CHAPTER 5

Managing SLAs and Monitoring Compliance

Using the SLA tab, you can define service level agreements (SLAs) and measure and verify them based on collected statistics. This section includes:

- Getting Started with SLAs, page 5-1
- Using the Compliance Matrix, page 5-3
- Using SLA Administration to Manage SLAs, page 5-8

Getting Started with SLAs

You can create SLAs to measure any attributes of instances managed by Service Statistics Manager. However, to do so, you must have the privilege to manage SLAs, which also enables you to update and delete them. For more information, see Using SLA Administration to Manage SLAs, page 5-8.

An SLA definition includes an SLA type that specifies the monitor types and attributes to measure in the SLA. An SLA also includes the following:

- Instance-Attribute pairs—Each pair includes a monitored instance and an attribute to measure.
- Service-level objectives—For each instance-attribute pair, specifies:
  - Value—Acceptable value or range of values for the attribute.
  - Duration—Amount of time for which the value can remain outside of the acceptable range before being considered in violation.
  - Weight—Relative importance of the measurements for this instance-attribute pair compared with others in the SLA. The weight is used when computing the weighted average percent compliance of all service-level objectives. (Service Statistics Manager compares the result of the computation with the SLA compliance objective.)

  **Note** You can specify value, duration, and weight individually, for each instance-attribute pair, or use the same value, duration, and weight for all instance-attribute pairs in the SLA.

- SLA compliance objective—The expected average percent compliance. To meet the SLA compliance objective, when weighted and averaged, the number of data points in violation over the total number of data points for each service-level objective must be greater than or equal to the SLA compliance objective.
When you define SLAs, Service Statistics Manager computes SLA compliance after the end of each day; computation occurs at 00:30 daily. For example, the computation of compliance for February 18, 2008 becomes available after 12:30 a.m. on February 19, 2008. To define SLAs for call-based monitors, you must change the default timing of SLA compliance computation. For more information, see \textit{Changing the Default Timing of SLA Compliance Computation, page 5-2}. You can review the results of compliance computations on the Compliance Matrix page. For more information, see \textit{Using the Compliance Matrix, page 5-3}.

Some SLA management tasks can affect the data that goes into compliance calculations:

- **Adding an SLA:**
  - If an SLA is added in the middle of the month, month-to-date compliance includes only the days for which compliance has been calculated.
  - Irrespective of the exact time that you create an SLA, when computing compliance, Service Statistics Manager includes all data points for the day. However, violation records—if any—are available immediately after SLA creation.

- **Updating an SLA**—Entering new values for SLA compliance and service-level objectives does not affect previously calculated values. New calculations are based on the current values. However, on all pages that display the results of compliance calculations, the current value of the objective and threshold is shown even when some calculations were made using older values.

- **Selecting a schedule for an SLA**—If an SLA uses a schedule other than the full day schedule, then the number of violated points from the calculation might not match the number of violated points illustrated on the Violation Details page.

The following also affect calculations:

- In case of server restart, the number of violated points in violation details might not match the number of violated points used in the calculation.

- For values not calculated, Service Statistics Manager displays a dash (\textbf{-}). The dash is displayed when there is a gap between the time of SLA creation and calculations that are made the next day.

- **NO DATA** data points are not considered in calculations.

- **NO RESPONSE** data points are considered as violations.

### Changing the Default Timing of SLA Compliance Computation

**Procedure**

1. **Step 1** Log into the system as a Windows system administrator.
2. **Step 2** Open the pronet.conf file located in the 	extit{Installation Directory}\textbackslash pw\pronto\conf\ directory.
3. **Step 3** Add the following properties at the end of the pronet.conf file:
   
   ```
   pronet.businessview.threadhour=6
   pronet.businessview.threadmin=30
   ```

   The `pronet.businessview.threadhour` property specifies the hour and the `pronet.businessview.threadmin` property specifies the minute.

**Note** You must set the time as 6:30 AM. Do not set any other time as it may interfere with the scheduling of reports in the system.
Using the Compliance Matrix

The compliance matrix—displayed when you click the SLA tab—provides a quick visual indication of the compliance of all SLAs: currently, and for the previous day, week-, month-, quarter-, and year-to-date. For each time period, an icon indicates status: a green icon indicates no violations and a red icon indicates that a service-level threshold violation has occurred at some level of the SLA.

The compliance matrix displays all top-level SLAs, those that include other SLAs (nested SLAs) and those that stand alone. From the compliance matrix that is initially displayed on the SLA tab, you can open additional compliance matrices that similarly provide a quick visual status of instance-attribute pairs in an SLA or of SLAs (in a nested SLA). You can continue to drill down to see more detailed information, such as instance-attribute pair violations for an SLA (on the SLA Details page) and violation data for an instance-attribute pair over the past 24 hours (on the Instance Details page).

