Time changes automatically based on your selection for this field.
   - **Display Grain**: set the interval at which the report must represent data.

- Note: The minimum value you can specify for the display grain is one hour for Avaya Incoming Trunk Load reports.
- **Hour of the Day**:specify the hour of the day for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
- **Day of the Week**: specify the day of the week for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.

8. Click **Confirm Selection**. This opens the Topology Filter page.
9. Select the required topology attributes for the call that you want to filter while generating the report.
10. Click **Confirm Selection**. This opens the Report Options page.
11. Select the primary and the secondary metrics for the report
12. Click **Confirm Selection** to generate the report and complete the scheduling procedure. The iSPI for IP Telephony generates the report periodically based on the time controls, topology filter, and the metrics specified.

Accessing the Avaya IP Telephony Intercom Load Reports

To access the Avaya IP Telephony Intercom Load reports from the NNMi console:

1. Log on to the NNMi console.
2. Click **Actions** > **Reporting-Report Menu** from the menu bar. This launches the NNM iSPI Performance Report Menu page.
3. Click the **Avaya IP Telephony** > **Avaya_IPT_PN_Load_Stats** > **Intercom_Load** to view a list of the supported intercom load report formats.
4. You can click any report format to launch the specific report based on the default metrics (**Intra PN Usage**) as the primary metric and the **Intra PN peg** as the secondary metric with no Topology Filter selected.

After launching a report, you can configure the report based on your requirements by specifying the following details and regenerating the report:

- Specify time controls
- Specify topology filters
- Specify metrics

Specifying Metrics for Reports

You can use the **Options** link to specify the metrics or the attribute distinct count, based on which you want to generate the report.

To access the Report Options page and specify the metrics, do as follows:

1. From any report that is displayed, click **Options** from the menu. This displays the Report Options page.

2. Select the primary metric and the secondary metric from the respective drop-down lists as required for the report.
3. Click **Confirm Selection** to generate the report.

Click here to see the metrics that you can select to generate reports.

Metric	Description
[1]Intra PN Usage	The Intra PN usage in centum call seconds for the port network for the intercom load.
[1]Intra PN peg	The Intra PN peg for the port network for the intercom load
[1]Iner PN Usage	The Intra PN usage in centum call seconds for the port network for the intercom load.
[1]Inter PN peg	The Intra PN peg for the port network for the intercom load
Attribute Distinct Count	**Description**
Communications Manager IP Address (countDistinct)	The distinct count of the Communications Manager IP Address, where Communications Manager IP Address represents the name of the attribute.
Port Network Number (countDistinct)	The distinct count of the Port Network Number, wherePort Network Number represents the name of the attribute.
SGUUID (countDistinct)	The distinct count of the SGUUID, where SGUUID represents the name of the attribute.

[1]You can select any of the following options for the metric:

- Average (avg)
- Minimum (min)
- Maximum (max)

Note: The distinct count of attributes represents the sum of the occurrences of unique values for the attributes. For example, if you select the Communications Manager IP Address (countDistinct) metric, and three distinct communication managers had participated during the time specified, the report lists the value for the Communications Manager IP Address (countDistinct) as 3.

Types of Reports

This extension pack helps you to generate the following types of reports based on the metrics that you specify:

- Chart Detail
- Heat Chart
- Top N
- Most Changed
- Calendar

- Top N Chart
- Peak Period

Chart Detail Report

This report plots the selected intercom load metrics on a chart at each display grain interval within the specified time frame. This report helps you to do a detailed analysis of the trend of aggregated metric values (aggregated at selected display grain interval) over a period of time. Based on your requirements, you can select a pair of metrics for which you want to analyze the data.

Note: You can generate a Chart Detail Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Chart Detail Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Chart Detail report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 20) to specify the primary metric and the secondary metric for the report. You can select one of the following options from the **Chart or Table** drop-down list to specify the format in which you want the report to be displayed:
   - **Chart**: specifies the report to be displayed as a chart. The Chart Detail report uses this option by default.
   - **Table**: specifies the report to be displayed in a tabular format. The table lists the rows based on the specified display grain (time interval) and displays the corresponding values for the primary and the secondary metrics.
   - **Chart and Table**: specifies the report to be displayed both in a chart and a tabular format.
5. Click **Confirm Selection** to generate the report.

Heat Chart Report

This report displays the hourly values of the selected intercom load metric in a color-coded tabular format. The report lists the hour of the day vertically and the day of the month horizontally. The report also displays the legend for the color coding on top of the report using which you can identify the color code used to represent the specific value ranges for the metric. Based on your requirement, you can select a metric for which you want to see the value range across a specified time frame. You can move the mouse pointer on a cell in the table of the report to see the raw value of the call metric for the specific hour.

