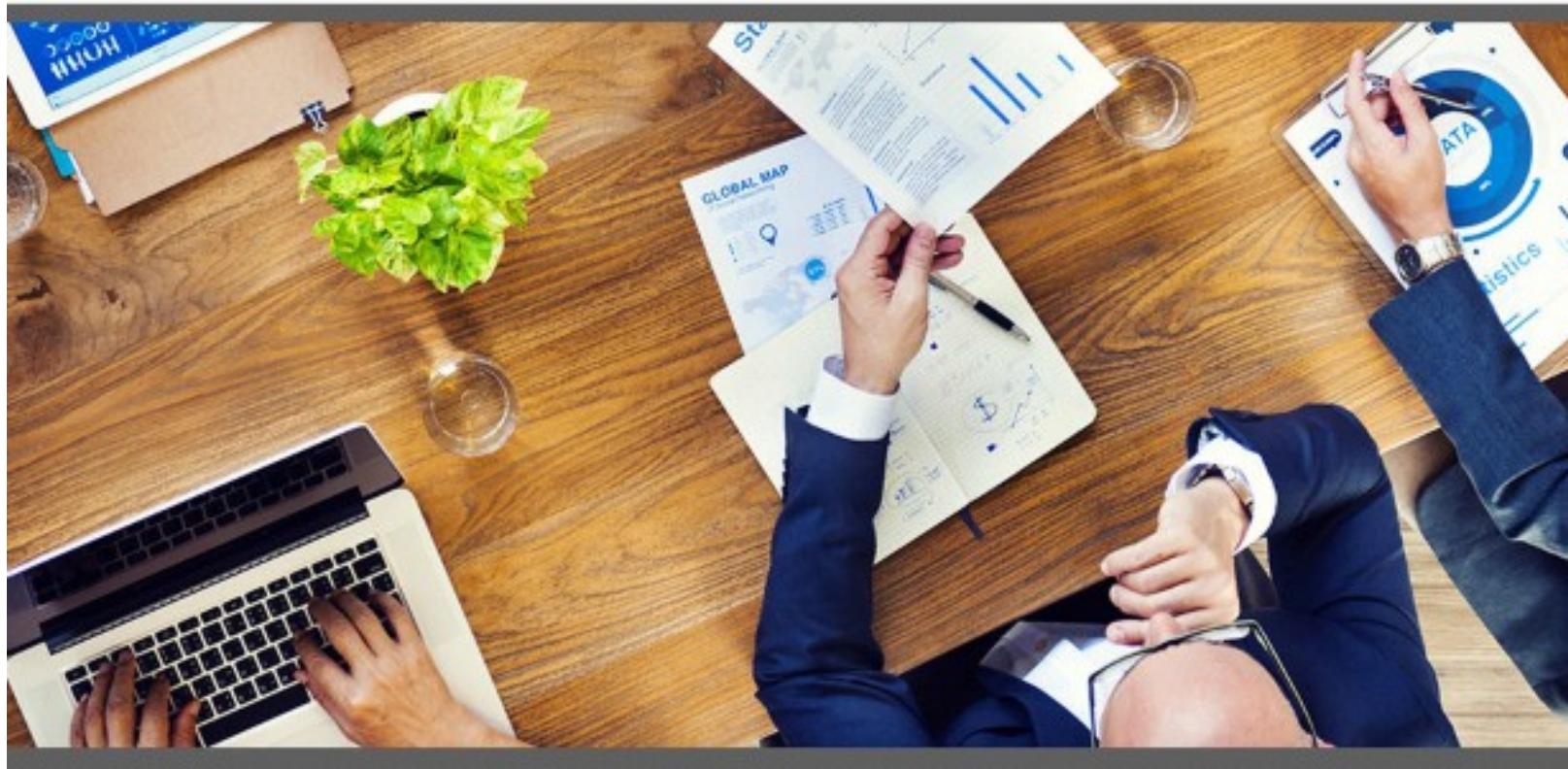




Ignite Technologies
Security and Compliance Solutions



SenSage AP Analyzer Guide SenSage Standard 2016 (v6.1.1) August 3, 2016

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Notices

Table of Contents

Preface.....	9
Audience for this Book.....	9
SenSage AP Analyzer Guide Organization.....	9
Road Map to SenSage AP Documentation	10
Conventions Used in SenSage AP Documentation.....	14
Contacting Technical Support.....	15
Chapter 1: Getting Started.....	17
What is SenSage AP Analyzer?.....	18
Logging Into the Analyzer.....	18
Viewing the Default Dashboard.....	20
Using Dashboard Features.....	21
Moving and Re-organizing Pods.....	22
Maximizing Pod for Full-Screen Viewing.....	23
Pod Options.....	24
Report Viewing Features.....	25
Customizing the Dashboard Layout.....	27
Using Analyzer Menus and Navigation.....	27
Dashboard.....	28
Data Design.....	28
Scheduler.....	29
Administration.....	29
Hiding the Menus.....	30
Limiting Namespace Access.....	31
Configuring Time Zones.....	32
Chapter 2: Viewing Reports, Charts, and Models.....	33
Viewing Reports.....	34
Viewing a Default Report Display.....	35
Specifying Filter Values in Columns.....	36
Zooming into a Report Timeframe.....	37
Using Other Report Viewing Options.....	39
Changing the Default Timeframe.....	40
Filtering a Report by Additional Timeframes.....	41
Using Quick Filters on Report Values.....	43
Removing Filters from a Report Display.....	45
Removing and Choosing Columns for Report Display.....	47
Using Filters to find a Report.....	47

Removing a Report Filter.....	52
Using Sort to Find a Specific Report Attribute.....	53
Using Viewing Features for Charts and Graphs.....	54
Viewing Models.....	55
Chapter 3: Creating and Modifying a Dashboard.....	61
Setting Up the Initial Analyzer Dashboard.....	61
Adding Dashboards.....	63
Modifying a Dashboard.....	63
Adding Reports to a Dashboard.....	64
Chapter 4: Creating, Modifying, and Running a Report.....	71
Creating a Report.....	72
Running a Report.....	77
Viewing Report Run Status.....	80
Modifying a Report.....	81
Joining Multiple Tables in the Report.....	83
Specifying a Summary Report.....	87
Providing a Date Limit Prompt in the Report.....	90
Setting Report Retention for Report History.....	91
Providing Interactive Runtime Parameters for the Report.....	91
Specifying Data Filters for the Report.....	94
Integrating Data Models with the Report.....	96
Associating the Report with a Related Report for Drill-down.....	98
Copying, Renaming, and Deleting Reports.....	101
Copying Reports.....	101
Renaming Report(s).....	102
Deleting Report(s).....	103
Chapter 5: Creating and Modifying Charts for a Report.....	105
Creating a Chart.....	106
Editing a Chart.....	108
Creating or Modifying an Area Chart.....	110
Creating or Modifying a Bar Chart.....	113
Creating or Modifying a Pie Chart.....	116
Creating or Modifying a Heat Map.....	118
Creating or Modifying a Custom Chart	120
Creating and Modifying a Trending Chart.....	122
Chapter 6: Using Analytics Wokbench for Advanced Data Modeling....	123
What is a Data Model?.....	123
Analytics Workbench.....	123

Defining a Model.....	124
Parts of a Model Component.....	125
Creating and Editing a Data Model.....	126
Adding and Modifying Model Input and Output Parameters.....	128
Creating a New Model Based on an Existing One.....	131
Nesting (embedding) a Model into an Existing Model.....	131
Adding and Modifying Model Components to a New or Existing Model.....	132
Connecting Components.....	134
Converting Data with Analytic Components.....	136
Analytics Component Menu Options.....	137
Filtering Components Display.....	137
Using Model Canvas Menu Options to perform Model Actions.....	138
Using Model Menu Items to Perform Model tasks.....	140
Filtering Model Display.....	141
Sharing Models.....	142
Using the Shared Button Option.....	142
Creating a Report with the Selected Model.....	143
Creating a Schedule with the Selected Model.....	143

Chapter 7: Using SQL Workbench for Code and Queries.....145

Creating an SQL Query.....	145
Saving an SQL Query as a Report.....	148

Chapter 8: Managing Report and Analytics Schedules.....151

Scheduler Overview.....	151
Creating a Report Schedule.....	152
Creating a Schedule for a Model	157
Creating a Schedule for Distribution.....	161
Viewing Results of Scheduled Reports.....	162
Viewing Results of Scheduled Analytics.....	163

Chapter 9: Administering Sensage AP Users (Draft).....167

Adding a SenSage AP Users.....	168
Adding a SenSage AP User in a Single/Multiple-AD Server Environment.....	168
Modifying a SenSage AP User.....	170
Deleting a SenSage AP User.....	171
Adding and Modifying Groups.....	172
Adding/Modifying Groups in a Single/Multiple-AD Server Environment.....	172
Deleting Groups.....	174
Adding and Modifying Roles.....	175
Deleting roles.....	178
Synchronizing Users from Active Directory/LDAP.....	179

Chapter 10: Using Import, Export, and Download Features.....	181
Importing/Exporting Reports.....	181
Importing/Exporting Dashboards.....	184
Exporting Charts.....	186
Downloading a Grid in a Chart.....	186
Importing/Exporting Models.....	187
Chapter 11: Administering Data Models.....	189
Adding/Deleting a Data Model Category.....	189
Displaying Model Execution Metrics.....	191
Chapter 12: Appendix A: Namespace Access Procedures.....	193
6.x.x Procedure to Limit a User's Access to a Namespace(s).....	193
5.x.x Procedure to Limit a User's Access to a Namespace(s).....	194
Chapter 13: Appendix B: Sensage AP Permission Requirements.....	197
Chapter 14: Appendix C: Setting up Analyzer for Custom Charts.....	203

Preface

For details, see the following topics:

- [Audience for this Book](#)
- [SenSage AP Analyzer Guide Organization](#)
- [Road Map to SenSage AP Documentation](#)
- [Conventions Used in SenSage AP Documentation](#)
- [Contacting Technical Support](#)

Audience for this Book

This book is intended for:

- system administrators who install and manage software systems.
- business analysts who views or writes reports and models.
- report developers who write reports and queries and SQL code

SenSage AP Analyzer Guide Organization

This book contains the following chapters:

[Getting Started](#) on page 17—Describes Analyzer basics to get started, including an introduction to the system, how to login, use its menus and interface, navigate between subcomponents, and perform timezone and access configuration.

[Viewing Reports, Charts, and Models](#) on page 33—Describes how to use SenSage AP Analyzer to view and filter reports and charts, and display data models.

[Creating and Modifying a Dashboard](#) on page 61—Describes how to create an initial, default dashboard, add dashboards, modify them, and use their features.

[Creating, Modifying, and Running a Report](#) on page 71—Describes how to use the Analyzer Report Creation Wizard to create a basic report along with optional configuration features such as runtime parameters, complex data filters, and integration with data models.

[Creating and Modifying Charts for a Report](#) on page 105—Describes how to use SenSage AP Analyzer to create and modify a chart corresponding to a report.