Table 5-1 describes the compliance matrix and the links that you can use to obtain relevant data. Table 5-2 lists the icons displayed on the compliance matrix.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLA</td>
<td>Name of the SLA. Click it to launch a compliance matrix for the SLA. See Viewing the Compliance Matrix for a Specific SLA, page 5-5.</td>
</tr>
</tbody>
</table>
| Type   | One of these:  
|        | - Dash (-)—Displayed for a nested SLA.  
|        | - Name of the SLA type. |
| Details| Click the icon to open the SLA Details page. See Viewing SLA Details (Compliance Matrix Details Column), page 5-6. |
| Current Status | Reflects real-time violations, if any. Displays one of the following:  
|        | - Green icon—No violations.  
|        | - Red icon—A service-level threshold violation has occurred at some level of the SLA; click to launch the Violation Details page. See Viewing Violation Details (Compliance Matrix Current Status Column), page 5-7.  
|        | - Dash (-)—Compliance has not been calculated yet or is not available. |
| History| Click the icon to open an SLA Compliance History Report page from which you can generate bar charts for different periods (depending on the data that has been collected to date). See Using an SLA Compliance History Report, page 3-29. |
| Objective| Expected average percent compliance for the SLA as a whole. |
Table 5-1  Compliance Matrix Links (continued)

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Day</td>
<td>Compliance values as of end of previous day. Displays one of the following:</td>
</tr>
<tr>
<td></td>
<td>- Green icon—No violations.</td>
</tr>
<tr>
<td></td>
<td>- Red icon—A service-level threshold violation has occurred at some level of the SLA.</td>
</tr>
<tr>
<td></td>
<td>- Dash (-)—Compliance has not been calculated yet or is not available.</td>
</tr>
<tr>
<td></td>
<td>- One or more up or down arrows—Trending up or down is based on the change in values over the past three time units. For example, two downward-pointing arrows indicate two consecutive time units where the value has degraded.</td>
</tr>
</tbody>
</table>

Click to open a compliance matrix for the time period. See Viewing Data Points for a Time Period (Compliance Matrix Time-Period-to-Date Details), page 5-8.

- Week to Date
- Month to Date
- Quarter to Date
- Year to Date

Compliance values as of end of previous week, month, quarter, or year. Displays one of the following:

- Green icon—No violations.
- Red icon—A service-level threshold violation has occurred at some level of the SLA.
- Dash (-)—Compliance has not been calculated yet or is not available.

Click to open a compliance matrix for the time period. See Viewing Data Points for a Time Period (Compliance Matrix Time-Period-to-Date Details), page 5-8.

## Compliance Matrix Icons

Service Statistics Manager displays a series of icons on the header of the Compliance Matrix page. Availability of these additional options is based on the content of the page.

Table 5-2  SLA Compliance Matrix Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Icon Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Show Report Header</td>
<td>Show report details.</td>
</tr>
<tr>
<td></td>
<td>Hide Report Header</td>
<td>Hide report details.</td>
</tr>
<tr>
<td></td>
<td>Schedule Report</td>
<td>Schedule a report for the SLA.</td>
</tr>
<tr>
<td></td>
<td>Show Compliance Matrix Report</td>
<td>Display a compliance matrix report.</td>
</tr>
<tr>
<td></td>
<td>PDF</td>
<td>View report as PDF.</td>
</tr>
</tbody>
</table>
### Viewing the Compliance Matrix for a Specific SLA

When you click the entry in the Compliance Matrix SLA column, what you see next depends upon the content of the SLA:

- If an SLA is composed of SLAs (child SLAs), the child SLAs are displayed; the resulting display looks like the compliance matrix that is described in Using the Compliance Matrix, page 5-3.
- If an SLA is composed of instance-attribute pairs, a compliance matrix is displayed for them; the information that is available is described in Table 5-3.

### Table 5-2 SLA Compliance Matrix Icons (continued)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Icon Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>📊</td>
<td>CSV</td>
<td>Export the report details to Microsoft Excel.</td>
</tr>
<tr>
<td>✉️</td>
<td>Mail This Page</td>
<td>Mail the report.</td>
</tr>
</tbody>
</table>

