Service Provider Utilities (formerly Business Services)

SL1 version 11.2.0

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Chapter

1

Overview of Service Provider Utilities (formerly Business Services)

Introduction

SL1 provides multiple types of services and policies that allow you to manage the business aspects of monitoring and managing a network. These services and policies are:

- ***Bandwidth Billing Policies***. Determines how an organization will be charged for bandwidth usage.
- ***Distribution Lists***. A list of users, external contacts, and/or vendors to whom you want to send an email message from SL1.
- ***Product Catalogs***. A list of product SKUs that allow you to track and bill customers for products and services rendered.
- ***Product Subscriptions***. A list of products that have been assigned to an organization, device, interface, or asset record.
- ***Service Notifiers***. Allows you to send a message from SL1 to distribution lists, selected users, external accounts, and vendors.
- ***Service Usage Policies***. Allows you to define and view composite reports based on collected information from multiple devices.

> **NOTE:** While the Service Provider Utilities were called "Business Services" in the Classic user interface of SL1, these utilities are not connected to the new Business Services on the **Business Services** page of the new user interface. For more information, see the ***Business Services*** manual.

Who Should Read This Manual?

This manual is intended for administrators who manage vendors and business services in SL1.

Chapter

2

Bandwidth Billing

Introduction

Bandwidth billing policies determine how an organization will be charged for bandwidth usage.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ( ).
- To view a page containing all the menu options, click the Advanced menu icon ( ).

This chapter includes the following topics:

What is a Bandwidth Billing Policy?

Bandwidth billing policies determine how an organization will be charged for bandwidth usage. When you define a bandwidth billing policy, the policy must be associated with an organization. The policy can be applied to one or more network interfaces in that organization. A single bandwidth billing policy cannot be applied to interfaces in multiple organizations.

When a user assigns network interfaces to a billing policy, SL1 creates a virtual interface. The virtual interface represents the network interface, as monitored by the billing policy. For example, if a billing policy drops 5 percent of the highest bandwidth readings, graphs for the virtual interface would not include those readings.

If multiple interfaces from a single device are assigned to a single billing policy, the virtual interface represents the "sum" of the interfaces assigned to the billing policy.

For example, suppose a device has two network interfaces. Suppose both interfaces are assigned to a single billing policy. The virtual interface for the device will represent both network interfaces.

You can view a list of virtual interfaces and their associated reports in the **Virtual Interfaces** page (Registry > Networks > Virtual Interfaces).

SL1 includes tools that allow you to define policies for interface billing, use those policies to monitor interfaces, and generate reports (bills) for the monitored interfaces.

To define bandwidth billing policies in SL1, you must perform two tasks:

- Define product SKUs for each type of bandwidth-billing structure or use existing product SKUs. You can view, edit, and create product SKUs in the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog). See the ***Product Catalogs*** section for more information.
- Define policies for bandwidth billing. This is described in this chapter.

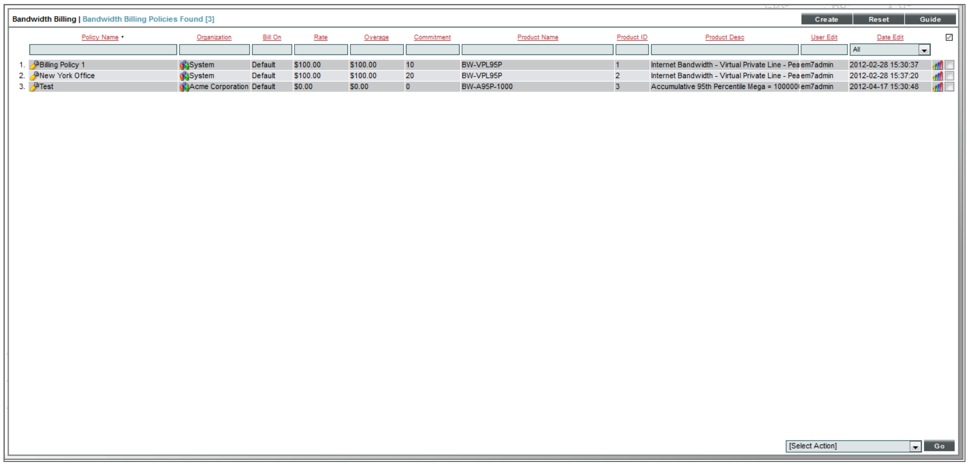
Viewing and Filtering the List of Bandwidth Billing Policies

You can view, create and manage Bandwidth Billing Policies from the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).

The **Bandwidth Billing Policies** page displays information on existing bandwidth billing policies and allows you to search for policies, among other options.

To view a list of bandwidth billing policies:

1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. The **Bandwidth Billing Policies** page displays the following about each bandwidth billing policy:



NOTE: For users of type "user", the **Bandwidth Billing Policies** page displays only bandwidth billing policies that are aligned with the same organization as the user.

- ***Policy Name***. Name of the billing policy.
- ***Organization***. Organization to be billed according to the billing policy.
- ***Bill On***. Day of the month on which each billing cycle begins.
- ***Rate***. Charge per unit for bandwidth specified in the customer's contract.
- ***Overage***. Charge per unit when the customer exceeds the base commitment.
- ***Commitment***. Amount of base bandwidth/transfer specified in the customer's contract.
- ***Product Name/ID***: Alphanumeric ID of the SKU associated with the billing policy.
- ***Product Description***. Description of the SKU associated with the billing policy.
- ***Edit User***. User who created or last edited the bandwidth billing policy.
- ***Edit Date***. Date the bandwidth billing policy was created or last edited.

Filtering the List of Bandwidth Billing Policies

The **Bandwidth Billing Policies** page includes eleven filters, in the top row in the list of policies. You can specify one or more parameters to filter the display of bandwidth billing policies. Only bandwidth billing policies that meet all the filter criteria will be displayed in the **Bandwidth Billing Policies** page.

You can filter by one or more of the following parameters. The list of bandwidth billing policies is dynamically updated as you select each filter.

- For each filter except ***Date Edit***, you must enter text to match against. SL1 will search for billing policies that match the text, including partial matches. Text matches are not case-sensitive. You can use the following special characters in each filter:

- , (comma). Specifies an "or" operation. For example:

  "dell, micro" would match all values that contain the string "dell" OR the string "micro".

- & (ampersand). Specifies an "and" operation. For example:

  "dell & micro" would match all values that contain the string "dell" AND the string "micro".

- ! (exclamation mark). Specifies a "not" operation. For example:

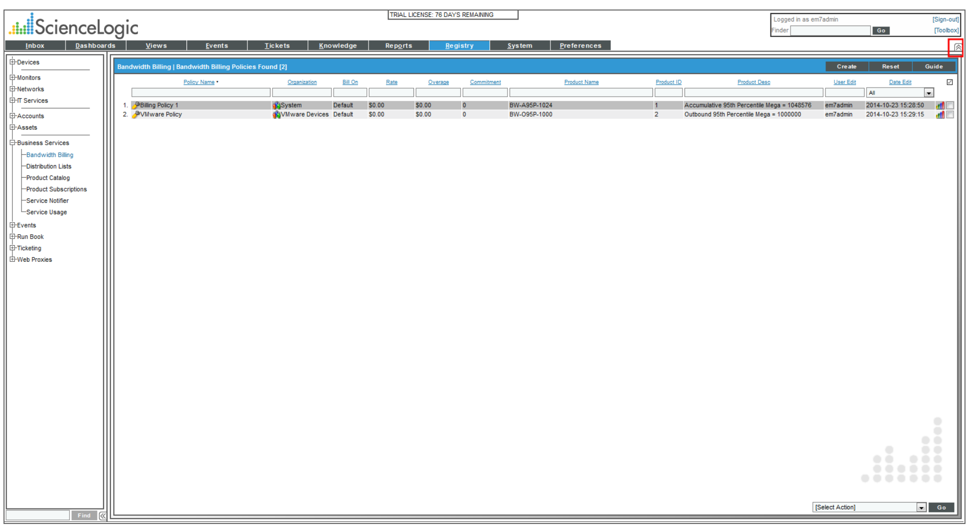
  "!dell" would match all values that do not contain the string "dell".

- ***Policy Name***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching name.
- ***Organization***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that are associated with a matching organization.
- ***Email Address***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching email address.
- ***Bill On***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching "bill on" date.
- ***Rate***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching billing rate.
- ***Overage***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching overage charge.
- ***Commitment***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching commitment value.
- ***Product Name***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching product name.
- ***Product ID***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching product ID.
- ***Product Desc***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching product description.

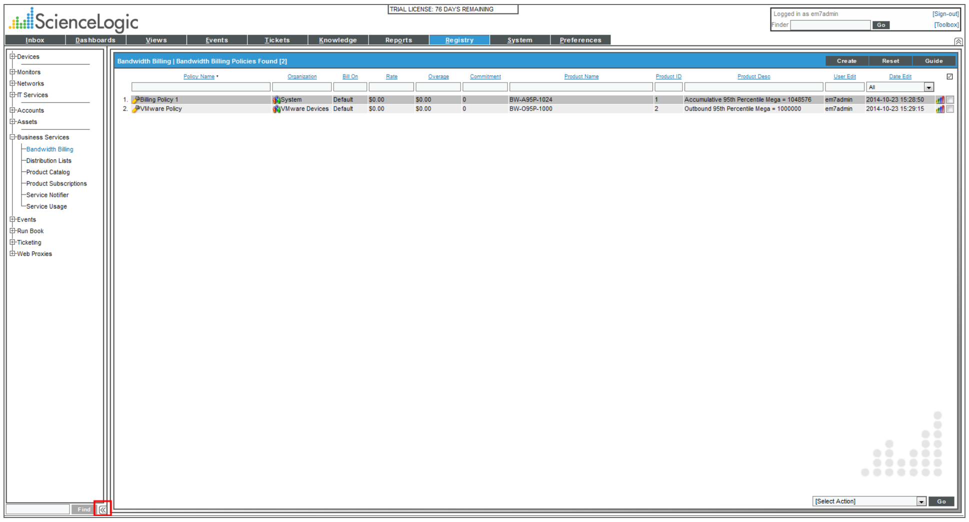
- ***User Edit***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Bandwidth Billing Policies** page will display only bandwidth billing policies that have a matching "edited by" value.
- ***Date Edit***. You can select from a list of time periods. The **Bandwidth Billing Policies** page will display only bandwidth billing policies that have been created or edited within that time period. The choices are:
  - *All*. Display all escalation policies that match the other filters.
  - *Last Minute*. Display only policies that have been created within the last minute.
  - *Last Hour*. Display only policies that have been created within the last hour.
  - *Last Day*. Display only policies that have been created within the last day.
  - *Last Week*. Display only policies that have been created within the last week.
  - *Last Month*. Display only policies that have been created within the last month.
  - *Last Year*. Display only policies that have been created within the last year.

Customizing the Bandwidth Billing Policies Page

You can customize the display of the pages under Business Services, such as the **Bandwidth Billing Policies** page, by hiding the header bar and navigation bar. To hide the header bar, click on the arrow in the top right of the page (above the **[Guide]** button).



To hide the navigation bar, click on the arrow at the bottom left of the page (next to the **[Find]** button).

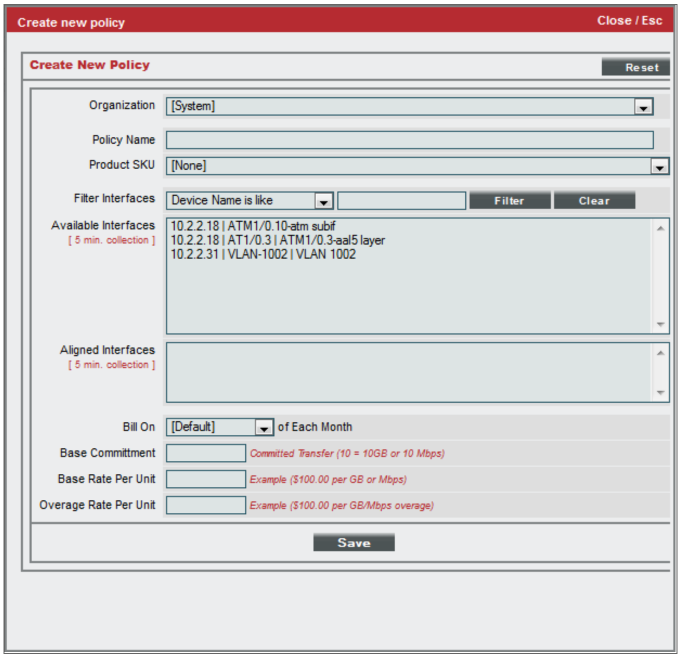


Creating a Bandwidth Billing Policy

You can create new bandwidth billing policies from the **Bandwidth Billing Policies** page. To create a new bandwidth billing policy:

> **NOTE:** Users of type "user" can create bandwidth billing policies only for organizations that are aligned with the user. These bandwidth billing policies can therefore contain only devices and interfaces aligned with the same organization as the user.

1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. In the upper right of the page, click the **[Create]** button.
3. The **Bandwidth Billing Editor** modal page appears. Provide a value in each field:



- ***Organization***. Organization to assign to the billing policy. Users of type "administrator" can select from a list of all organization in SL1. Users of type "user" can select from a list of all organizations of which they are a member.
- ***Policy Name***. Name of the billing policy.
- ***Product SKU***. Select a SKU. The SKUs selected in the **Product Manager** page will appear in this drop-down list.
- ***Filter Interfaces***. Specifies the parameter you want to use to filter the list of interfaces. You can select from the following:
  - *Device Name is like*. Filter by device name. Only interfaces on the specified device(s) will appear in the *Available Interfaces* field.
  - *Organization is like*. Filter by organization name. Only interfaces associated with the specified organization(s) will appear in the *Available Interfaces* field.
  - *Interface Name is like*. Filter by interface name. Only interfaces with names that match the search string will appear in the *Available Interfaces* field.
  - *Interface Alias is like*. Filter by interface alias. Only interfaces with aliases that match the search string will appear in the *Available Interfaces* field.
  - *Interface Description is like*. Filter by interface description. Only interfaces with descriptions that match the search string will appear in the *Available Interfaces* field.

- ***regular expression***. In this field you manually enter the text to filter by. You can use the following special characters in this field:

  * Match zero or more characters preceding the asterisk. For example:

  "dell*" would match "dell", "dell2650", "dell7250" and "dell1700N".

  "*dell*" would match "mydell", "dell", "dell2650", "dell7250" and "dell1700N".

  % Match zero or more characters preceding the asterisk. This special character behaves in the same way as the asterisk.

Click the **[Filter]** button. The ***Available Interfaces*** field is refreshed and displays only interfaces that match the search parameters.

To go back to the entire list of interfaces, click the **[Clear]** button.

- ***Available Interfaces***. By default, all interfaces on all devices associated with the specified organization will appear in this list. If you use the filtering fields, the list of interfaces that match the search parameters are displayed in this field. When you select an interface from this list, SL1 collects and manages billing data for that interface, using the parameters of the billing policy. To select multiple entries, hold down the **<Ctrl>** key and left-click the entries.

> **NOTE:** When you assign a network interface to a billing policy, SL1 creates a virtual interface. The virtual interface represents the network interface, as monitored by the billing policy. For example, if a billing policy drops 5 percent of the highest bandwidth readings, graphs for the virtual interface would not include those readings. If multiple interfaces from a single device are assigned to a billing policy, the virtual interface represents the "sum" of the interfaces assigned to the billing policy. For example, suppose a device has two network interfaces. Suppose both interfaces are assigned to a single billing policy. The virtual interface for the device will represent both network interfaces.

> **CAUTION:** After you create a bandwidth billing policy, SL1 will not prevent a user from changing the *Collection Frequency* setting for the associated interfaces. If the collection frequency of an interface that is already included in a bandwidth billing policy is changed, SL1 will calculate incorrect bandwidth billing data.

- ***Aligned Interfaces***. Appears only for existing billing policies. Displays the interfaces already assigned to this billing policy. To un-assign an interface, select it.
- ***Bill On***. Day of the month on which each billing cycle begins.
- ***Base Commitments***. Amount of base bandwidth/transfer specified in the customer's contract.
- ***Base Rate Per Unit***. Charge per unit for bandwidth specified in the customer's contract.
- ***Overage Rate Per Unit***. Charge per unit when the customer exceeds the base commitment.

4. Click the **[Save]** button to save the bandwidth billing policy. Clicking the **[Reset]** button will clear and refresh the fields in the **Bandwidth Billing Editor** page.
5. The new bandwidth billing policy will appear in the list in the **Bandwidth Billing Policies** page.

Editing a Bandwidth Billing Policy

You can edit a bandwidth billing policy from the **Bandwidth Billing Policies** page. To edit a bandwidth billing policy:

> **NOTE:** For users of type "user", the **Bandwidth Billing Policies** page displays only bandwidth billing policies that are aligned with the same organization as the user.

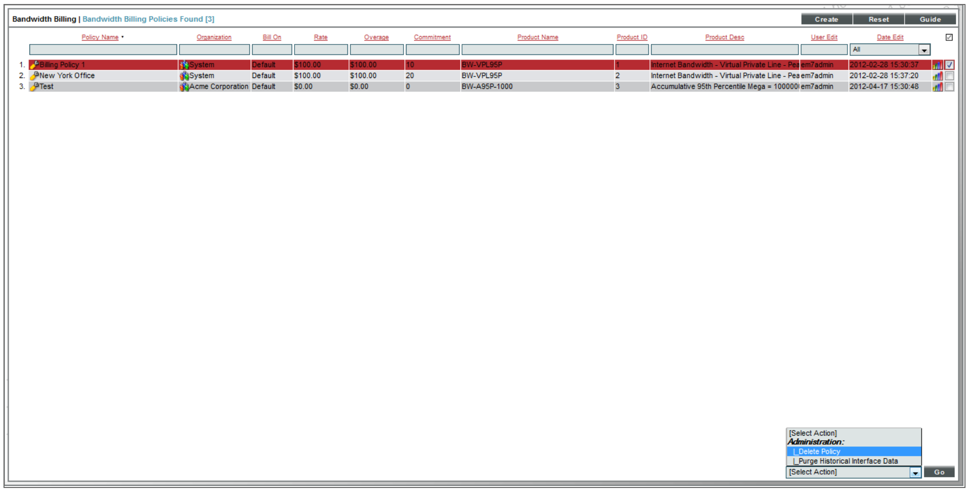
1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. Find the bandwidth billing policy you want to edit. Click its wrench ( ) icon.
3. The **Bandwidth Billing Editor** page appears with the same fields described in ***Creating a Bandwidth Billing Policy***. You can edit the values in one or more fields.
4. Click the **[Save]** button to save your changes. Clicking the **[Refresh]** button will discard all changes and reset all fields with their previous content.