[Using Analytics Workbench for Advanced Data Modeling](#) on page 123—Describes how to use SenSage AP Data Analytics Workbench, interactive and visual Data Modeling tool, to create, alter, and execute data models.

[Using SQL Workbench for Code and Queries](#) on page 145—Describes how to use the Analyzer's Data Analytics Workbench, interactive and visual Data Modeling tool, to create, alter, and execute data models.

[Managing Report and Analytics Schedules](#) on page 151—Describes how to manage report and analytics schedules through the Analyzer's Scheduler, where users can create report schedules and view the output of scheduled reports.

[Administering Sensage AP Users \(Draft\)](#) on page 167—Describes how to use SenSage AP Analyzer to administer SenSage AP users, including maintenance of their assigned roles and groups.

[Using Import, Export, and Download Features](#) on page 181—

[Administering Data Models](#) on page 189—

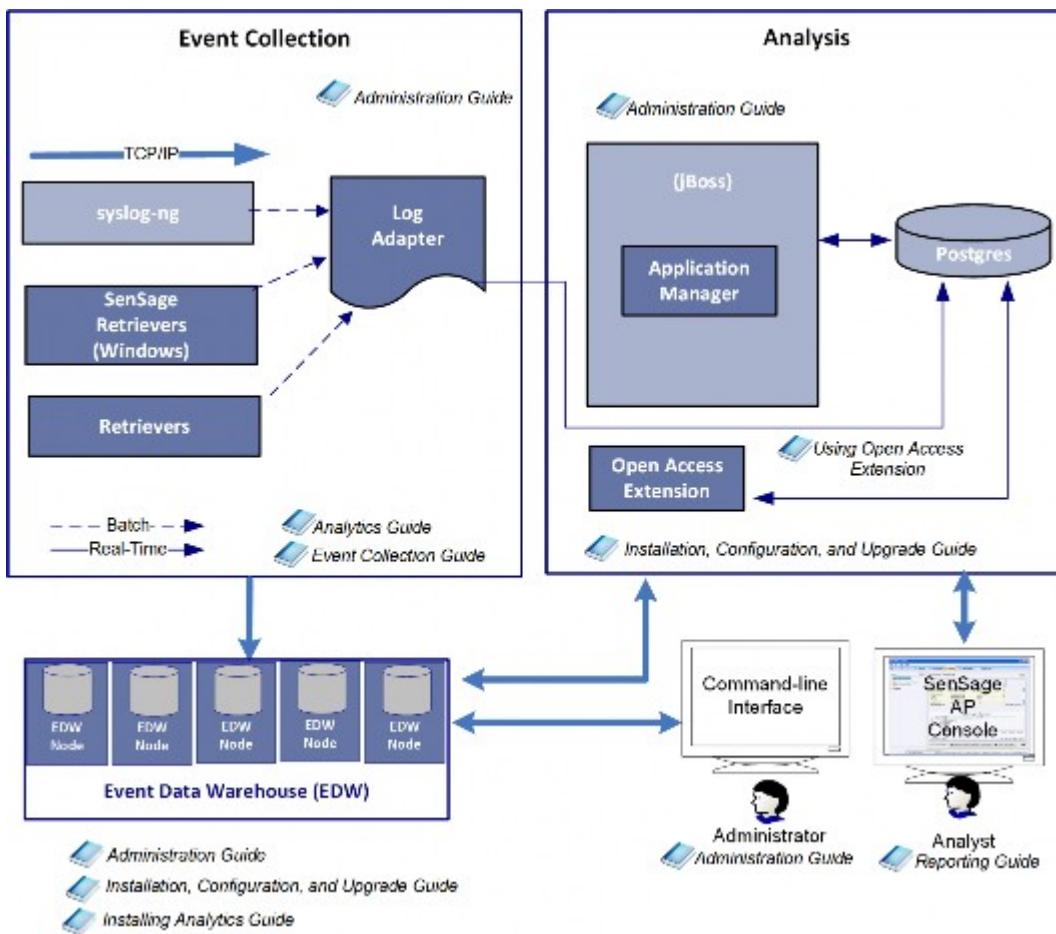
[Appendix A: Namespace Access Procedures](#) on page 193—Contains both the SenSage AP version 5.x.x and 6.x.x procedure to limit a user's access to a namespace(s).

[Appendix B: Sensage AP Permission Requirements](#) on page 197—Lists role privileges and permissions that are required to perform specific actions (such as view, edit, run, delete, etc) in each feature of the SenSage AP application (reporting, scheduling, etc).

Road Map to SenSage AP Documentation

This document, the *SenSage AP Analyzer Guide*, is part of the larger documentation set of your SenSage AP system. Figure P-1 below, illustrates SenSage AP components and modules in the context of their function within the SenSage AP system.

Figure P-1: Road Map to SenSage AP Documentation



The table below describes all the manuals in the SenSage AP documentation set and the user roles to which they are directed.

Role	Tasks	Documentation
Developer, Report Developer	<ul style="list-style-type: none"> • Learn about Analytics • Use IntelliSchema views • Learn about the Foundation and Compliance Analytics packages • Learn about additional Analytics packages 	<i>Analyzer Guide</i>
Business Analyst or System Administrator	<ul style="list-style-type: none"> • Get an overview of advanced Analytics • View a listing of all sample models available in the Analytics package • Learn how to implement a Data Table in sample models • Find reference details on each Advanced Analytics model and model component 	<i>Analytics Guide</i>
Developer, Report Developer or Security Analyst	<ul style="list-style-type: none"> • Use SenSage AP SQL, SenSage AP SQL functions, and libraries to create reports or query the EDW • Access EDW data using open standards as ANSI SQL, ODBC, and JDBC • Create and use Perl code in SenSage AP SQL statements • Use the DBD Driver to query SenSage AP from other locations 	<i>Event Data Warehouse Guide</i>
Security System Administrator		<i>Collector Guide</i>

Role	Tasks	Documentation
	<ul style="list-style-type: none"> • Configure retrievers, receivers, and collectors • Enable/disable log adapters • Configure SenSage APRetriever • Create log adapter PTL files 	
System Administrator	<ul style="list-style-type: none"> • Install SenSage AP • Configure SenSage AP and its components • Configure Vmware 	<i>Installation, Configuration, and Upgrade Guide</i>
System Administrator	<ul style="list-style-type: none"> • Manage the SenSage AP Event Data Warehouse (EDW) • Manage the Collector • Manage users, groups, and permissions • Archive to nearline storage • Manage assets & monitor security alerts • Monitor log source health • Monitor system health • Troubleshoot • Error Messages 	<i>Administration Guide</i>
Legal	Monitor third-party licenses	<i>Third-Party Open Source Licensing</i>

Note: TIP: You can access the manuals listed above from:

- SenSage AP Welcome page

Click the **Documentation** hyperlink.

Conventions Used in SenSage AP Documentation

This conven- tion...	Indicates...	Example
bold text	Names of user interface items, such as field names, buttons, menu choices, and keystrokes	Click Clear Filter .
<i>italic text</i>	Indicates a variable name or a new term the first time it appears	<code>http://<host>:<port>/index.mhtml</code> Use the whammerjammer to adjust the whamming frequency.
Courier text	Indicates a literal value, such as a command name, file name, information typed by the user, or information displayed by the system	atquery localhost:8072 myquery.sql
CAPS	Indicates a key on the computer keyboard	Press ENTER.
{ }	In a syntax line, curly braces surround a set of options from which you must choose one and only one. NOTE: Syntax specifications for SELECT statements include curly braces as part of the {INCLUDE_BAD_LOADS} keyword.	{ start stop restart }
[]	In a syntax line, square brackets surround an optional parameter	atquery [options] <code><host>:<port> -</code>
	In a syntax line, a pipe within square brackets or curly braces separates a choice between mutually exclusive parameters NOTE: Syntax for defining a Nearline Storage Address (NSA) includes a pipe.	{ start stop restart } [g m]

...	In a syntax line, ellipses indicate a repetition of the previous parameter	The following example indicates you can enter multiple, comma-separated options: <code><option>[, <option>[...]]</code>
backslash ()	A backslash in command-line syntax or in a command example behaves as the escape character on Unix. It removes any special meaning from the character immediately following it. In SenSage AP documentation, a backslash nullifies the special meaning of the newline character as a command terminator. Without the backslash, pressing ENTER at the end of the line causes the Unix system to execute the text preceding the ENTER. Without the backslash, you must allow long commands to wrap over multiple lines as a single line.	<code>atquery --user=administrator \ --pass=pass:p@ss localhost:8072\ -e='SELECT * FROM system.users;'</code>

Contacting Technical Support

For additional help, call +1 650 830-0484, Option 2. Also you can log into the IgniteTech Technical Support web page under Services at <http://www.ignitetech.com> for SenSage AP documentation, product downloads, and additional information on contacting support to escalate help on issues that impact your production environment.

Getting Started

This chapter introduces you to the SenSage AP Analyzer, the web interface that facilitates reporting and administration tasks. It describes the basics in using Analyzer, which includes logging into the system, using the menus and interface, navigating between subcomponents, and configuring the system.

This chapter contains these sections:

- [What is SenSage AP Analyzer?](#) on page 18
- [Logging Into the Analyzer](#) on page 18
- [Using Dashboard Features](#) on page 21
- [Using Analyzer Menus and Navigation](#) on page 27
- [Limiting Namespace Access](#) on page 31
- [Configuring Time Zones](#) on page 32

What is SenSage AP Analyzer?

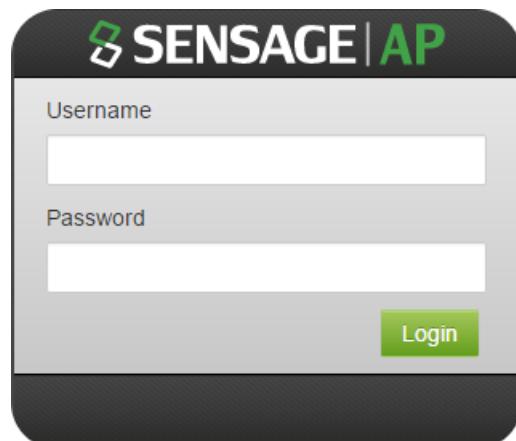
The SenSage AP Analyzer is comprehensive client tool for performing SenSage AP reporting, data modeling, and AP user administration. AP administrators assign privileges to Analyzer users to perform specific tasks:

- Users can view, create, run, schedule and edit their own reports, as well as set up and manage dashboards to display critical reporting data when and where it is needed. An import and export feature allows for reports and dashboards to be copied and shared among AP deployments.
- With the easy-to-use Report Wizard, users can configure both standard and Analyzer-featured reports for effective data presentation and create corresponding charts with a number of chart type options (such as area, bar, pie, etc.).
- For more complex reporting, users can conveniently run and alter data models included in a SenSage AP installation using the Analyzer's Analytics Workbench, an interactive and visual Data Modeling tool. The workbench includes a feature to manage models. For details on available sample models, including Insider Threat Detection, see the Analytics Guide.
- With the SQL Workbench, AP Analyzer provides users with a a SQL authoring tool to develop ad-hoc SQL queries and write SQL code using data from the EDW and other sources. Included in Workbench is the capability to bring in columns from tables, additional parameters, and edit a query as a report.t
- Users can view event data from information systems in AP Analyzer with ready-to-run AP Analytics reports and dashboards included in a SenSage AP installation. For details on available SenSage AP Analytics reports, see the Analytics Guide.