### Table 5-3 Columns in a Compliance Matrix for a Specific SLA

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLA Instance</td>
<td>IP address or DNS name. If available, other information that identifies the instance is displayed; for example, if the instance is a Cisco IOS router, the type, such as H323, is displayed.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Name of the attribute.</td>
</tr>
<tr>
<td>Details icon</td>
<td>Click to open an Instance Details page for the instance-attribute pair. See Viewing Instance Details (SLA Details Threshold Condition Link), page 5-6.</td>
</tr>
<tr>
<td>Current Status</td>
<td>One of these:</td>
</tr>
<tr>
<td></td>
<td>- Red icon—Click to open the violation details page. See Viewing Violation Details (Compliance Matrix Current Status Column), page 5-7.</td>
</tr>
<tr>
<td></td>
<td>- Green icon—There are no violations.</td>
</tr>
<tr>
<td>Graph</td>
<td>Click the line graph icon to open a Graph Display page.</td>
</tr>
<tr>
<td>Weight</td>
<td>An integer that represents the relative importance of the instance-attribute pair compared with other instance-attribute pairs in the SLA; used in calculating the average percent compliance of the whole SLA.</td>
</tr>
<tr>
<td>Previous Day</td>
<td>SLA compliance for the previous day. Click the icon in this column to see details. (For more information, see Viewing Data Points for a Time Period (Compliance Matrix Time-Period-to-Date Details), page 5-8.)</td>
</tr>
<tr>
<td>Week to Date</td>
<td>SLA compliance from the first day of this week up to the current date. Click the icon in this column to see details.</td>
</tr>
<tr>
<td>Month to Date</td>
<td>SLA compliance from the first day of this month up to the current date. Click the icon in this column to see details.</td>
</tr>
</tbody>
</table>
Viewing SLA Details (Compliance Matrix Details Column)

An SLA Details page displays the status of each instance-attribute pair that is included in the SLA. To open an SLA Details page, click the icon in the Details column from a compliance matrix or a Violation Details page. An SLA Details page include three panes:

- **SLA Information**—Includes:
  - Compliance objective, owner, contact information, and dates.
  - Comments—Click Edit to add comments to the SLA.
- **Compliance summary**—Graphical representation of compliance over time; the calculated percent compliance for the period appears above the graph.
- **SLA Violation History**—A scrollable table that includes:
  - **SLA Instance**—Instance name.
  - **Threshold Condition**—The attribute being measured and the expected value are displayed as a link. Click it to display instance details. (See Viewing Instance Details (SLA Details Threshold Condition Link), page 5-6.)
  - **Weight**—Weighting factor for this instance-attribute pair; a positive integer.
  - **Current Status**—An icon that is either red (if a violation is open) or green (if there is no current violation). If a red icon is displayed, click it to open a Violation Details page. (See Viewing Violation Details (Compliance Matrix Current Status Column), page 5-7.)
  - **SLA History**—A bar graph, representing the status over time. To see when a violation was opened, mouse over any red portion of the bar.

To generate a report, click the Generate Health Summary Report icon in the header. (For more information, see Using an SLA Compliance History Report, page 3-29.)

### Viewing Instance Details (SLA Details Threshold Condition Link)

To open an Instance Details page, either click the threshold condition link from an SLA Details page or click the icon in the Details column from a compliance matrix for an SLA. The Instance Details page include three panes:

- **Instance Information**—Includes:
  - Instance name, schedule name, and service-level objective value.
  - **Current Status**—Open (red) or closed (green). If red, click the dot to open a Violation Details page for the instance. See Viewing Violation Details (Compliance Matrix Current Status Column), page 5-7.
  - **SLA 24-Hour Status**—A bar that represents status over time.

---

**Table 5-3 Columns in a Compliance Matrix for a Specific SLA (continued)**

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter to Date</td>
<td>SLA compliance from the first day of the current quarter up to the current date. Click the icon in this column to see details.</td>
</tr>
<tr>
<td>Year to Date</td>
<td>SLA compliance from the first day of the current year up to the current date. Click the icon in this column to see details.</td>
</tr>
</tbody>
</table>
– Last Time Violated—A date.
– Service Level Objective Duration—The time for which the service-level objective can be in violation before being reported as in violation.
– Weight—Weighting factor for this instance in the SLA; a positive integer.
– SLA Name—Click to open an SLA Details page. See Viewing SLA Details (Compliance Matrix Details Column), page 5-6.

• Last 24 hrs—A line graph.
• Violations table with the following information:
  – Time—The time that the violation occurred.
  – Status—Either open (the value is currently in violation) or closed.
  – Duration—The amount of time that the violation was open.
  – Violated Points—Number of data points that were in violation of the service-level objective.

### Viewing Violation Details (Compliance Matrix Current Status Column)

You can open a Violation Details page from a compliance matrix and from an Instance Details page by clicking a red icon in the Current Status column or field. Table 5-4 lists the information displayed on the Violation Details page.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>Time at which the violation was recorded.</td>
</tr>
<tr>
<td>SLA Name</td>
<td>Name.</td>
</tr>
<tr>
<td>SLA Type</td>
<td>Name.</td>
</tr>
<tr>
<td>SLA Details</td>
<td>Click to open the SLA Details page. See Viewing SLA Details (Compliance Matrix Details Column), page 5-6.</td>
</tr>
<tr>
<td>Device Information</td>
<td>Details of the instance from which the violation is generated.</td>
</tr>
<tr>
<td>Status</td>
<td>Current status of the violation: either Open (if the violation is occurring) or Closed (if the violation is no longer occurring).</td>
</tr>
<tr>
<td>Duration</td>
<td>Duration for which the violation was open.</td>
</tr>
<tr>
<td>Violated Points</td>
<td>Number of violated points for the violation record.</td>
</tr>
<tr>
<td>SLA Violation Description</td>
<td>Description of the service-level objective that was violated, including the attribute name, the expected value, and, if specified, the duration.</td>
</tr>
</tbody>
</table>