Deleting One or More Bandwidth Billing Policies

You can delete bandwidth billing policies from the **Bandwidth Billing Policies** page. To delete one or more bandwidth billing policies:

1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. Find the bandwidth billing policy or policies you want to delete. Select the checkbox (☑) for each policy that you want to delete. To select all bandwidth billing policies, select the checkmark in the upper right of the page.

3. In the ***Select Action*** menu in the lower right of the page, select *Delete Policy*.
4. Click the **[Go]** button.



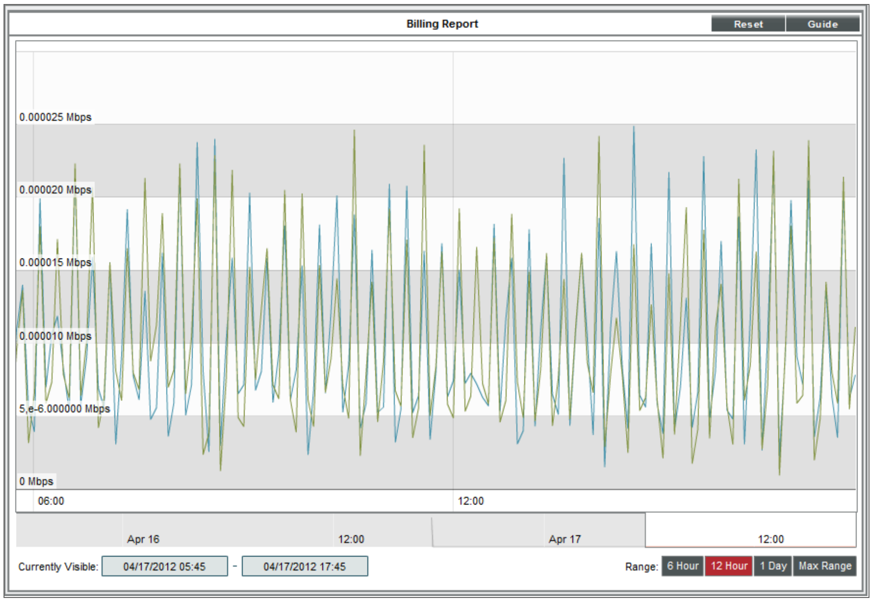
5. You will be asked if you want to delete the selected bandwidth billing policies. Click the **[OK]** button to continue to delete the policy or policies.
6. The selected bandwidth billing policies will be deleted.

Viewing Virtual Interface Data

You can view the data associated with a virtual interface from the **Bandwidth Billing Policies** page. The report displays the Mbps in and Mbps out for the virtual interface. To view a report for a virtual interface associated with a bandwidth billing policy:

1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. In the **Bandwidth Billing Policies** page, find the policy you want to view a report on. Click its bar graph icon ().

3. The **Billing Report** page appears and displays the following graphical report:



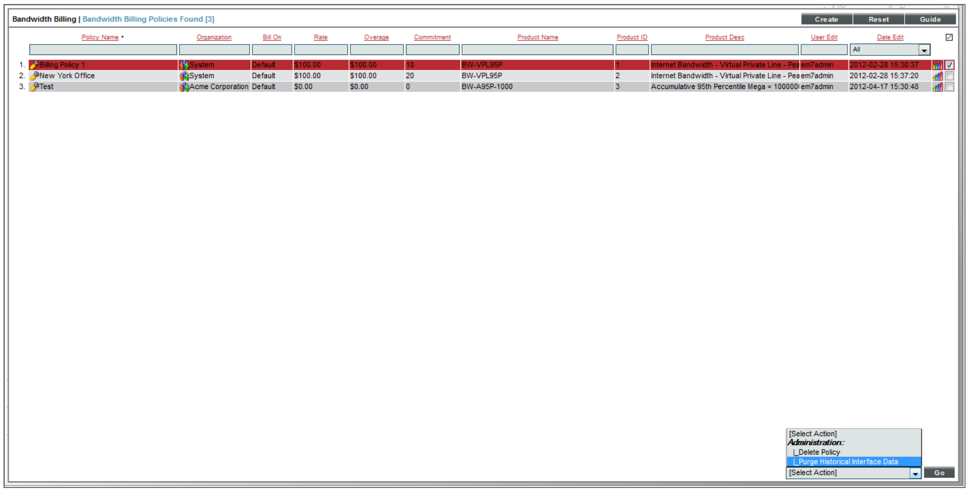
- The y-axis displays bandwidth usage, in Mbps.
- The x-axis displays time. The increments vary, depending upon the selected data type (from the **[Options]** menu) and the date range (from the **Date Range Selection** pane).
- Each parameter is represented by a color-coded line.
- Mousing over any point in any line displays the high, low, and average value at that time-point in the **Data Table** pane.
- You can use your mouse to scroll the report to the left and right.
- In a graph of normalized data, clicking on a data point zooms in on that time period and shows the non-normalized data.

Purging Billing Data

From the **Bandwidth Billing Policies** page, you can purge all the historical bandwidth information associated with a bandwidth billing policy. All billing data associated with the policy will be deleted. The policy starts collecting and computing again, but with a "clean slate". To purge historical data associated with a bandwidth billing policy:

1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. In the **Bandwidth Billing Policies** page, find the policy for which you want to purge historical data. Select its checkbox (☑).
3. Select the checkbox for each policy you want to delete and purge.

4. In the ***Select Action*** drop-down field in the lower right of the page, select *Purge Historical Interface Data*.



5. Click the **[Go]** button.

6. You will be asked if you want to alter or remove the selected bandwidth billing policies. Click the **[OK]** button to purge the data.

7. The billing data for each selected bandwidth billing policy will be deleted.

Generating a Bandwidth Billing Report

You can use the ***Interface Billing*** custom report to generate a billing report that includes the costs incurred for one or more bandwidth billing policies. For a description of how to generate the Interface Billing report, see the ***Creating a Bandwidth Billing Report*** example. For more information on generating and scheduling custom reports, see the ***Reports*** manual.

Bandwidth Billing Calculations

The report includes the following three dollar amounts for each selected bandwidth billing policy:

- ***Base Amount ($)***
- ***Overage Amount ($)***
- ***Total Bill ($)***

To calculate these values, the report used the data collected for the virtual interface associated with the bandwidth billing policy, and the values from the following fields in the product SKU and bandwidth billing policy:

- ***Bill On (from billing policy)***. This value is used to adjust the time period for the policy data.
- ***Base Commitment (from billing policy)***. After the bandwidth usage for the time period is calculated, this value is used to calculate the ***Base Amount ($)*** value.

- ***Base Rate Per Unit (from billing policy)***. After the bandwidth usage for the time period amount is calculated, this value is used to calculate the ***Base Amount ($)*** value.
- ***Overage Rate Per Unit (from billing policy)***. After the bandwidth usage for the time period amount is calculated, this value is used to calculate the ***Overage Amount ($)*** value.
- ***Interface Service Type (from SKU)***. This value is used to calculate the total amount of bandwidth the customer is billed for.
- ***Interface Percentile Rate (from SKU)***. This value is used to calculate the total amount of bandwidth the customer is billed for.

To calculate the billing amounts, the following calculations are performed when the report is generated:

1. The report calculates the time period for each policy:

    - If a report span of one month was selected in the report input form, the time span is adjusted based on the ***Bill On*** value defined in the billing policy. If the ***Bill On*** value is between 2 and 28, the report adjusts the start and end times forward so that the time span starts on the correct day. For example, if on the report input form, you select *Last Month* as the time span and a billing policy has a ***Bill On*** value of 3, the time span used by the report for that policy will start at the beginning of the 3rd day of last month and end at the end of the 2nd day of the current month. The time span for a policy is not adjusted if the bill on value is less than 2 or greater than 28.
    - If the time span for a billing policy is not adjusted , the time period used by the report is the time span that you specified in the input form.

2. The report calculates the total amount of bandwidth the customer is billed for. For ***Interface Service Types*** of "Committed Transfer", this amount is the total amount of inbound and outbound bandwidth used for the entire billing period, i.e. the sum of all collected inbound and outbound values. For the other ***Interface Service Types***, the calculation of this value is based on the collected data for a single poll. First, the report calculates a value for each poll during the time span. The value is different for each ***Interface Service Type***:

    - ***Percentile In & Out***: The value for each poll is the combined inbound & outbound utilization, measured in the units specified in the SKU.
    - ***Percentile Inbound***: The value for each poll is the inbound utilization, measured in the units specified in the SKU.
    - ***Percentile Outbound***: The value for each poll is the outbound utilization, measured in the units specified in the SKU.
    - ***Percentile: Highest Poll***: The value for each poll is either the inbound utilization or the outbound utilization, whichever is higher, measured in the units specified in the SKU.

3. For ***Interface Service Types*** other than "Committed Transfer", the report orders the data for each poll from the lowest value to the highest value. The value at the percentile specified in the Interface Percentile Rate specified in the SKU is selected. For example, if there were 100 polls during the time period specified in the report, the values would be ordered with the lowest value at position 1 and the highest value at position 100. If the ***Interface Percentile Rate*** specified in the SKU is 95%, the report would select the value at position 95.

NOTE: When the percentile option is selected, the **Billing Report** performance graph displays a calculated value at each percentile point. The Interface Billing report uses the actual reading that is closest to the 95th percentile to calculate billing values.

4. The report now uses either the total amount of inbound and outbound bandwidth used (for "Committed Transfer" ***Interface Service Types***) or the single selected value (for other ***Interface Service Types***) as the calculated bandwidth usage. The calculated bandwidth usage is used to calculate three dollar amounts:

   - ***Base Amount ($)*** = ***Base Commitment*** defined in billing policy * ***Base Rate*** defined in billing policy
   - ***Overage Amount ($)***. If the calculated bandwidth usage is less than the base commitment, this value is 0. If the calculated bandwidth usage is greater than the base commitment, this value equals: (calculated bandwidth usage – base commitment) * overage rate defined in policy
   - ***Total Bill ($)*** = Base Amount + Overage Amount

Chapter 3

Distribution Lists

Introduction

A ***distribution list*** is one of the service provider utilities that SL1 provides. A ***distribution list*** is a list of users, external contacts, and/or vendors to whom you want to send email messages from SL1. These lists are used in the **Service Notifier** page, which allows you to send messages from SL1. For more information about service notifiers, see *Service Notifiers*.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ( ).
- To view a page containing all the menu options, click the Advanced menu icon ( ).

This chapter includes the following topics:

What is a Distribution List?

A distribution list is a list of users, external contacts, and/or vendors to whom you want to send email messages from SL1. The list can include both rules and manually added accounts. The rules allow the distribution list to be dynamically updated. For example, suppose one of the rules for a distribution list is "include all external contact accounts in the organization named Central NOC." You could then add or remove external contacts from the organization, and the distribution list would include only the current external contact accounts in the organization.

An external contact is a user to whom you can send email messages from SL1. External contacts are associated with organizations, but they do not have an account and cannot log in to SL1. For instance, an external contact might be an account manager for a specific organization that needs to be notified of monthly billing reports, but does not have an account. To read more about external contacts, see the manual ***Organizations and Users***.

Distribution lists are used in the **Service Notifier** page. The **Service Notifier** page allows you to send a message from SL1. The message can include text, screen captures, and attached files. The message can be sent to manually entered email addresses, distribution lists, manually selected users, manually selected external contact accounts, and manually selected vendors.

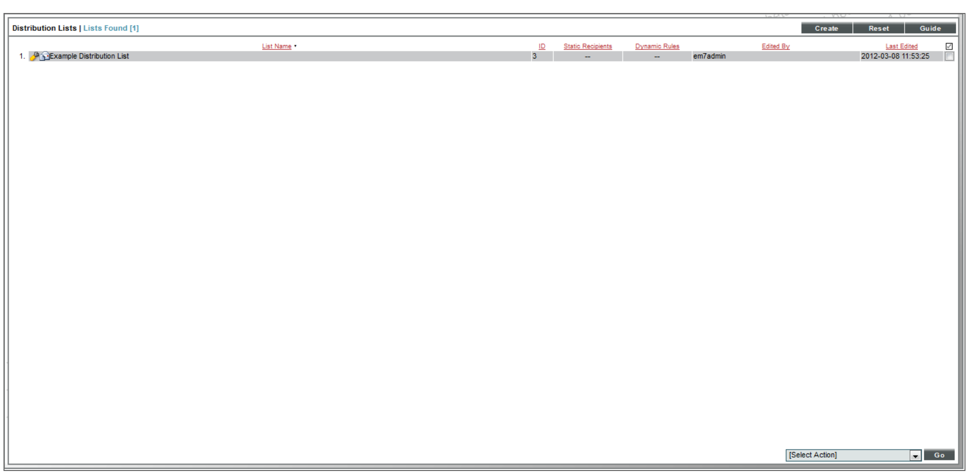
For more information about service notifiers, see ***Service Notifiers***.

Viewing Distribution Lists

You can view and manage distribution lists from the **Distribution Lists** page (Registry > Service Provider Utilities > Distribution Lists). The **Distribution Lists** page also allows you to create, edit, and delete distribution lists, among other options.

To view a list of distribution lists:

1. Go to the **Distribution Lists** page (Registry > Service Provider Utilities > Distribution Lists).
2. The **Distribution Lists** page displays the following about each distribution list:

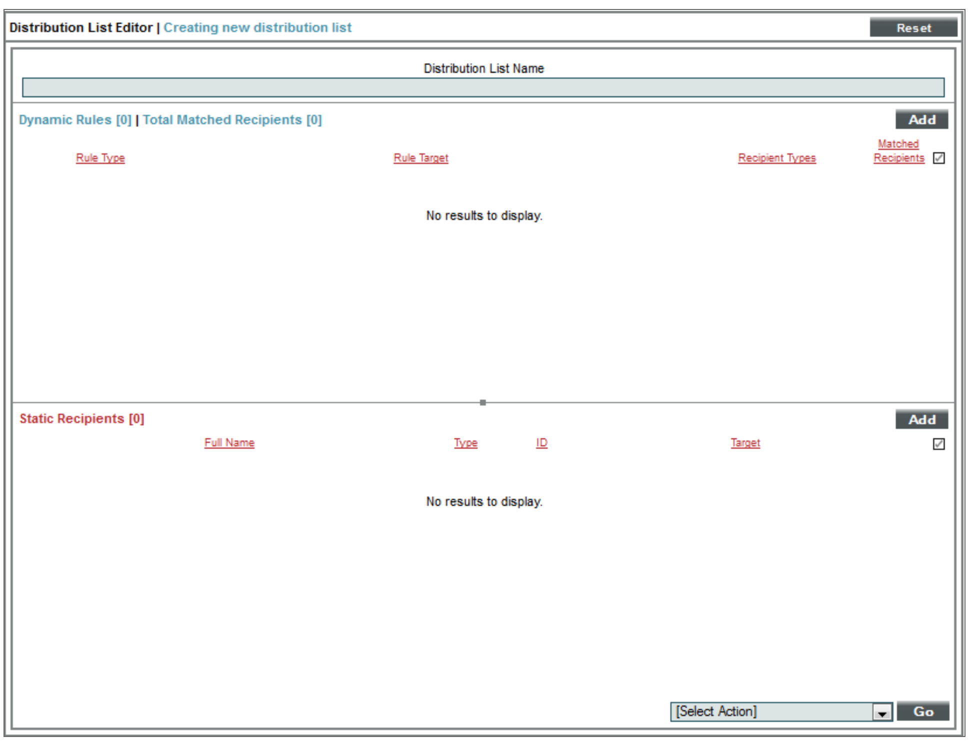


- ***List Name***. Name of the distribution list.
- ***ID***. Unique numeric ID, automatically assigned to each distribution list by SL1.
- ***Static Recipients***. Number of user accounts, external contacts, and vendor contacts that are manually included in the distribution list.
- ***Dynamic Rules***. Number of dynamic rules included in the distribution list. A dynamic rule allows the distribution list to be dynamically updated.
- ***Edited By***. User who created or last edited the distribution list.
- ***Last Edited***. The date and time the distribution list was created or last edited.

Creating a Distribution List

You can create a new distribution list from the **Distribution Lists** page. To create a new distribution list:

1. Go to the **Distribution Lists** page ((Registry > Service Provider Utilities > Distribution Lists).
2. In the **Distribution Lists** page, click the **[Create]** button in the upper right of the page.
3. The**Distribution List Editor** page appears. To create a new distribution list, define a value in each field:



- ***Distribution List Name***. Name of the distribution list.
- ***Dynamic Rules pane***. This pane displays a list of dynamic rules included in the distribution list.
  - To *add a dynamic rule*, click the **[Add]** button. The **Dynamic Rule Editor** modal page appears, where you can define a new dynamic rule. To read more about defining a dynamic rule, see *Adding a Dynamic Rule*.
  - To *edit a dynamic rule*, click its wrench icon (). The **Dynamic Rule Editor** modal page appears, where you can edit a dynamic rule.
- ***Static Recipients pane***. This pane displays a list of manually added users, external contacts, and vendor contacts you have included in the distribution list.
  - To *add a static recipient*, click the **[Add]** button. The **Static Recipient Editor** modal page appears, where you can define a list of static recipients for the distribution list. To read more about adding a static recipient, see *Adding a Static Recipient*.
  - To *edit static recipients*, click the **[Add]** button. The **Static Recipient Editor**modal page appears, where you can add more recipients or remove existing recipients from the distribution list.
- ***Select Action***. This drop-down list allows you to perform administrative actions to multiple items at once. This field includes the following administrative actions:
  - *Delete selected rules/recipients*. Deletes the selected rules and/or recipients from the distribution list.
  - *Save changes to list properties*. Saves any changes to the distribution list.
  - *Match EM7 users*. Edits the selected rule(s) to include users.
  - *Do Not Match EM7 users*. Edits the selected rule(s) and no longer matches users.
  - *Match External Contacts*. Edits the selected rule(s) to include external contacts.
  - *Do not match External Contacts*. Edits the selected rule(s) and no longer matches external contacts.