Logging Into the Analyzer

To log into the Analyzer, open your browser, enter the URL to access Analyzer, and provide your User ID and Password (case-sensitive). Consult with your system administrator to obtain these three pieces of information, which are required to log into Analyzer.

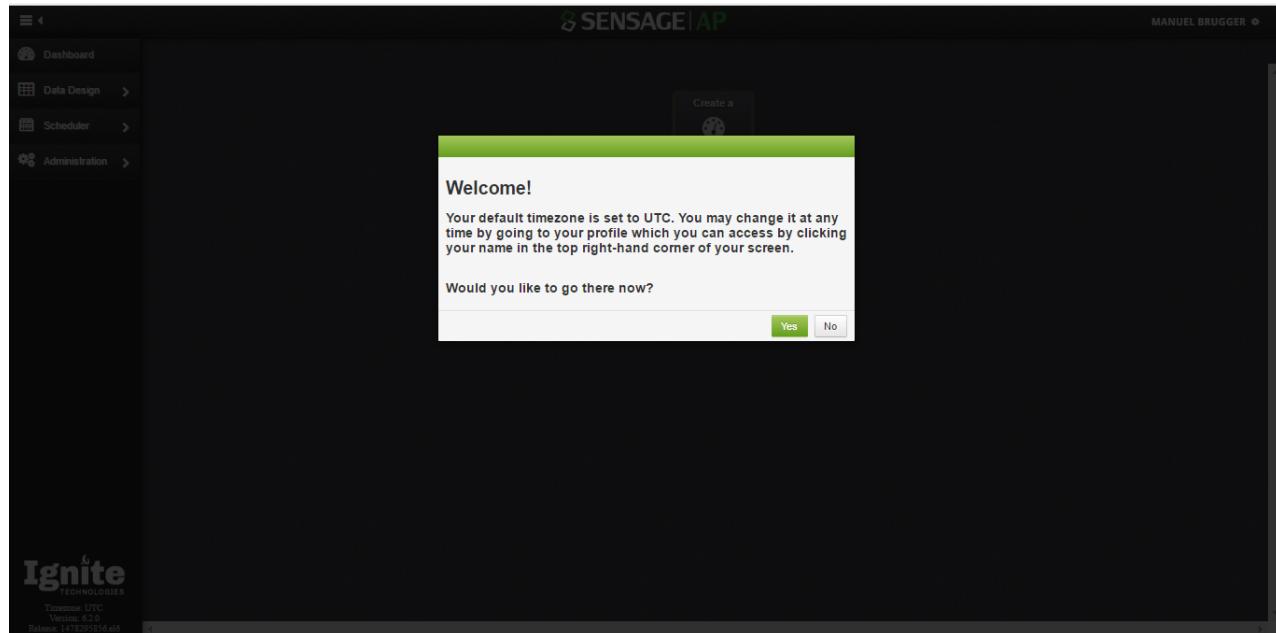
Figure 1: Figure 1-1: Analyzer Login



Note: SenSage AP supports versions of standard HTML browsers released within the last two years; Supported browsers include Internet Explorer, Firefox, and Chrome

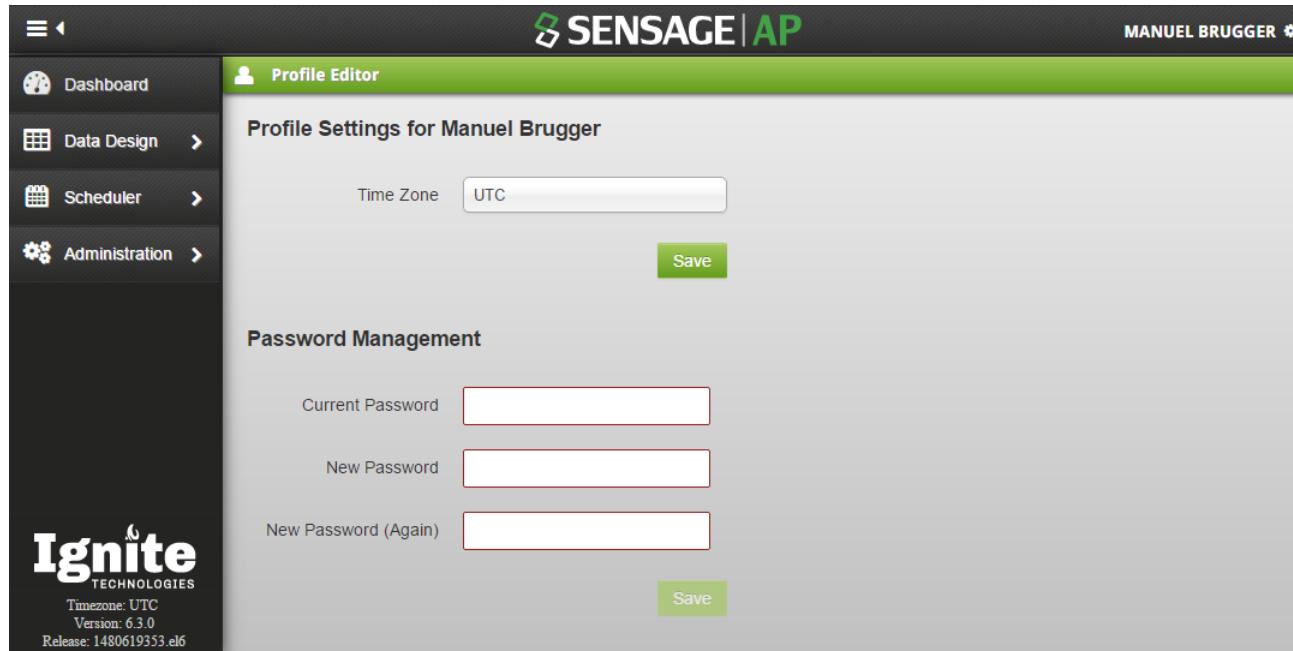
If this is the first time you have logged into SenSage AP, you will be prompted to specify your time zone.

Figure 2: Figure 1-2: Analyzer Login Time Zone Prompt



If you click Yes, a screen similar to the one below is displayed to specify your time zone from a dropdown list. Note that the default is UTC.

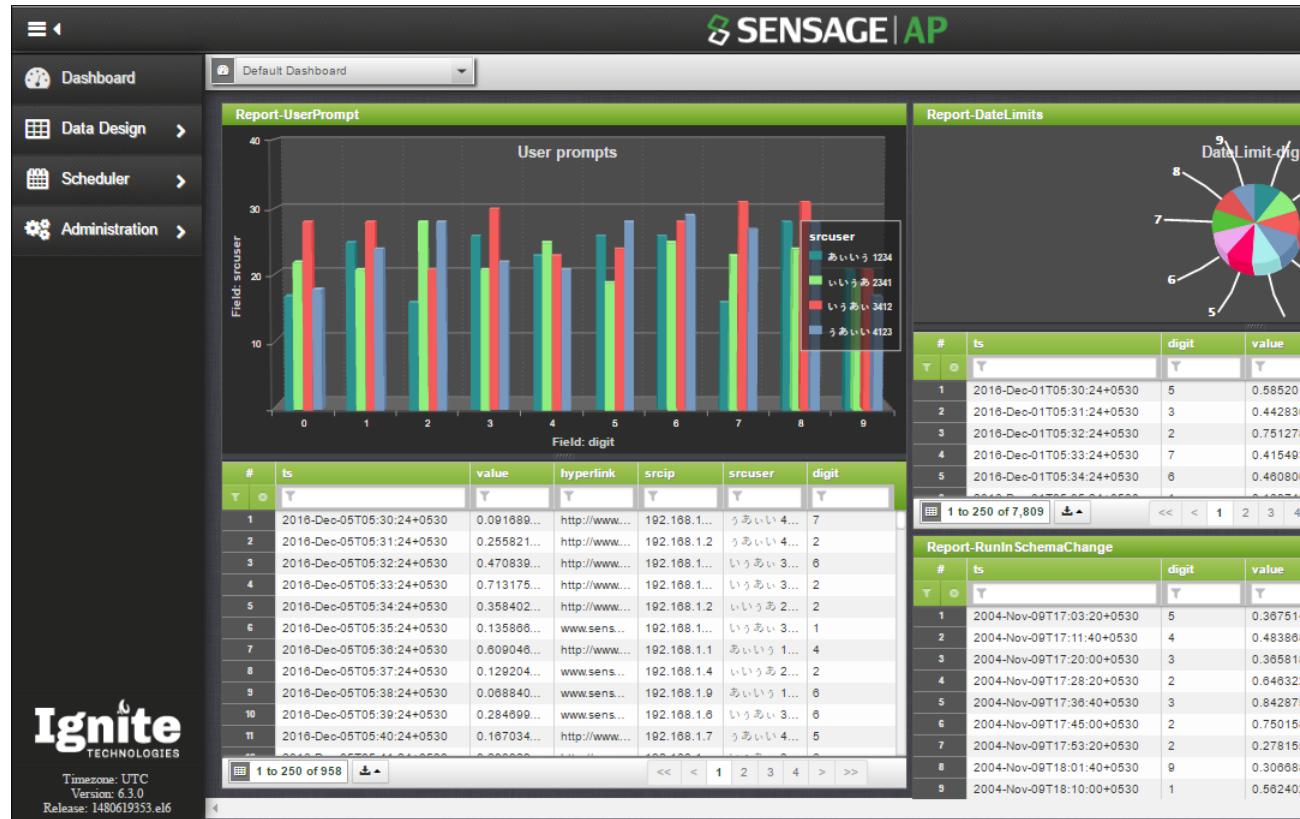
Figure 3: Figure 1-3: Profile Setting for Timezone



After your timezone has been saved, this change now applies to all time zones displayed throughout the SenSage AP UI.

After you have logged into Analyzer (and if logging in the first time specified your timezone), the default Dashboard is displayed as shown below. The contents of this screen are customizable.

Figure 4: Figure 1-4: Default Dashboard



Viewing the Default Dashboard

At login, the dashboard that is displayed is unlocked so that the pods are situated based on the screen size of your device. The name of the dashboard is displayed at the top left-corner of the screen.