### Launching the SLA Compliance History Report (Compliance Matrix History)

Click the icon in the History column to open a graphical representation of SLA compliance over a specified duration. This page provides options to generate graphs for different predefined time ranges. For more information, see Using an SLA Compliance History Report, page 3-29.
Viewing Data Points for a Time Period (Compliance Matrix Time-Period-to-Date Details)

On a compliance matrix, click any period-to-date icon (in the Previous Day, Week to Date, Month to Date, Quarter to Date, and Year to Date columns) to open a window that displays the following information:

- Compliance Objective—Expected average percent compliance for all instances in the SLA.
- Compliance Value—Calculated average percent compliance for all instances in the SLA.
- SLA Type.
- Schedule.
- Date range—Dates that start and end the data collection shown on this page.
- A table that includes information described in Table 5-5.

Table 5-5  Data Points for a Time Period

<table>
<thead>
<tr>
<th>Column</th>
<th>Description/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLA Instance</td>
<td>Device IP address or DNS name.</td>
</tr>
<tr>
<td>Attribute Details</td>
<td>Name.</td>
</tr>
<tr>
<td>Detail</td>
<td>Click to open the Instance Details page. See Viewing Instance Details</td>
</tr>
<tr>
<td>Graph</td>
<td>Click the line graph icon to open a Graph Display page.</td>
</tr>
<tr>
<td>Weight</td>
<td>Weighting assigned to the instance-attribute pair. Used in calculating the overall</td>
</tr>
<tr>
<td></td>
<td>average percent compliance of the SLA.</td>
</tr>
<tr>
<td>Violated/Total Points</td>
<td>Number of data points that violated the service-level objective over the total</td>
</tr>
<tr>
<td></td>
<td>number of data points recorded during for the time period (day, week, month,</td>
</tr>
<tr>
<td></td>
<td>quarter, or year). Only data that is recorded during the SLA schedule is included</td>
</tr>
<tr>
<td></td>
<td>in the violated and total points. A schedule that includes all hours of the day</td>
</tr>
<tr>
<td></td>
<td>includes all data points regardless of when they were recorded. A schedule that is</td>
</tr>
<tr>
<td></td>
<td>limited to business hours includes only data recorded during business hours.</td>
</tr>
<tr>
<td>Compliance Objective</td>
<td>Expected average percent compliance for all instances in the SLA.</td>
</tr>
<tr>
<td>Compliance Value</td>
<td>Percentage of time that the instance-attribute pair met the service-level objective</td>
</tr>
<tr>
<td></td>
<td>during the time period.</td>
</tr>
</tbody>
</table>

Using SLA Administration to Manage SLAs

After you define SLAs, Service Statistics Manager monitors and reports on their various aspects, you can do the following:

- Adding an SLA, page 5-9
- Editing an SLA, page 5-14
- Deleting an SLA, page 5-16

For more information, see these related topics:
Adding an SLA

You can add SLAs to:

- Categorize or organize other SLAs. Such an SLA includes a group of SLAs but does not impose an overall compliance objective on them. See Adding an SLA to Group Other SLAs, page 5-11.
- Impose an overall compliance objective on other SLAs. In such an SLA, the average percent compliance of the child SLAs must meet the compliance objective specified in the parent SLA. See Adding an SLA to Measure the Compliance of a Group of SLAs, page 5-12.
- Select instances and specify attributes and individual service-level objectives that the attribute values must meet. In such an SLA, the average percent compliance achieved by instances must meet the compliance objective for the SLA. See Adding an SLA to Measure Compliance for Instances, page 5-9.

Adding an SLA to Measure Compliance for Instances

Step 1 Select the SLA tab and click the SLA Administration link. The SLA Administration page appears.

Step 2 Click Add. The Create SLA Wizard page appears.

Step 3 Enter data as follows:

- Name—Enter a unique name.
- Owner—(Optional) Enter the name of the owner.
- Contact Information—(Optional) Enter the e-mail ID or phone number of the SLA owner.
- SLA Content—Select the Instances radio button.

Note After you create an SLA, you cannot change the selection for SLA content.

Step 4 Select the SLA Type.

Note After you create an SLA, you cannot change its SLA type.