4. Click the **[Go]** button to save the distribution list.

Adding a Dynamic Rule

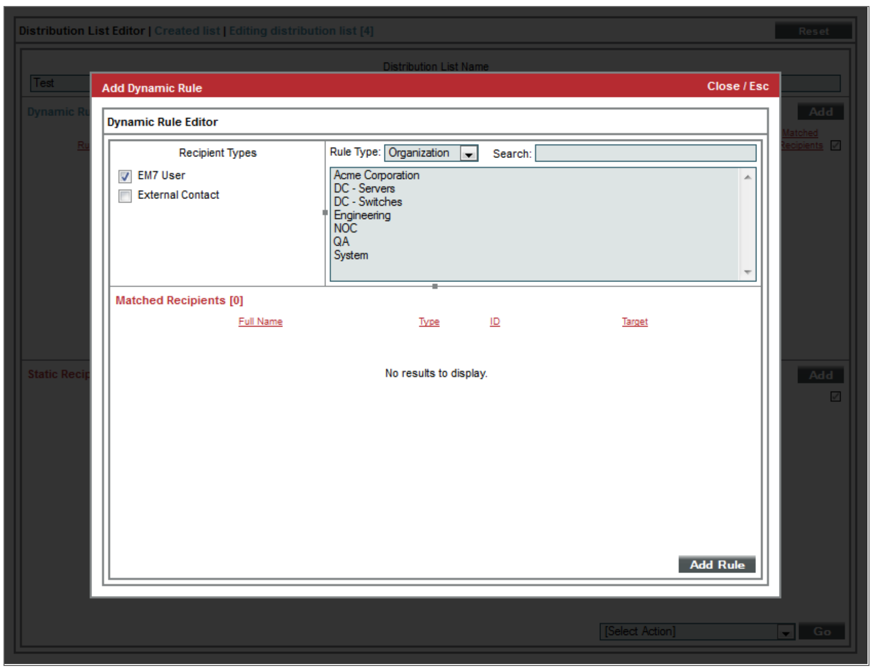
In the **Distribution List Editor** page, you have the option of adding a dynamic rule. A dynamic rule allows the distribution list to be dynamically updated. To add a dynamic rule:

1. In the **Distribution List Editor** page, click the **[Add]** button in the **Dynamic Rules** pane.
2. The **Dynamic Rule Editor** page appears. You can define a value in the following fields:
   - ***EM7 User***. If you select this checkbox, all user accounts associated with the organization, product SKU, or ticket queue will be included.
   - ***External Contact***. If you select this checkbox, all external contact accounts associated with the organization, product SKU, or ticket queue will be included.
   - ***Rule Type***. Select the item that you want to base the user list on. Choices are:

- *Organization*. Include all users and/or external contacts associated with the selected organization (s). You can select one or more entries from a list of all organizations in SL1.
- *Product*. Include all users and/or external contacts associated with the selected product SKU(s). You can select one or more entries from a list of all product SKUs in SL1 .
- *Ticket Queue*. Include all users and/or external contacts associated with the ticket queue(s). You can select one or more entries from a list of all ticket queues in SL1.

- ***Search***. Allows you to search the list of organizations, products, or ticket queues by name.

3. The **Matched Recipients** pane displays all the current users and/or external contacts who match the criteria you have selected.
4. Click the **[Add Rule]** button to add the dynamic rule to the current distribution list.



Adding a Static Recipient

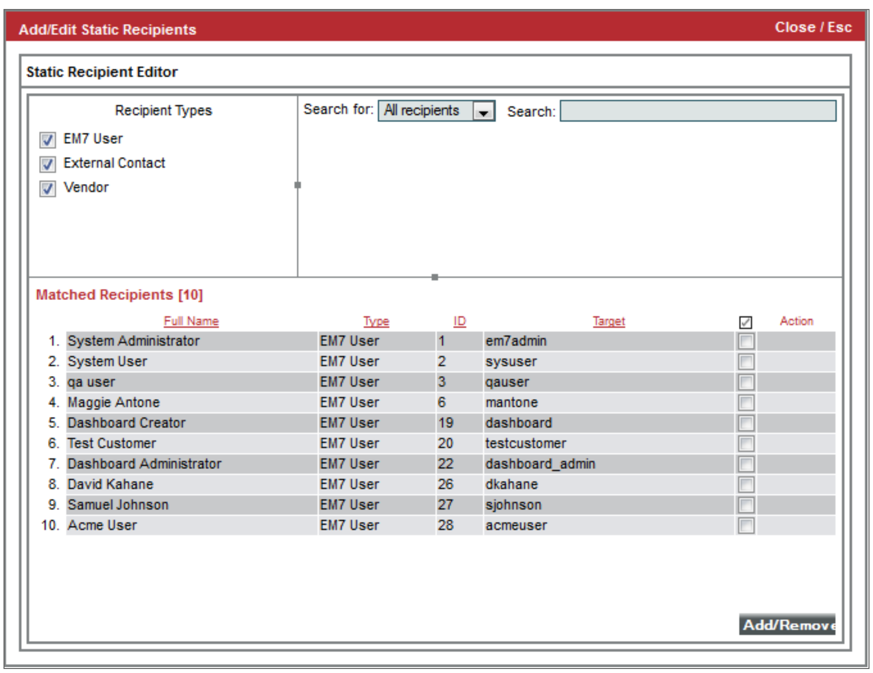
In the **Distribution List Editor** page, you have the option of adding static recipients to a distribution list. To add static recipients to a distribution list:

1. In the **Distribution List Editor** page, click the **[Add]** button in the *Static Recipients* field.
2. The **Static Recipient Editor** page appears, where you can define a value in the following fields:

- ***EM7 User***. Select from a list of user accounts associated with the organization, product SKU, or ticket queue.
- ***External Contact***. Select from a list of external contact accounts associated with the organization, product SKU, or ticket queue.

- ***Vendor***. Select from a list of vendor contacts associated with the organization, product SKU, or ticket queue.
- ***Search for***. Select the item that you want to base the user list on. Choices are:
  - *All recipients*. Includes all users, external contacts, or vendor contacts in SL1.
  - *Organization*. Include all users, and/or external contacts associated with the selected organization (s). You can select one or more entries from a list of all organizations in SL1.
  - *Product*. Include all users and/or external contacts associated with the selected product SKU(s). You can select one or more entries from a list of all product SKUs in SL1.
  - *Ticket Queue*. Include all users and/or external contacts associated with the ticket queue(s). You can select one or more entries from a list of all ticket queues in SL1.
- ***Search***. Allows you to search the list of organizations, products, or ticket queues by name.

3. To add static recipients to a new distribution list, select the checkbox (☑) of each recipient you want to include in the distribution list from the **Matched Recipients** pane.
4. Click the **[Add/Remove]** button to add the select recipients to the distribution list.



Editing a Distribution List

You can edit existing distribution lists from the **Distribution Lists** page. To edit a distribution list:

1. Go to the **Distribution Lists** page (Registry > Service Provider Utilities > Distribution Lists).
2. In the **Distribution Lists** page, find the distribution list you want to edit. Click its wrench () icon.
3. The **Distribution Lists** page appears, with the same fields described in ***Creating a Distribution List***.
4. To edit *Dynamic Rules* or *Static Recipients*, click their **[Add]**button.
5. To save your changes, click the **[Go]**button. Clicking the **[Reset]** button will discard all changes and reset the fields to their previous values.

Deleting Distribution Lists

You can delete all, multiple, or individual distribution lists from the **Distribution Lists** page. To delete one or more distribution lists:

1. Go to the **Bandwidth Billing Policies** page (the **Distribution Lists** page (Registry > Service Provider Utilities > Distribution Lists).
2. In the**Distribution Lists** page, select the checkbox () for each distribution list you want to delete. To select all distribution lists, select the checkmark in the upper right of the page.
3. In the ***Select Action*** drop-down list at the bottom of the page, select *DELETE Distribution Lists*.

4. Click the **[Go]** button to delete the selected distribution list(s).
5. The selected distribution lists are deleted from SL1.

Sending a Message to a Distribution List with the Service Notifier

The **Service Notifier** page allows you to send a message from SL1. The message can include text, screen captures, and attached files. The message can be sent to manually entered email addresses, distribution lists, manually selected users, manually selected external contact accounts, and manually selected vendors.

There are two ways to send a message to a distribution list:

- From the **Distribution Lists** page:

  1. Go to the **Distribution Lists** page (Registry > Service Provider Utilities > Distribution Lists).
  2. In the **Distribution Lists** page, find the distribution list you want to send a message to. Click its email icon ().
  3. In the **Service Notifier** page, the ***To*** field is automatically populated with the distribution list. You can define a subject and the body text, format the body text, and include one or more attachments with the message.
  4. Click the **[Send]** button to send the message to the distribution list.

- From the **Service Notifier** page:

  1. Go to the **Service Notifier** page (Registry > Service Provider Utilities > Service Notifier).
  2. In the **Service Notifier** page, select a distribution list from the drop-down list in the upper right.
  3. Click the **[Add]** button.
  4. The ***To*** field is populated with the distribution list. You can define a subject and the body text, format the body text, and include one or more attachments with the message.
  5. Click the **[Send]** button to send the message to the distribution list.

Chapter

4

Service Notifiers

Overview

The **Service Notifier** page allows you send a message to manually entered email addresses, distribution lists, manually selected users, manually selected external contact accounts, and manually selected vendors. The message can include text, images, videos, and attached files.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ( ).
- To view a page containing all the menu options, click the Advanced menu icon ( ).

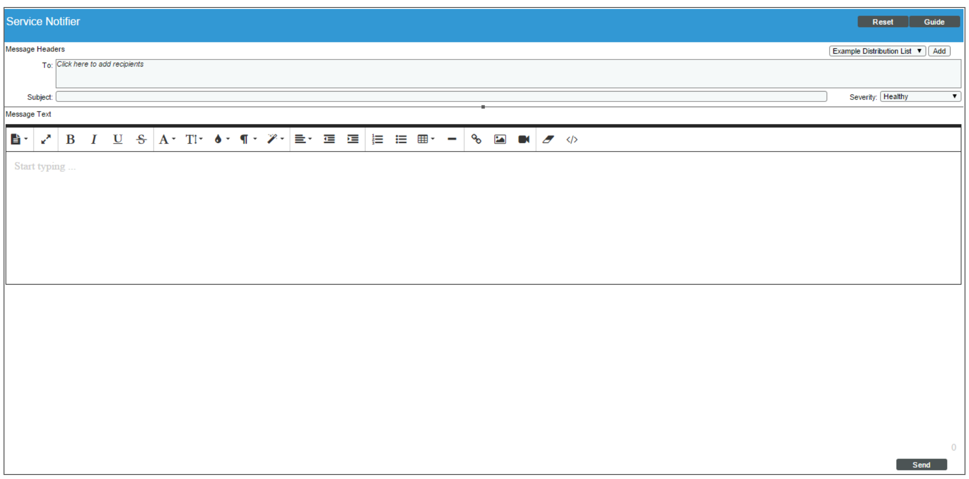
This chapter includes the following topics:

The Service Notifier Page

You can format and compose a notification message from the **Service Notifier** page. The **Service Notifier** page allows you to select the message's recipient(s), severity, and content. From this page, you can add and format message text; insert content from a saved template; and add hyperlinks, images, or videos to the message.

To view the **Service Notifier** page:

1. Go to the **Service Notifier** page (Registry > Service Provider Utilities > Service Notifier).
2. The **Service Notifier** page contains the following fields:



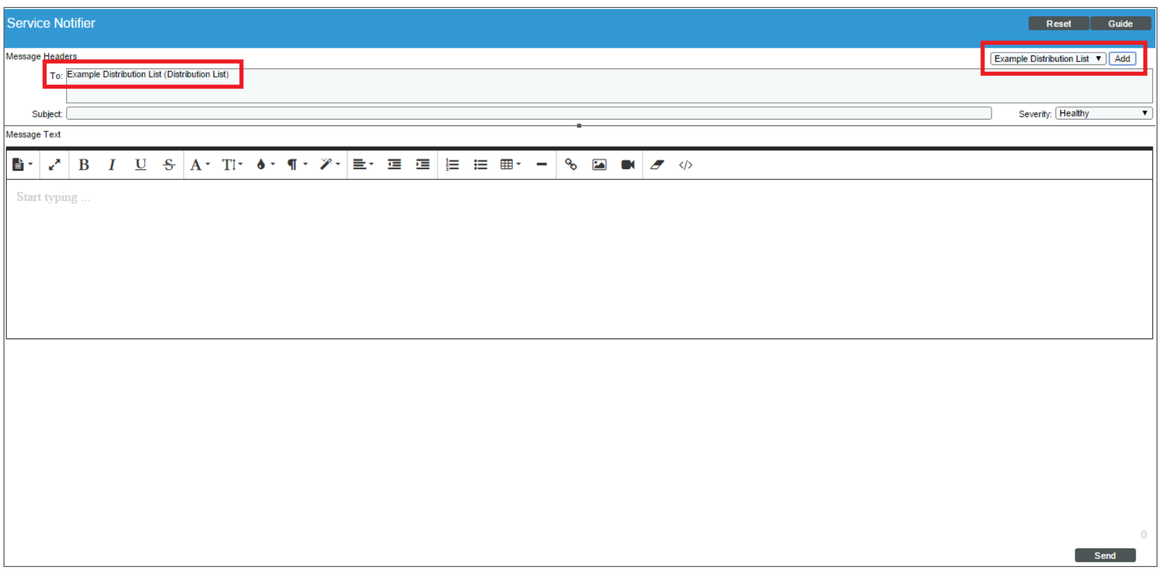
- ***Distribution List***. This drop-down list contains entries for each ***distribution list***. To include a distribution list in the ***To*** field, select it from this field and click the **[Add]** button. To read more about adding a distribution list, see ***Adding a Distribution List to the "To" Field***.
- ***To***. Specifies the recipients for the message. Clicking in this field displays the **Add Recipients** modal page, where you can select users, external contacts, and vendor contacts to include in the ***To*** field.
- ***Subject***. Subject of the email message.
- **Severity**. Severity associated with the message. Choices are *Healthy*, *Notice*, *Minor*, *Major*, or *Critical*.
- ***Message Text***. Text to include in the body of the email message. You can use the toolbar to format the text.
- **[Send]**. Click this button to send the message from SL1 to the selected recipients.

Adding a Distribution List to the "To" Field

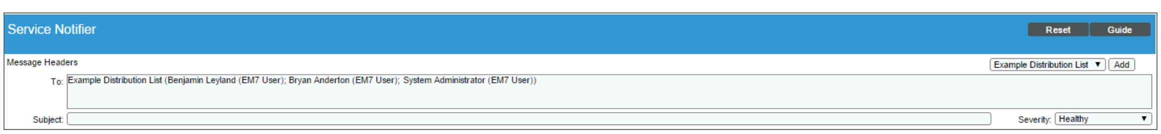
A distribution list is a list of users, external contacts, and/or vendors to whom you want to send email messages from SL1. You can add a distribution list to a message in the **Service Notifier** page. From the distribution list, you can also select one or more users who will receive the message.

To add a distribution list to a service notifier:

1. Go to the **Service Notifier** page (Registry > Service Provider Utilities > Service Notifier).
2. In the **Service Notifier** page, select a distribution list from the drop-down list in the upper right of the page. Click the **[Add]** button.
3. The ***To*** field is populated with the distribution list. You can define a subject and the body text, format the body text, and include one or more images, videos, or attachments with the message.



4. To view the individual users in the distribution list, click on the name of the distribution list. Each user in the distribution list appears in the ***To*** field



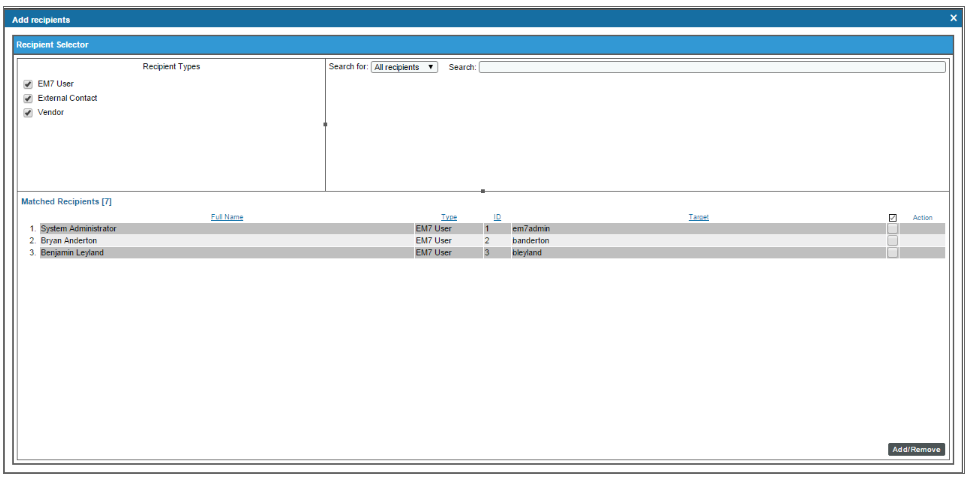
5. To remove individual users from the ***To*** field, click their username. The user will be removed from the ***To*** field.
6. Click the **[Send]** button to send the message to the distribution list.

Adding Users, Vendors, and External Contacts to the "To" field

Along with distribution lists, you can also add users, external contacts, and vendors to the ***To*** field of a service notification. To manually add users, external contacts, and vendors in a message:

1. Go to the **Service Notifier** page (Registry > Service Provider Utilities > Service Notifier).

2. In the **Service Notifier** page, click the ***To*** field. The **Add Recipients** page appears, where you can perform the following actions:



- ***EM7 User***. Select this checkbox if you would like to see matched recipients of type "EM7 User." This checkbox is selected by default.
- ***External Contact***. Select this checkbox if you would like to see matched recipients of type "External Contact." This checkbox is selected by default.
- ***Vendor***. Select this checkbox if you would like to see matched recipients of type "Vendor." This checkbox is selected by default.
- ***Search for***. Specify the parameter you want to search matched recipients by. Choices are:
    - *All recipients*. SL1 will search all matched recipients.
    - *Organization*. SL1 will search all organizations that have a state that matches the regular expression.
    - *Product*. SL1 will search all products that have a state that matches the regular expression.
    - *Ticket Queue*. SL1 will search all ticket queues that have a state that matches the regular expression.

The **Matched Recipients** pane displays all the current users, external contacts, and/or vendor contacts who match the criteria you have selected.

- Select the checkbox (☑) of each recipient you want to include in the ***To*** field.
- To remove a recipient who is currently included in the ***To*** field, unselect the checkbox.
- Click the **[Add/Remove]** button to update the list of recipients in the ***To*** field.

Chapter

5

Product Catalogs

Overview

The **Product Catalog** page allows you to view a list of existing product SKUs. From this page, you can also define and edit product SKUs.

Product SKUs can be associated with organizations, devices, assets, or interfaces. Product SKUs allow you to track and bill customers for products and services rendered.

When you associate a product with an organization, device, asset, or interface, that product/element pair appears in the **Product Subscription Manager** page.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ( ).
- To view a page containing all the menu options, click the Advanced menu icon ( ).