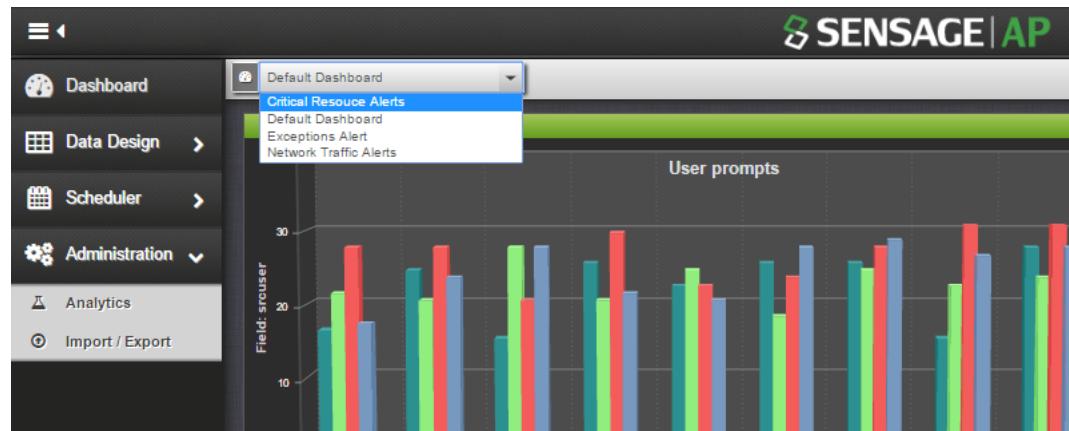
If you want to resize your browser, but keep the pods in place, click the "Lock" button (magnet icon). Your browser will then add scroll bars to resize without affecting the pods positioning.

To maximize a pod for full screen viewing, click the option in the pod's title bar. Click **Escape** to exit full screen view and return to dashboard view.

Switching Between Dashboards

Click the **Dashboard** menu to display a dropdown list of all dashboards in the system that you are allowed to access. Clicking a different dashboard name will access that dashboard on the screen.

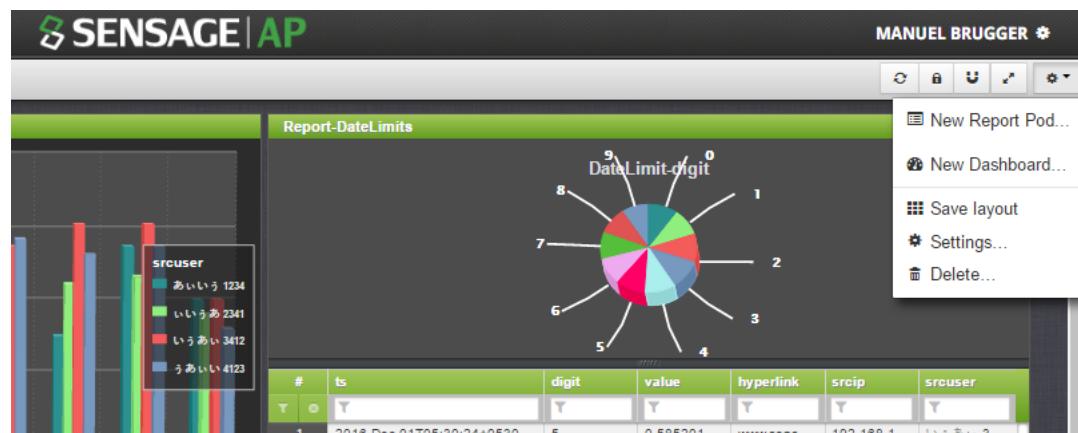
Figure 5: Figure 1-5: Dashboard Menu



Using Dashboard Features

At the top right of the Dashboard, you will see six icons that represent Dashboard features described below. Note that when you click the Gear icon, you have access to customizing your dashboard layout and creating new dashboards and pods.

Figure 6: Figure 1-6: Dashboard Icons



The following table describes the use of each Dashboard Icon:

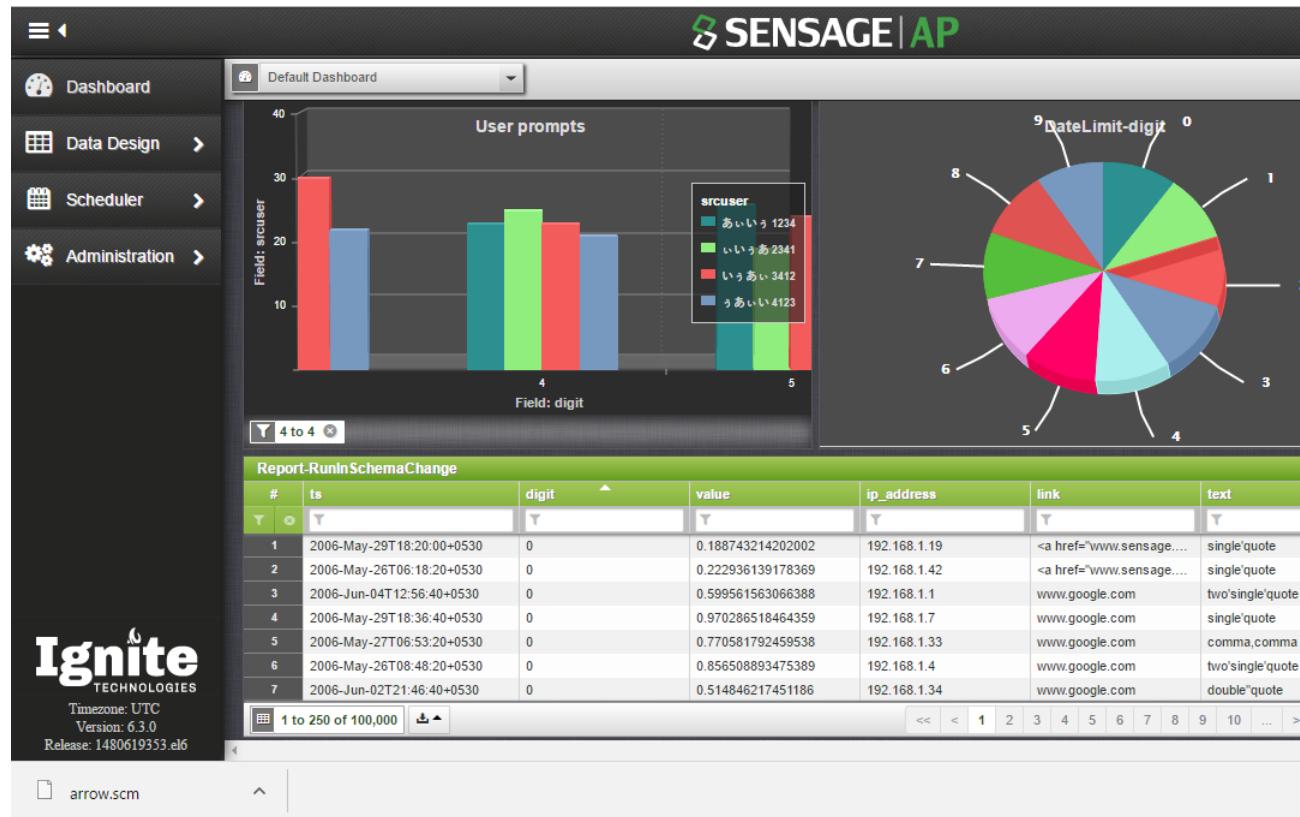
Icon	Name	Use to...
	Refresh Dashboard	Refresh the dashboard. This will rerun the reports that make up each pod on the dashboard.
	Access Control	Modify access control to the dashboard if you have dashboard edit privileges.

Icon	Name	Use to...
	Lock Pods	Lock the pods into position for the remainder of the session if you want to resize your browser. For more details, see Moving and Re-organizing Pods on page 22.
	Share Dashboard	Share the dashboard by creating a link in an email message on the local client.
	View Full-Screen Dashboard or Pod	View the dashboard full screen. (Press ESC to return to regular size viewing.)
	Modify the Dashboard	Modify the dashboard if you have dashboard edit privileges. For more details on modifying dashboard, see Creating and Modifying a Dashboard on page 61.

Moving and Re-organizing Pods

When a dashboard first loads in each user-session, it remains unlocked; this allows the pods to arrange themselves on the screen based on the screen size of the device in use. If you want to keep the pods the way they are currently displayed, click the "lock" button (magnet icon); this will also allow the browser to add a scroll bar when resized.

Figure 7: Figure 1-7: Moving and Re-organizing Pods



Now you can manually re-organize the pods by dragging them with the mouse.

You can resize any of the pods by holding the mouse over the edge of the pod you want to move and using the mouse to slide the edge larger or smaller. For example:

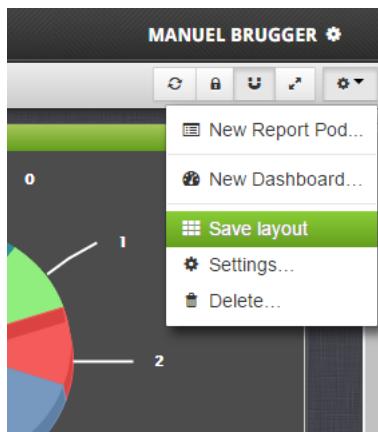
Figure 8: Figure 1-8: Resizing Pods



If you have edit rights on the dashboard you can save the layout by clicking the gear icon and then Save Layout.

For more information on viewing options, refer to Chapter 2: Viewing Reports, Charts, and Models.