Step 5 Do one of the following:

- Select an SLA type or a global attribute set from the list. Service Statistics Manager provides the following global attribute sets:
  - Route Group Utilization
  - System Utilization (for Unity)
  - Trunk Utilization
  - Unified CM Performance
Click **New** to add a new SLA type; after adding the SLA type, select it from the list. (See Adding an SLA Type, page 5-13.)

Click **Edit** to edit an existing SLA type before selecting it from the list. (See Editing an SLA Type, page 5-13.)

**Step 6** Select one or more schedules to apply:

a. Select the **Single** or **Multiple** radio button.

Selecting more than one schedule enables you to set different service-level objectives for different time periods. For example, response-time service-level objectives might be different during business and nonbusiness hours.

b. Select a schedule (or schedules). If you selected the **Multiple** radio button, select and move schedules from Available Schedules to Selected Schedules.

Optionally, you can edit an existing schedule or add a schedule:

- Click **Edit** to edit an existing schedule before selecting it from the list. (See Editing a Schedule When Configuring Custom Graphs, Reports, and SLAs, page 5-18.)
- Click **New** to add a new schedule; after adding the schedule, select it. (See Adding a Schedule When Configuring Custom Graphs, Reports, and SLAs, page 5-17.)

**Step 7** Enter a percentage for SLA Compliance Objective.

**Step 8** Click **Next**. Service Statistics Manager displays the Create SLA (Step 2 of 3) page.

- The SLA type that you select governs the availability of monitor type and related monitor instances on the Create SLA (Step 2 of 3) page.

**Step 9** Select the following to include in the SLA:

a. **Group Filter**—Select **No Filter**; alternatively, to select groups, use the Shift or Ctrl key. Optionally, use the Search field to find a group.

b. **Monitor Types**—Select the monitor types to associate with the SLA.

**Step 10** Click **Next**. The Monitor Instance selection box appears.

**Step 11** Select the monitor instances to associate with the SLA.

**Step 12** Click **Next**. Service Statistics Manager displays the Create SLA (Step 3 of 3) page.

For each schedule that you selected on page 1, a table identifies the attributes for the selected instances in these columns:

- **Monitor Type**—Monitor type.
- **Device Name**—Instance name.
- **Instance**—Instance IP address.
- **Attribute**—An attribute that is included in the selected SLA type.

Additional columns are included; you will enter data in them in **Step 13** to set service-level objectives for the particular schedule.
Step 13  Set the service-level objectives for each instance-attribute pair. To provide the same values for multiple instance-attribute pairs, go to Step 14. Otherwise, modify values for any row of instance-attribute pairs:

- **Service Level Objective Condition**—Select one:
  - Less than or equal
  - Greater than or equal

- **Service Level Objective Value**—Enter a value that the attribute must meet to be in compliance.

- **Minimum Duration**—Enter the number of minutes that the value must remain outside of the service-level objective before it is reported as a violation.

- **Weighting**—To ignore any violations on a particular instance, enter zero. Otherwise, enter a whole number greater than zero to define the relative importance of the attribute within the SLA; weighting is used in calculating the average compliance of all instances in the SLA.

- **Financial Impact**—Enter the amount of financial loss (per hour) that will be caused if the service-level objective is not met.

Step 14  To provide the same values for more than one instance-attribute pair, do the following:

a. Select the instances or select the **Select All** check box.

b. Under the Update the Rows Selected Above Using the Following Values heading, enter values in these fields:
   - **Condition**—Select Greater than or equal or Less than or equal from the list.
   - **Value**—Enter the service-level objective value for the selected instance-attribute pairs.
   - **Duration**—Enter the number of minutes that the service-level objective value must remain in the violation range before it is reported as a violation.
   - **Weighting**—To ignore any violations on the selected instances, enter zero. Otherwise, enter a whole number greater than zero to define the relative importance of the attribute within the SLA. Weighting is used in SLA computation. For example, attributes A, B, and C have associated weighting of 5, 10, and 15. In this case, attribute C is three times as important as A, and B is twice as important as A.
   - **Financial Impact**—Enter the amount of financial loss (per hour) that will be caused if the service-level objective is not met.

c. Click **Apply**.

Step 15  Click **Finish**. Service Statistics Manager creates the new SLA and returns to the SLA Administration page, displaying the new SLA in the list.

While creating the SLA, Service Statistics Manager also creates alarm thresholds for all listed monitor instances with the duration specified and the corresponding service-level objective (condition and value).

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**Adding an SLA to Group Other SLAs**

Use this procedure to create an SLA that includes a group of SLAs but does not impose an overall compliance objective on them.

Step 1  Select the **SLA** tab and click the **SLA Administration** link. The SLA Administration page appears.

Step 2  Click **Add**. The Create SLA Wizard page appears.
Using SLA Administration to Manage SLAs

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Step 3  Enter data as follows:

- Name—Enter a unique name.
- Owner—(Optional) Enter name of the owner.
- Contact Information—(Optional) Enter the e-mail ID or phone number of the SLA owner.
- SLA Content—Select the **SLAs** radio button.

