HP Network Node Manager iSPI for IP Telephony Software

For the Microsoft Windows ® operating system

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Online Help for Microsoft Lync Reports

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Contents

Microsoft Lync Reports

The iSPI for IP Telephony provides the Microsoft Lync extension pack. You can use this extension pack to generate reports for the performance metrics collected using SiteScope from the following Microsoft servers that are part of the Lync site monitored:

- Audio-video conferencing Server
- Archiving Server
- Director Server
- Edge Server
- Frontend Server
- Mediation Server
- Monitoring Server
- Registrar Server

Prerequisites to Enable Microsoft Lync Reports

You must make sure that the following prerequisites are satisfied to enable Microsoft Lync reporting:

- Install the NNM iSPI Performance for Metrics/Network Performance Server (iSPI Performance for Metrics) in your deployment environment before installing the iSPI for IP Telephony.
- Install and configure SiteScope to collect performance metrics from the Microsoft Lync site for which you want to monitor and generate reports.
- Create a data integration point between NNMi and SiteScope according to the details specified in the *SiteScope Online Help*.
- Enable performance monitoring for Microsoft Unified Communications and Collaboration Manager using the HP SiteScope IP Telephony link present under the **Integration Module Configuration** workspace. For more details, see the iSPI for IP Telephony > Microsoft IP Telephony Inventory > Integrating with SiteScope section in the iSPI for IP Telephony Online Help.
- Verify that the iSPI Performance for Metrics is running before opening the reports provided by the Microsoft Lync extension pack.

Specifying Topology Filters

Topology filters allow you to scope or filter the reports based on the various combinations of the server performance values available in the accumulated 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** > **Launch Topology Selector** from the left panel on the NNM iSPI Performance page. 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+Return** to select the topology filter and generate the report. Clicking Apply selects the specified topology filters and lets you choose additional topology filters for 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 or dimensions.

Call Attribute	Description
NodeGroup Name	The name of the node group.
Node UUID	The UUID of the node.
Node Name	The name of the node.
Node Contact	The contact for the node.

Call Attribute	Description
Node Location	The location of the node.
Node Family	The family that the node is a part of.
Node Vendor	The vendor for the node.
Node ID	The unique ID of the node.
Node ODBID	The ODBID of the node.
Node HostName	The host name for the node.
Tenant Name	The tenant name associated with the node.
Tenant UUID	The UUID of the tenant associated with the node.
SecGroup Name	The name of the security group associated with the node.
SecGroup UUID	The UUID of the security group associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

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 performance 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.

Specifying Time Controls

You can specify the time-specific details using which you want the report to be generated using the Time Control workspace on the NNM iSPI Performance page.:

To specify time controls, do as follows:

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.
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.

Microsoft Audio Video Conferencing Server Reports

You can view the following types of reports using this extension pack for the Microsoft audio video conferencing server.:

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

Accessing the Microsoft Lync Audio Video Conferencing Server Reports

To access the Microsoft Audio Video Conferencing Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports.
4. Click **AV_Conferencing_Server**. This displays the reports you can launch for the audio video conferencing server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Audio Video Conferencing Server Performance Metric	Description
Failed Add Conference Requests (sum)	Number of add-conference failed responses returned.
Exception - Failed Add Conference Requests (sum)	The quality of the metric.
Number of Conferences (sum)	The number of active conferences on the A/V Conferencing Server.
Exception - Number of Conferences (sum)	The quality of the metric.
Health State (sum)	The current health of the MCU. 0 = Normal. 1 = Loaded. 2 = Full. 3 = Unavailable.
Exception - Health State (sum)	The quality of the metric.
[1]HTTP Stack Load (sum)	The estimated time to process all pending items in the HTTP stack measured in milliseconds
Exception - HTTP Stack Load (sum)	The quality of the metric.
[1]Processor Time	Monitors the % Processor Time counter

Audio Video Conferencing Server Performance Metric	Description
Exception - Processor Time (sum)	The quality of the metric.
[1]Page Faults/sec	Monitors the Page Faults/sec counter
Exception - Page Faults (sum)	The quality of the metric.
Private Bytes (sum)	Monitors the Private Bytes counter
Exception - -Private Bytes (sum)	The quality of the metric.
Thread Count (sum)	Monitors the Thread Count counter
Exception - Thread Count (sum)	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count
Sample Count (sum)	The sum of the sample count of conferences.
Audio Video Conferencing Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.

Audio Video Conferencing Server Performance Metric	Description
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section "Accessing the Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) 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 11) to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 15) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section"Accessing the Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 15) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 15) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) 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.

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 Microsoft Lync Audio Video Conferencing Server Reports" (on page 14) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Failed Add Conference Requests (sum)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Failed Add Conference Requests (sum)** metric in the descending order of the raw value on a chart.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Failed Add Conference Requests (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Failed Add Conference Requests (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Failed Add Conference Requests (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Archiving Server Reports

You can view the following types of reports using this extension pack for the Microsoft archiving server.:

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

Accessing the Microsoft Archiving Server Reports

To access the Microsoft Archiving Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Archiving_Server**. This displays the reports you can launch for the archiving server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Archiving Server Performance Metric	Description
Queue Latency (ms)	The average time (in milliseconds) a request is held in the database queue.
Exception -Queue Latency (ms) (sum)	The quality of the metric.
DB Write Failures (sum)	Number of messages failed to be written to SQL database.
Exception - DB Write Failures (sum)	The quality of the metric.
Invalid Messages (sum)	The number of messages for which validation failed.
Exception - Invalid Messages (sum)	The quality of the metric.
Dropped Messages (sum)	Number of messages dropped from MSMQ queue.
Exception - Dropped Messages (sum)	The quality of the metric.
Blocked Client Threads (sum)	The average number of blocked client threads waiting for the queue depth to decrease.
Exception Blocked Client Threads (sum)	The quality of the metric.
[1]Processor Time	Monitors the % Processor Time counter
Exception - Processor Time (sum)	The quality of the metric.
[1]Page Faults/sec	Monitors the Page Faults/sec counter
Exception - Page Faults (sum)	The quality of the metric.