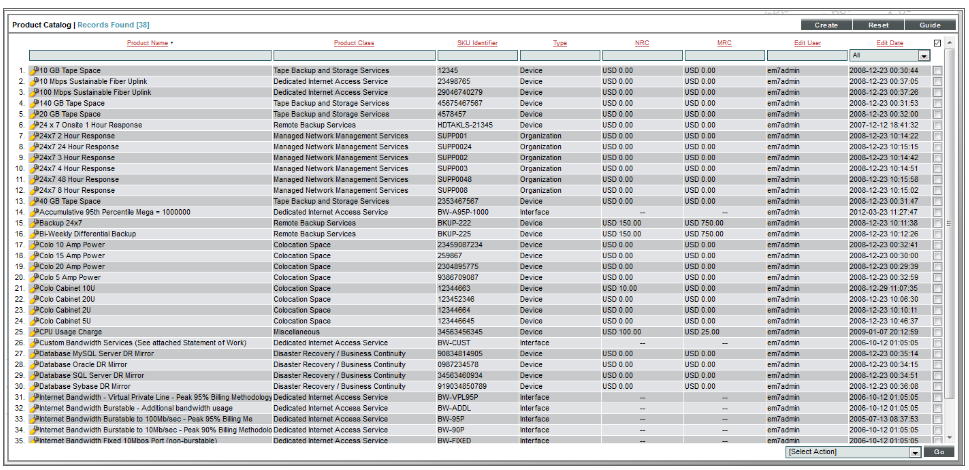
This chapter includes the following topics:

Viewing and Filtering the List of Product SKUs

The **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog) displays a list of existing product SKUs. From the **Product Catalog** page you can view and manage existing product SKUs. To view a list of existing product SKUs:

TIP: You can sort the list of product SKUs by column. To sort by ascending column value, click on a column heading. To sort by descending column value, click on the same column heading a second time. The ***Edit Date*** column sorts by descending order on the first click; to sort by ascending order, click the column heading again.

1. Go to the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog).
2. The **Product Catalog** page displays the following about each product:



Product Catalog | Records Found [38]

Create | Reset | Guide

	Product Name	Product Class	SKU Identifier	Type	NRC	MRC	Edit User	Edit Date
								All
1.	10 GB Tape Space	Tape Backup and Storage Services	12345	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:30:44
2.	10 Mbps Sustainable Fiber Uplink	Dedicated Internet Access Service	23498765	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:37:05
3.	100 Mbps Sustainable Fiber Uplink	Dedicated Internet Access Service	29046740279	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:37:26
4.	140 GB Tape Space	Tape Backup and Storage Services	45675467567	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:31:53
5.	20 GB Tape Space	Tape Backup and Storage Services	4578457	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:00
6.	24 x 7 Onsite 1 Hour Response	Remote Backup Services	HDTAKLS-21345	Device	USD 0.00	USD 0.00	em7admin	2007-12-12 18:41:32
7.	24x7 2 Hour Response	Managed Network Management Services	SUPP001	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:22
8.	24x7 24 Hour Response	Managed Network Management Services	SUPP0024	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:15
9.	24x7 3 Hour Response	Managed Network Management Services	SUPP002	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:42
10.	24x7 4 Hour Response	Managed Network Management Services	SUPP003	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:51
11.	24x7 48 Hour Response	Managed Network Management Services	SUPP0048	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:58
12.	24x7 8 Hour Response	Managed Network Management Services	SUPP008	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:02
13.	40 GB Tape Space	Tape Backup and Storage Services	2353467567	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:31:47
14.	Accumulative 95th Percentile Mega = 1000000	Dedicated Internet Access Service	BW-A95P-1000	Interface	--	--	em7admin	2012-03-23 11:27:47
15.	Backup 24x7	Remote Backup Services	BKUP-222	Device	USD 150.00	USD 750.00	em7admin	2008-12-23 10:11:38
16.	Bi-Weekly Differential Backup	Remote Backup Services	BKUP-225	Device	USD 150.00	USD 750.00	em7admin	2008-12-23 10:12:26
17.	Colo 10 Amp Power	Colocation Space	23459087234	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:41
18.	Colo 15 Amp Power	Colocation Space	259867	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:30:00
19.	Colo 20 Amp Power	Colocation Space	2304895775	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:29:39
20.	Colo 5 Amp Power	Colocation Space	9386709087	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:59
21.	Colo Cabinet 10U	Colocation Space	12344663	Device	USD 10.00	USD 0.00	em7admin	2008-12-29 11:07:35
22.	Colo Cabinet 20U	Colocation Space	123452346	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:06:30
23.	Colo Cabinet 2U	Colocation Space	12344664	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:10:11
24.	Colo Cabinet 5U	Colocation Space	123446645	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:46:37
25.	CPU Usage Charge	Miscellaneous	34563456345	Device	USD 100.00	USD 25.00	em7admin	2009-01-07 20:12:59
26.	Custom Bandwidth Services (See attached Statement of Work)	Dedicated Internet Access Service	BW-CUST	Interface	--	--	em7admin	2006-10-12 01:05:05
27.	Database MySQL Server DR Mirror	Disaster Recovery / Business Continuity	90834814905	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:35:14
28.	Database Oracle DR Mirror	Disaster Recovery / Business Continuity	0987234578	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:34:15
29.	Database SQL Server DR Mirror	Disaster Recovery / Business Continuity	34563460934	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:34:51
30.	Database Sybase DR Mirror	Disaster Recovery / Business Continuity	919034850789	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:36:08
31.	Internet Bandwidth - Virtual Private Line - Peak 95% Billing Methodology	Dedicated Internet Access Service	BW-VPL95P	Interface	--	--	em7admin	2006-10-12 01:05:05
32.	Internet Bandwidth Burstable - Additional bandwidth usage	Dedicated Internet Access Service	BW-ADDL	Interface	--	--	em7admin	2006-10-12 01:05:05
33.	Internet Bandwidth Burstable to 100Mb/sec - Peak 95% Billing Me	Dedicated Internet Access Service	BW-95P	Interface	--	--	em7admin	2005-07-13 08:37:53
34.	Internet Bandwidth Burstable to 10Mb/sec - Peak 90% Billing Methodolo	Dedicated Internet Access Service	BW-90P	Interface	--	--	em7admin	2006-10-12 01:05:05
35.	Internet Bandwidth Fixed 10Mbps Port (non-burstable)	Dedicated Internet Access Service	BW-FIXED	Interface	--	--	em7admin	2006-10-12 01:05:05

[Select Action] Go

- ***Product Name***. Name of the product. Can be up to 64 characters in length.
- ***Product Class***. Description of the product. Administrators can use the **Select Objects Editor** page (System > Customize > Select Objects) to customize the list of possible choices in this field.
- ***SKU Identifier***. User-defined, numeric ID for the product. Can be up to 24 characters in length.
- ***Type***. The element for which you are creating a product. Choices are:
  - *Organization*
  - *Device*
  - *Asset*
  - *Interface*

- ***NRC***. Any initial, non-recurring cost associated with the product. If you selected any entry other than *Interface* in the ***For Entity Type*** field, this field is populated. Can be up to 12 characters in length.
- ***MRC***. Monthly recurring cost associated with the product. If you selected any entry other than *Interface* in the ***For Entity Type*** field, this field is populated. Can be up to 12 characters in length.
- ***Edit User***. User who created or last edited the product definition.
- ***Edit Date***. Date and time the product definition was created or last edited.

Filtering the List of Products

The **Product Catalog** page includes eight filters, in the top row in the list of products. You can specify one or more parameters to filter the display of products. Only products that meet all the filter criteria will be displayed in the **Product Catalog** page.

You can filter by one or more of the following parameters. The list of products is dynamically updated as you select each filter.

- For each filter except ***Edit Date***, you must enter text to match against. SL1 will search for products that match the text, including partial matches. Text matches are not case sensitive. You can use the following special characters in each filter:
  - , (comma). Specifies an "or" operation. For example:

    "dell, micro" would match all values that contain the string "dell" OR the string "micro".
  - & (ampersand). Specifies an "and" operation. For example:

    "dell & micro" would match all values that contain the string "dell" AND the string "micro".
  - ! (exclamation mark). Specifies a "not" operation. For example:

    "!dell" would match all values that do not contain the string "dell".
- ***Product Name***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching name.
- ***Product Class***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that are associated with a matching product class.
- ***SKU Identifier***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching SKU ID.
- ***Type***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching element type.
- ***NRC***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching non-recurring cost.
- ***MRC***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching monthly recurring cost.

- ***Edit User***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Catalog** page will display only products that have a matching username associated with the creation or last edit of the Product SKU.

- ***Edit Date***. You can select from a list of time periods. The **Product Catalog** page will display only products that have been created or edited within that time period. Choices are:

  - *All*. Display all products that match the other filters.
  - *Last Minute*. Display only products that have been created within the last minute.
  - *Last Hour*. Display only products that have been created within the last hour.
  - *Last Day*. Display only products that have been created within the last day.
  - *Last Week*. Display only products that have been created within the last week.
  - *Last Month*. Display only products that have been created within the last month.
  - *Last Year*. Display only products that have been created within the last year.

Creating a New Product SKU

You can create new product SKU from the **Product Catalog** page. To create a new product SKU:

1. Go to the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog).
2. In the **Product Catalog** page, click the **[Create]** button.
3. In the **Add Product** page, enter values in the following fields:

   - ***Product Name***. Name of the product.
   - ***SKU Identifier***. User-defined numeric identifier for the product.
   - ***Product Class***. The type of service the product represents. SL1 administrators can use the **Select Objects Editor** page (System > Customize > Select Objects) to customize the list of possible choices in this field.
   - ***Addendum/Description***. Additional identification for the SKU. Can be up to 24 characters in length.
   - ***Non-Recurring Cost***. Any initial, non-recurring cost associated with the product. If you selected any entry other than *Interface* in the ***For Entity Type*** field, this field appears after the product definition has been saved. Can be up to 12 characters in length.
   - ***Monthly Recurring Cost***. Monthly recurring cost associated with the product. If you selected any entry other than *Interface* in the ***For Entity Type*** field, this field appears. Can be up to 12 characters in length.
   - ***For Entity Type***. The element for which you are creating a product. Choices are:

     - *Organization*. The product will appear in the **Product Catalog** modal page for organizations, where users can associate the product with an organization.

- *Device*. The product will appear in the **Product Catalog** modal page for devices, where users can associate the product with a device.
- *Asset*. The product will appear in the **Product Catalog** modal page for assets, where users can associate the product with an asset
- *Interface*. The product will appear in the **Bandwidth Billing Editor** modal page, where users can associated the product with a bandwidth billing policy.

- ***Interface Service Type***. If you selected *Interface* in the ***For Entity Type*** field, this field appears. This field defines the basis for bandwidth billing. The choices are:

  - *Mega = 1000000: Percentile: In & Out*. Customer is billed for total inbound and outbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1000000 (one million) bytes.
  - *Mega = 1000000: Percentile: Inbound*. Customer is billed for the total inbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1000000 (one million) bytes.
  - *Mega = 1000000: Percentile: Outbound*. Customer is billed for the total outbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1000000 (one million) bytes.
  - *Mega = 1000000: Percentile: Highest Poll*. Customer is billed for either the total inbound or total outbound , whichever is highest, for each applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1000000 (one million) bytes.
  - *Mega = 1000000: Committed Transfer: Gigabyte*. Customer is billed for the total inbound and outbound bytes transferred for the entire billing period. A Megabyte will be measured as 1000000 (one million) bytes.
  - *Mega = 1048576: Percentile: Base 10: In & Out*. Customer is billed for total inbound and outbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1,048,576 bytes.
  - *Mega = 1048576: Percentile: Base 10: Inbound*. Customer is billed for the total inbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1,048,576 bytes.
  - *Mega = 1048576: Percentile: Base 10: Outbound*. Customer is billed for the total outbound bandwidth for all applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1,048,576 bytes.
  - *Mega = 1048576: Percentile: Base 10: Highest Poll*. Customer is billed for either the total inbound or total outbound, whichever is highest, for each applicable interfaces. Billing is at the specified percentile point. A Megabyte will be measured as 1,048,576 bytes.
  - *Mega = 1048576: Committed Transfer: Gigabyte*. Customer is billed for the total inbound and outbound bytes transferred for the entire billing period. A Megabyte will be measured as 1,048,576 bytes.

- ***Interface Percentile Rate***. If you selected *Interface* in the ***For Entity Type*** field, this field appears. Highest reading for which the customer will be billed. For example, if a customer is billed with a 95 percentile, all the bandwidth readings for the billing period are sorted, and the top 5% of bandwidth readings are dropped. The customer is then charged for the remaining 95% of bandwidth readings. If you selected Committed Transfer: Gigabyte in the Interface Service Type fiend, select Disabled.

4. Click the **[Save]** button to save the new product SKU.

For an example of how to create a product SKU for a bandwidth billing policy, see the ***Bandwidth Billing*** section.

Editing an Existing Product Definition

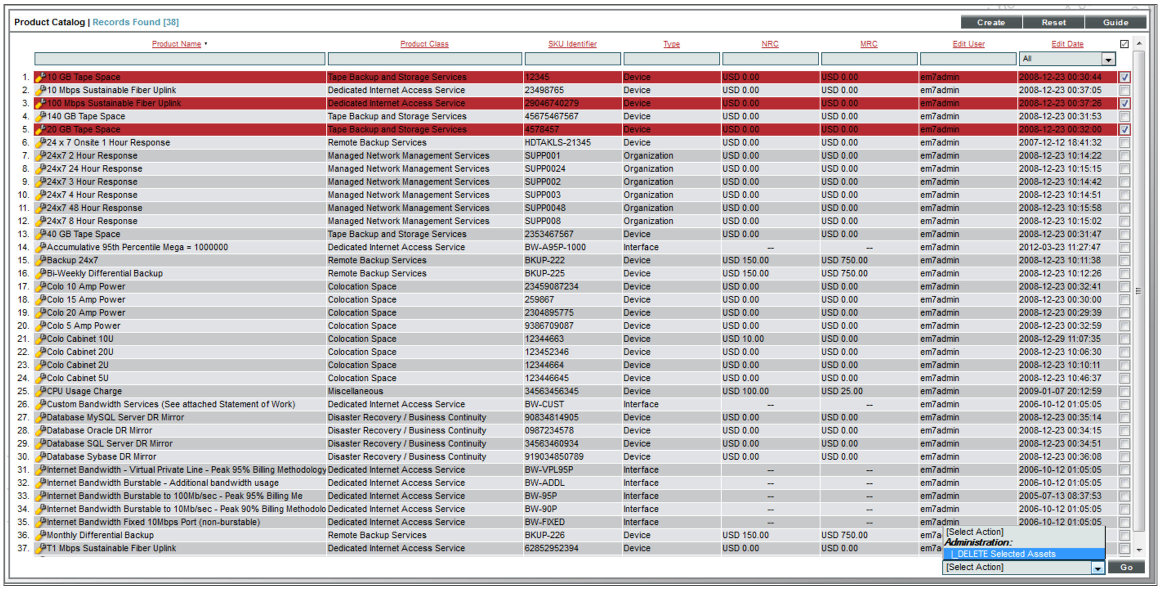
You can edit an existing product SKU from the **Product Catalog** page. To edit an existing product SKU:

1. Go to the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog).
2. Find the product SKU you want to edit. Click its wrench icon ().
3. In the **Add Product** page, you can edit the value of any of the fields described in the ***Creating a Product Definition*** section.
4. Click the **[Save]** button to save your changes. If you are creating a new product SKU based on an existing definition, click the **[Save As]** button, making sure you supply a new name for the product SKU.

Deleting One or More Product SKUs

You can delete one or more product SKUs from the **Product Catalog** page. To delete product SKUs:

1. Go to the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog).
2. In the **Product Catalog** page, find the product SKUs you want to delete. Select their checkboxes () to the right of the page.
3. In the ***Select Action*** drop-down field (in the lower right), choose *DELETE Selected Assets*.
4. Click the **[Go]** button.
5. The selected product definitions will be deleted.



Product Catalog | Records Found [38]

Create | Reset | Guide

	Product Name	Product Class	SKU Identifier	Type	NRC	MRC	Edit User	Edit Date
								All
1.	10 GB Tape Space	Tape Backup and Storage Services	12345	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:30:44
2.	10 Mbps Sustainable Fiber Uplink	Dedicated Internet Access Service	23498765	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:37:05
3.	100 Mbps Sustainable Fiber Uplink	Dedicated Internet Access Service	29046740279	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:37:26
4.	140 GB Tape Space	Tape Backup and Storage Services	45675467567	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:31:53
5.	20 GB Tape Space	Tape Backup and Storage Services	4578457	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:00
6.	24 x 7 Onsite 1 Hour Response	Remote Backup Services	HDTAKLS-21345	Device	USD 0.00	USD 0.00	em7admin	2007-12-12 18:41:32
7.	24x7 2 Hour Response	Managed Network Management Services	SUPP001	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:22
8.	24x7 24 Hour Response	Managed Network Management Services	SUPP0024	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:15
9.	24x7 3 Hour Response	Managed Network Management Services	SUPP002	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:42
10.	24x7 4 Hour Response	Managed Network Management Services	SUPP003	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:14:51
11.	24x7 48 Hour Response	Managed Network Management Services	SUPP0048	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:58
12.	24x7 8 Hour Response	Managed Network Management Services	SUPP008	Organization	USD 0.00	USD 0.00	em7admin	2008-12-23 10:15:02
13.	40 GB Tape Space	Tape Backup and Storage Services	2353467567	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:31:47
14.	Accumulative 95th Percentile Mega = 1000000	Dedicated Internet Access Service	BW-A95P-1000	Interface	--	--	em7admin	2012-03-23 11:27:47
15.	Backup 24x7	Remote Backup Services	BKUP-222	Device	USD 150.00	USD 750.00	em7admin	2008-12-23 10:11:38
16.	Bi-Weekly Differential Backup	Remote Backup Services	BKUP-225	Device	USD 150.00	USD 750.00	em7admin	2008-12-23 10:12:26
17.	Colo 10 Amp Power	Colocation Space	23459087234	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:41
18.	Colo 15 Amp Power	Colocation Space	259867	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:30:00
19.	Colo 20 Amp Power	Colocation Space	2304895775	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:29:39
20.	Colo 5 Amp Power	Colocation Space	9386709087	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:32:59
21.	Colo Cabinet 10U	Colocation Space	12344663	Device	USD 10.00	USD 0.00	em7admin	2008-12-29 11:07:35
22.	Colo Cabinet 20U	Colocation Space	123452346	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:06:30
23.	Colo Cabinet 2U	Colocation Space	12344664	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:10:11
24.	Colo Cabinet 5U	Colocation Space	123446645	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 10:46:37
25.	CPU Usage Charge	Miscellaneous	34563456345	Device	USD 100.00	USD 25.00	em7admin	2009-01-07 20:12:59
26.	Custom Bandwidth Services (See attached Statement of Work)	Dedicated Internet Access Service	BW-CUST	Interface	--	--	em7admin	2006-10-12 01:05:05
27.	Database MySQL Server DR Mirror	Disaster Recovery / Business Continuity	90834814905	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:35:14
28.	Database Oracle DR Mirror	Disaster Recovery / Business Continuity	0987234578	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:34:15
29.	Database SQL Server DR Mirror	Disaster Recovery / Business Continuity	34563460934	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:34:51
30.	Database Sybase DR Mirror	Disaster Recovery / Business Continuity	919034850789	Device	USD 0.00	USD 0.00	em7admin	2008-12-23 00:36:08
31.	Internet Bandwidth - Virtual Private Line - Peak 95% Billing Methodology	Dedicated Internet Access Service	BW-VPL95P	Interface	--	--	em7admin	2006-10-12 01:05:05
32.	Internet Bandwidth Burstable - Additional bandwidth usage	Dedicated Internet Access Service	BW-ADDL	Interface	--	--	em7admin	2006-10-12 01:05:05
33.	Internet Bandwidth Burstable to 100Mb/sec - Peak 95% Billing Me	Dedicated Internet Access Service	BW-95P	Interface	--	--	em7admin	2005-07-13 08:37:53
34.	Internet Bandwidth Burstable to 10Mb/sec - Peak 90% Billing Methodolo	Dedicated Internet Access Service	BW-90P	Interface	--	--	em7admin	2006-10-12 01:05:05
35.	Internet Bandwidth Fixed 10Mbps Port (non-burstable)	Dedicated Internet Access Service	BW-FIXED	Interface	--	--	em7admin	2006-10-12 01:05:05
36.	Monthly Differential Backup	Remote Backup Services	BKUP-226	Device	USD 150.00	USD 750.00	em7a	
37.	T1 Mbps Sustainable Fiber Uplink	Dedicated Internet Access Service	62852952394	Device	USD 0.00	USD 0.00	em7a	