Note  After you create an SLA, you cannot change the selection for SLA content.

- Use this SLA for grouping only and not to calculate Aggregate Compliance values—Select this check box.

Step 4  Click **Next**. Service Statistics Manager displays the Create SLA (Step 2 of 2) page.

Step 5  Select the SLAs to include; use the arrows to move them between Available SLAs and Selected SLAs.

Step 6  Click **Finish**.

Adding an SLA to Measure the Compliance of a Group of SLAs

This SLA will measure the average compliance of other SLAs against a compliance objective that you set.

Step 1  Select the **SLA** tab and click the **SLA Administration** link. The SLA Administration page appears.

Step 2  Click **Add**. The Create SLA Wizard page appears.

Step 3  Enter data as follows:

- Name—Enter a unique name.
- Owner—(Optional) Enter name of the owner.
- Contact Information—(Optional) Enter e-mail ID or phone number of the SLA owner.
- SLA Content—Select the **SLAs** radio button.

Note  After you create an SLA, you cannot change the selection for SLA content.

- Use this SLA for grouping only and not to calculate Aggregate Compliance values—Ensure that this check box is cleared.
- Compliance Objective—Enter the expected average compliance (%) for the SLAs that you plan to include.

Step 4  Click **Next**. Service Statistics Manager displays the Create SLA (Step 2 of 3) page.

Step 5  Select the SLAs to include; use the arrow to move them from Available SLAs to Selected SLAs.

Step 6  Click **Next**. Service Statistics Manager displays the Create SLA (Step 3 of 3) page with the selected SLAs in a table that includes these columns: SLA, SLA Type, and Weight.

Step 7  Enter a weight for each SLA. (Default value: 1). To ignore any violations on a particular SLA, enter zero (0). Otherwise, enter a whole number greater than zero to define the relative importance of the attribute within the SLA; weighting is used to calculate the average percent compliance.
Adding an SLA Type

An SLA type is an attribute set that is used only when defining an SLA. An SLA type specifies the monitor types from which you can select instances to include in an SLA. AN SLA type also specifies attributes to measure for each monitor type.

This procedure explains how to create an SLA type while you are creating an SLA.

Note

You can also create an SLA type by adding an attribute set and selecting SLA Type as the attribute set type; to do so, see Adding an Attribute Set, page 7-3.

Step 1

Navigate to the Create SLA (Step 1 of 3) window.

Step 2

For SLA type, click New. Service Statistics Manager displays the Add Attribute Set window.

Step 3

Select monitor types to associate with the SLA type by doing one of the following:

- Select from the list
- Use the Search for field to find and select monitor types.

Step 4

Click Next. Service Statistics Manager populates the attributes list with corresponding attributes.

Note

If you selected multiple monitor types, an attributes list is displayed for each monitor type, one above another.

Step 5

Scroll down to each attribute list and select the attributes to associate with the SLA type in one of these ways:

- Using the list—For multiple selections, use the Ctrl and Shift keys.
- Using the Search for field to find and select monitor types.

Step 6

Click Next. Service Statistics Manager records the selection and displays the next page.

Step 7

Complete the attribute set:

- Enter a name.
- Select all attributes to include in this set.
- Click Finish. A confirmation message is displayed and the SLA Administration page appears.

Editing an SLA Type

Step 1

On the Create SLA (Step 1 of 3) page, select the SLA type to edit from the list.

Step 2

Click Edit. Service Statistics Manager displays the Edit/View SLA Type page.

Step 3

Click Add Attributes to add new attributes to the existing SLA Type. Adding attributes is similar to Custom SLA Type creation.
Using SLA Administration to Manage SLAs

Chapter 5   Managing SLAs and Monitoring Compliance

• Click Delete to remove the selected Attributes.
• Click Cancel to exit.
• Click Finish to complete editing.

Editing an SLA

What you can change when you edit an SLA depends on the SLA content type—SLAs, SLAs for grouping only, or Instances. You cannot change the SLA content type.

Step 1
Select the SLA tab and click the SLA Administration link. The SLA Administration page appears, displaying SLAs in a table.

Note  If the SLA type is a dash, the SLA is a nested SLA; go to Editing a Nested SLA, page 5-15.

Step 2
Click the Edit button that corresponds with the SLA that you want to edit. The Edit SLA Wizard page appears.

Step 3
Update any of the following values:
• Name—Unique name for the SLA.
• Owner—Name of the owner.
• Contact Information—E-mail ID or phone number of the SLA owner.
• Schedule—You can select schedules different from those that are currently selected. (You cannot change the number of schedules that are associated with this SLA.)
• SLA Compliance Objective—Enter the compliance measure for the SLA. For the SLA to be in compliance, the calculated average percent compliance of the instances in the SLA must meet or exceed this value.