Archiving Server Performance Metric	Description
Private Bytes (sum)	Monitors the Private Bytes counter
Exception - -Private Bytes (sum)	The quality of the metric.
Thread Count (sum)	Monitors the Thread Count counter
Exception - Thread Count (sum)	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count
Sample Count (sum)	The sum of the sample count.
Archiving Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.

Archiving Server Performance Metric	Description
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Archiving Server Reports" (on page 23) 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 13) 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 11)to be applied on the report.

4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 24) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section"Accessing the Microsoft Archiving Server Reports" (on page 23) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 24) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Archiving Server Reports" (on page 23) 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 13) section.

3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 24) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section "Accessing the Microsoft Archiving Server Reports" (on page 23) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Archiving Server Reports" (on page 23) 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 13) 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.

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 Microsoft Archiving Server Reports" (on page 23) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Queue Latency (ms)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Queue latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Lync Director Server Reports

You can view the following types of reports using this extension pack for the Microsoft Director server.:

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

Accessing the Microsoft Director Server Reports

To access the Microsoft Director Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Director_Server**. This displays the reports you can launch for the Director Server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Director Server Performance Metric	Description
[1]Authorization Latency (ms)	The average time (in milliseconds) it takes to process a RtcAuthorizeDelegate sproc call.
Exception -Authorization Latency (ms) (sum)	The quality of the metric.
[1]Search Latency	The average time (in milliseconds) it takes to perform the actual LDAP search.
Exception - Search Latency (ms) (sum)	The quality of the metric.
Directory Outstanding Searches (sum)	Total number of outstanding searches on this LDAP session in the Directory Search component of the Communications Server User Services Module associated with a GC.
Exception - Directory Outstanding Searches (sum)	The quality of the metric.
[1]LDAP Errors/sec (sum)	Per-second rate of errors on this LDAP session in the Directory Search component of the Communications Server User Services Module associated with a GC.
Exception - LDAP Errors/sec (sum)	The quality of the metric.
[1]ReplicaReplicator Agent ProcessorTime (%)	Monitors the % Processor Time counter
Exception ReplicaReplicator Agent ProcessorTime (%)	The quality of the metric.
[1]ReplicaReplicator Agent Page Faults/sec	Monitors the Page Faults/sec counter

Director Server Performance Metric	Description
ReplicaReplicator Agent Private Bytes (sum)	Monitors the Private Bytes counter
[1]Exception - ReplicaReplicator Agent Private Bytes (sum)	The quality of the metric.
ReplicaReplicator Agent Thread Count (sum)	Monitors the Thread Count counter
[1]RTC Service Processor Time (%)	Monitors the % Processor Time counter
Exception - -RTC Service Processor Time (%)	The quality of the metric.
[1]RTC Service Page Faults/sec (sum)	The sum of the RTC Service Page Faults in a second.
Exception - RTC Service Page Faults/sec (sum)	The quality of the metric.
RTC Service Thread Count (sum)	The sum of the RTC Service Thread Count.
Exception - RTC Service Thread Count (sum)	The quality of the metric.
RTC Service Private Bytes (sum)	The sum of the RTC Service Private Bytes.
Exception - RTC Service Private Bytes (sum)	The quality of the metric.
Exception ReplicaReplicator Agent Page Faults/sec (sum)	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count
Sample Count (sum)	The sum of the sample count.
Director Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.

Director Server Performance Metric	Description
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Director Server Reports" (on page 32) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 33) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section"Accessing the Microsoft Director Server Reports" (on page 32) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 33) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Director Server Reports" (on page 32) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 33) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Director Server Reports" (on page 32) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of call attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Director Server Reports" (on page 32) 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 13) 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.

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 Microsoft Director Server Reports" (on page 32) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Authorization Latency (ms)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Authorization Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Edge Server Reports

You can view the following types of reports using this extension pack for the Microsoft Edge Server.:

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

- Calendar
- Top N Chart

Accessing the Microsoft Edge Server Reports

To access the Microsoft Edge Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Edge_Server**. This displays the reports you can launch for the edge server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Edge Server Performance Metric	Description
[1]Failed to Establish Connections/sec (sum)	The sum of the Failed to Establish Connections in a second.
Exception -Failed to Establish Connections/sec (sum)	The quality of the metric.
[1]Disconnected Clients/sec (Invalid Cookie Date) (sum)	The sum of the Disconnected Clients in a second due to an invalid cookie date.
Exception - Disconnected Clients/sec (Invalid Cookie Date) (sum)	The quality of the metric.
[1]Bad Requests Received/sec (sum)	The number of bad requests received/sec
Exception - Bad Requests Received/sec (sum)	The quality of the metric.
[1]UDP-Authentication Failures/sec (sum)	The per-second rate of failed attempts to authenticate with the relay over UDP.
Exception - UDP-Authentication Failures/sec	The quality of the metric.