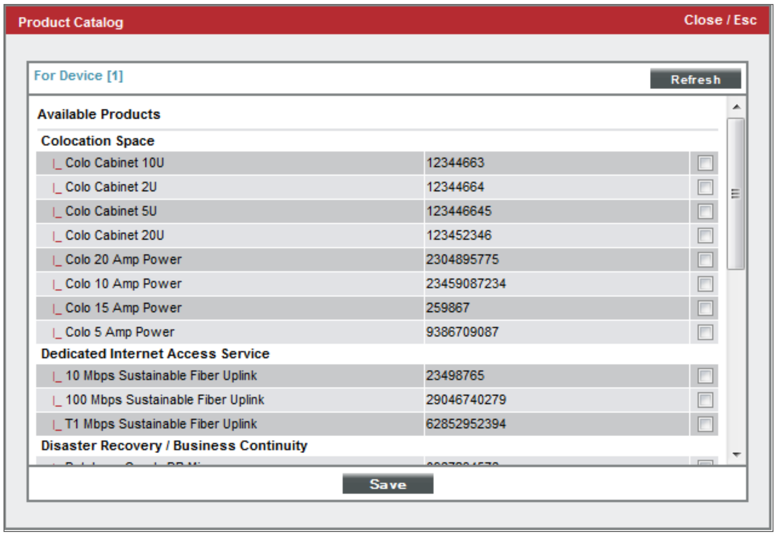
[Select Action]
Administration:
|_DELETE Selected Assets
[Select Action]
Go

Associating a Product SKU with a Device

SL1 allows you to align a product SKU with a device. You can also view active product subscriptions associated with the device, view available products that can be associated with a device, and can disassociate a product SKU from a device.

To associate a product SKU with a device:

1. Go to the **Device Manager** page (Devices > Device Manager).
2. Find the device you want to associate with a product SKU. Click its wrench () icon.
3. In the **Device Administration** panel, click any tab.
4. Click the **[Actions]** menu and choose *Product Catalog*.
5. The **Product Catalog** modal page appears, where you can perform the following actions:



To associate a product SKU with a device:

1. In the **Available Products** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Active Product Subscriptions** pane.
4. In the **Active Product Subscriptions** pane, you can increase (or decrease) the number of subscriptions to the product by manually entering a number. By default, the number "1" (one) appears in the number field.

To disassociate a product SKU from a device:

1. In the **Active Product Subscriptions** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Available Products** pane and will no longer be associated with the device.

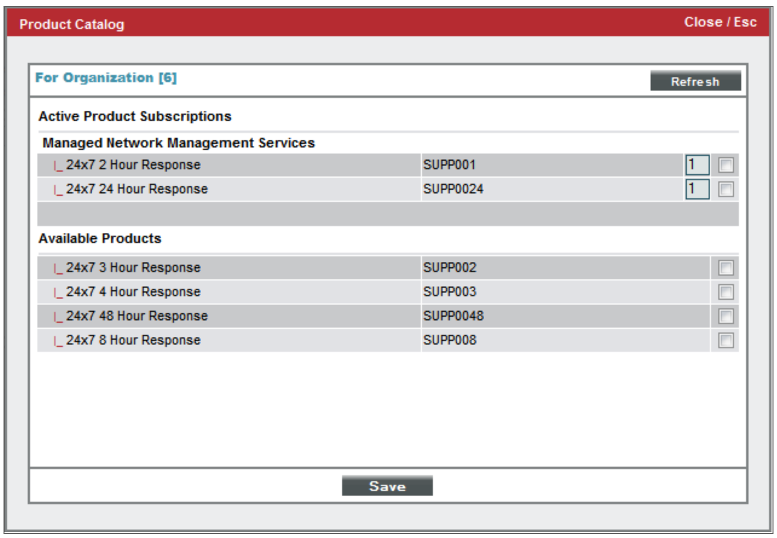
You can also edit a product subscription from the **Product Subscription Manager** page. To learn more about the **Product Subscription Manager** page, see *Product Subscriptions.*

Associating a Product SKU with an Organization

In addition to associating a product SKU with a device, you can also associate a product SKU with an organization. This functionality is similar to associating a product SKU with a device: You can view current associated product SKUs, view available product SKUs, and disassociate product SKUs from an organization.

To associate a product SKU with an organization:

1. Go to the **Organizational Account Administration** page (Registry > Accounts > Organizations).
2. In the **Organizational Account Administration** page, find the organization you want to associate with a product SKU. Click its wrench icon ().
3. The **Organizational Summary Page** appears. In the **[Actions]** menu in the upper right of the page, select *Product Catalog*.
4. The **Product Catalog** modal page appears, where you can perform the following actions:



To associate a product SKU with an organization:

1. In the **Available Products** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Active Product Subscriptions** pane.
4. In the **Active Product Subscriptions** pane, you can increase (or decrease) the number of subscriptions to the product by manually entering a number. By default, the number "1" (one) appears in the number field.

To disassociate a product SKU from an organization:

1. In the **Active Product Subscriptions** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Available Products** pane and will no longer be associated with the organization.

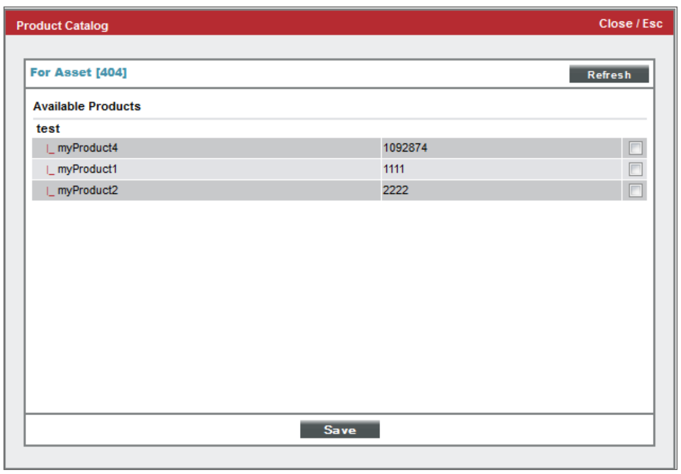
You can also edit a product subscription from the **Product Subscription Manager** page. To learn more about the **Product Subscription Manager** page, see *Product Subscriptions*.

Associating a Product SKU with an Asset

SL1 allows you to associate a product SKU with an asset. You can also view active product SKUs associated with the asset, view available products that can be associated with an asset, view available products that can be associated with an asset, and can disassociate a product SKU from an asset.

To associate a product SKU with an asset:

1. Go to the **Asset Manager** page (Registry > Assets > Asset Manager).
2. Find the asset you want to associate with a product SKU. Click its wrench icon ( ).
3. The **Asset Properties** page appears. In the **[Actions]** menu in the upper right of the page, select *Product Catalog*.
4. The **Product Catalog** modal page appears, where you can perform the following actions:



To associate a product SKU with an asset:

1. In the **Available Products** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Active Product Subscriptions** pane.
4. In the **Active Product Subscriptions** pane, you can increase (or decrease) the number of subscriptions to the product by manually entering a number. By default, the number "1" (one) appears in the number field.

To disassociate a product SKU from an asset:

1. In the **Active Product Subscriptions** pane, select one or more product SKUs.
2. Click the **[Save]** button.
3. The product SKU(s) will now appear in the **Available Products** pane and will no longer be associated with the asset.

You can also edit a product subscription from the **Product Subscription Manager** page. To learn more about the **Product Subscription Manager** page, see *Product Subscriptions*.

Chapter

6

Product Subscriptions

Overview

The **Product Subscription Manager** page allows you to view a list of all products that have been assigned to a device, organization, interface, or asset record.

The **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions) displays each aligned product/element pair. If a product has been assigned to multiple elements, it will appear more than once in the **Product Subscription Manager** page.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon ( ).
- To view a page containing all the menu options, click the Advanced menu icon ( ).

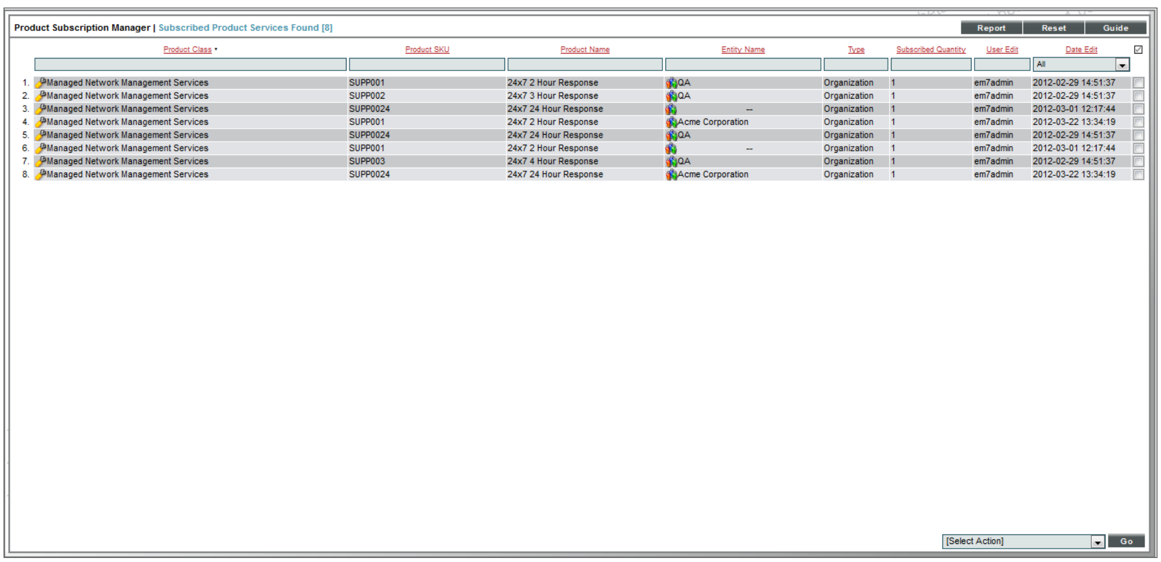
This chapter includes the following topics:

Viewing the List of Product Subscriptions

The **Product Subscription Manager** page displays the list of elements and their product subscriptions. If a product has been assigned to multiple elements, it will appear more than once in the **Product Subscription Manager** page.

To view a list of product subscriptions:

1. Go to the **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions).
2. The **Product Subscription Manager** page displays the following information about each product subscription:



- ***Product Class***. General category for the product. You can customize the list of entries for the product class in the **Select Objects Editor** page (System > Customize > Select Objects).
- ***Product SKU***. User-defined, numeric ID for the product.
- ***Product Name***. Name of the product.
- ***Entity Name***. Name of the entity (organization, device, asset record, or network interface) that has subscribed to the product.
- ***Type***. Entity type for the entity that has subscribed to the product. This column also contains an icon, where users can view additional information about the entity. Choices are:
  - Organization
  - Device

    - Asset
    - Interface

- ***Subscribed Quantity***. Number of subscriptions associated with the entity.
- ***Edit User***. User who created or last edited the subscription.
- ***Edit Date***. Date and time the subscription was created or last edited.

Filtering the List of Product Subscriptions

The **Product Subscription Manager** page includes eight filters, in the top row in the list of subscriptions. You can specify one or more parameters to filter the display of product subscriptions. Only product subscriptions that meet all the filter criteria will be displayed in the **Product Subscription Manager** page.

You can filter by one or more of the following parameters. The list of product subscriptions is dynamically updated as you select each filter.

- For each filter except ***Date Edit***, you must enter text to match against. SL1 will search for product subscriptions that match the text, including partial matches. Text matches are not case-sensitive. You can use the following special characters in each filter:
  - , (comma). Specifies an "or" operation. For example:

    "dell, micro" would match all values that contain the string "dell" OR the string "micro".
  - & (ampersand). Specifies an "and" operation. For example:

    "dell & micro" would match all values that contain the string "dell" AND the string "micro".
  - ! (exclamation mark). Specifies a "not" operation. For example:

    "!dell" would match all values that do not contain the string "dell".

- ***Product Class***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that have a matching product class.
- ***Product SKU***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that are associated with a product SKU.
- ***Product Name*** . You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that have a matching product name.
- ***Entity Name***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that are associated with a matching entity.
- ***Type***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that are associated with a matching entity type.
- ***Subscribed Quantity***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that have a matching number of subscribers.
- ***User Edit***. You can enter text to match, including special characters (comma, ampersand, and exclamation mark), and the **Product Subscription Manager** page will display only product subscriptions that have a

matching "edited by" value.

- ***Date Edit***. You can select from a list of time periods. The **Product Subscription Manager** page will display only product subscriptions that have been created or edited within that time period:
    - *All*. Display all subscriptions that match the other filters.
    - *Last Minute*. Display only subscriptions that have been created within the last minute.
    - *Last Hour*. Display only subscriptions that have been created within the last hour.
    - *Last Day*. Display only subscriptions that have been created within the last day.
    - *Last Week*. Display only subscriptions that have been created within the last week.
    - *Last Month*. Display only subscriptions that have been created within the last month.
    - *Last Year*. Display only subscriptions that have been created within the last year.

Editing a Product Subscription

You can edit a product subscription from the **Product Subscription Manager** page. To edit a product subscription:

1. Go to the **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions).
2. In the **Product Subscription Manager** page, find the subscription you want to edit. Click its wrench icon ( ).
3. The **Product Catalog** modal page appears. In this page, you can view or edit the subscription.

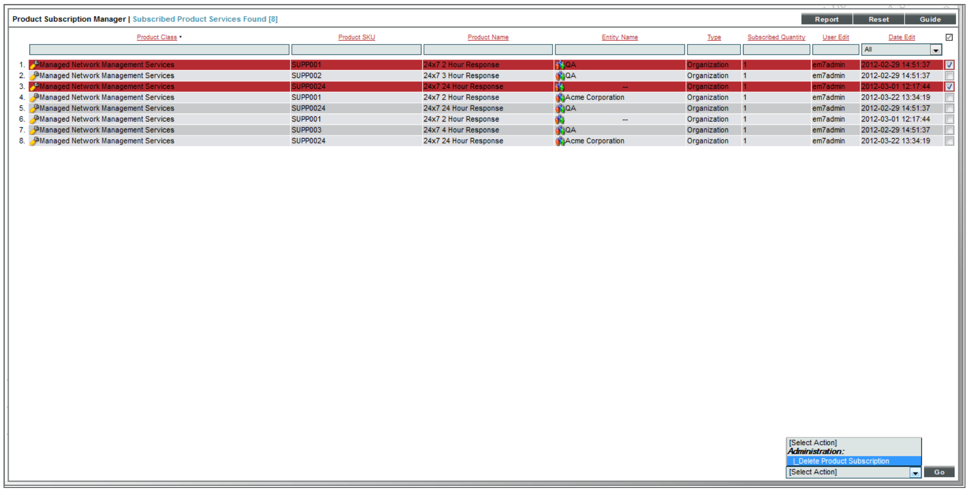
To learn more about the **Product Catalog** page, see ***Product Catalogs***.

Deleting Product Subscriptions

You can delete one or more product subscriptions from the **Product Subscription Manager** page. To do so:

1. Go to the **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions).
2. In the **Product Subscription Manager** page, select the checkbox ( ) for each product subscription you want to delete.
3. In the ***Select Action*** field at the bottom of the page, select *DELETE Product Subscription*.

4. Click the **[Go]** button.



5. The selected subscriptions are deleted from SL1.

Generating a Report for Product Subscriptions

From the **Product Subscription Manager** page you can generate an Excel report on all product subscriptions in SL1.