Note: You can generate a Heat Chart Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Heat Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Heat Chart report for a specific time frame.

2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 20) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Top N Report

Based on your selection of the intercom load attributes and the intercom load metric, this report ranks the intercom load attribute values in the ascending or descending order of the total raw values of the intercom load metric. This report includes all the intercom load instances that had a variation for the specified intercom load attribute. The report displays the rank of the intercom load attribute value along with the intercom load metric value and the percentage of the intercom load metric value with respect to all the values listed. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis. You can use this report to identify the intercom load attribute values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the intercom load attributes that exhibit unusual occurrence levels in the calls.

Note: You can generate a Top N Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Top N Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Top N report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied for the report from the **Grouping by:** drop-down list.
   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.

- **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
- **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
- **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
- **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
- **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
- **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Top N Chart Report

Based on your selection of the attributes and the metric, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric along with a chart that plots the change of values over the specified time frame. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis.

To launch a Top N Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Top N chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter that you want to apply on the report from the **Grouping by:** drop-down list.

Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
   - **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.
7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Most Changed Report

This report compares the variation in the intercom load metric values for two different (consecutive) time periods for specified grouping of intercom load attributes and ranks these groups of intercom load attributes based on the variation. The sort order lists the attributes from the attributes with the most changed values to the attributes with the least changed values. The report displays the value

of the intercom load metric for the previous time frame and the current time frame along with the difference and the percentage of change in the value. Based on your requirement, you can select a intercom load metric, specify the intercom load attribute to group by, select the topology filter to scope the report only for certain intercom load attribute values, and specify the time range before generating the report.

You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the intercom load attributes. You can remove the additional intercom load attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

Note: You can generate a Most Changed Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Most Changed Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Most Changed report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied to the report from the **Grouping by:** drop-down list.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes.
   - **Top 5**: lists the top five specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 10**: lists the top 10 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists the top 25 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
7. Click **Confirm Selection** to generate the report.

Calendar Report

The Calendar Report uses a traditional, calendar-style layout to show hourly statistics for two intercom load metrics in a single, extended graph spanning over multiple days. By default, this report displays the data for the current month.

Note: You can generate a Calendar Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Calendar Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Calendar report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.

Note: If you select a time range that is less than 24 hours, the report displays the following message: `This report is not designed to operate with a time range of less than 24 hours. Please modify your time selections.`

3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 20) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Peak Period Report

This report by default, displays the top 10 intercom load instances based on the **Intra PN Usage** metric. You can generate this report for an hour, a day, or a week to analyze the number of intercom load instances on your network. You can select the number of intercom load instances you want the report to display from the options provided by the report template.

To launch a Peak Period report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Intercom Load Reports" (on page 20) to launch the Peak Period report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" section.
3. Click **Confirm Selection** to generate the report.

Scheduling Reports

This extension pack allows you to schedule your reports to run at specified intervals. You can do as follows to schedule the generation of reports:

To schedule report generation:

1. Click **BI Server** > **Public Folders** from the NNM iSPI Performance Report Menu page. This opens the HP NNM iSPI Performance BI Portal page.
2. Click **Avaya IP Telephony**.
3. Click **Avaya_IPT_PN_Load_Stats**
4. Click **Intercom_Load**. This opens the Intercom Load page.
5. Click **Report Templates suitable for scheduling**. This displays the report templates that you can use to schedule generation of reports:
   - Chart Detail
   - Heat Chart
   - Top N
   - Most Changed
   - Calendar
   - Top N Chart
6. Click a report template. This opens the Time Controls page.

7. Specify the following details for the time controls:
   - **Time Range**: set the time range for report generation. The Server Start Date/Time changes automatically based on your selection for this field.
   - **Display Grain**: set the interval at which the report must represent data.
   - Note: The minimum value you can specify for the display grain is one hour for Avaya IP Telephony Port Network Intercom Load reports.
   - **Hour of the Day**:specify the hour of the day for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
   - **Day of the Week**: specify the day of the week for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
8. Click **Confirm Selection**. This opens the Topology Filter page.
9. Select the required topology attributes for the call that you want to filter while generating the report.
10. Click **Confirm Selection**. This opens the Report Options page.
11. Select the primary and the secondary metrics for the report
12. Click **Confirm Selection** to generate the report and complete the scheduling procedure. The iSPI for IP Telephony generates the report periodically based on the time controls, topology filter, and the metrics specified.