Step 4
Click Next. Service Statistics Manager displays the next page.

Step 5
From here, you can add or delete instances:
To add an instance, click Add. The SLA SLA Name—Select Instances page appears; do the following:
a. Select the Group Filter to associate with the SLA. To select multiple group filters, use the Shift or Ctrl keys. Alternatively, use the Search for field to search for and select a group.
b. Select the monitor types to associate with the SLA. To select multiple monitor types, use the Shift or Ctrl keys. Alternatively, use the Search for field to search for and select monitor types.
c. Select the monitor instances to add to the SLA. These are instances of the monitor type.
d. Click Apply.
To delete an instance:
a. Select the instance and click Delete. Service Statistics Manager displays a confirmation message.
b. Click OK.

Step 6
Click Next. Service Statistics Manager displays the next page of the wizard. You can modify service-level objectives and costs for the instances from here.
Step 7  To provide the same values for one or more instances, go to Step 8. Otherwise, use this procedure to modify the values for each instance-attribute pair individually:

a. Change any of these values:
   - Service Level Objective Condition—Select the condition from the list.
   - Service Level Objective Value—Enter the expected value for the instance-attribute pair.
   - Minimum Duration—Enter the number of minutes that the service-level objective value must remain in the violation range before it is reported as a violation.
   - Weighting—To ignore any violations on a particular SLA instance, enter zero. Otherwise, enter a whole number greater than zero to define the relative importance of the attribute within the SLA; weighting is used in computation. For example, attributes A, B, and C have associated weighting of 5, 10, and 15. In this case, attribute C is three times as important as A, and B is twice as important as A.
   - Financial Impact—Enter the amount of financial loss (per hour) that will be caused if the service-level objective is not met.

b. Click Apply.

Step 8  To provide the same values for multiple monitor types, do the following:

a. Select the Select All check box or select individual check boxes in the Update column.

b. Under the Update the Rows Selected Above Using the Following Values heading, enter values in these fields:
   - Condition—Select the Service Level Objective condition from the list.
   - Value—Enter the service-level objective value.
   - Duration—Enter the number of minutes that the service-level objective value must remain in the violation range before it is reported as a violation.
   - Weighting—Enter an integer; the default value is 1.
   - Financial Impact—Enter the amount of financial loss (per hour) that will be caused if the service-level objective is not met.

c. Click Apply.

Step 9  Click Finish. Service Statistics Manager updates the SLA and returns to the SLA Administration page.

---

Editing a Nested SLA

A nested SLA contains other SLAs. The SLA type for a nested SLA is a dash; you can see the SLA type displayed on the SLA Administration page and on the Compliance Matrix page.

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>When you edit an SLA, you cannot change the SLA content type.</strong></td>
</tr>
</tbody>
</table>

Step 1  Select the SLA tab and click the SLA Administration link. The SLA Administration page appears, displaying SLAs in a table.
Note: If the SLA type is not a dash, the SLA is not nested; instead, use the procedure Editing an SLA, page 5-14.

Step 2 Click the Edit button that corresponds with the SLA that you want to edit. The Edit SLA Wizard page appears.

Step 3 Update any of the following values:
- Name—Unique name for the SLA.
- Owner—Name of the owner.
- Contact Information—E-mail ID or phone number of the SLA owner.
- Compliance Objective—This field appears only if the SLA is used to calculate aggregated compliance for other SLAs. Enter the expected average compliance (%) for the SLAs that are included in this SLA.

Step 4 Click Next. Service Statistics Manager displays the Create SLA (Step 2 of n) page.

Step 5 Select the SLAs to include; use the arrows to move them between Available SLAs and Selected SLAs.

Step 6 If the SLA is used to calculate aggregated compliance for other SLAs:
   a. Click Next. Service Statistics Manager displays the Create SLA (Step 3 of n) page, displaying SLAs in a table with these columns: SLA, SLA Type, and Weight.
   b. Enter a weight for each SLA. (Default value: 1). To ignore any violations on a particular SLA, enter zero (0). Otherwise, enter a whole number greater than zero to define the relative importance of the attribute within the SLA; weighting is used to calculate the average percent compliance.

Step 7 Click Finish.

Deleting an SLA

Step 1 Select the check box under the Select column corresponding to the SLA that you want to delete.

Step 2 Click Delete. If the SLA is not included in a nested SLA, Service Statistics Manager deletes it and refreshes the SLA Administration page.

Step 3 If the SLA is included in a nested SLA, Service Statistics Manager displays a table listing the affected SLAs. Click OK or click Cancel.

Defining Schedules

Service Statistics Manager collects data without reference to schedules. Schedules, however, enable you to select from the collected data only the values that were recorded during the specific time windows that are defined in a schedule.