EM7™ Management Systems

Product SKU Report

April 17, 2015, 3:57 am

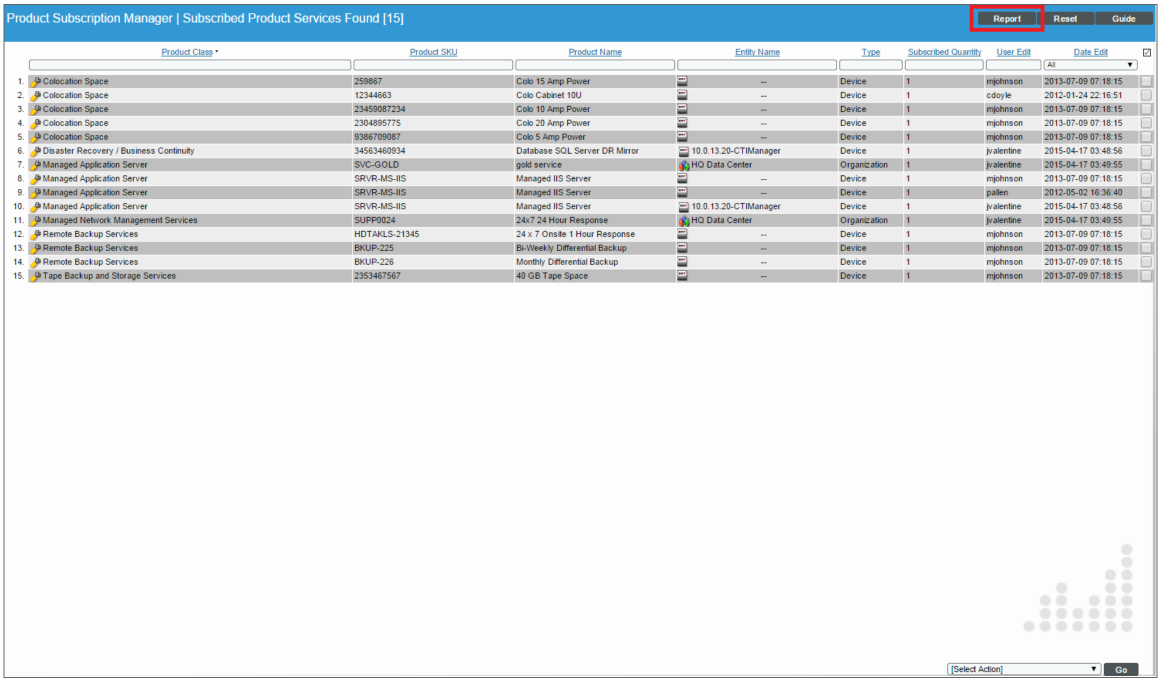
Report Data

SKU Class	SKU Number	SKU Name	Element Name	Element Type	SKU ID
Colocation Space	12344663	Colo Cabinet 10U		Device	80
Colocation Space	2304895775	Colo 20 Amp Power		Device	66
Colocation Space	23459087234	Colo 10 Amp Power		Device	71
Tape Backup and Storage Services	2353467567	40 GB Tape Space		Device	69
Colocation Space	259867	Colo 15 Amp Power		Device	67
Disaster Recovery / Business Continuity	34563460934	Database SQL Server DR Mirror	10.0.13.20-CTIManager	Device	74
Colocation Space	9386709087	Colo 5 Amp Power		Device	72
Remote Backup Services	BKUP-225	Bi-Weekly Differential Backup		Device	83
Remote Backup Services	BKUP-226	Monthly Differential Backup		Device	84
Remote Backup Services	HDTAKLS-21345	24 x 7 Onsite 1 Hour Response		Device	63
Managed Application Server	SRVR-MS-IIS	Managed IIS Server	10.0.13.20-CTIManager	Device	93
Managed Application Server	SRVR-MS-IIS	Managed IIS Server		Device	93
Managed Application Server	SRVR-MS-IIS	Managed IIS Server		Device	93
Managed Network Management Services	SUPP0024	24x7 24 Hour Response	HQ Data Center	Organization	89
Managed Application Server	SVC-GOLD	gold service	HQ Data Center	Organization	94

Report Created By ScienceLogic EM7™

To generate a report on product subscriptions:

1. Go to the **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions).
2. On the **Product Subscription Manager** page, click the **[Report]** button.



3. After clicking the **[Report]** option, specify whether you want to save the report to your local computer or open the report immediately with Excel. The report will contain all the information displayed in the **Product Subscription Manager** page.

Chapter 7

Service Usage Policies

Overview

A service usage policy allows you to collect data points from multiple Dynamic Applications, each running on multiple devices. The collected data is then displayed in a graphical report. From the **Service Usage** page (Registry > Business Services > Service Usage) you can view a list of existing service usage policies, create new service usage policies, edit and delete existing service usage policies, and view reports generated by service usage policies.

For example, you could define a policy to monitor information on CPU usage, collected by a Cisco Dynamic Application. The policy could collect this data from all Cisco hardware in your network. The resulting report would show total CPU usage by all Cisco hardware.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (☰).
- To view a page containing all the menu options, click the Advanced menu icon (···).

This chapter includes the following topics:

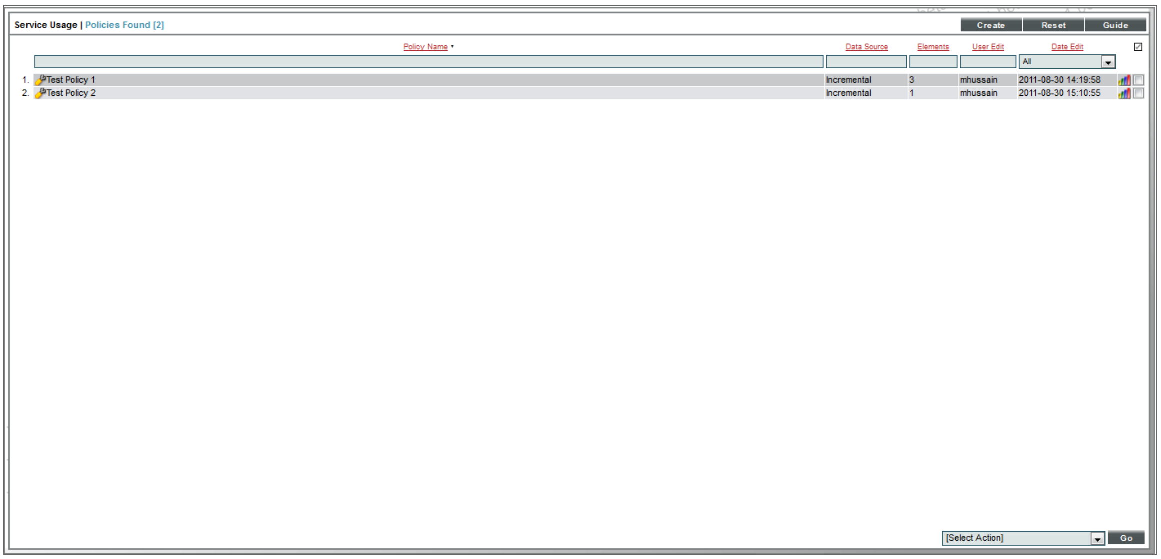
Viewing the List of Service Usage Policies

The **Service Usage** page contains a list of all existing service usage policies. From the **Service Usage** page you can view and manage service usage policies, and create reports on individual service usage policies, among other actions.

NOTE: The **Service Usage** page is only available in the classic user interface.

To view the list of service usage policies:

1. In the classic user interface, go to the **Service Usage** page (Registry > Business Services > Service Usage).



2. The **Service Usage** page contains the following about each service usage policy:

   - ***Policy Name***. Name of the service usage policy.
   - ***Data Source***. Default value of "incremental".
   - ***Elements***. Specifies the total number of data points plus the total number of devices. For example, if a policy monitors two data points on five devices, this column would contain the value "7" (seven).
   - ***User Edit*** . User who created or last edited the policy.
   - ***Date Edit*** . Date and time the policy was created or last edited.

Filtering the List of Service Usage Policies

The **Service Usage** page includes five filters, in the top row in the list of policies. You can specify one or more parameters to filter the display of service usage policies. Only service usage policies that meet all the filter criteria will be displayed in the **Service Usage** page.

You can filter by one or more of the following parameters. The list of service usage policies is dynamically updated as you select each filter.

- For each filter except ***Date Edit***, you must enter text to match against. SL1 will search for billing policies that match the text, including partial matches. Text matches are not case-sensitive. You can use the following special characters in each filter:
  - , (comma). Specifies an "or" operation. For example:

    dell, micro

    would match all values that contain the string "dell" OR the string "micro".
  - ! (exclamation point). Specifies a "not" operation. For example:

    !dell

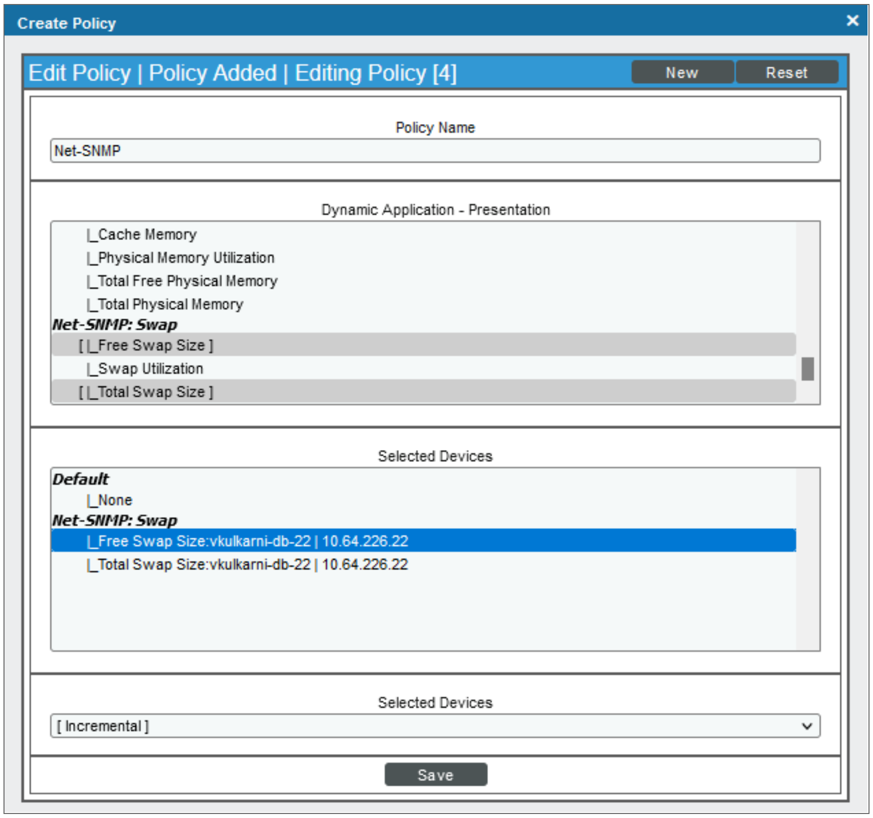
    would match all values that do not contain the string "dell".
- ***Policy Name***. You can enter text to match, and the **Service Usage** page will display only service usage policies that have a matching name.
- ***Data Source***. You can enter text to match, and the **Service Usage** page will display only service usage policies that are associated with a matching data source.
- ***Elements***. You can enter text to match, and the **Service Usage** page will display only service usage policies that have a matching number of elements.
- ***User Edit***. You can enter text to match, and the **Service Usage** page will display only service usage policies that have a matching username that created or last edited the policy.
- ***Date Edit***. You can select from a list of time periods. The **Service Usage** page will display only service usage policies that have been created or edited within that time period. The choices are:
  - *All*. Display all policies that match the other filters.
  - *Last Minute*. Display only policies that have been created within the last minute.
  - *Last Hour*. Display only policies that have been created within the last hour.
  - *Last Day*. Display only policies that have been created within the last day.
  - *Last Week*. Display only policies that have been created within the last week.
  - *Last Month*. Display only policies that have been created within the last month.
  - *Last Year*. Display only policies that have been created within the last year.

Creating a Service Usage Policy

You can create a new service usage policy from the **Service Usage** page.

To create a new service usage policy:

1. Go to the **Service Usage** page (Registry > Business Services > Service Usage).
2. In the **Service Usage** page, click the **[Create]** button in the upper right of the page. The **Service Usage Editor** page appears.



3. Supply values in the following fields:

   - ***Policy Name***. In this field, enter the name of the service usage policy.
   - ***Dynamic Application-Presentation***. This field displays a list of SNMP performance Dynamic Applications that are currently being used to monitor one or more devices or applications. The field also displays the data points included in these Dynamic Applications.

   > NOTE: After you select one ore more Dynamic Applications and data points, you will need to click **[Save]** so that SL1 can populate the ***Selected Devices*** field with a list of the devices using the Dynamic Applications and data points you selected.

   - ***Selected Devices***. This field displays all the devices using the Dynamic Application and data point you selected in the previous field. Select one or more devices to collect data from.
   - ***Data Source***. By default, contains "Incremental".

4. Click the **[Save]** button to save the service usage policy. Clicking the **[Reset]** button will clear the values in each field.

Editing a Service Usage Policy

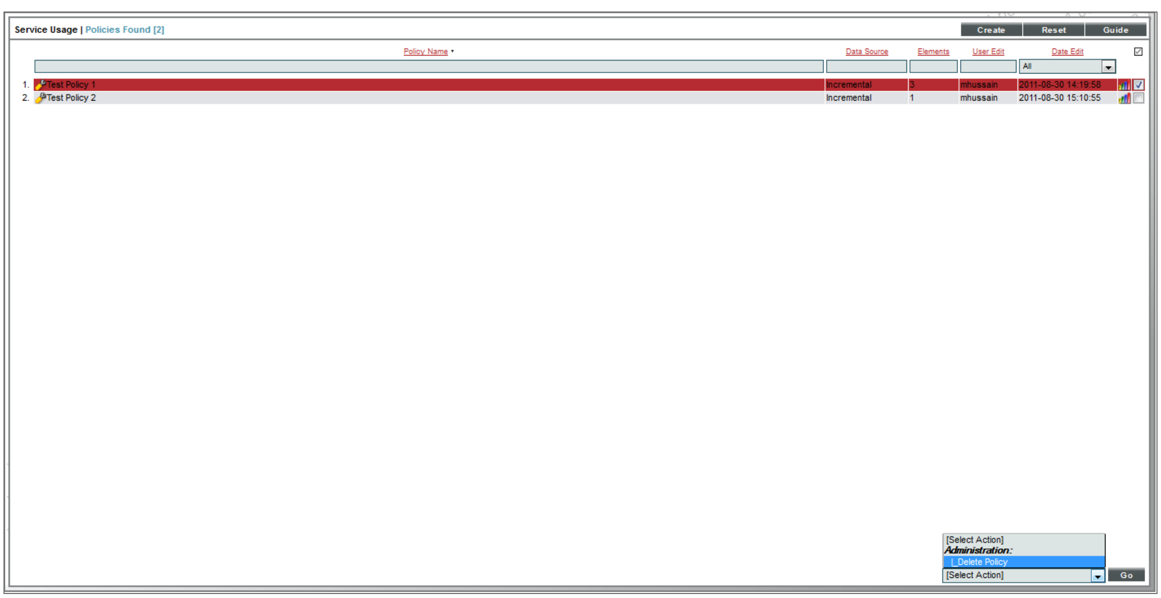
You can edit existing service usage policies from the **Service Usage** page. To edit an existing service usage policy:

1. Go to the **Service Usage** page (Registry > Business Services > Service Usage).
2. In the **Service Usage** page, find the policy you want to edit. Click its wrench icon ().
3. The **Service Usage Editor** page appears, where you can edit one or more of the values described above in the section *Creating a Service Usage Policy*.
4. To save your changes, click the **[Save]** button. To discard your changes and reset each field to its previous content, click the **[Reset]** button.

Deleting a Service Usage Policy

You can delete all, multiple, or an individual service usage policy from the **Service Usage** page. To delete one or more service usage policies:

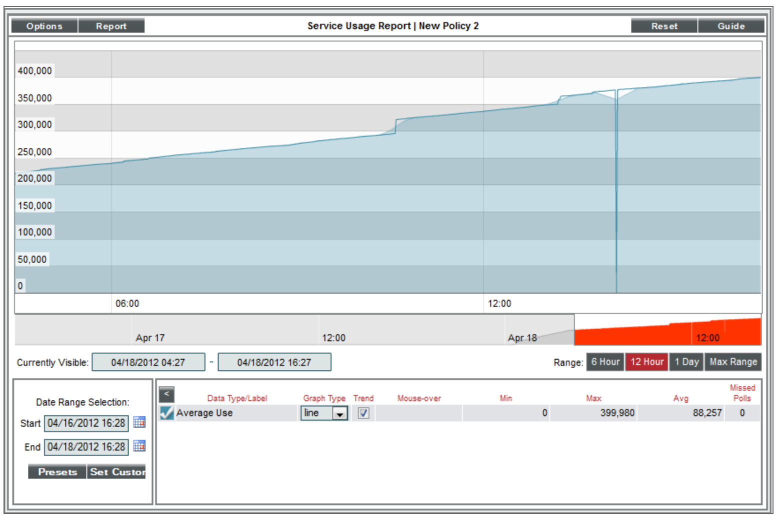
1. Go to the **Service Usage** page (Registry > Business Services > Service Usage).
2. In the **Service Usage** page, find the policy or policies you want to delete.
3. Select the checkbox for each policy you want to delete. If you want to select all service usage policies, select the checkmark () in the upper right of the page.
4. In the ***Select Action*** drop-down, select *Delete Policy*.
5. Click the **[Go]** button. The policy or policies will be deleted.



Viewing a Report on a Service Usage Policy

You can view a report an existing service usage policy from the **Service Usage** page. To view a report on a service usage policy:

1. Go to the **Service Usage** page (Registry > Business Services > Service Usage).
2. In the **Service Usage** page, find the service usage policy for which you want to view a report. Click its bar graph icon ( ) to the right of the page.
3. The **Service Usage Report** page appears and displays the following information:



- The y-axis displays the average value of the data point(s).
- The x-axis displays time. The increments vary, depending upon the selected data type (from the **[Options]** menu) and the date range (from the **Date Range Selection** pane).
- Mousing over any point in any line displays the high, low, and average value at that time-point in the **Data Table** pane.
- You can use your mouse to scroll the report to the left and right.
- In a graph of normalized data, clicking on a data point zooms in on that time period and shows the non-normalized data.

Example 1

Creating a Bandwidth Billing Report

Overview

This example describes how a service provider might configure SL1 to create bandwidth billing reports for a customer.

To create a bandwidth billing report in SL1, you must perform the following tasks:

1. Define product SKUs for each type of bandwidth billing structure used by your organization, or use existing product SKUs.
2. Configure the network interfaces that will be used in the bandwidth billing policies. To use an interface in a bandwidth billing policy, SL1 must be configured to collect bandwidth statistics for the interface every five minutes.
3. Define one or more bandwidth billing policies.
4. Generate the Interface Billing report that includes the bandwidth billing policies that you created. You can optionally configure SL1 to generate the report on a set schedule.

This chapter includes the following topics:

Creating a Product SKU

To define a bandwidth billing policy, you must first define product SKUs for each type of bandwidth product, or use existing product SKUs in SL1.

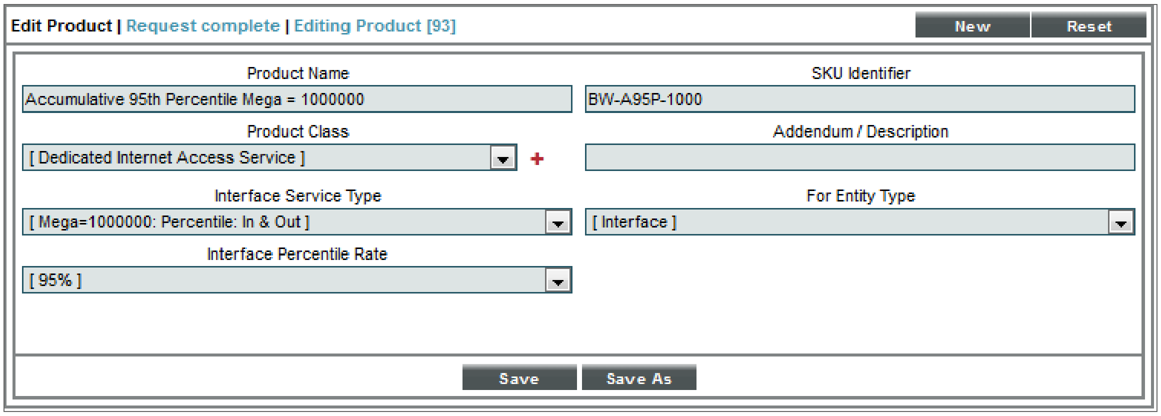
Product SKUs can be associated with organizations, devices, assets, or interfaces. Product SKUs allow you to track and bill customers for products and services rendered, such as bandwidth billing. Product SKU's can be viewed, edited, and created in the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog). When you associate a product with an organization, device, asset, or interface, that product/element pair appears in the **Product Subscription Manager** page (Registry > Service Provider Utilities > Product Subscriptions).