Accessing the Avaya Outgoing Trunk Load Reports

To access the Avaya IP Telephony Outgoing Trunk Load reports from the NNMi console:

1. Log on to the NNMi console.
2. Click **Actions** > **Reporting-Report Menu** from the menu bar. This launches the NNM iSPI Performance Report Menu page.
3. Click the **Avaya IP Telephony** > **Avaya_IPT_PN_Load-Stats** > **Outgoing_Trunk_Load** to view a list of the supported DSP usage summary report formats.
4. You can click any report format to launch the specific report based on the default metrics (**Intra PN Usage**) as the primary metric and the **Intra PN peg** as the secondary metric with no Topology Filter selected.

After launching a report, you can configure the report based on your requirements by specifying the following details and regenerating the report:

- Specify time controls
- Specify topology filters
- Specify metrics

Specifying Metrics for Reports

You can use the **Options** link to specify the metrics or the attribute distinct count, based on which you want to generate the report.

To access the Report Options page and specify the metrics, do as follows:

1. From any report that is displayed, click **Options** from the menu. This displays the Report Options page.
2. Select the primary metric and the secondary metric from the respective drop-down lists as required for the report.
3. Click **Confirm Selection** to generate the report.

Click here to see the metrics that you can select to generate reports.

Metric	Description
[1]Intra PN Usage	The Intra PN usage in centum call seconds for the port network for the outgoing trunk load.
[1]Intra PN peg	The Intra PN peg for the port network for the outgoing trunk load
[1]Incoming Usage	The incoming usage for the port network for the outgoing trunk load
[1]Incoming peg	The incoming peg for the port network for the outgoing trunk load
[1]Outgoing Usage	The outgoing usage for the port network for the outgoing trunk load.
[1]Outgoing peg	The outgoing peg for the port network for the outgoing trunk load.
Attribute Distinct Count	**Description**
Communications Manager IP Address (countDistinct)	The distinct count of the Communications Manager IP Address, where Communications Manager IP Address represents the name of the attribute.
Port Network Number (countDistinct)	The distinct count of the Port Network Number, wherePort Network Number represents the name of the attribute.
SGUUID (countDistinct)	The distinct count of the SGUUID, where SGUUID represents the name of the attribute.

[1]You can select any of the following options for the metric:

- Average (avg)
- Minimum (min)
- Maximum (max)

Note: The distinct count of attributes represents the sum of the occurrences of unique values for the attributes. For example, if you select the Communications Manager IP Address (countDistinct) metric, and three distinct communication managers had participated during the time specified, the report lists the value for the Communications Manager IP Address (countDistinct) as 3.

Types of Reports

This extension pack helps you to generate the following types of reports based on the metrics that you specify:

- Chart Detail
- Heat Chart
- Top N
- Most Changed
- Calendar
- Top N Chart
- Peak Period

Chart Detail Report

This report plots the selected outgoing trunk load metrics on a chart at each display grain interval within the specified time frame. This report helps you to do a detailed analysis of the trend of aggregated metric values (aggregated at selected display grain interval) over a period of time. Based on your requirements, you can select a pair of metrics for which you want to analyze the data.

Note: You can generate a Chart Detail Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Chart Detail Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Chart Detail report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 28) to specify the primary metric and the secondary metric for the report. You can select one of the following options from the **Chart or Table** drop-down list to specify the format in which you want the report to be displayed:
   - **Chart**: specifies the report to be displayed as a chart. The Chart Detail report uses this option by default.
   - **Table**: specifies the report to be displayed in a tabular format. The table lists the rows based on the specified display grain (time interval) and displays the corresponding values for the primary and the secondary metrics.
   - **Chart and Table**: specifies the report to be displayed both in a chart and a tabular format.
5. Click **Confirm Selection** to generate the report.

Heat Chart Report

This report displays the hourly values of the selected outgoing trunk load metric in a color-coded tabular format. The report lists the hour of the day vertically and the day of the month horizontally. The report also displays the legend for the color coding on top of the report using which you can identify the color code used to represent the specific value ranges for the metric. Based on your requirement, you can select a metric for which you want to see the value range across a specified time frame. You can move the mouse pointer on a cell in the table of the report to see the raw value of the call metric for the specific hour.

Note: You can generate a Heat Chart Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Heat Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Heat Chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 28) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Top N Report

Based on your selection of the outgoing trunk load attributes and the outgoing trunk load metric, this report ranks the outgoing trunk load attribute values in the ascending or descending order of the total raw values of the outgoing trunk load metric. This report includes all the outgoing trunk load instances that had a variation for the specified outgoing trunk load attribute. The report displays the rank of the outgoing trunk load attribute value along with the outgoing trunk load metric value and the percentage of the outgoing trunk load metric value with respect to all the values listed. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis. You can use this report to identify the outgoing trunk load attribute values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the outgoing trunk load attributes that exhibit unusual occurrence levels in the calls.