Edge Server Performance Metric	Description
(sum)	
[1]UDP-Requests Exceeding Limit/sec (sum)	The per-second rate of allocate requests over UDP that exceeded the port limit.
Exception UDP-Requests Exceeding Limit/sec (sum)	The quality of the metric.
[1]UDP-Active Sessions Exceeding Avg Bandwidth (sum)	The sum of the UDP-Active Sessions Exceeding Average Bandwidth.
Exception - UDP-Active Sessions Exceeding Avg Bandwidth (sum)	The quality of the metric.
[1]UDP-Client Request Errors/sec (sum)	The sum of the UDP-Client Request Errors in a second.
Exception - UDP-Client Request Errors/sec (sum)	The quality of the metric.
[1]UDP-Client Send Request Errors/sec (sum)	The Number of Client Send Errors/sec
Exception - UDP-Client Send Request Errors/sec (sum)	The quality of the metric.
[1]UDP- Session Idle Timeouts/sec (sum)	Session Idle timeouts
Exception - UDP- Session Idle Timeouts/sec (sum)	The quality of the metric.
[1]UDP- Packets Dropped /sec (sum)	The per-second rate of packets over UDP dropped by the relay.
Exception -Packets Dropped /sec (sum)	The quality of the metric.
[1]TCP Authentication Failures/sec (sum)	The per-second rate of failed attempts to authenticate with the relay over TCP
Exception - TCP Authentication Failures/sec (sum)	The quality of the metric.
[1]TCP Requests Exceeding Limits/sec (sum)	The per-second rate of allocate requests over TCP that exceeded the port limit.
Exception TCP Requests Exceeding Limits/sec (sum)	The quality of the metric.
[1]TCP Active Sessions Exceeding Average Bandwidth (sum)	The number of active relay sessions over TCP that are exceeding bandwidth limit.
Exception TCP Active Sessions Exceeding Average Bandwidth (sum)	The quality of the metric.
[1]TCP Client Request Errors/sec (sum)	The Number of Client Requests Errors/sec
Exception TCP Client Request Errors/sec (sum)	The quality of the metric.

Edge Server Performance Metric	Description
[1]TCP Client Send Request Errors/sec (sum)	The Number of Client Send Errors/sec
Exception TCP Client Send Request Errors/sec (sum)	The quality of the metric.
[1]TCP Session Idle Timeout/sec (sum)	Session Idle timeouts
Exception TCP Session Idle Timeout/sec (sum)	The quality of the metric.
[1]TCP packets Dropped/sec (sum)	The per-second rate of packets over TCP dropped by the relay.
Exception TCP packets Dropped/sec (sum)	The quality of the metric.
[1]Pending Transactions (sum)	The number of established TLS connections that are currently active. TLS Connection is considered established when peer certificate and, possibly, host name are verified for trust relationship.
Exception Pending Transactions (sum)	The quality of the metric.
[1]Dropped Connections (Access Proxies Only) (sum)	The total number of connections that were dropped because the limit on number of incoming connections from a federated partner or clearinghouse was exceeded.
Exception Dropped Connections (Access Proxies Only) (sum)	The quality of the metric.
[1]Requests Send Timed-Out (sum)	The total number of sends dropped because they stayed in the outgoing (send) queue for too long.
Exception Requests Send Timed-Out (sum)	The quality of the metric.
[1]SIP Flow Controlled Connections (sum)	The number of connections that are currently being flow-controlled (no socket receives are posted).
Exception SIP Flow Controlled Connections (sum)	The quality of the metric.
[1]Flow Controlled Connections Dropped (sum)	The total number of connections dropped because of excessive flow-control.
Exception Flow Controlled Connections Dropped (sum)	The quality of the metric.
[1]Incoming Requests Dropped/sec (sum)	The per-second rate of incoming requests dropped because they could not be processed (due to bad headers, insufficient routing information, server resource allocation failure).
Exception Incoming Requests Dropped/sec (sum)	The quality of the metric.
[1]Incoming Responses Dropped/sec (sum)	The per-second rate of incoming responses dropped because

Edge Server Performance Metric	Description
	they could not be processed (due to bad headers, insufficient routing information, server resource allocation failure).
Exception Incoming Responses Dropped/sec (sum)	The quality of the metric.
[1]Dropped Messages/sec (Certificate Mismatch) (sum)	The per-second rate of messages dropped because the remote peer's certificate did not contain a matching FQDN.
Exception Dropped Messages/sec (Certificate Mismatch) (sum)	The quality of the metric.
[1]Messages in Server (sum)	The number of messages currently being processed by the server.
Exception Messages in Server (sum)	The quality of the metric.
[1]Incoming Messages Help (Above Overload Watermark) (sum)	The number of incoming messages currently being held by the server for processing for more than the overload watermark time threshold.
Exception Incoming Messages Help (Above Overload Watermark) (sum)	The quality of the metric.
[1]Address Space Usage (%)	The percentage of available address space currently in use by the server process.
Exception Address Space Usage (%)	The quality of the metric.
[1]Rejected Edge Server Connections/sec (sum)	The per-second rate of server connections rejected at the external edge because all federation is disabled.
Exception Rejected Edge Server Connections/sec (sum)	The quality of the metric.
[1]Rejected Edge Client Connections/sec (sum)	The per-second rate of client connections rejected at the external edge because remote user access is disabled.
Exception Rejected Edge Client Connections/sec (sum)	The quality of the metric.
[1]Dropped Messages/sec (Unknown Domain)	The per-second rate of messages that could not be routed because the message domain is not in the routing table.
Exception Dropped Messages /sec (Unknown Domain)	The quality of the metric.
[1]Dropped Messages/sec (Blocked Domain) (sum)	The per-second rate of messages dropped at the external edge because the domain is in the blocked list.
Exception Dropped Messages /sec (Blocked Domain) (sum)	The quality of the metric.