This section describes how to create a Product SKU that a service provider is most likely to use.

To create the example Product SKU:

1. Go to the **Product Catalog** page (Registry > Service Provider Utilities > Product Catalog).
2. Click the **[Create]** button and the **Edit Product** modal page appears.
3. In this example, the customer is billed based on the 95th percentile value of inbound and outbound bandwidth. To configure the example Product SKU, supply values in the following fields:

    - ***Product Name***. Enter a name for the Product SKU. For this example, the product SKU is named *Accumulative 95th Percentile Mega = 1000000*.
    - ***SKU Identifier***. Enter a short identifier for the Product SKU. For this example, the identifier is *BW-A95P-1000*.
    - ***Product Class***. Select the type of service this Product SKU represents. You can add a new product class by clicking the red plus icon. The example SKU is for dedicated Internet access; select *Dedicated Internet Access Service* from the drop-down list.
    - ***Addendum/Description***. Optionally enter description of the product SKU.
    - ***For Entity Type***. To use a Product SKU with a bandwidth billing policy, you must select *Interface* from this drop-down list. After selecting *Interface*, the fields ***Interface Service Type*** and ***Interface Percentile Rate*** will appear.
    - ***Interface Service Type***. The example the policy will bill the customer based on inbound and outbound bandwidth in Megabits, with Megabits defined as 1000000 bits. Select *Mega = 1000000: Percentile: In & Out* in this drop-down list.
    - ***Interface Percentile Rate***. The value you select in this field determines the single bandwidth usage reading that will be used to calculate the cost to the customer. Most services bill customers based on the bandwidth usage reading at the 95th percentile. For this example, select *95%*. If your organization uses a different bandwidth usage reading to calculate cost, you can select from *50%* to *100%* or Disabled.



4. Click the **[Save]** button to save the Product SKU, which can now be used in a bandwidth billing policy.

Configuring Network Interfaces

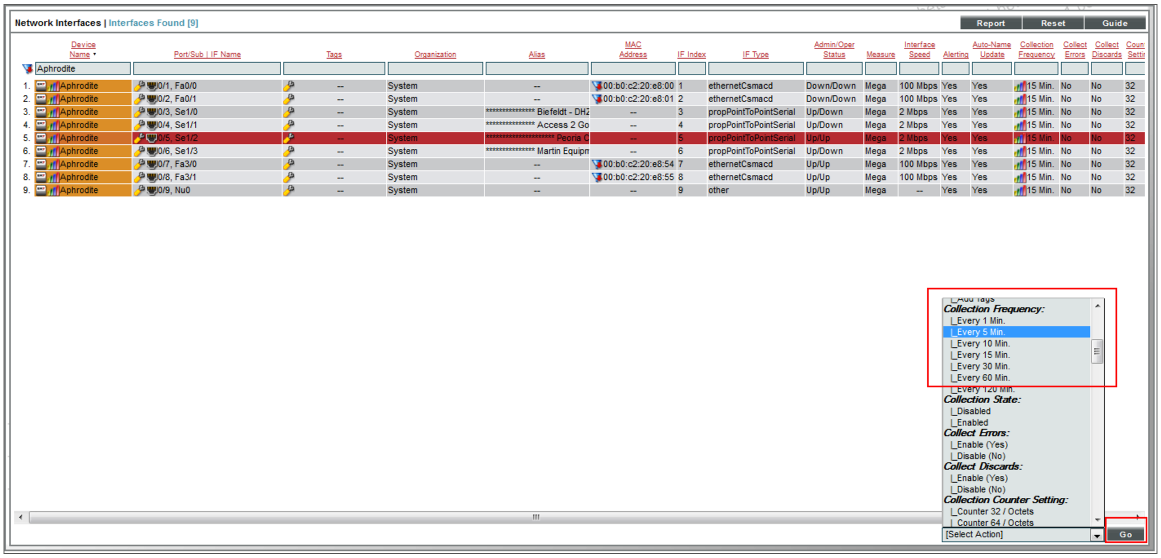
By default, SL1 collects usage data from network interfaces every 15 minutes. However, bandwidth billing in SL1 requires a shorter polling interval of 5 minutes. Collection intervals can be adjusted on one or more interfaces in the **Network Interfaces** page (Registry > Networks > Interfaces).

To change the collection interval for multiple interfaces:

1. Go to the **Network Interfaces** page (Registry > Networks > Interfaces).
2. Select the checkbox for each interface for which you want to change the collection interval. You can use the fields at the top of each column to filter the list of interfaces. For this example, the list of interfaces is filtered to include only interfaces on a device called "Aphrodite".
3. In the ***Select Action*** drop-down list at the bottom-right of the page, select *Every 5 Min.*in the *Collection Frequency* section.

> CAUTION: After you create a bandwidth billing policy, SL1 will not prevent a user from changing the *Collection Frequency* setting for the associated interfaces. If the collection frequency of an interface that is already included in a bandwidth billing policy is changed, SL1 will calculate incorrect bandwidth billing data.

4. Click the **[Go]** button.



When you create a Bandwidth Billing policy, the ***Available Interfaces*** field will display a list of all interfaces with a collection frequency of 5 minutes.

> **NOTE:** The Interface Billing report supports multi-tenancy. For users of type "user", this means that the Interface Billing report will only display interfaces that are included in the bandwidth billing policies that the user is allowed to view, and interfaces that are aligned with the same organization as the user or has an Emissary setting that allows the user to view the interface.

Creating a Bandwidth Billing Policy

For this example, the service provider guarantees each customer a specified throughput speed and bills each customer based on incoming and outgoing bandwidth usage. A bandwidth billing policy specifies the product SKU to use for billing, the interfaces used by the customer, and the cost for using the bandwidth. In this example, the bandwidth billing policy includes two interfaces. For each bandwidth billing policy, SL1 creates a virtual interface. A virtual interface is used to record the combined bandwidth usage for all the interfaces included in the associated bandwidth billing policy.

To create a bandwidth billing policy, perform the following steps:

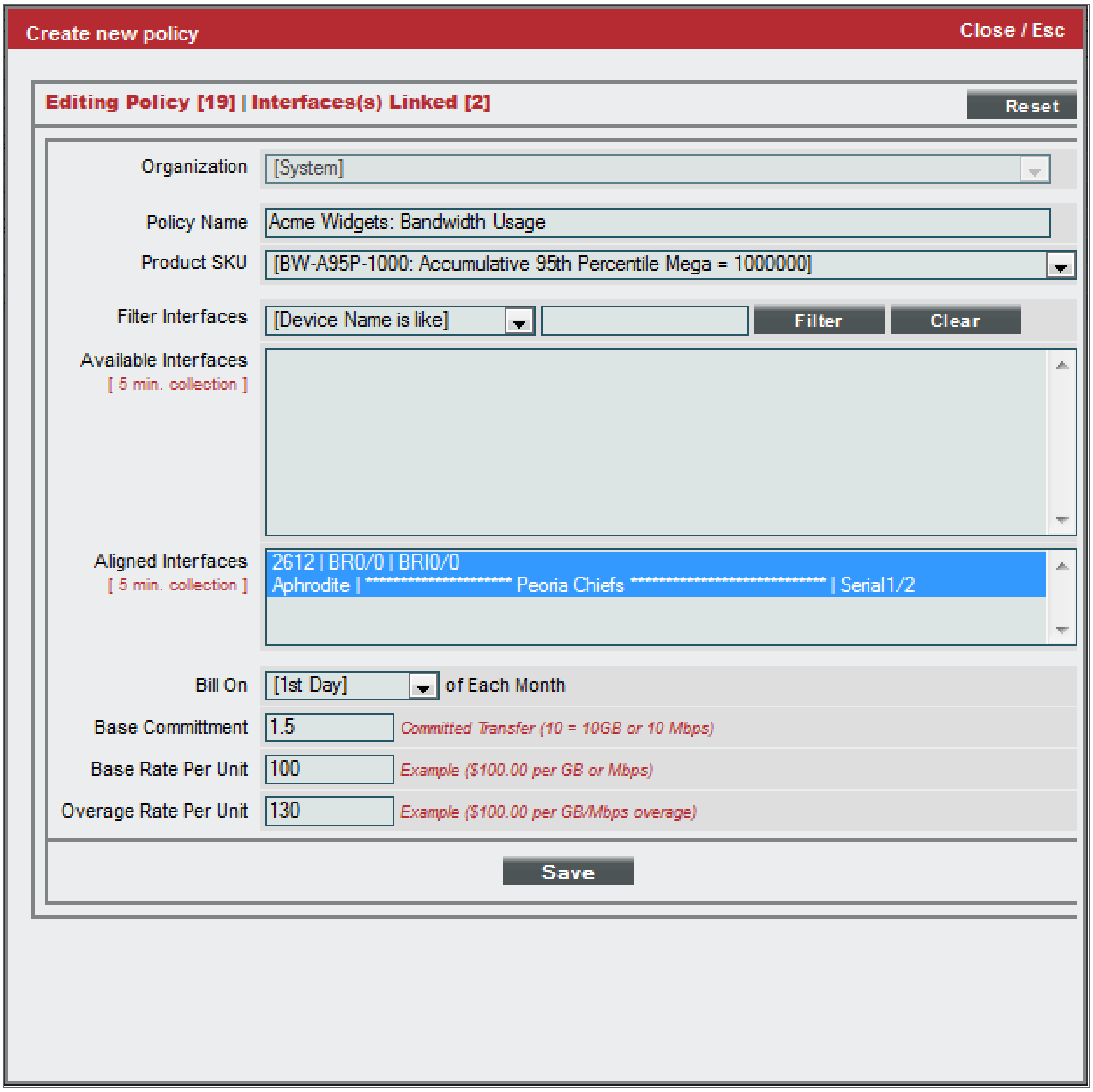
1. Go to the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing).
2. Click the **[Create]** button. The **Bandwidth Billing Editor** page is displayed.
3. Supply values in the following fields:

    - ***Organization***: Select the organization associated with the customer to be billed. Users of type "administrator" can select from a list of all organizations in SL1. Users of type "user" can select from a list of all organizations of which they are a member.
    - ***Policy Name***: Enter a name for the policy, for example, "Acme Widgets: Bandwidth Usage".

- ***Product SKU***: Select a Product SKU to associate with the bandwidth billing policy. To use the example Product SKU described in the Creating a Product SKU section, select*BW-A95P-1000: Accumulative 95th Percentile Mega = 1000000*. The customer will be billed based on inbound and outbound bandwidth for all applicable interfaces. Billing is calculated using the percentile point specified in the ***Interface Percentile Rate*** field, which in this case is the 95th percentile. A Megabyte will be measured as 1000000 (one million) bytes.
- ***Filter Interface***: You can use this field to search for interfaces by device name, organization, interface name, interface alias, or interface description.
- ***Available Interfaces***: Select which interfaces to align with the bandwidth billing policy. You can select one or more interfaces. This example includes two interfaces: *2612 BR0/0 BRI0/0*, and *Aphrodite **********Peoria Chiefs********** Serial 1/2*.

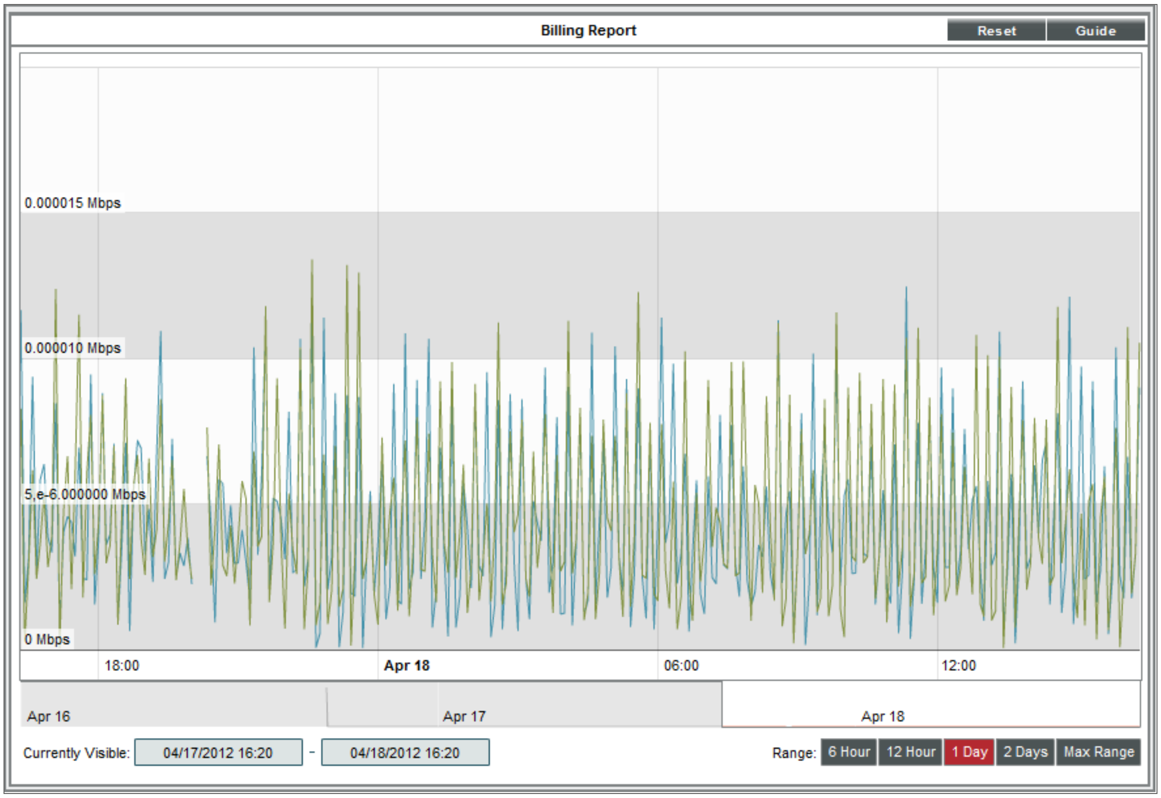
In this example, the two selected interfaces are located on separate routers. The first interface, *2612 BR0/0 BRI0/0*, is active, while the second interface, *Aphrodite **********Peoria Chiefs********** Serial 1/2*, acts as a failover interface and typically remains dormant. The second interface is used only if the first interface should fail. By including both interfaces in the bandwidth billing policy, no additional steps need to be taken during the billing process to account for failover. When the policy is saved, SL1 creates a virtual interface, which acts as a container for the customer's bandwidth usage information.

- ***Bill On***: Select a specific day of the month on which the customer will be billed . For this example, select *1st Day* to bill the customer on the first day of each month.
- ***Base Commitment***: Amount of base bandwidth/transfer specified in the customer's contract. For example, enter "1.5". In this example, the unit of measurement specified in the Product SKU is Megabits per second, so "1.5" represents, for 1.5 Megabits per second.
- ***Base Rate Per Unit***: Enter the cost per unit for bandwidth specified in the ***Base Commitment*** field. This figure is always based on a unit of 1. For example, enter "100", which represents $100 per Megabit.
- ***Overage Rate Per Unit***: Enter the cost per unit when the customer exceeds the bandwidth specified in the ***Base Commitment*** field. For example, enter "130", which represents $130 per Megabit overage.



4. Click the **[Save]** button to save the policy.

The Bandwidth Billing policy appears in the **Bandwidth Billing Policies** page (Registry > Service Provider Utilities > Bandwidth Billing). To view the bandwidth usage data associated with the virtual interface for the bandwidth billing policy (the combined bandwidth usage of all interfaces associated with the policy), click the graph icon () for the bandwidth billing policy. When you click the graph icon, the **Billing Report** page is displayed:

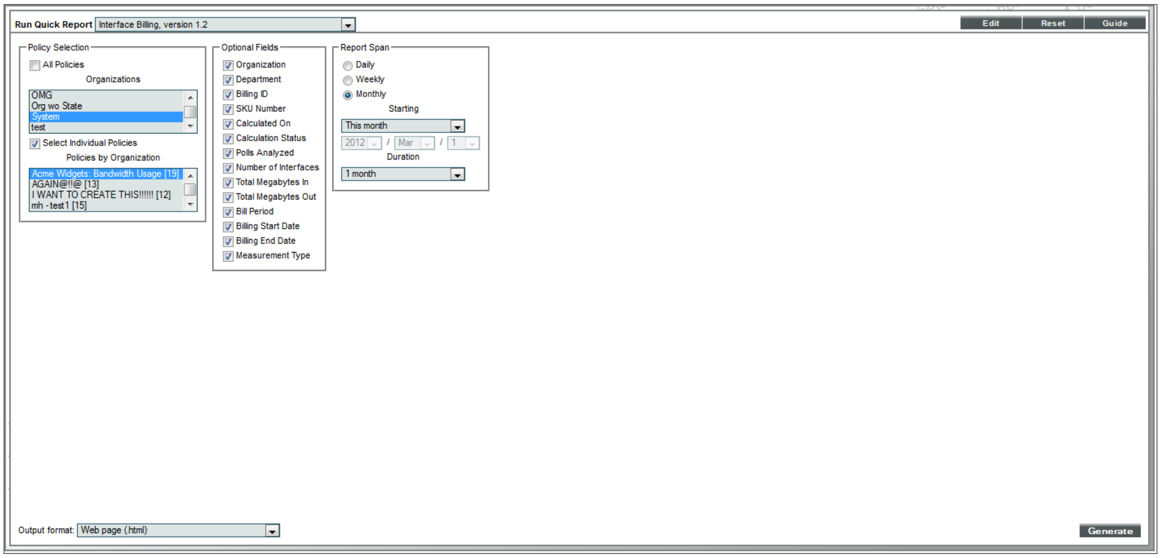


Viewing the Bandwidth Billing Report

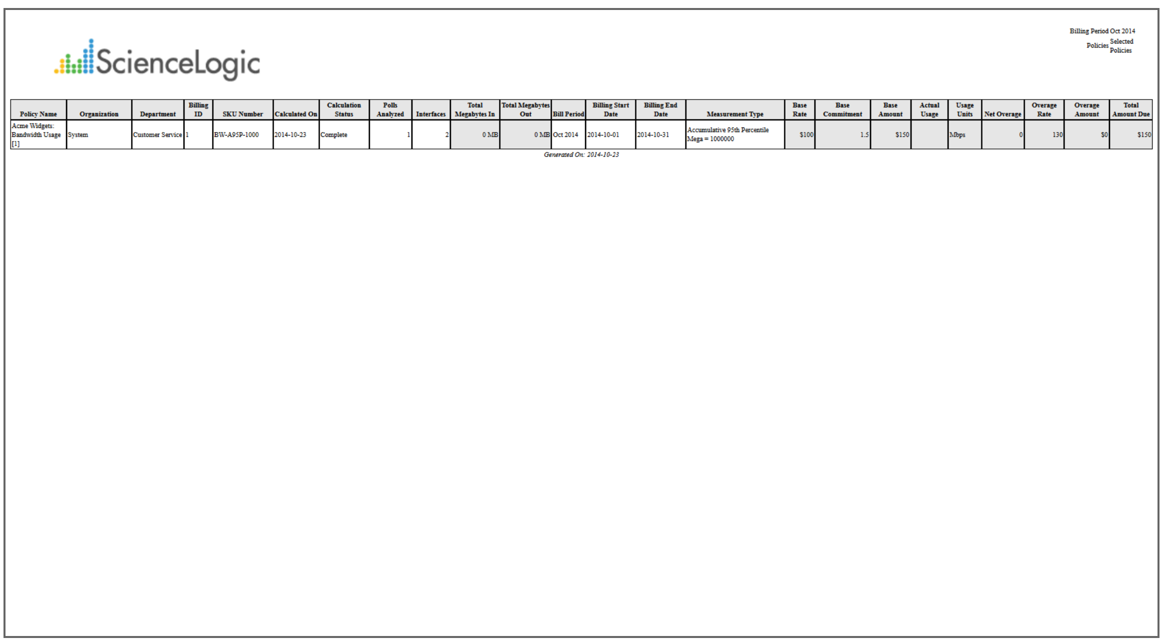
To generate a Bandwidth Billing Report for *Acme Widgets: Bandwidth Usage*:

1. Go to the **Reports** page (Reports > Reports).
2. In the ***Run Quick Report*** field, select *Interface Billing, version 1.2*.
3. In the **Policy Selection** pane, de-select the ***All Policies*** checkbox, and then select "*System*" from the Organizations list.
4. Also in the **Policy Selection** pane, select the ***Select Individual Policies*** checkbox, and then select the *Acme Widgets: Bandwidth Usage* policy.
5. In the **Report Span** pane, select *Monthly*, and leave the ***Starting*** and ***Duration*** fields as *This month* and *1 month*, respectively.