Note: You can generate a Top N Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Top N Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Top N report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.

4. Select the topology filter to be applied for the report from the **Grouping by:** drop-down list.

   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
   - **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.
7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Top N Chart Report

Based on your selection of the attributes and the metric, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric along with a chart that plots the change of values over the specified time frame. Based on your requirement, you can select a metric

using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis.

To launch a Top N Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Top N chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter that you want to apply on the report from the **Grouping by:** drop-down list.

   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
   - **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.

- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Most Changed Report

This report compares the variation in the outgoing trunk load metric values for two different (consecutive) time periods for specified grouping of outgoing trunk load attributes and ranks these groups of outgoing trunk load attributes based on the variation. The sort order lists the attributes from the attributes with the most changed values to the attributes with the least changed values. The report displays the value of the outgoing trunk load metric for the previous time frame and the current time frame along with the difference and the percentage of change in the value. Based on your requirement, you can select a outgoing trunk load metric, specify the outgoing trunk load attribute to group by, select the topology filter to scope the report only for certain outgoing trunk load attribute values, and specify the time range before generating the report.

You can select multiple outgoing trunk load attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the outgoing trunk load attributes. You can remove the additional outgoing trunk load attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

Note: You can generate a Most Changed Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Most Changed Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Most Changed report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied to the report from the **Grouping by:** drop-down list.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes.
   - **Top 5**: lists the top five specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 10**: lists the top 10 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists the top 25 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
7. Click **Confirm Selection** to generate the report.

Calendar Report

The Calendar Report uses a traditional, calendar-style layout to show hourly statistics for two outgoing trunk load metrics in a single, extended graph spanning over multiple days. By default, this report displays the data for the current month.

Note: You can generate a Calendar Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Calendar Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Calendar report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
   Note: If you select a time range that is less than 24 hours, the report displays the following message: `This report is not designed to operate with a time range of less than 24 hours. Please modify your time selections.`
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 28) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Peak Period Report

This report by default, displays the top 10 outgoing trunk load instances based on the **Intra PN Usage** metric. You can generate this report for an hour, a day, or a week to analyze the number of outgoing trunk load instances on your network. You can select the number of outgoing trunk load instances you want the report to display from the options provided by the report template.

To launch a Peak Period report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya Outgoing Trunk Load Reports" (on page 28) to launch the Peak Period report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Confirm Selection** to generate the report.

Scheduling Reports

This extension pack allows you to schedule your reports to run at specified intervals. You can do as follows to schedule the generation of reports:

To schedule report generation:

1. Click **BI Server** > **Public Folders** from the NNM iSPI Performance Report Menu page. This opens the HP NNM iSPI Performance BI Portal page.
2. Click **Avaya IP Telephony**.
3. Click **Avaya_IPT_PN_Load_Stats**

4. Click **Outgoing_Trunk_Load**. This opens the Outgoing Trunk Load page.
5. Click **Report Templates suitable for scheduling**. This displays the report templates that you can use to schedule generation of reports:
   - Heat Chart
   - Top N
   - Most Changed
   - Calendar
   - Top N Chart
   - Peak Period
   - Chart Detail
6. Click a report template. This opens the Time Controls page.
7. Specify the following details for the time controls:
   - **Time Range**: set the time range for report generation. The Server Start Date/Time changes automatically based on your selection for this field.
   - **Display Grain**: set the interval at which the report must represent data.
   - Note: The minimum value you can specify for the display grain is one hour for Avaya IP Telephony Outgoing Trunk Load reports.
   - **Hour of the Day**:specify the hour of the day for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
   - **Day of the Week**: specify the day of the week for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
8. Click **Confirm Selection**. This opens the Topology Filter page.
9. Select the required topology attributes for the call that you want to filter while generating the report.
10. Click **Confirm Selection**. This opens the Report Options page.
11. Select the primary and the secondary metrics for the report
12. Click **Confirm Selection** to generate the report and complete the scheduling procedure. The iSPI for IP Telephony generates the report periodically based on the time controls, topology filter, and the metrics specified.

Accessing the Avaya IP Telephony Tandem Load Reports

To access the Avaya IP Telephony Tandem Load reports from the NNMi console:

1. Log on to the NNMi console.
2. Click **Actions** > **Reporting-Report Menu** from the menu bar. This launches the NNM iSPI Performance Report Menu page.
3. Click the **Avaya IP Telephony** > **Avaya_IPT_PN_Load_Stats** > **Tandem_Load** to view a list of the supported tandem load report formats.