Edge Server Performance Metric	Description
[1]Dropped Messages/sec (Blocked IM Service) (sum)	The per-second rate of messages dropped at the external edge because the domain resolved by DNS SRV to a server that is blocked in the IM Service Providers table.
Exception Dropped Messages /sec (Blocked Blocked TM Service) (sum)	The quality of the metric.
[1]Dropped Messages/sec (Incompatible Message Domain) (sum)	The per-second rate of messages dropped at the external edge because the federation type of the domain is incompatible with previous messages.
Exception Dropped Messages /sec (Incompatible Message Domain) (sum)	The quality of the metric.
[1]Throttled Server Connections (sum)	The number of server connections currently that are throttled
Exception Throttled Server Connections (sum)	The quality of the metric.
[1]Throttled System (sum)	This value indicates that system wide throttling is on
Exception Throttled System (sum)	The quality of the metric.
[1]Disconnected Clients/sec (Invalid Cookie Time Stamp) (sum)	The per-second rate of number of clients rejected due to invalid timestamps
Exception Disconnected Clients/sec (Invalid Cookie Time Stamp) (sum)	The quality of the metric.
[1]Refused Connections/sec (Server Overload) (sum)	The per-second rate of the connections that were refused with Service Unavailable response because the server was overloaded.
Exception Refused Connections/sec (Server Overload) (sum)	The quality of the metric.
[1]Dropped Messages (Routing Failure) (sum)	The sum of the dropped messages due to a routing failure.
Exception Dropped Messages (Routing Failure) (sum)	The quality of the metric.
[1]Dropped Messages (Internal Error) (sum)	The number of messages dropped due to an internal server error.
Exception Dropped Messages (Internal Error) (sum)	The quality of the metric.
[1]Data Proxy Processor Time (%)	Monitors the % Processor Time counter
Exception Data Proxy Processor Time (%)	The quality of the metric.
[1]Data Proxy Page Faults/sec	Monitors the Page Faults/sec counter
Exception Data Proxy Page Faults/sec	The quality of the metric.
[1]Data Proxy Private Bytes (sum)	The sum of the Data Proxy Private Bytes.

Edge Server Performance Metric	Description
Exception Data Proxy Private Bytes (sum)	The quality of the metric.
[1]Data Proxy Thread Count (sum)	Monitors the Thread Count counter
Exception Data Proxy Thread Count (sum)	The quality of the metric.
[1]Media Relay Service Processor Time (%)	Monitors the % Processor Time counter
Exception Media Relay Service Processor Time (%)	The quality of the metric.
[1]Media Relay Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter
Exception Media Relay Service Page Faults/sec (sum)	The quality of the metric.
[1]Media Relay Service Private Bytes (sum)	Monitors the Private Bytes counter
Exception Media Relay Service Private Bytes (sum)	The quality of the metric.
[1]Media Relay Service Thread Count (sum)	Monitors the Thread Count counter
Exception Media Relay Service Thread Count (sum)	The quality of the metric.
[1]Media Relay Authentication Service Processor Time (%)	Monitors the % Processor Time counter
Exception Media Relay Authentication Service Processor Time (%)	The quality of the metric.
[1]Media Relay Authentication Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter
Exception Media Relay Authentication Service Page Faults/sec (sum)	The quality of the metric.
[1]Media Relay Authentication Service Private Bytes (sum)	Monitors the Private Bytes counter
Exception Media Relay Authentication Service Private Bytes (sum)	The quality of the metric.
[1]Media Relay Authentication Service Thread Count (sum)	Monitors the Thread Count counter
Exception Media Relay Authentication Service Thread Count (sum)	The quality of the metric.
[1]RTC Service Processor Time (%)	The percentage of the RTC Service Processor Time.
Exception - -RTC Service Processor Time (%)	The quality of the metric.
[1]RTC Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter

Edge Server Performance Metric	Description
Exception - RTC Service Page Faults/sec (sum)	The quality of the metric.
[1]RTC Service Thread Count (sum)	Monitors the Thread Count counter
Exception - RTC Service Thread Count (sum)	The quality of the metric.
[1]RTC Service Private Bytes (sum)	Monitors the Private Bytes counter
Exception - RTC Service Private Bytes (sum)	The sum of the RTC Service Private Bytes. that raised an exception.
Exception ReplicaReplicator Agent Page Faults/sec (sum)	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count
Edge Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.

Edge Server Performance Metric	Description
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Edge Server Reports" (on page 42) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 42) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section"Accessing the Microsoft Edge Server Reports" (on page 42) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 42) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Edge Server Reports" (on page 42) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 42) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Edge Server Reports" (on page 42) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Edge Server Reports" (on page 42) 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 13) 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.

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 Microsoft Edge Server Reports" (on page 42) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Failed to Establish Connections/sec** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Failed to Establish Connections/sec** metric in the descending order of the raw value on a chart.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Failed to Establish Connections/sec** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Failed to Establish Connections/sec** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Failed to Establish Connections/sec** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Failed to Establish Connections/sec** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Frontend Server Reports

You can view the following types of reports using this extension pack for the Microsoft Frontend Server:

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

Accessing the Microsoft Frontend Server Reports

To access the Microsoft Frontend Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Front_End_Server**. This displays the reports you can launch for the Frontend server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

FrontEnd Server Performance Metric	Description
[1]Queue Latency (ms)	The amount of time(in milliseconds) that a request spent in the back end queue.
Exception - Queue Latency (ms)	The quality of the metric.
[1]Backend Processing Latency (ms)	The amount of time (in milliseconds) that the back end spent in processing a request.
Exception - Backend Processing Latency (ms)	The quality of the metric.
[1]Average Hold Time (Incoming)	The average amount of time taken by the server to process a request.
Exception - Average Hold Time (Incoming)	The quality of the metric.
Unhandled Application Exceptions (sum)	The number of unhandled application exceptions.
[1]SIP 503 Responses/sec	The number of 503 responses per second. The 503 code indicates that the server is unavailable.
Exception SIP 503 Responses/sec	The quality of the metric.
[1]SIP 504 Responses/sec	The number of 504 responses per second. The 504 code indicates connectivity problems with other servers.
Exception SIP 504 Responses/sec	The quality of the metric.
SIP Sends Outstanding (sum)	The number of requests and responses that are queued outbound.