Figure 9: Figure 1-9: Saving Dashboard Layout

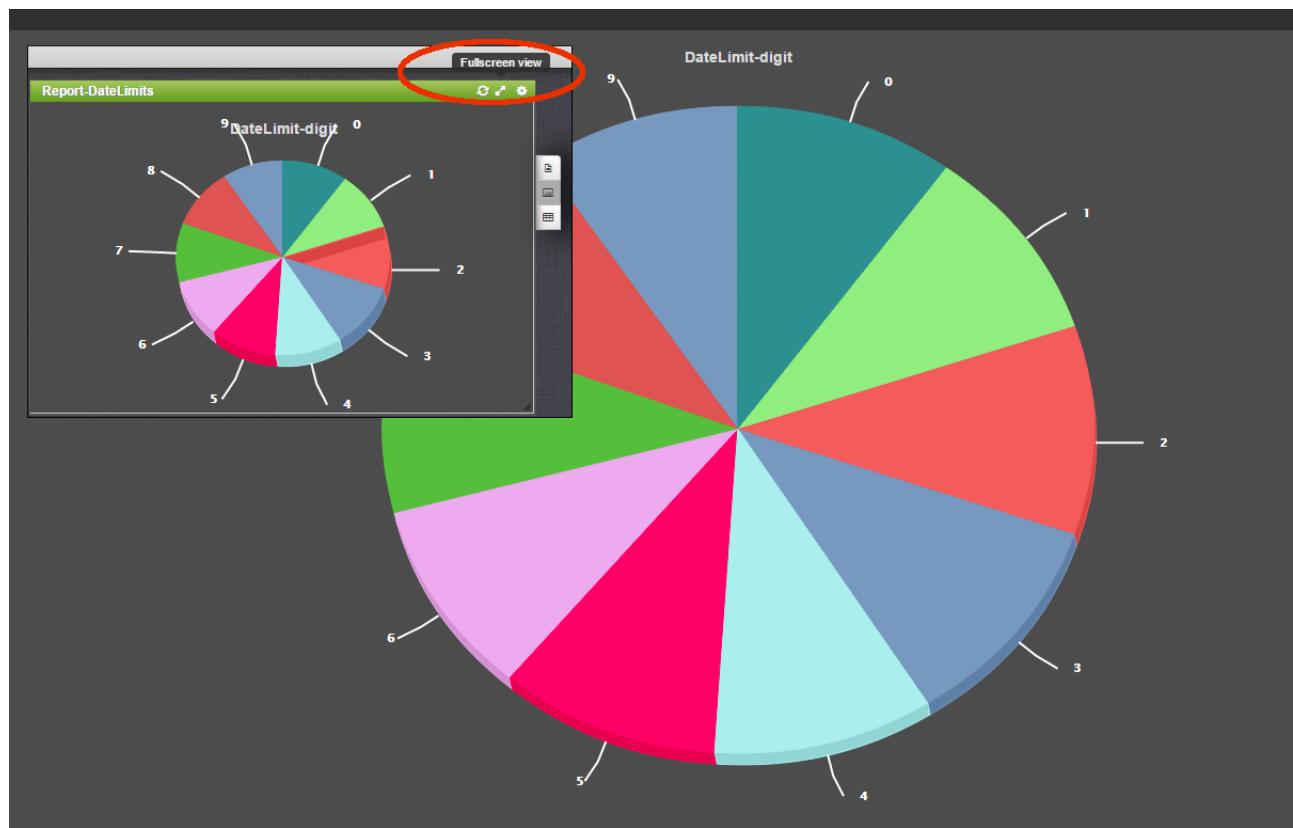


Maximizing Pod for Full-Screen Viewing

To view a pod full screen:

Click the full-screen icon shown below and in the title bar of the pod in Figure 1-10.

Figure 10: Figure 1-10: Full-screen Pod View



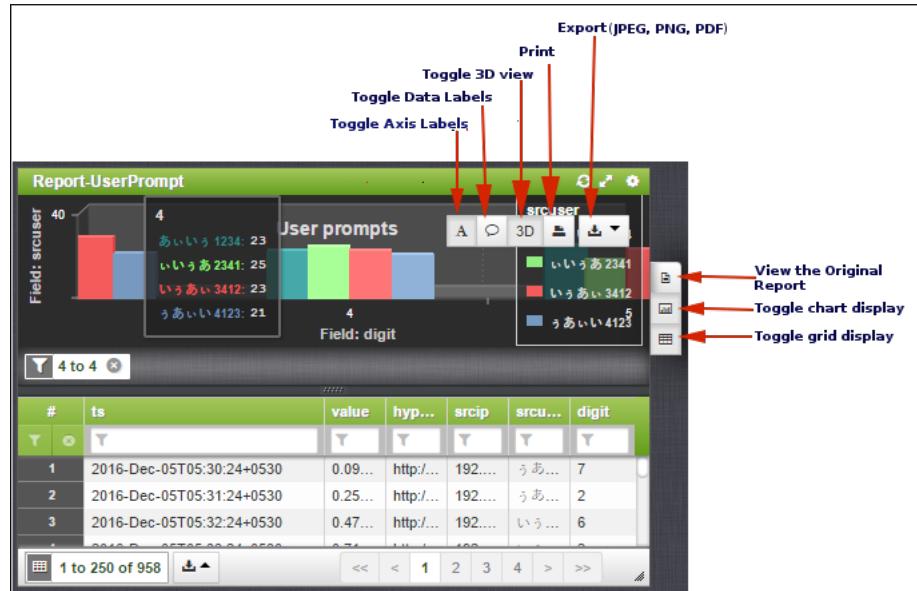
Press **ESC** to exit full-screen view and return to the dashboard view.

Pod Options

Whenever you hover the mouse over each pod a pop-up menu is displayed that allows you to perform the following actions on the specific pod, as shown in the figure.

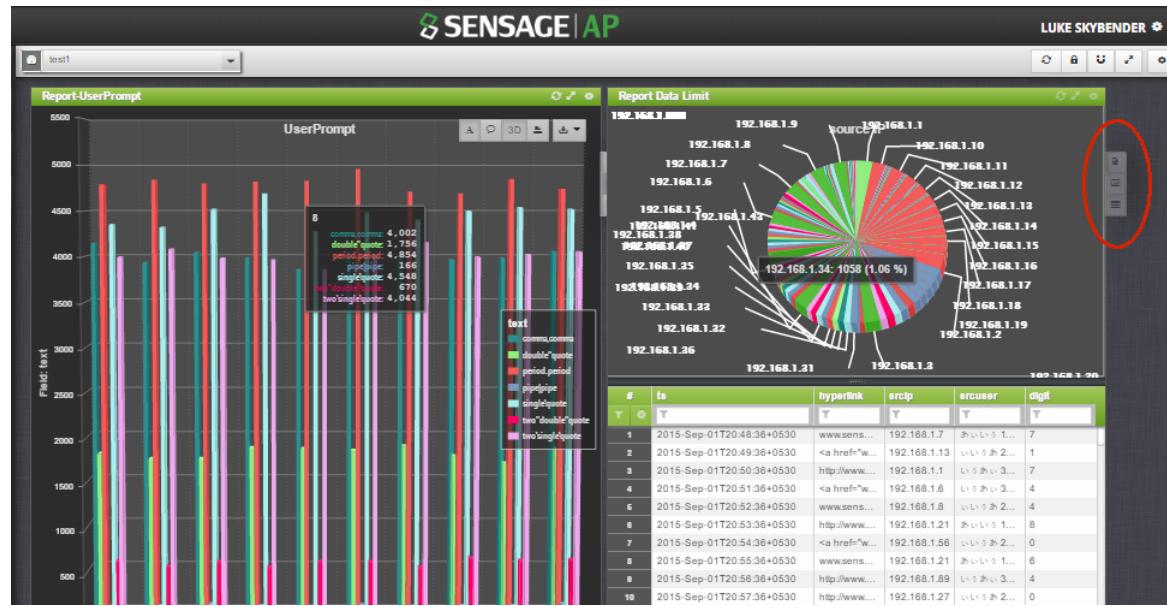
- Toggle Axis Labels—Allows you to toggle the items displayed on the X and Y axis.
- Toggle Data Labels—Allows you to display values on the Y axis on the pie chart.
- Toggle 3D View of the chart—Allows you to switch between the three dimensional and two dimensional views of the charts.
- Print pod using browser printing to a local printer
- Export pod to JPEG, PNG, or PDF formats
- View original report

- Toggle the grid on and off to gain a larger view of the chart
- Toggle the chart on and off to gain a larger view of the grid.

Figure 11: Figure 1-11: Export Pod

Report Viewing Features

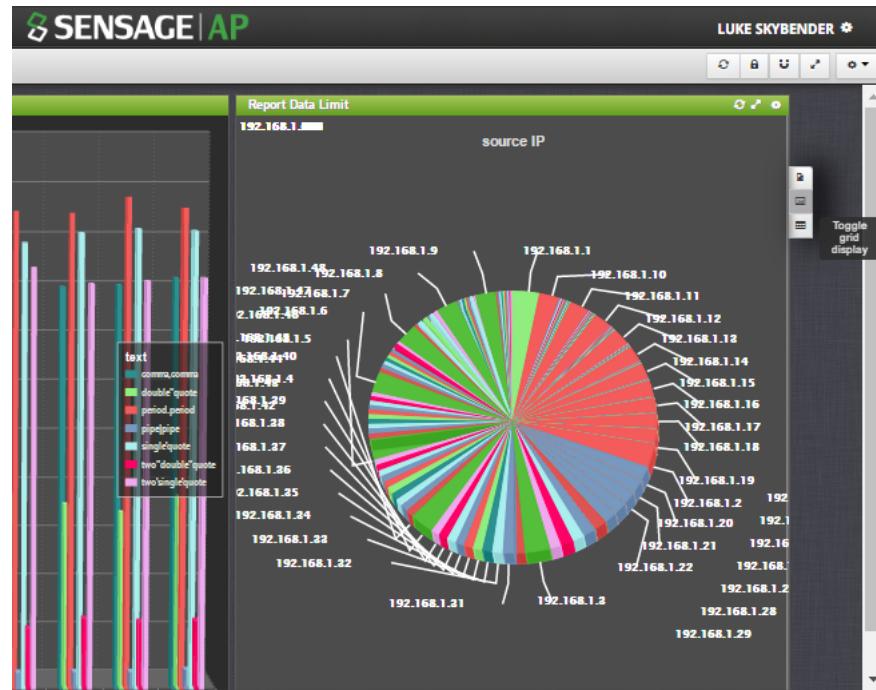
The dashboard report viewing is nearly the same as the viewing features used to view reports accessed through the Data Design menu. For details on viewing reports, see [Viewing Reports](#) on page 34. When accessed, the Dashboard always displays the most recent run of the report.

Figure 12: Figure 1-12: Dashboard Report Viewing



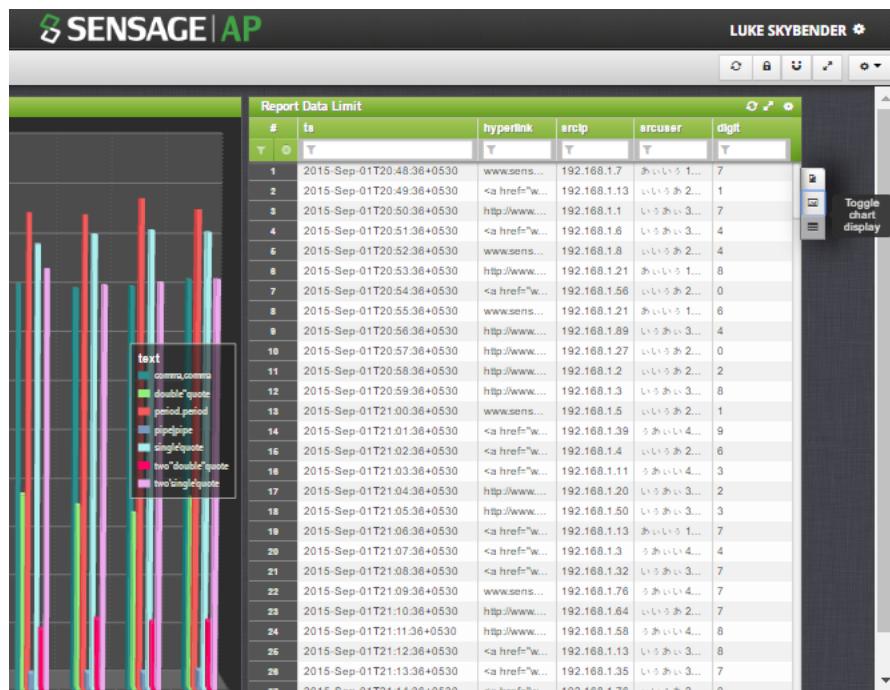
Hover over the dashboard pod, you want to display the report chart, the toggle menu  pops up. Choose the middle button  to toggle the grid off and maximize the chart.