4. You can click any report format to launch the specific report based on the default metrics (**Intra PN Usage**) as the primary metric and the **Intra PN peg** as the secondary metric with no Topology Filter selected.

After launching a report, you can configure the report based on your requirements by specifying the following details and regenerating the report:

- Specify time controls
- Specify topology filters
- Specify metrics

Specifying Metrics for Reports

You can use the **Options** link to specify the metrics or the attribute distinct count, based on which you want to generate the report.

To access the Report Options page and specify the metrics, do as follows:

1. From any report that is displayed, click **Options** from the menu. This displays the Report Options page.
2. Select the primary metric and the secondary metric from the respective drop-down lists as required for the report.
3. Click **Confirm Selection** to generate the report.

Click here to see the metrics that you can select to generate reports.

Metric	Description
[1]Intra PN Usage	The Intra PN usage in centum call seconds for the port network for the tandem load.
[1]Intra PN peg	The Intra PN peg for the port network for the tandem load
[1]Incoming Usage	The incoming usage for the port network for the tandem load
[1]Incoming peg	The incoming peg for the port network for the tandem load
[1]Outgoing Usage	The outgoing usage for the port network for the tandem load.
[1]Outgoing peg	The outgoing peg for the port network for the tandem load.
Attribute Distinct Count	**Description**
Communications Manager IP Address (countDistinct)	The distinct count of the Communications Manager IP Address, where Communications Manager IP Address represents the name of the attribute.
Port Network Number (countDistinct)	The distinct count of the Port Network Number, wherePort Network Number represents the name of the attribute.
SGUUID (countDistinct)	The distinct count of the SGUUID, where SGUUID represents the name of the attribute.

[1]You can select any of the following options for the duration metric:

- Average (avg)
- Minimum (min)
- Maximum (max)

Note: The distinct count of attributes represents the sum of the occurrences of unique values for the attributes. For example, if you select the Communications Manager IP Address (countDistinct) metric, and three distinct communication managers had participated during the time specified, the report lists the value for the Communications Manager IP Address (countDistinct) as 3.

Types of Reports

This extension pack helps you to generate the following types of reports based on the metrics that you specify:

- Chart Detail
- Heat Chart
- Top N
- Most Changed
- Calendar
- Top N Chart
- Peak Period

Chart Detail Report

This report plots the selected tandem load metrics on a chart at each display grain interval within the specified time frame. This report helps you to do a detailed analysis of the trend of aggregated metric values (aggregated at selected display grain interval) over a period of time. Based on your requirements, you can select a pair of metrics for which you want to analyze the data.

Note: You can generate a Chart Detail Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Chart Detail Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Chart Detail report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 37) to specify the primary metric and the secondary metric for the report. You can select one of the following options from the **Chart or Table** drop-down list to specify the format in which you want the report to be displayed:
   - **Chart**: specifies the report to be displayed as a chart. The Chart Detail report uses this option by default.

- **Table**: specifies the report to be displayed in a tabular format. The table lists the rows based on the specified display grain (time interval) and displays the corresponding values for the primary and the secondary metrics.
- **Chart and Table**: specifies the report to be displayed both in a chart and a tabular format.

5. Click **Confirm Selection** to generate the report.

Heat Chart Report

This report displays the hourly values of the selected tandem load metric in a color-coded tabular format. The report lists the hour of the day vertically and the day of the month horizontally. The report also displays the legend for the color coding on top of the report using which you can identify the color code used to represent the specific value ranges for the metric. Based on your requirement, you can select a metric for which you want to see the value range across a specified time frame. You can move the mouse pointer on a cell in the table of the report to see the raw value of the call metric for the specific hour.

Note: You can generate a Heat Chart Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Heat Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Heat Chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 37) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Top N Report

Based on your selection of the tandem load attributes and the tandem load metric, this report ranks the tandem load attribute values in the ascending or descending order of the total raw values of the tandem load metric. This report includes all the tandem load instances that had a variation for the specified tandem load attribute. The report displays the rank of the tandem load attribute value along with the tandem load metric value and the percentage of the tandem load metric value with respect to all the values listed. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis. You can use this report to identify the tandem load attribute values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the tandem load attributes that exhibit unusual occurrence levels.

Note: You can generate a Top N Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Top N Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Top N report for a specific time frame.

2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied for the report from the **Grouping by:** drop-down list.
   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
   - **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.
7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Top N Chart Report

Based on your selection of the attributes and the metric, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric along with a chart that plots the change of values over the specified time frame. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis.

To launch a Top N Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Top N chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter that you want to apply on the report from the **Grouping by:** drop-down list.

   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.