FrontEnd Server Performance Metric	Description
Exception - SIP Sends Outstanding (sum)	The quality of the metric.
DATAMCU Compliance Errors (sum)	The number of errors reported by the compliance module.
Exception - DATAMCU Compliance Errors (sum)	The quality of the metric.
[1]Avg Blocked Client Threads (ms)	The average blocked client threads in milliseconds.
Pending Active Directory Requests (sum)	Current number of requests waiting on Active Directory responses.
Pending Active Directory Responses (sum)	Current number of requests waiting on Active Directory responses.
Exception -Unhandled Application Exceptions (sum)	The quality of the metric.
Session Queues State (sum)	The state of the session queues.
Average Member Properties Fetch Time (ms) (sum)	The sum of the Average Member Properties Fetch Time in milliseconds.
Exception - Session Queues State (sum)	The quality of the metric.
MCU Health State (sum)	The current health of the MCU. 0 = Normal. 1 = Loaded. 2 = Full. 3 = Unavailable.
[1]Distribution List Expansion Failed Authorizations/sec	The per-second rate of unauthorized requesters.
Exception - MCU Health State (sum)	The quality of the metric.
[1]Registrar Module DB Queue Latency (ms)	The average time (in milliseconds) a request is held in the database queue by Registrar Module.
Exception -Registrar Module DB Queue Latency (ms)	The quality of the metric.
[1]Distribution List Expansion SOAP Exceptions/sec	The per-second rate of Soap Exceptions.
Exception - -Avg Blocked Client Threads (ms) (sum)	The quality of the metric.
[1]DATAMCU Service Processor Time (%)	Monitors the % Processor Time counter
Exception - Pending Active Directory Requests (sum)	The quality of the metric.
[1]DATAMCU Service Page Faults/sec	Monitors the Page Faults/sec counter
[1]DATAMCU Service Private Bytes (sum)	Monitors the Private Bytes counter.

FrontEnd Server Performance Metric	Description
Exception - Average Member Properties Fetch Time (ms) (sum)	The quality of the metric.
Exception - Distribution List Expansion Failed Authorizations/sec	The quality of the metric.
DATAMCU Service Thread Count (sum)	Monitors the Thread Count counter.
Exception - Distribution List Expansion SOAP Exceptions/sec	The quality of the metric.
[1]RTC Service Processor Time (%)	Monitors the % Processor Time counter
Exception - DATAMCU Service Processor Time (%)	The quality of the metric.
[1]RTC Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter
Exception - DATAMCU Service Page Faults/sec	The quality of the metric.
[1]RTC Service Private Bytes (sum)	Monitors the Private Bytes counter
[1]RTC Service Thread Count (sum)	Monitors the Thread Count counter.
Exception - DATAMCU Service Private Bytes	The quality of the metric.
Exception - DATAMCU Service Thread Count	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Counters in Error (sum)	Metrics Error Count
Exception - -RTC Service Processor Time (%)	The quality of the metric.
Exception - RTC Service Page Faults/sec (sum)	The quality of the metric.
Exception - RTC Service Private Bytes (sum)	The quality of the metric.
Exception - RTC Service Thread Count (sum)	The quality of the metric.
Exception - Total Processor Time (sum)	The quality of the metric.
FrontEnd Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.

FrontEnd Server Performance Metric	Description
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Frontend Server Reports" (on page 55) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 56) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section "Accessing the Microsoft Frontend Server Reports" (on page 55) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 56) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Frontend Server Reports" (on page 55) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 56) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Frontend Server Reports" (on page 55) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
   - **Bottom 50**: lists 50 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 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 of the list.
   - **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Frontend Server Reports" (on page 55) 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 13) 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.

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 Microsoft Frontend Server Reports" (on page 55) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
   - **Bottom 50**: lists 50 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 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 of the list.
   - **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.
7. Click **Confirm Selection** to generate the report.

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Queue Latency (ms)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart

- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Queue latency (ms)** metric in the descending order of the raw value on a chart.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Mediation Server Reports

You can view the following types of reports using this extension pack for the Microsoft Mediation Server.:

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

Accessing the Microsoft Mediation Server Reports

To access the Microsoft Mediation Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Mediation_Server**. This displays the reports you can launch for the Microsoft Mediation server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Mediation Server Performance Metric	Description
Outbound Calls Rejected (Load) (sum)	The number of SIP INVITEs from proxy which were rejected immediately because of server load.
Exception -Outbound Calls Rejected (Load)	The quality of the metric.