Figure 13: Figure 1-13: Maximizing Chart for Viewing with Toggle Grid Display



Choose the bottom button  to toggle the chart off and maximize the grid.

Figure 14: Figure 1-13: Maximizing Chart for Viewing with Toggle Grid Display



The screenshot shows a dashboard interface for SENSAGE|AP. On the left, there is a bar chart with a legend titled 'text' containing six items: 'comma.comma' (blue), 'double"quote' (green), 'period.period' (red), 'pipe|pipe' (dark blue), 'single'quote' (light blue), and 'two"double"quote' (pink). To the right of the chart is a table titled 'Report Data Limit' with columns: #, ts, hyperlink, ercip, arcuser, and digit. The table contains 28 rows of data. At the bottom right of the grid area, a tooltip box appears with the text 'Toggle chart display' and a small icon of a grid.

#	ts	hyperlink	ercip	arcuser	digit
1	2015-Sep-01T20:48:36+0530	www.sens...	192.168.1.7	あいあい 1...	7
2	2015-Sep-01T20:49:36+0530	<a href="w...	192.168.1.13	いいうあ 2...	1
3	2015-Sep-01T20:50:36+0530	http://www...	192.168.1.1	いうあい 3...	7
4	2015-Sep-01T20:51:36+0530	<a href="w...	192.168.1.6	いいうあ 3...	4
5	2015-Sep-01T20:52:36+0530	www.sens...	192.168.1.8	いいうあ 2...	4
6	2015-Sep-01T20:53:36+0530	http://www...	192.168.1.21	あいあい 1...	8
7	2015-Sep-01T20:54:36+0530	<a href="w...	192.168.1.56	いいうあ 2...	0
8	2015-Sep-01T20:55:36+0530	www.sens...	192.168.1.21	あいあい 1...	6
9	2015-Sep-01T20:56:36+0530	http://www...	192.168.1.89	いうあい 3...	4
10	2015-Sep-01T20:57:36+0530	http://www...	192.168.1.27	いいうあ 2...	0
11	2015-Sep-01T20:58:36+0530	http://www...	192.168.1.2	いいうあ 2...	2
12	2015-Sep-01T20:59:36+0530	http://www...	192.168.1.3	いうあい 3...	8
13	2015-Sep-01T21:00:36+0530	www.sens...	192.168.1.5	いいうあ 2...	1
14	2015-Sep-01T21:01:36+0530	<a href="w...	192.168.1.39	うあい 4...	9
15	2015-Sep-01T21:02:36+0530	<a href="w...	192.168.1.4	いいうあ 2...	6
16	2015-Sep-01T21:03:36+0530	<a href="w...	192.168.1.11	うあい 4...	3
17	2015-Sep-01T21:04:36+0530	http://www...	192.168.1.20	いいうあ 3...	2
18	2015-Sep-01T21:05:36+0530	http://www...	192.168.1.50	いいうあ 3...	3
19	2015-Sep-01T21:06:36+0530	<a href="w...	192.168.1.13	あいあい 1...	7
20	2015-Sep-01T21:07:36+0530	<a href="w...	192.168.1.3	うあい 4...	4
21	2015-Sep-01T21:08:36+0530	<a href="w...	192.168.1.32	うあい 3...	7
22	2015-Sep-01T21:09:36+0530	www.sens...	192.168.1.76	うあい 4...	7
23	2015-Sep-01T21:10:36+0530	http://www...	192.168.1.64	いいうあ 2...	7
24	2015-Sep-01T21:11:36+0530	http://www...	192.168.1.58	うあい 4...	8
25	2015-Sep-01T21:12:36+0530	<a href="w...	192.168.1.13	うあい 3...	8
26	2015-Sep-01T21:13:36+0530	<a href="w...	192.168.1.35	うあい 3...	7

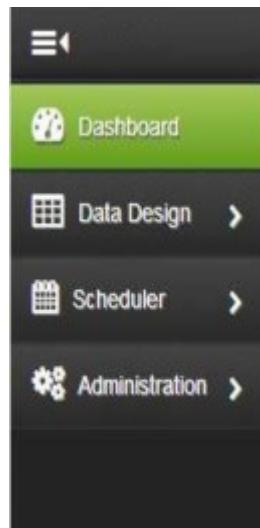
Customizing the Dashboard Layout

If you have edit privileges on the default dashboard, you can customize the dashboard to suit your own viewing preferences.

To reorganize the pods, manually drag them with the mouse to a desired placement on your screen. To save your layout, click the Gear icon and Save Layout.

Using Analyzer Menus and Navigation

Analyzer Menus and Navigation provide you with convenient and quick access to reports and data modeling features as well as ability to perform data administration tasks, including report scheduling and user and group account administration. The menu pane to the left of your dashboard screen presents four main task areas: Dashboard, Data Design, Scheduler, and Administration, as shown below in Figure 1-14.



Note: Click the icon in the upper-left corner to hide or display the left menu pane.

Click the arrow to access submenu items, which are described below for each main task area.

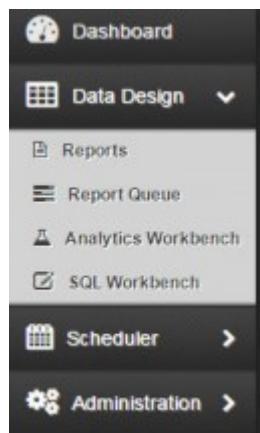
Note: The Dashboard tab does not have any submenus.

Dashboard

When you click Dashboard a dropdown list is displayed that lists all dashboards in the system to which you have access. To access a desired dashboard, select it from the list. You can create dashboards to add to your system. For details, [Creating and Modifying a Dashboard](#) on page 61.

Data Design

The Data Design tab shown below has three submenus.

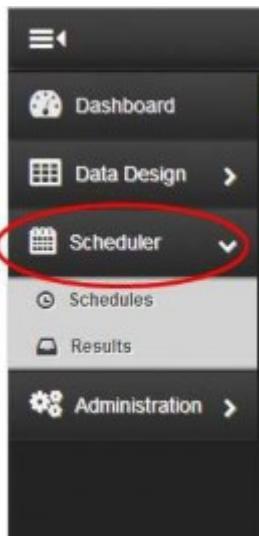


The following is a brief description of each submenu:

- Reports--allows analysts to manage all reports in the system.
- Reports Queue--allows analysts to view the status of their report runs.
- Analytics Workbench Data Flow Models--allows analysts to manage advanced analytics data models.
- SQL Workbench--allows developers to create custom reports and execute ad-hoc queries using SQL code.

Scheduler

The Scheduler tab as shown below has two submenus.

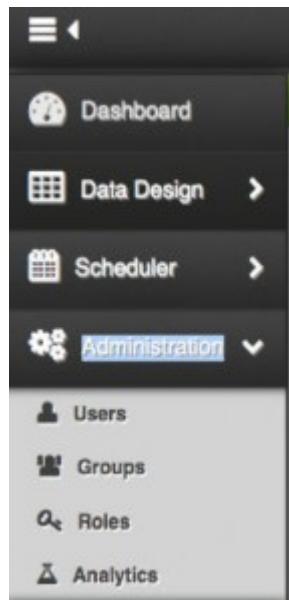


The following is a brief description of each submenu:

- Schedules—this is where all schedules for reporting are managed
- Results—this is where the output of scheduled reports is viewed.

Administration

Figure 1-16: Administration Tab



The Administration tab as shown in Figure 1-16 has five submenus::

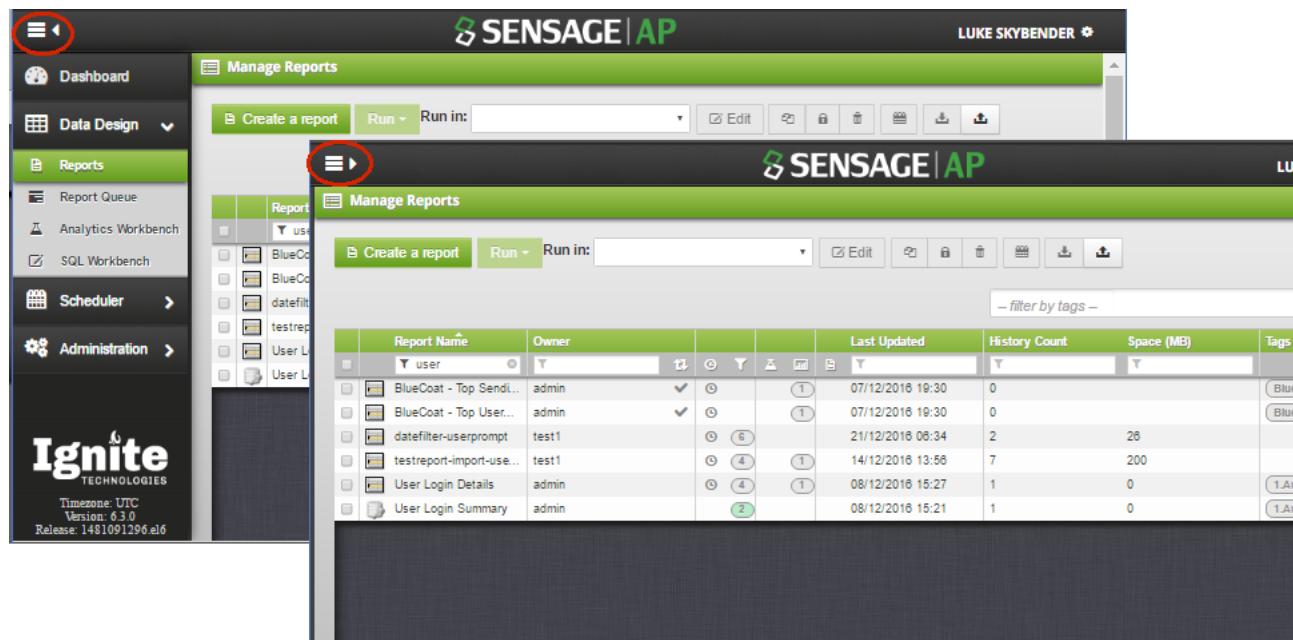
- User—allows administrators to create and manage individual user accounts
- Groups—allows administrators to create and manage groups of users.
- Roles—allows administrators to set up global permissions based on user roles (type of user or group)
- Analytics—allows analysts to manage tags, categories, and other analytics features.
- Export and Import—allows analysts to manage tags, categories, and other analytics features.

Note: An LDAP sub-menu is displayed on this menu pane if LDAP integration is configured.

Hiding the Menus

By clicking the icon in the upper-left corner the menu can be hidden and un-hidden. NEW SCREENSHOT NEEDED

Figure 1-17: Hiding and Unhiding Menus



Limiting Namespace Access

When administering SenSage AP user roles and privileges in the Analyzer, you can limit a user's access to a namespace. The following is an overview of this procedure:

1. Create a Postgres user/role.
2. Grant access to the schema/namespace.

```
grant schema usage
grant select privilege
```

3. Update the Analyzer Application user's postgres user setting.
4. Log on as the user that you edited in Step 3 and verify schema access.