- **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Most Changed Report

This report compares the variation in the tandem load metric values for two different (consecutive) time periods for specified grouping of tandem load attributes and ranks these groups of tandem load attributes based on the variation. The sort order lists the attributes from the attributes with the most changed values to the attributes with the least changed values. The report displays the value of the tandem load metric for the previous time frame and the current time frame along with the difference and the percentage of change in the value. Based on your requirement, you can select a tandem load metric, specify the tandem load attribute to group by, select the topology filter to scope the report only for certain tandem load attribute values, and specify the time range before generating the report.

You can select multiple tandem load attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the tandem load attributes. You can remove the additional tandem load attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

Note: You can generate a Most Changed Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Most Changed Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Most Changed report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied to the report from the **Grouping by:** drop-down list.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes.
   - **Top 5**: lists the top five specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.

- **Top 10**: lists the top 10 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
- **Top 25**: lists the top 25 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.

7. Click **Confirm Selection** to generate the report.

Calendar Report

The Calendar Report uses a traditional, calendar-style layout to show hourly statistics for two tandem load metrics in a single, extended graph spanning over multiple days. By default, this report displays the data for the current month.

Note: You can generate a Calendar Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Calendar Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Calendar report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
   Note: If you select a time range that is less than 24 hours, the report displays the following message: `This report is not designed to operate with a time range of less than 24 hours. Please modify your time selections.`
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 37) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Peak Period Report

This report by default, displays the top 10 tandem load instances based on the **Intra PN Usage** metric. You can generate this report for an hour, a day, or a week to analyze the number of tandem load instances on your network. You can select the number of tandem load instances you want the report to display from the options provided by the report template.

To launch a Peak Period report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Tandem Load Reports" (on page 36) to launch the Peak Period report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Confirm Selection** to generate the report.

Scheduling Reports

This extension pack allows you to schedule your reports to run at specified intervals. You can do as follows to schedule the generation of reports:

To schedule report generation:

1. Click **BI Server** > **Public Folders** from the NNM iSPI Performance Report Menu page. This opens the HP NNM iSPI Performance BI Portal page.
2. Click **Avaya IP Telephony**.
3. Click **Avaya_IPT_PN_Load_Stats**
4. Click **Tandem_Load**. This opens the Tandem Load page.
5. Click **Report Templates suitable for scheduling**. This displays the report templates that you can use to schedule generation of reports:
   - Chart Detail
   - Heat Chart
   - Top N
   - Most Changed
   - Calendar
   - Top N Chart
   - Peak Period
6. Click a report template. This opens the Time Controls page.
7. Specify the following details for the time controls:
   - **Time Range**: set the time range for report generation. The Server Start Date/Time changes automatically based on your selection for this field.
   - **Display Grain**: set the interval at which the report must represent data.
   - Note: The minimum value you can specify for the display grain is one hour for Avaya IP Telephony tandem load reports.
   - **Hour of the Day**:specify the hour of the day for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
   - **Day of the Week**: specify the day of the week for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
8. Click **Confirm Selection**. This opens the Topology Filter page.
9. Select the required topology attributes for the call that you want to filter while generating the report.
10. Click **Confirm Selection**. This opens the Report Options page.
11. Select the primary and the secondary metrics for the report
12. Click **Confirm Selection** to generate the report and complete the scheduling procedure. The iSPI for IP Telephony generates the report periodically based on the time controls, topology filter, and the metrics specified.

Accessing the Avaya IP Telephony Total Load Reports

To access the Avaya IP Telephony Total Load reports from the NNMi console:

1. Log on to the NNMi console.
2. Click **Actions** > **Reporting-Report Menu** from the menu bar. This launches the NNM iSPI Performance Report Menu page.
3. Click the **Avaya IP Telephony** > **Avaya_IPT_PN_Load_Stats** > **Total_Load** to view a list of the supported total load report formats.
4. You can click any report format to launch the specific report based on the default metrics (**TDM Occupancy**) as the primary metric and the **PN Occupancy** as the secondary metric with no Topology Filter selected.

After launching a report, you can configure the report based on your requirements by specifying the following details and regenerating the report:

- Specify time controls
- Specify topology filters
- Specify metrics

Specifying Metrics for Reports

You can use the **Options** link to specify the call metrics or the call attribute distinct count, based on which you want to generate the report.

To access the Report Options page and specify the metrics, do as follows:

1. From any report that is displayed, click **Options** from the menu. This displays the Report Options page.
2. Select the primary metric and the secondary metric from the respective drop-down lists as required for the report.
3. Click **Confirm Selection** to generate the report.

Click here to see the metrics that you can select to generate reports.