Mediation Server Performance Metric	Description
(sum)	
Inbound Calls Rejected (Load) (sum)	The number of SIP INVITEs from gateway which were rejected immediately because of server load
Exception - Inbound Calls Rejected (Load) (sum)	The quality of the metric.
[1]Load Call Failure Index	Scaled index between zero and 100 that is related to all call failures due to heavy load.
Exception - Load Call Failure Index	The quality of the metric.
Failed Calls (Unexpected Interaction from Proxy) (sum)	The number of calls that failed because of unexpected interaction from the Proxy.
Exception - Failed Calls (Unexpected Interaction from Proxy) (sum)	The quality of the metric.
Failed Calls (Unexpected Interaction from Gateway) (sum)	The number of calls that failed because of unexpected interaction from a gateway.
Exception Failed Calls (Unexpected Interaction from Gateway) (sum)	The quality of the metric.
[1]Media Connectivity Check Failures	Number of media connectivity check failures.
Exception - Media Connectivity Check Failures	The quality of the metric.
[1]Global Health (sum)	Global health indicator - 0 means DISABLED, 1 is NORMAL, 2 is LIGHTLOAD, 3 is HEAVYLOAD and 4 is OVERLOADED
Exception -Global Health (sum)	The quality of the metric.
[1]Processor Time (%)	Monitors the % Processor Time counter
Exception - Processor Time (%) (sum)	The quality of the metric.
[1]Page Faults/sec	Monitors the Page Faults/sec counter
Exception - Page Faults/sec	The quality of the metric.
Private Bytes (sum)	Monitors the Private Bytes counter
Exception -Private Bytes (sum)	The quality of the metric.
Thread Count (sum)	Monitors the Thread Count counter.
Exception - Thread Count (sum)	The quality of the metric.
[1]Total Processor Time (%)	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (%)	The quality of the metric.

Mediation Server Performance Metric	Description
Counters in Error (sum)	Metrics Error Count.
Mediation Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Mediation Server Reports" (on page 66) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 66) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected 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.

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

1. Perform the steps in the section"Accessing the Microsoft Mediation Server Reports" (on page 66) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 66) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Mediation Server Reports" (on page 66) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 66) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Mediation Server Reports" (on page 66) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
   - **Bottom 50**: lists 50 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 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 of the list.
   - **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Mediation Server Reports" (on page 66) 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 13) 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.

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 Microsoft Mediation Server Reports" (on page 66) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
   - **Bottom 50**: lists 50 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 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 of the list.
   - **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.
7. Click **Confirm Selection** to generate the report.

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Outbound Calls Rejected (Load) (sum)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Outbound Calls Rejected (Load) (sum)** metric in the descending order of the raw value on a chart.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Outbound Calls Rejected (Load) (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Outbound Calls Rejected (Load) (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Outbound Calls Rejected (Load) (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Outbound Calls Rejected (Load) (sum)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Monitoring Server Reports

You can view the following types of reports using this extension pack for the Microsoft Monitoring Server.:

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

Accessing the Microsoft Monitoring Server Reports

To access the Microsoft Monitoring Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Monitoring_Server**. This displays the reports you can launch for the Monitoring server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Monitoring Server Performance Metric	Description
[1]Queue Latency (ms)	The average time (in milliseconds) a request is held in the database queue.
Exception - Queue Latency (ms)	The quality of the metric.
Fatal SQL Errors (sum)	The total number of fatal SQL errors since the server started.
Exception - Fatal SQL Errors (sum)	The quality of the metric.
Incorrect MSMQ Messages (Type/Version) (sum)	This counter represents the total number of MSMQ messages discarded because they were not of the expected type or version.
Exception - Incorrect MSMQ Messages (Type/Version) (sum)	The quality of the metric.
Dropped Reports (DB Insertion Failure) (sum)	This counter represents the total number of reports that were dropped due to database insertion failure. The transaction was committed prematurely due to an unrecoverable database error.
Exception - Dropped Reports (DB Insertion Failure) (sum)	The quality of the metric.
Deadlocks (sum)	The total number of deadlocks that have occurred since the server started.
Exception - Deadlocks (sum)	The quality of the metric.
ODBC Failures (sum)	The total number of ODBC timeout failures that have occurred since the server started.
Exception - ODBC Failures (sum)	The quality of the metric.
Severe SQL Errors (sum)	The total number of severe SQL errors since the server started.
Exception - Severe SQL Errors (sum)	The quality of the metric.
Throttled Requests (sum)	The total number of requests that were rejected with a retry-after since the database queue latency was high.
Exception - Throttled Requests (sum)	The quality of the metric.
Invalid Messages (sum)	The number of messages that failed validation.
Exception - Exception Invalid Messages (sum)	The quality of the metric.
Dropped Messages (sum)	Number of messages dropped from MSMQ queue.
Exception - Dropped Messages (sum)	The quality of the metric.
Transactions Aborted (sum)	The number of transactions aborted.

Monitoring Server Performance Metric	Description
Exception - Transactions Aborted (sum)	The quality of the metric.
DB Write Failures (sum)	The number of messages failed to be written to SQL database.
Exception - DB Write Failures (sum)	The quality of the metric.
Unknown Failures (sum)	The total count of unknown error report failures.
Exception - Unknown Failures (sum)	The quality of the metric.
Internal Lock Triggered Failures (sum)	The total count of error report failures due to internal locks.
Exception - Internal Lock Triggered Failures (sum)	The quality of the metric.
Throttled Errors (Max Reports Per Minute) (sum)	The total count of throttled error reports due to max report per minute limit.
Exception - -Throttled Errors (Max Reports Per Minute) (sum)	The quality of the metric.
[1]QMS Service Processor Time (%)	Monitors the % Processor Time counter of Qms Service.
Exception - QMS Service Processor Time (%)	The quality of the metric.
[1]QMS Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter
Exception - QMS Service Page Faults/sec (sum)	The quality of the metric.
QMS Service Private Bytes (sum)	Monitors the Private Bytes counter
Exception - QMS Service Private Bytes (sum)	The quality of the metric.
QMS Service Thread Count (sum)	Monitors the Thread Count counter
Exception - QMS Service Thread Count (sum)	The quality of the metric.
ReplicaReplicator Agent Processor Time (%)	Monitors the % Processor Time counter
Exception - ReplicaReplicator Agent Processor Time (%)	The quality of the metric.
ReplicaReplicator Agent Page Faults/sec	Monitors the Page Faults/sec counter
Exception - ReplicaReplicator Agent Page Faults/sec	The quality of the metric.
ReplicaReplicator Agent Private Bytes (sum)	Monitors the Private Bytes counter
Exception - ReplicaReplicator Agent Private Bytes (sum)	The quality of the metric.
ReplicaReplicator Agent Thread Count (sum)	Monitors the Thread Count counter