The easiest way to do this is to create a report and see what schemas are available or run reports that access a schema that the user has and/or does not have permission to access.

Note: The steps are different for a SenSage AP 6.x.x system and a 5.0.0 system. On a 5.0.0 system, after completing the procedure, you must grant users Select privilege to provide them with access to the tables. Refer to [Appendix A: Namespace Access Procedures](#) on page 193(steps for 6.x.x or 5.0.0) for specific instructions.

Configuring Time Zones

SenSage AP always converts timestamps in the logs that it receives to GMT (assuming a correctly configured Collector and a properly built Log Adapter). If a time zone has been specified in a log entry, AP will use the time zone value in the log entry as the basis for the conversion. Otherwise, if the log adapters are configured with a time zone, then AP converts those timestamps in the log entries. If the time zone information is not in the log entry nor in the adapter configuration, then timestamps in the logs are considered GMT.

In Analyzer, users can customize what time zone is used when requesting reports as well as the time displayed in the reports. Time zone settings are specified in the Analyzer user profile settings screen as shown in Figure 1-3. Users are prompted to set the time zone they want to use on their first login to the Analyzer. By default all data is displayed in the user's local time zone. Users can also change time zone settings at any time later.

Note that the time displayed in the reports is the adjusted time based on the time zone setting in the user profile of the user who ran the report; the user's time zone is not derived from the time zone of the source system where the logs originated. When displaying, scheduling, or running reports, a date range option is available to enter date/time field entries. These fields are always assumed as GMT.

Note: The clock on the client where the Analyzer web GUI is run should be synchronized and set to the same time zone as the Analyzer host (server). The Analyzer web GUI uses the client's clock value in report headers in the GUI (that are not part of the actual report). If this clock is not synchronized with the Analyzer host, the time-range value in the report header in the GUI will not match the actual time-range in the report. Scheduled reports are run in the time zone of the Analyzer host.

2

Viewing Reports, Charts, and Models

This chapter describes how to use SenSage AP Analyzer to view and filter reports, and display charts and data models.

This chapter contains these sections:

- [Viewing Reports](#) on page 34
- [Viewing a Default Report Display](#) on page 35
- [Using Other Report Viewing Options](#) on page 39
- [Changing the Default Timeframe](#) on page 40
- [Filtering a Report by Additional Timeframes](#) on page 41
- [Using Quick Filters on Report Values](#) on page 43
- [Using Filters to find a Report](#) on page 47
- [Removing a Report Filter](#) on page 52
- [Using Sort to Find a Specific Report Attribute](#) on page 53
- [Using Viewing Features for Charts and Graphs](#) on page 54
- [Viewing Models](#) on page 55

Viewing Reports

To view reports:

1. Go to the Analyzer dashboard and select Data Design from the dropdown list, and click **Reports**.

A list of reports that you have permission to access displays.

Figure 2-1: Manage Reports Screen

	Report Name	Owner	Last Updated	History Count	Space
RunOnSchemaChange	test1	06/12/2016 13:45	0	13	
testreport-filter	test1	06/12/2016 16:46	3	11	
testreport-filtertest	test1	06/12/2016 19:43	1	11	
testreport-filtertest3	test1	06/12/2016 19:51	1	11	
testreport-datelimits	test1	06/12/2016 13:19	19	13	
testreport-frombeginningof	test1	05/12/2016 19:21	2	0	
testreport-notable-swap	test1	05/12/2016 18:59	0	0	
testreport-nouseracces...	test1	05/12/2016 18:43	0	13	
testreport-runinschema...	testadmin1	06/12/2016 14:02	11	31	
testreport-userprompt	test1	06/12/2016 15:03	8	65	
testsqldatelimits	test1	05/12/2016 21:12	1	30	
testSQLreport-namesp...	test1	05/12/2016 19:11	16	31	
testSQLreport-namesp...	test1	06/12/2016 12:44	0	23	
testSQLreport-nosche...	test1	05/12/2016 23:06	0	0	
testsqldatefilter...	test1	06/12/2016 15:44	3	0	

Note: The Manage Reports screen lets you find a report by name, last updated, history count, space, and by a report tag. Six icons provide additional information on each report letting you know if a report is a summary, its date range limit (timestamp), number of fields used as filters, models, chart type, and associated reports. For more details, see the table under [Using Filters to find a Report](#) on page 47.

2. Check the report that you want to view, click **Run**, and from the dropdown select **View last run** to obtain the latest report for viewing. For a sample report display, see [Viewing a Default Report Display](#) on page 35, next.

Figure 2-2: Run Latest Report for Viewing

The screenshot shows a 'Manage Reports' interface. At the top, there's a green header bar with a 'Create a report' button, a 'Run' dropdown menu, and various toolbar icons. A context menu is open over a row in a table, listing options: 'View last run', 'Run and retain', and 'Run once'. The main table lists several reports with columns for Report Name, Last Updated, History Count, Space (MB), and Tags. One report, 'RunOnSchemaChange', has a history count of 5.

	Report Name	Last Updated	History Count	Space (MB)	Tags
<input type="checkbox"/>	RunOnSchemaChange	06/12/2016 13:45	0		
<input type="checkbox"/>	testreport-filter	06/12/2016 16:46	3	13	
<input type="checkbox"/>	testreport-filtertest	06/12/2016 19:43	1	11	
<input type="checkbox"/>	testreport-filtertest3	06/12/2016 19:51	1	11	
<input type="checkbox"/>	testreport-datedelimits	06/12/2016 13:19	19	132	

Note: The **View Last Run** option will access which ever is the latest report from the report's history; the last report run can be either an ad hoc or scheduled report. For details on other Run options, see [Running a Report](#) on page 77.

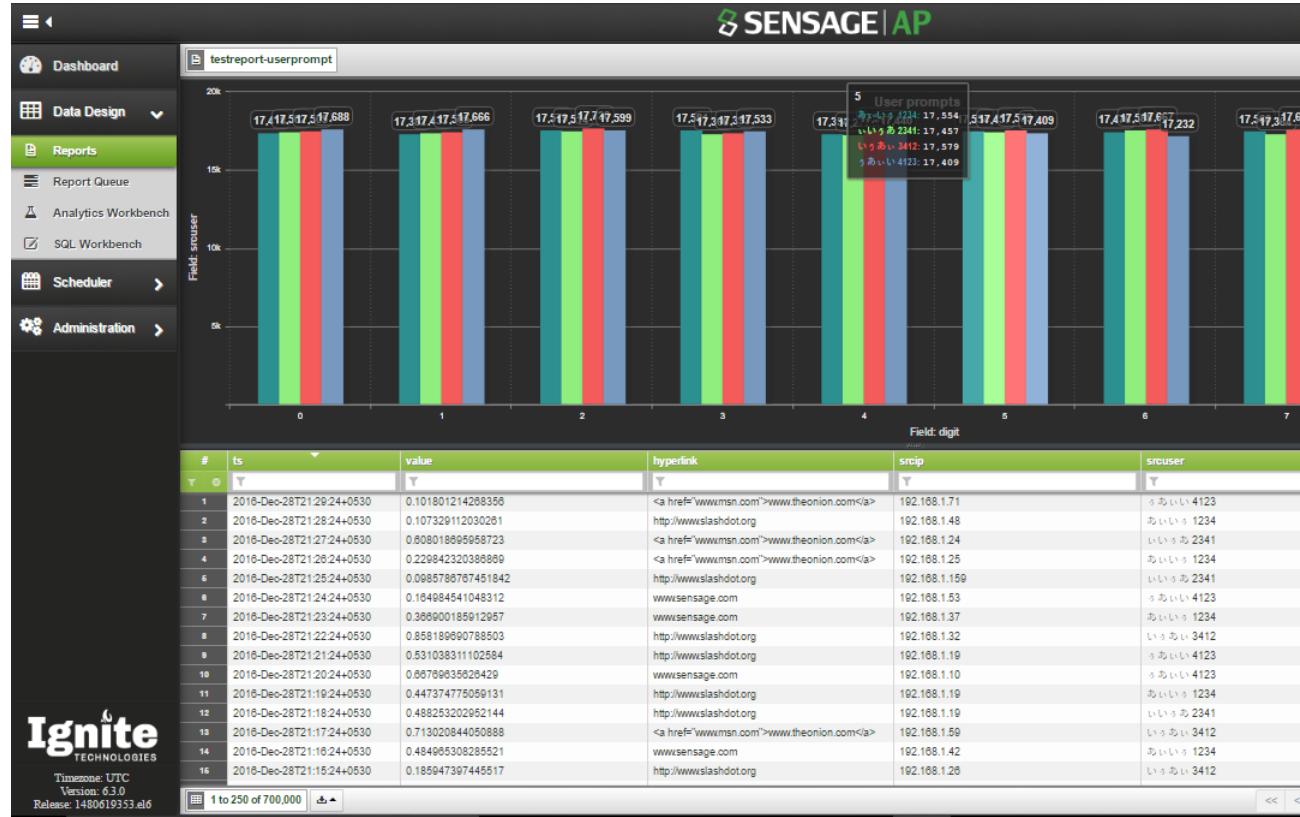
Viewing a Default Report Display

The screen below shows a default display of a typical report. The top of the report displays the report name and the timeframe in which the report was run. Some reports are configured with charts that use a specific chart type as shown in the example.

For details on how to create charts with reports, see [Creating and Modifying Charts for a Report](#) on page 105.

Note also that you can click on a column label of a report which will sort the report by that column. Clicking on the same column again sorts the report in the alternative direction. In the following screenshot the **ts** (time stamp) column is sorted in the descending order.

Figure 15: Figure 2-3: Sorting Report by Column



Specifying Filter Values in Columns

You can type in explicit values to "filter by" at the top of each column of a grid as shown in Figure 2-4 below. The **hyperlink** column is filtered using the value =<http://www.slashdot.org>.