Metric	Description
[1]TDM Occupancy (%)	The Time Divisioned Multiplex (TDM) occupancy for the port network.
[1]PN Occupancy (%)	The Port Network Occupancy.
Attribute Distinct Count	**Description**
Communications Manager IP Address (countDistinct)	The distinct count of the Communications Manager IP Address, where Communications Manager IP Address represents the name of the attribute.
Port Network Number (countDistinct)	The distinct count of the Port Network Number, wherePort Network Number represents the name of the attribute.
SGUUID (countDistinct)	The distinct count of the SGUUID, where SGUUID represents the name of the attribute.

[1]You can select any of the following options for the metric:

- Average (avg)
- Minimum (min)
- Maximum (max)

Note: The distinct count of attributes represents the sum of the occurrences of unique values for the attributes. For example, if you select the Communications Manager IP Address (countDistinct) metric, and three distinct communication managers had participated during the time specified, the report lists the value for the Communications Manager IP Address (countDistinct) as 3.

Types of Reports

This extension pack helps you to generate the following types of reports based on the metrics that you specify:

- Chart Detail
- Heat Chart
- Top N
- Most Changed
- Calendar
- Top N Chart
- Peak Period

Chart Detail Report

This report plots the selected total load metrics on a chart at each display grain interval within the specified time frame. This report helps you to do a detailed analysis of the trend of aggregated metric values (aggregated at selected display grain interval) over a period of time. Based on your requirements, you can select a pair of metrics for which you want to analyze the data.

Note: You can generate a Chart Detail Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Chart Detail Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Chart Detail report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 45) to specify the primary metric and the secondary metric for the report. You can select one of the following options from the **Chart or Table** drop-down list to specify the format in which you want the report to be displayed:
   - **Chart**: specifies the report to be displayed as a chart. The Chart Detail report uses this option by default.

- **Table**: specifies the report to be displayed in a tabular format. The table lists the rows based on the specified display grain (time interval) and displays the corresponding values for the primary and the secondary metrics.
- **Chart and Table**: specifies the report to be displayed both in a chart and a tabular format.

5. Click **Confirm Selection** to generate the report.

Heat Chart Report

This report displays the hourly values of the selected total load metric in a color-coded tabular format. The report lists the hour of the day vertically and the day of the month horizontally. The report also displays the legend for the color coding on top of the report using which you can identify the color code used to represent the specific value ranges for the metric. Based on your requirement, you can select a metric for which you want to see the value range across a specified time frame. You can move the mouse pointer on a cell in the table of the report to see the raw value of the metric for the specific hour.

Note: You can generate a Heat Chart Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Heat Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Heat Chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 45) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Top N Report

Based on your selection of the total load attributes and the total load metric, this report ranks the total load attribute values in the ascending or descending order of the total raw values of the total load metric. This report includes all the total load instances that had a variation for the specified total load attribute. The report displays the rank of the total load attribute value along with the total load metric value and the percentage of the total load metric value with respect to all the values listed. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis. You can use this report to identify the total load attribute values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the total load attributes that exhibit unusual occurrence levels in the calls.

Note: You can generate a Top N Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Top N Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Top N report for a specific time frame.

2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied for the report from the **Grouping by:** drop-down list.
   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon. Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.
   - **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.
7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Top N Chart Report

Based on your selection of the attributes and the metric, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric along with a chart that plots the change of values over the specified time frame. Based on your requirement, you can select a metric using the **Options** link and specify the topology filter using the **Topology Filter** link to fine tune the analysis.

To launch a Top N Chart Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Top N chart report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter that you want to apply on the report from the **Grouping by:** drop-down list.

   Note: You can select multiple call attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the call attributes. You can remove the additional call attribute drop-down lists displayed by clicking the **Remove Grouping** icon .
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes:
   - **Top 5**: lists five of the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
   - **Top 10**: lists 10 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top of the list.
   - **Top 25**: lists 25 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 50**: lists 50 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Top 100**: lists 100 of the specified attributes with the maximum metric value in the descending order of the value with the highest value at the top pf the list.
   - **Bottom 5**: lists five of the specified attributes with the lowest metric value in the ascending order of the value, with the lowest value at the top of the list.
   - **Bottom 10**: lists 10 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top of the list.
   - **Bottom 25**: lists 25 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
   - **Bottom 50**: lists 50 of the specified attributes with the lowest metric value in the ascending order of the value with the highest value at the top pf the list.

- **Bottom 100**: lists 100 of the specified attributes with the lowest metric value in the ascending order of the value with the lowest value at the top pf the list.
- **Sort All in Descending**: lists all the specified attributes with the maximum metric value in the descending order of the value, with the highest value at the top of the list.
- **Sort All in Ascending**: lists all the specified attributes with the maximum metric value in the ascending order of the value, with the lowest value at the top of the list.