Monitoring Server Performance Metric	Description
Exception - ReplicaReplicator Agent Thread Count (sum)	The quality of the metric.
[1]RTCCDR Service Processor Time (%)	Monitors the % Processor Time counter
Exception -RTCCDR Service Processor Time (%)	The quality of the metric.
[1]RTCCDR Service Page Faults/sec	Monitors the Page Faults/sec counter
Exception -RTCCDR Service Page Faults/sec	The quality of the metric.
[1]RTCCDR Service Private Bytes	Monitors the Private Bytes counter
Exception -RTCCDR Service Private Bytes	The quality of the metric.
RTCCDR Service Thread Count	Monitors the Thread Count counter
Exception -RTCCDR Service Thread Count	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy)
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count
Monitoring Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.

Monitoring Server Performance Metric	Description
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

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

1. Perform the steps in the section"Accessing the Microsoft Monitoring Server Reports" (on page 75) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 75) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected call 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.

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

1. Perform the steps in the section"Accessing the Microsoft Monitoring Server Reports" (on page 75) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 75) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Monitoring Server Reports" (on page 75) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 75) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Monitoring Server Reports" (on page 75) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Monitoring Server Reports" (on page 75) 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 13) 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.

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 Microsoft Monitoring Server Reports" (on page 75) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Queue Latency (ms)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Queue latency (ms)** metric in the descending order of the raw value on a chart.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line

on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Microsoft Registrar Server Reports

You can view the following types of reports using this extension pack for the Microsoft Registrar Server.:

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

Accessing the Microsoft Registrar Server Reports

To access the Microsoft Registrar Server 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 **UCC Applications** > **Microsoft Lync**. This displays the Microsoft servers for which you can launch the .reports,
4. Click **Registrar_Server**. This displays the reports you can launch for the Registrar server.

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.

Note: You can add more metrics for the report by clicking the  (Add) icon and then selecting the metric of your choice from the drop-down list displayed.

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

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

Registrar Server Performance Metric	Description
[1]Queue Latency (ms)	The average time (in milliseconds) a request is held in the database queue.
Exception - Queue Latency (ms)	The quality of the metric.
Dropped Requests (sum)	The number of requests that have been dropped by the database layer because they would time out.
Exception - Dropped Requests (sum)	The quality of the metric.
Rejected Registers	The total number of legacy Registers rejected due to publisher being in rich mode.
Exception - Rejected Registers	The quality of the metric.
Disconnected Endpoints (Indirectly Connected) (sum)	The total number of indirectly connected endpoints disconnected due to error responses.
Exception - Disconnected Endpoints (Indirectly Connected) (sum)	The quality of the metric.
DeRegistration Notifications (sum)	The total number of 'deregistered' notifications sent. A 'deregistered' notification is sent to a contact when server decides the contact is no longer valid.

Registrar Server Performance Metric	Description
Exception DeRegistration Notifications (sum)	The quality of the metric.
Disconnected Endpoints (sum)	The total number of endpoints disconnected due to missed keep-alive.
Exception - Disconnected Endpoints (sum)	The quality of the metric.
[1]Queue Depth (sum)	The average number of database requests waiting to be executed.
Exception - Queue Depth (sum)	The quality of the metric.
Deadlocks (sum)	The total number of deadlocks that have occurred since the server started.
Exception - Deadlocks (sum)	The quality of the metric.
Deadlock Failures (sum)	The total number of deadlock failures that have occurred since the server started.
Exception - Deadlock Failures (sum)	The quality of the metric.
ODBC Timeout Failures (sum)	The total number of ODBC timeout failures that have occurred since the server started.
Exception -ODBC Timeout Failures (sum)	The quality of the metric.
Severe SQL Errors (sum)	The total number of severe SQL errors since the server started.
Exception - Severe SQL Errors (sum)	The quality of the metric.
Fatal SQL Errors (sum)	The total number of fatal SQL errors since the server started.
Exception - Fatal SQL Errors (sum)	The quality of the metric.
[1]Throttled Requests/sec	The number of requests that were rejected in a second with a retry-after since the database queue latency was high.
Exception - Throttled Requests/sec	The quality of the metric.
Throttled Requests (sum)	The total number of requests that were rejected with a retry after the database queue latency was high..
Exception - Throttled Requests (sum)	The quality of the metric.
[1]RTC Service Processor Time (%)	Monitors the % Processor Time counter.
Exception - -RTC Service Processor Time (%)	The quality of the metric.
[1]RTC Service Page Faults/sec (sum)	Monitors the Page Faults/sec counter
Exception - RTC Service Page Faults/sec (sum)	The quality of the metric.