Service Statistics Manager provides some default schedules:
- 24x7—Includes all monitored attribute values recorded at any time during the entire week.
A schedule includes one or more defined time periods. Schedule criteria can be inclusive (including selected hours of the day and days of the week) and exclusive (excluding, for example, a selected hour).

You can also define your own schedules within the Service Statistics Manager user interface:

- From the Administration tab—See Configuring Schedules, page 7-5.
- From windows where you can create or edit:
  - SLAs—An SLA can have one or more schedules associated with it. When making SLA computations, Service Statistics Manager uses the schedules to determine which monitored attribute values to include. Schedules help put SLA compliance computation in the right perspective without distorting the values by including invalid periods.
  - Reports—A report can have one schedule associated with it.
  - Custom graphs and graph-based views—A graph can have one schedule associated with it.

When configuring an SLA, a report, or a custom graph, you must select a schedule; at that point, you can also click the **New** button and open the Create New Schedule page.

### Adding a Schedule When Configuring Custom Graphs, Reports, and SLAs

Use this procedure to create a new schedule from the Create New Schedule window.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Enter a name for the schedule.</td>
</tr>
</tbody>
</table>
| Step 2 | Define times to include in the schedule by selecting the **Inclusion** radio button and selecting the **Select All Days** check box; or, to define a time range for a single day:  
  a. Select the check box for one of the days (listed beside Days).  
  b. Select the start time and end time from the list.  
  c. Click **Add**. Service Statistics Manager adds the new time range to the table in the lower portion of the window. |
| Step 3 | To define an exclusion period:  
  a. Select the **Exclusion** radio button.  
  b. Select one of the following, and the criteria for it:  
    - One Time Setting—Select the From and To time and date period to exclude.  
    - Monthly—Select the number of days, the week of the month (First, Second...), and the hours to exclude.  
  c. Click **Add**. Service Statistics Manager adds the new time range to the table in the lower portion of the window. |

**Note**  
If you define an exclusion period, it takes precedence over defined inclusion periods.

| Step 4 | Repeat **Step 2** or **Step 3** until you have ensured that the computation timings for all days are correct. |
| Step 5 | Click **Done**. Service Statistics Manager displays a confirmation message. |
Step 6  Click Close. Service Statistics Manager updates the database and returns to the previous window. The new schedule is available in the list.

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Editing a Schedule When Configuring Custom Graphs, Reports, and SLAs

Note  You can alternatively edit a schedule from the Advanced pane of the Administration tab. See Editing a Schedule, page 7-6.

When adding or editing an SLA, report, or custom graph, you must select a schedule. The procedures to configure SLAs, reports, and custom graphs are different from one another:

- Adding an SLA, page 5-9
- Editing an SLA, page 5-14
- Creating Custom Graphs, page 4-1
- Creating a Report—Page 3 of the Report Wizard (Display, Schedule, and E-Mail Options), page 3-53
- Editing a Report, page 3-55

However, in each procedure, when you must select a schedule, you can use this procedure to edit an existing schedule.

Note  Any changes that you make to a schedule affect all reports, custom graphs, and SLAs that are associated with the schedule. Unless you are sure that the change is appropriate for all, consider creating a new schedule or using a different schedule for your purpose.

Step 1  When configuring an SLA, a report, or a custom graph and you must select a schedule, to edit an existing schedule, select it and click the Edit button that is displayed next to the schedule list.

If the schedule is associated with another SLA, report, or custom graph, a confirmation window lists them and asks whether you want to continue.

Step 2  If appropriate, click OK. Service Statistics Manager displays the Edit Schedule window. Existing schedule criteria are displayed in the table in the lower portion of the window.

Step 3  Update the schedule as needed:

- To delete criteria from the schedule, select them from the table and click the Delete button above and to the right of the table.

Caution  Be sure to click the Delete button above and to the right of the table. The Delete Schedule button below the table deletes the entire schedule.

- To add criteria to the schedule, select the Inclusion or Exclusion radio button, select the appropriate time period to include or exclude, and click Add.

Step 4  When you have finished updating the schedule, click Done. Service Statistics Manager stores the changes and closes the window.
Deleting a Schedule

When configuring an SLA, a report, or a custom graph and you must select a schedule, you can also delete a schedule at that time.

**Step 1** When configuring an SLA, a report, or a custom graph and you must select a schedule, select the schedule that you want to delete and click the **Edit** button that is displayed next to the schedule list.

If the schedule is associated with another SLA, report, or custom graph, a confirmation window lists them and asks whether you want to continue. If appropriate, click **OK**.

**Step 2** Click the **Delete Schedule** button beneath the table. Service Statistics Manager displays a confirmation message:

- If the schedule is still associated with an SLA or report, these are listed. You cannot complete this procedure. You must either delete these SLAs and reports or reconfigure them to use a different schedule before you try to delete the schedule again.
- If the schedule is not associated with an SLA or a report, click **OK**.