7. You can select **Yes** from the **Display Time Series Chart** drop-down list if you want the report to display the data in the form of a chart. The chart uses a different color to plot each Top N attribute. Alternatively, you can click the **Show Chart** link to view the chart after you generate the report.
8. Click **Confirm Selection** to generate the report.

Most Changed Report

This report compares the variation in the total load metric values for two different (consecutive) time periods for specified grouping of total load attributes and ranks these groups of total load attributes based on the variation. The sort order lists the attributes from the attributes with the most changed values to the attributes with the least changed values. The report displays the value of the total load metric for the previous time frame and the current time frame along with the difference and the percentage of change in the value. Based on your requirement, you can select a total load metric, specify the total load attribute to group by, select the topology filter to scope the report only for certain total load attribute values, and specify the time range before generating the report.

You can select multiple total load attributes by clicking the **Add New Grouping** icon . Clicking on this icon displays another drop-down list of the total load attributes. You can remove the additional total load attribute drop-down lists displayed by clicking the **Remove Grouping** icon .

Note: You can generate a Most Changed Report on an Hourly (**H**), Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Most Changed Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Most Changed report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Options** from the menu.
4. Select the topology filter to be applied to the report from the **Grouping by:** drop-down list.
5. Select the metric for the report.from the **Metric:** drop-down list.
6. Select one of the following options from the **Top N:** drop-down list to view the report for the specified number of attributes.
   - **Top 5**: lists the top five specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.
   - **Top 10**: lists the top 10 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.

- **Top 25**: lists the top 25 specified attributes with the maximum metric value variation in the descending order of the value with the highest value at the top of the list.

7. Click **Confirm Selection** to generate the report.

Calendar Report

The Calendar Report uses a traditional, calendar-style layout to show hourly statistics for two total load metrics in a single, extended graph spanning over multiple days. By default, this report displays the data for the current month.

Note: You can generate a Calendar Report on a Daily (**D**), Weekly (**W**), or a Monthly (**M**) basis.

To launch a Calendar Report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Calendar report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
   Note: If you select a time range that is less than 24 hours, the report displays the following message: `This report is not designed to operate with a time range of less than 24 hours. Please modify your time selections.`
3. Perform the steps in the section "Specifying Topology Filters" (on page 10)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 45) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Peak Period Report

This report by default, displays the top 10 total load instances based on the **TDM Occupancy (%)** metric. You can generate this report for an hour, a day, or a week to analyze the number of total load instances on your network. You can select the number of total load instances you want the report to display from the options provided by the report template.

To launch a Peak Period report based on your requirements, do as follows:

1. Perform the steps in the section"Accessing the Avaya IP Telephony Total Load Reports" (on page 44) to launch the Peak Period report for a specific time frame.
2. Specify the time controls for the report as mentioned in the "Specifying Time Controls" (on page 9) section.
3. Click **Confirm Selection** to generate the report.

Scheduling Reports

This extension pack allows you to schedule your reports to run at specified intervals. You can do as follows to schedule the generation of reports:

To schedule report generation:

1. Click **BI Server** > **Public Folders** from the NNM iSPI Performance Report Menu page. This opens the HP NNM iSPI Performance BI Portal page.
2. Click **Avaya IP Telephony**.
3. Click **Avaya_IPT_PN_Load_Stats**
4. Click **Total_Load**. This opens the Total Load page.
5. Click **Report Templates suitable for scheduling**. This displays the report templates that you can use to schedule generation of reports:
   - Chart Detail
   - Heat Chart
   - Top N
   - Most Changed
   - Calendar
   - Top N Chart
   - Peak Period
6. Click a report template. This opens the Time Controls page.
7. Specify the following details for the time controls:
   - **Time Range**: set the time range for report generation. The Server Start Date/Time changes automatically based on your selection for this field.
   - **Display Grain**: set the interval at which the report must represent data.
   - Note: The minimum value you can specify for the display grain is one hour for Avaya IP Telephony Port Network Total Load reports.
   - **Hour of the Day**:specify the hour of the day for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
   - **Day of the Week**: specify the day of the week for which you want to generate the report. You can select multiple values from this drop-down list by pressing the Control (Ctrl) key.
8. Click **Confirm Selection**. This opens the Topology Filter page.
9. Select the required topology attributes for the total load that you want to filter while generating the report.
10. Click **Confirm Selection**. This opens the Report Options page.
11. Select the primary and the secondary metrics for the report
12. Click **Confirm Selection** to generate the report and complete the scheduling procedure. The iSPI for IP Telephony generates the report periodically based on the time controls, topology filter, and the metrics specified.


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