6. In the ***Output format*** field, select *Web page (.html)*.



7. Click the **[Generate]** button. The report will open in a new tab in the browser.



Bandwidth Billing Calculations

The report includes the following three dollar amounts for each selected bandwidth billing policy:

- ***Base Amount ($)***
- ***Overage Amount ($)***
- ***Total Bill ($)***

To calculate these values, the report used the data collected for the virtual interface associated with the bandwidth billing policy, and the values from the following fields in the product SKU and bandwidth billing policy:

- ***Bill On (from billing policy)***. This value is used to adjust the time period for the policy data.
- ***Base Commitment (from billing policy)***. After the bandwidth usage for the time period is calculated, this value is used to calculate the ***Base Amount ($)*** value.
- ***Base Rate Per Unit (from billing policy)***. After the bandwidth usage for the time period amount is calculated, this value is used to calculate the ***Base Amount ($)*** value.
- ***Overage Rate Per Unit (from billing policy)***. After the bandwidth usage for the time period amount is calculated, this value is used to calculate the ***Overage Amount ($)*** value.
- ***Interface Service Type (from SKU)***. This value is used to calculate the total amount of bandwidth the customer is billed for.
- ***Interface Percentile Rate (from SKU)***. This value is used to calculate the total amount of bandwidth the customer is billed for.

To calculate the billing amounts, the following calculations are performed when the report is generated:

1. The report calculates the time period for each policy:

    - If a report span of one month was selected in the report input form, the time span is adjusted based on the ***Bill On*** value defined in the billing policy. If the ***Bill On*** value is between 2 and 28, the report adjusts the start and end times forward so that the time span starts on the correct day. For example, if on the report input form, you select *Last Month* as the time span and a billing policy has a ***Bill On*** value of 3, the time span used by the report for that policy will start at the beginning of the 3rd day of last month and end at the end of the 2nd day of the current month. The time span for a policy is not adjusted if the bill on value is less than 2 or greater than 28.
    - If the time span for a billing policy is not adjusted , the time period used by the report is the time span that you specified in the input form.

2. The report calculates the total amount of bandwidth the customer is billed for. For ***Interface Service Types*** of "Committed Transfer", this amount is the total amount of inbound and outbound bandwidth used for the entire billing period, i.e. the sum of all collected inbound and outbound values. For the other ***Interface Service Types***, the calculation of this value is based on the collected data for a single poll. First, the report calculates a value for each poll during the time span. The value is different for each ***Interface Service Type***:

   - ***Percentile In & Out***: The value for each poll is the combined inbound & outbound utilization, measured in the units specified in the SKU.
   - ***Percentile Inbound***: The value for each poll is the inbound utilization, measured in the units specified in the SKU.
   - ***Percentile Outbound***: The value for each poll is the outbound utilization, measured in the units specified in the SKU.
   - ***Percentile: Highest Poll***: The value for each poll is either the inbound utilization or the outbound utilization, whichever is higher, measured in the units specified in the SKU.

3. For ***Interface Service Types*** other than "Committed Transfer", the report orders the data for each poll from the lowest value to the highest value. The value at the percentile specified in the Interface Percentile Rate specified in the SKU is selected. For example, if there were 100 polls during the time period specified in the report, the values would be ordered with the lowest value at position 1 and the highest value at position 100. If the ***Interface Percentile Rate*** specified in the SKU is 95%, the report would select the value at position 95.

   NOTE: When the percentile option is selected, the **Billing Report** performance graph displays a calculated value at each percentile point. The Interface Billing report uses the actual reading that is closest to the 95th percentile to calculate billing values.

4. The report now uses either the total amount of inbound and outbound bandwidth used (for "Committed Transfer" ***Interface Service Types***) or the single selected value (for other ***Interface Service Types***) as the calculated bandwidth usage. The calculated bandwidth usage is used to calculate three dollar amounts:

   - ***Base Amount ($)*** = ***Base Commitment*** defined in billing policy * ***Base Rate*** defined in billing policy
   - ***Overage Amount ($)***. If the calculated bandwidth usage is less than the base commitment, this value is 0. If the calculated bandwidth usage is greater than the base commitment, this value equals: (calculated bandwidth usage – base commitment) * overage rate defined in policy
   - ***Total Bill ($)*** = Base Amount + Overage Amount

Scheduling a Bandwidth Billing Report

To schedule a report in SL1, you must:

- Create a report job, which stores the options and parameters of the report.
- Add the report job to the schedule.

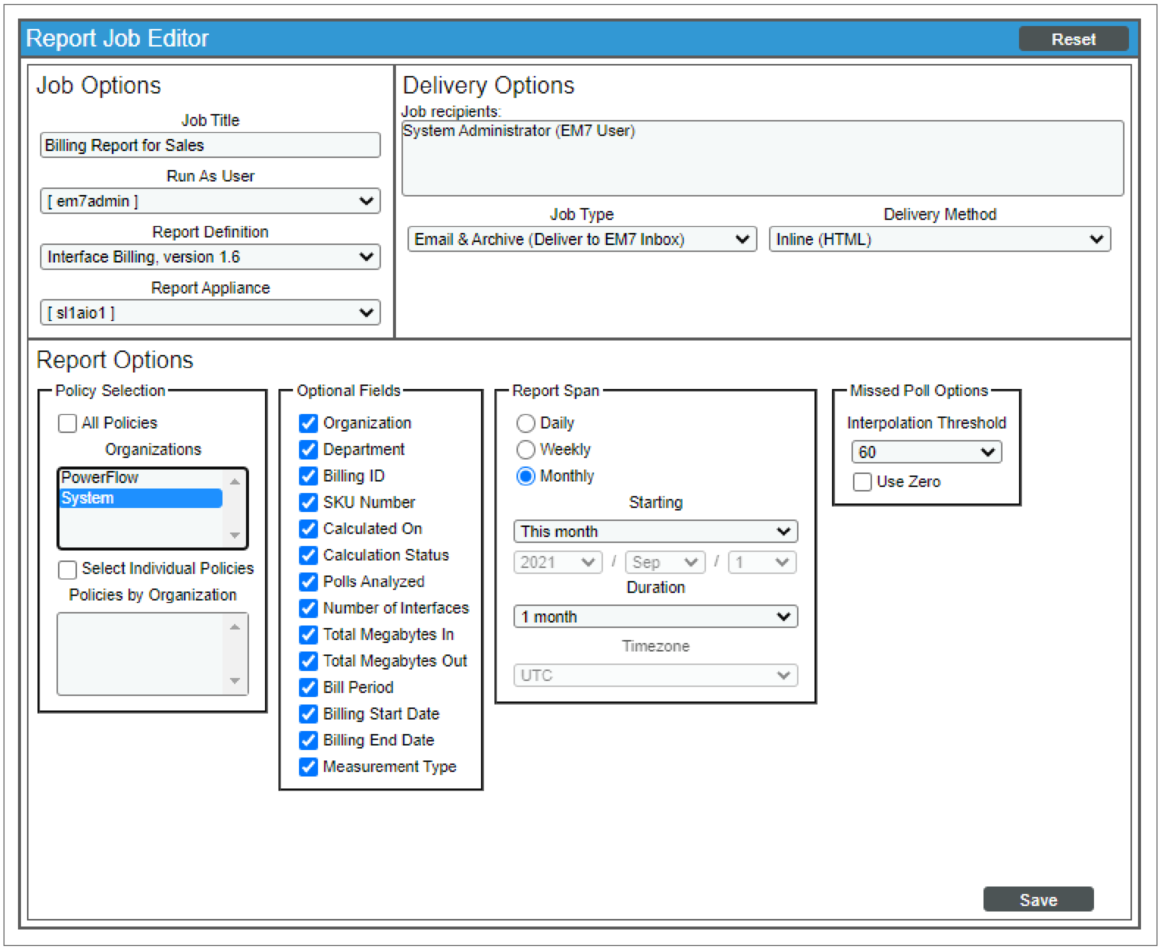
This section describes both of these tasks.

Creating a Report Job

You can define a report job in the **Report Jobs** page (Reports > Create Report > Report Jobs). From this page, you can create a report job, run a report job, edit a report job, or delete a report job. To create a report job:

1. Go to the **Report Jobs** page (Reports > Create Report > Report Jobs).
2. Click the **[Create]** button in the upper right of the page. The **Report Job Editor** page appears.
3. The **Report Job Editor** page contains fields where you can select the parameters of the report job. The fields are:
   - ***Job Title***. Provide a title for the report job. For this example, enter *Billing Report for Sales*.
   - ***Run as User***. Specify a user that the report will run for. When the report is generated this user's organization restrictions will be used. This is helpful when a system administrator is setting up a scheduled report for a user who does not have access to the Report Scheduler and who may have access only to the entities in his/her organization. Therefore, it is best practice to select the user account for the customer you are generating the report for. For more information on organization restrictions, see the ***Access Permissions*** manual.
   - **Report Definition**. Select a custom report to run. The drop-down list will display all custom reports in the system. For this example, select *Interface Billing, version 1.2*.
   - ***Job Recipients***. Select the users, external contacts, and vendors to send the report to. For this example, select a user account or external contact associated with the customer's organization. To add job recipients to the report job:
     - Select the *Job recipients* field. The **Recipient Selector** modal page appears. In the ***Matched Recipients*** list, select the checkbox in the *Action* column for the user you want to send the report to.
     - Click the **[Add/Remove]** button in the bottom right of the page to add the selected user(s).
   - ***Job Type***. How SL1 will deliver the report. For this example, select *Email & Archive (Deliver to EM7 Inbox)*. When the scheduled report is generated, SL1 will send it to the Inbox of all users you selected in the ***Job Recipients*** field; send the report to the email address for all users, external contacts, and vendors you selected in the ***Job Recipients*** field; and archive the report in the **Scheduled Report Archive** page (Reports > Create Report > Scheduled Job / Report Archive).
   - ***Delivery Method***. Specifies the method of delivery and the output format for the report. For this example, under *Attachment* select *Inline (HTML)*.
   - ***Report Options***. The interface for the selected report appears in this pane. Select the options you want included in the automatically generated report. These options are limited by the Access Keys aligned with your SL1 system account and the organization memberships aligned with your account. For this example, supply the report options that you entered when you followed the steps listed in ***Viewing the Bandwidth Billing Report***.

4. To save the report job you created, click the **[Save]** button in the bottom right of the page.



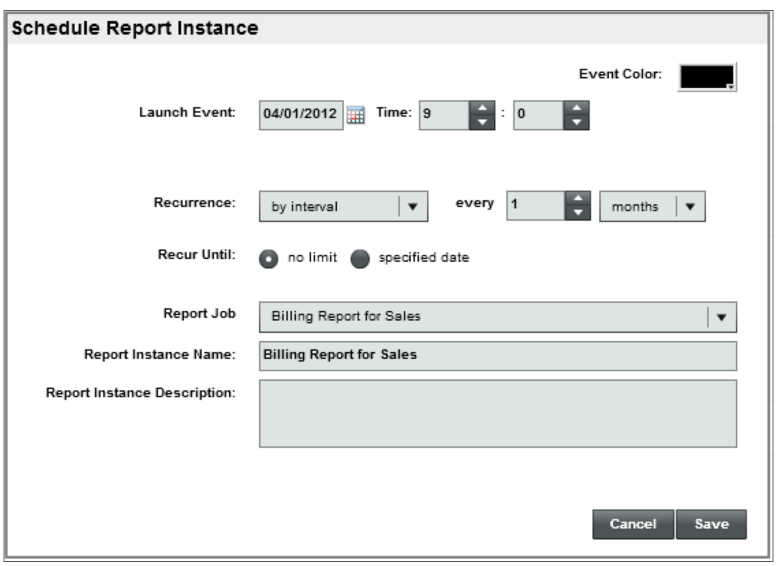
Scheduling the Report Job

After a report job has been created, you can schedule the report to run automatically. Scheduled reports are automatically generated by SL1 either once, at a specified time, or at specified regular intervals. You can select the day and time the Report Job runs, the recurrence of the Report Job, if necessary, and save these parameters in a calendar to view and edit later. To schedule a Report Job for this example:

1. Go to the **Report Scheduler** page (Reports > Create Report > Scheduler).
2. The **Report Scheduler** page is divided into two parts:
   - The right side displays a calendar where you can view scheduled report
   - The left side includes buttons that control the display of the calendar on the right side.
3. To schedule a Report Job, select the day you want to schedule the report. You can do this by selecting the day from the large or small calendar, or by clicking the **[day]** button if you want to schedule the Report Job for the current day. For this example, select the first day of the month.

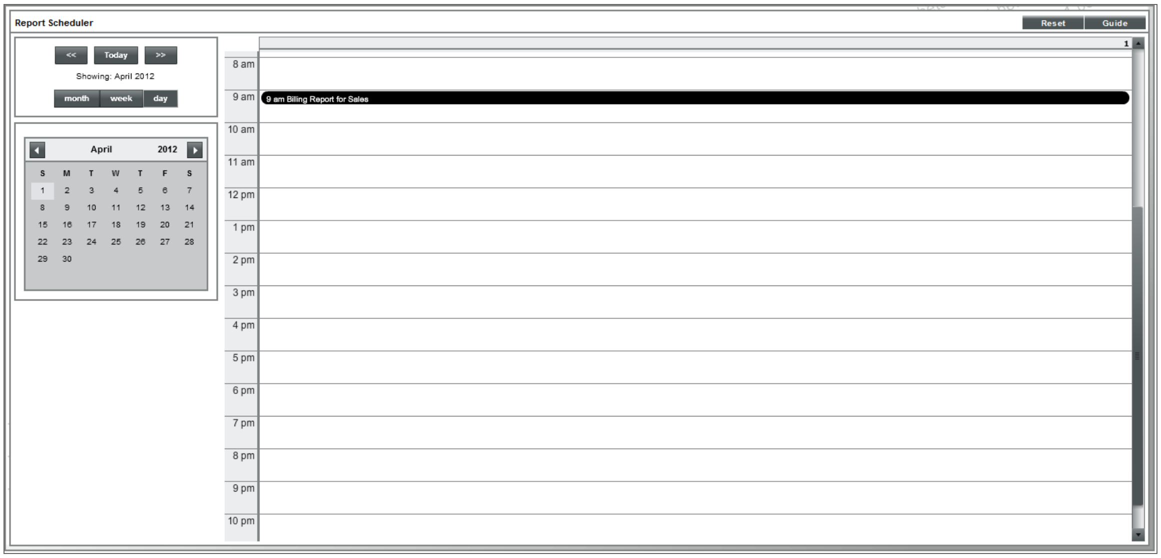
4. After you have selected a day, the calendar will display an hourly view. You can select the scheduled report to run at the beginning or half mark of the hour by clicking at the top or bottom of the desired hour, or you select the entire hour or multiple hours by clicking and dragging the mouse. For this example, select 9:00 a.m.
5. After selecting the time of the report, the **Schedule Report Instance** page appears. Define the following fields:

   - ***Event Color***. Select from a range of colors in the drop-down list. The report name will now appear in the selected color in the calendar. Leave the color as the default black for this example.
   - ***Launch Event***. Select the date and time to generate the report. By default, the date and time are set as the date and time you selected in the calendar views, which in this example are 04/01/2012 and 9:00.
   - ***Recurrence***. Specifies whether the report is recurring or not. Select *by interval* and then select *1* in the ***every number*** field and *months* in the ***every interval*** field to make the report recur once every month.
   - ***Recur Until***. If you specified that the event is recurring, this field appears. This field specifies the amount of time for which the report will recur. You can select *no limit* or *specified date*. If you select *specified date*, you must enter a date in the date field to the right.
   - ***Report Job***. Select the *Billing Report for Sales* report job you created in ***Creating a Report Job***.
   - ***Report Instance Name***. Supply a name for the scheduled report. For this example, input the same name as the report job: *Billing Report for Sales*.
   - ***Report Instance Description***. Supply the description of the scheduled report, e.g. "Monthly billing report for the customer".



6. To save the scheduled report, click the **[Save]** button. If you want to cancel the scheduled report, click the **[Cancel]** button.

7. If you click **[Save]**, the scheduled report will appear in the calendar at the time it is scheduled to occur:



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