Registrar Server Performance Metric	Description
RTC Service Thread Count (sum)	Monitors the Thread Count counter.
Exception - RTC Service Thread Count (sum)	The quality of the metric.
RTC Service Private Bytes (sum)	Monitors the Private Bytes counter.
Exception - RTC Service Private Bytes (sum)	The quality of the metric.
[1]ReplicaReplicator Agent Processor Time (%)	Monitors the % Processor Time counter.
Exception - ReplicaReplicator Agent Processor Time (%)	The quality of the metric.
[1]ReplicaReplicator Agent Faults/sec	Monitors the Page Faults/sec counter
Exception ReplicaReplicator Agent Page Faults/sec (sum)	The quality of the metric.
ReplicaReplicator Agent Private Bytes (sum)	Monitors the Private Bytes counter
Exception - ReplicaReplicator Agent Private Bytes (sum)	The quality of the metric.
ReplicaReplicator Agent Thread Count (sum)	Monitors the Thread Count counter.
Exception - ReplicaReplicator Agent Thread Count (sum)	The quality of the metric.
[1]Total Processor Time	Monitors the Working Set counter(Logging only policy).
Exception - Total Processor Time (sum)	The quality of the metric.
Counters in Error (sum)	Metrics Error Count.
Registrar Server Distinct Count	**Description**
NodeGroup Name (countDistinct)	The distinct count of the name of the node group.
Node UUID (countDistinct)	The distinct count of theUUID of the node.
Node Name (countDistinct)	The distinct count of thename of the node.
Node Contact (countDistinct)	The distinct count of the node contact.
Node Location (countDistinct)	The distinct count of the location of the node.
Node Family (countDistinct)	The distinct count of the family that the node is a part of.
Node Vendor (countDistinct)	The distinct count of the vendor for the node.
Node ID (countDistinct)	The distinct count of the unique ID of the node.
Node ODBID (countDistinct)	The distinct count of the ODBID of the node.
Node HostName (countDistinct)	The distinct count of the host name for the node.

Registrar Server Performance Metric	Description
Tenant Name (countDistinct)	The distinct count of the tenant name associated with the node.
Tenant UUID (countDistinct)	The distinct count of the tenant UUID associated with the node.
SecGroup Name (countDistinct)	The distinct count of the security group name associated with the node.
SecGroup UUID (countDistinct)	The distinct count of the security group UUID associated with the node.
Monitor Name	The server monitor name.
Monitor Type	The server monitor type.
Site Name	The user-configured NNMi Site.
Site UUID	The site UUID
Lync Site Name	The Lync Site name
Lync Site UUID	The Lync Site UUID.
Pool FQDN	The pool FQDN.

[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.

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

Calendar Report

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

data for the current month.

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

1. Perform the steps in the section"Accessing the Microsoft Registrar Server Reports" (on page 85) 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 13) 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 11)to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 86) to specify the primary metric and the secondary metric for the report.
5. Click **Confirm Selection** to generate the report.

Chart Detail Report

This report plots the selected call 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.

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

1. Perform the steps in the section"Accessing the Microsoft Registrar Server Reports" (on page 85) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied on the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 86) 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 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.

Note: You can launch this report for a minimum time frame of 24 hours only.

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

1. Perform the steps in the section"Accessing the Microsoft Registrar Server Reports" (on page 85) 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 13) section.
3. Perform the steps in the section "Specifying Topology Filters" (on page 11) to specify the topology filters to be applied for the report.
4. Perform the steps listed in the "Specifying Metrics for Reports" (on page 86) 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 metrics, this report ranks the attribute values in the ascending or descending order of the total raw values of the metric. The report displays the rank of the metric value along with the metric value and the percentage of the 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 metric values that had occurrences at the extremes. You can also use this report to investigate historical sampled data for the metrics that exhibit unusual occurrence levels.

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

1. Perform the steps in the section"Accessing the Microsoft Registrar Server Reports" (on page 85) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 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 metric values for two different (consecutive) time periods for specified grouping of attributes and ranks these groups of 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 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 metric, specify the attribute to group by, select the topology filter to scope the report only for certain attribute values, and specify the time range before generating the report.

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

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

1. Perform the steps in the section "Accessing the Microsoft Registrar Server Reports" (on page 85) 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 13) 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.

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 Microsoft Registrar Server Reports" (on page 85) 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 13) 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 attributes by clicking the **Add New Grouping** icon  . Clicking on this icon displays another drop-down list of the attributes. You can remove the additional 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 of 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 of 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 of 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 of the list.
- **Bottom 50**: lists 50 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 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 of the list.
- **Sort All in Descending**: lists all the specified attributes with the 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 metric value in the ascending order of the value, with the lowest value at the top of the list.

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

Types of Reportlets

This extension pack helps you to generate the following types of Top N reportlets based on the **Queue Latency (ms)** metric:

- Top N Chart
- Top N Line Chart
- Top N Stacked Chart
- Top N Table
- Top N Table with Bars

To access the reportlets, click the **Reportlets** workspace from the NNM iSPI Performance Report Menu page.

Top N Chart Reportlet

This reportlet displays the top 10 instances of the **Queue latency (ms)** metric in the descending order of the raw value on a chart.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Line Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by plotting the metric using a line on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Stacked Chart Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data by combining the metric value for all the top 10 instances on the chart over the time period.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.

Top N Table with Bars Reportlet

This reportlet displays the top 10 instances of the **Queue Latency (ms)** metric in the descending order of the raw value on a chart. This reportlet displays the data in a table listing the top 10 instances for the metric along with a bar adjacent to the instance that depicts the value for that instance of the metric.

You can click the  (Toggle Options) icon to select the metrics of your choice and click **Confirm Selection** to regenerate the reportlet.


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