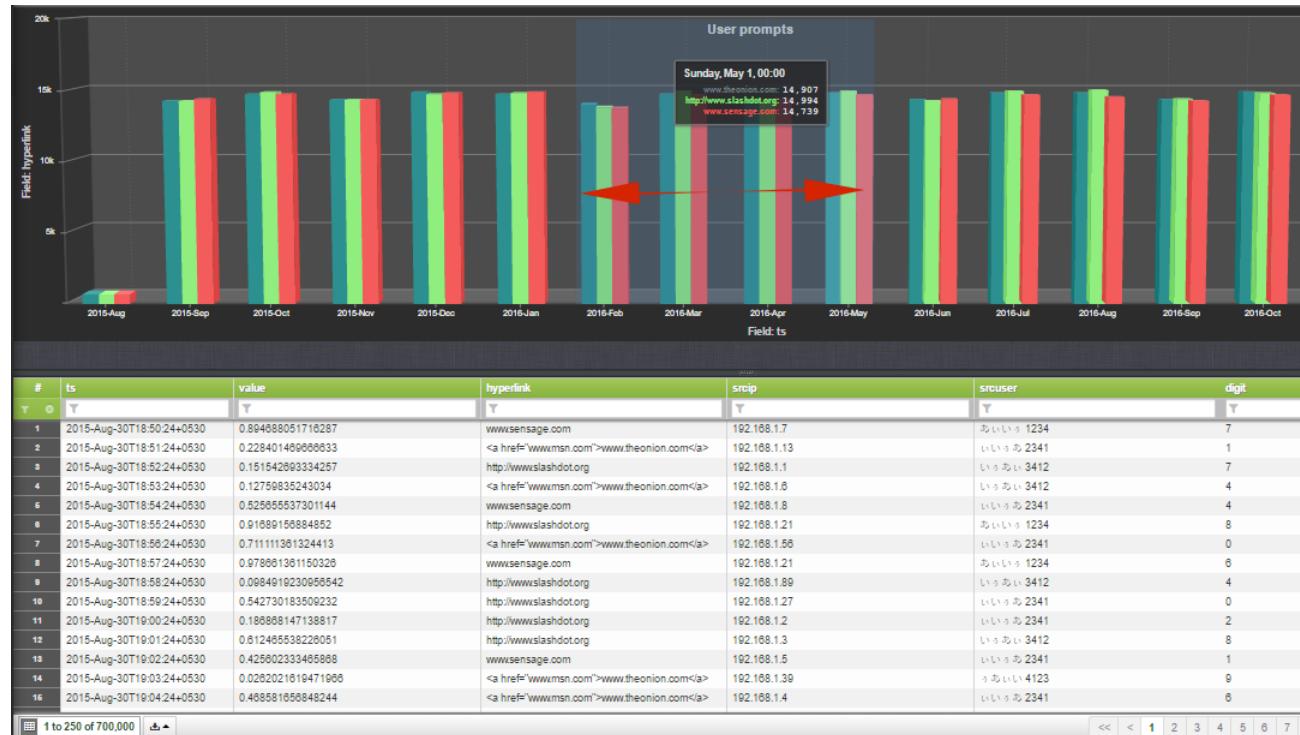
Figure 16: Figure 2-4: Filter Report by Column Value

The figure shows a grid table with columns: #, ts, value, hyperlink, srep, and sreuser. The "hyperlink" column header has a search input field with the value "=http://wwwslashdot.org" highlighted with a red oval. The grid lists 16 rows of data, mostly filtered to show entries where the hyperlink starts with "http://wwwslashdot.org". The Ignite Technologies logo is in the bottom left corner.

Zooming into a Report Timeframe

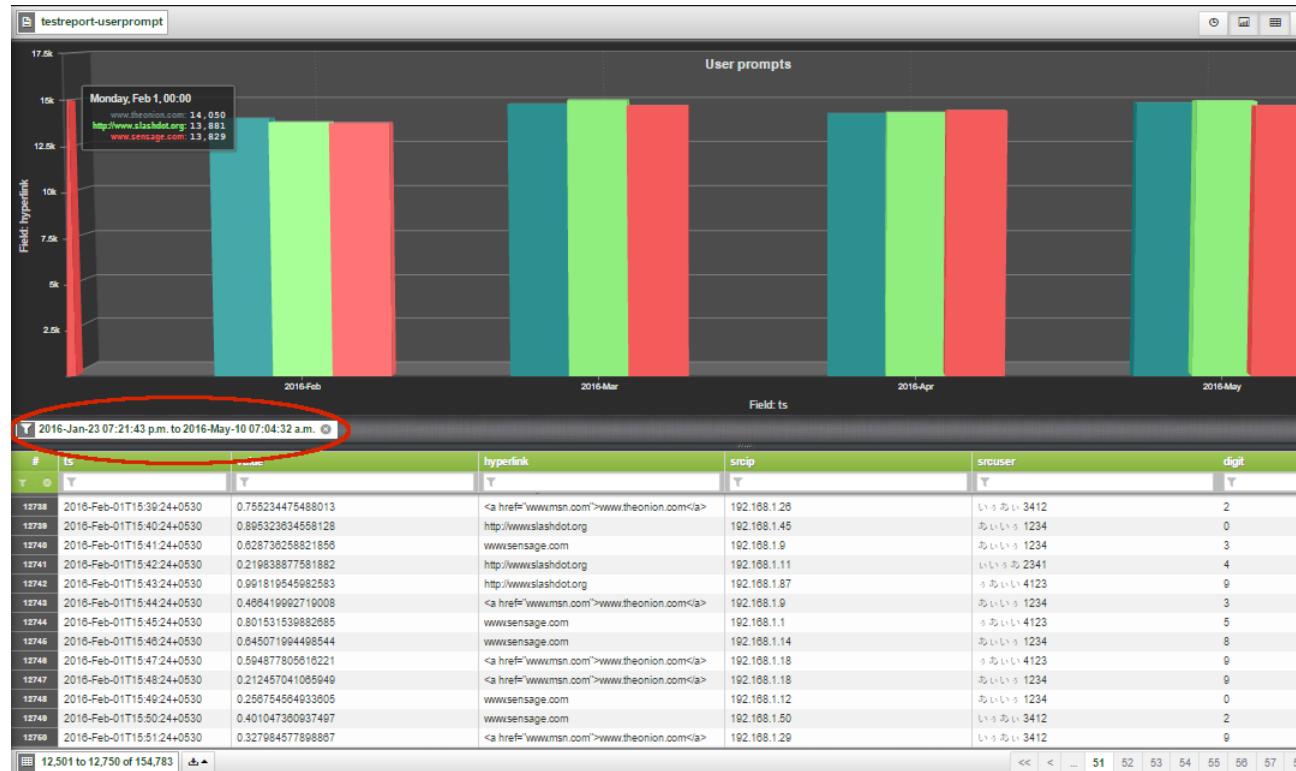
By “painting” a section on the chart, one can easily zoom in on that timeframe. Both the chart and the grid will be updated with the new timeframe. To paint a section of the chart, click and drag the pointer across the section of the chart you want to select. For example, selecting the chart from **2016Feb** to the **2016May**(shown by the double arrow), results in the new new chart display as shown in Figure 2-5-1.

Figure 17: Figure 2-5: Zooming into Report Timeframe



Note: The selected region is also greyed out.

Figure 18: Figure 2-5-1: Zooming into Report Timeframe



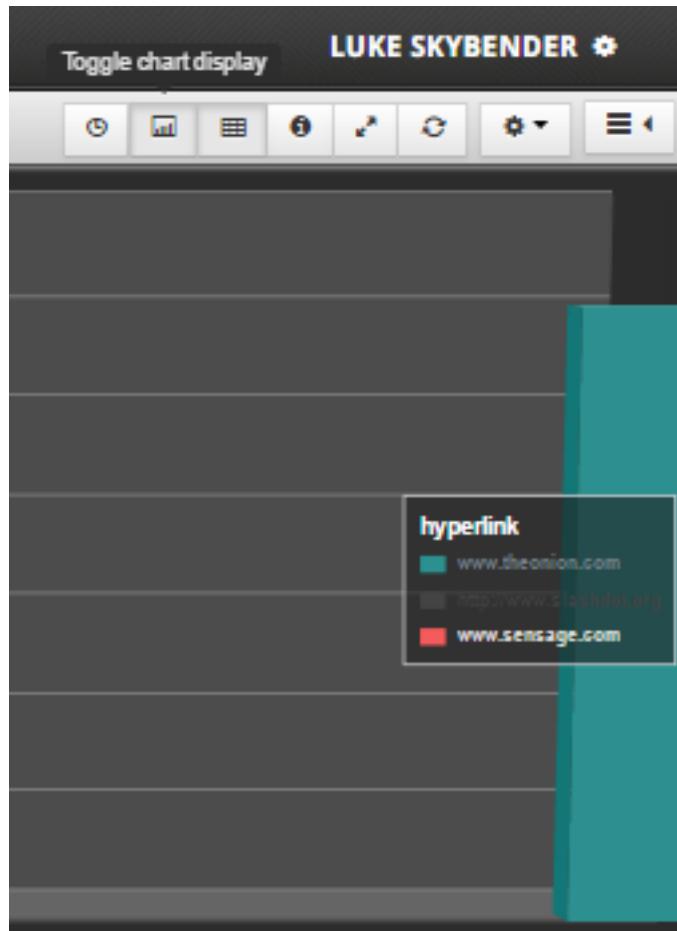
Note: The new filter is added at the bottom of the chart (circled in red).

For details on changing timeframe default, see [Filtering a Report by Additional Timeframes](#) on page 41.

Using Other Report Viewing Options

Viewing options are presented as icon items at the top right corner of the report screen as noted in Figure 2-6. In this figure the icon for toggling the grid on and off to provide a larger view of the chart is selected.

Figure 19: Figure 2-6: Grid Toggle for Maximum Viewing



The following table describes the use Report option icon for viewing:

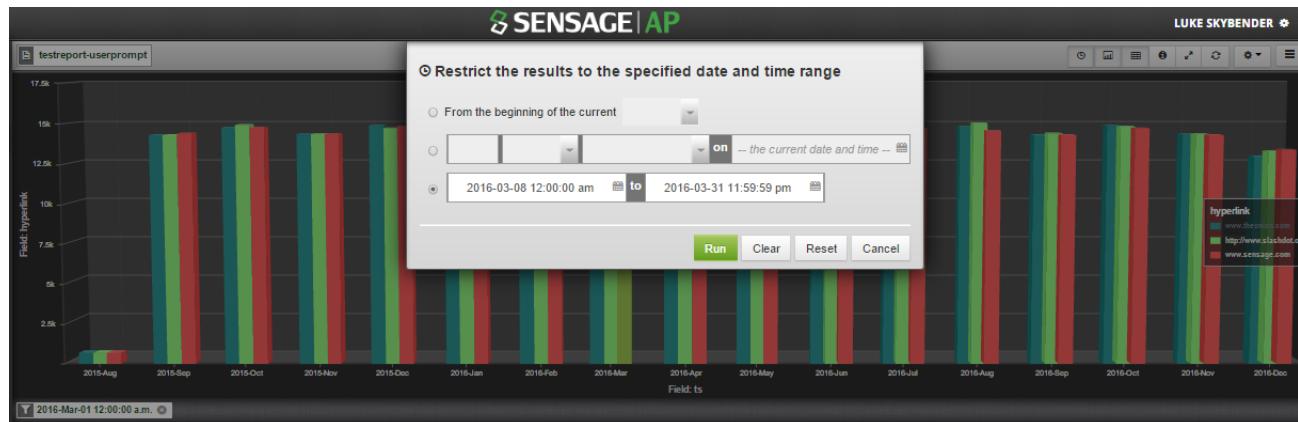
icon	Name	Use to...
	Chart Toggle	Toggle the chart on and off to gain a larger view of the grid.
	Grid Toggle	Toggle the grid on and off to gain a larger view of the chart.
	View raw SQL Code	View the raw SQL code that was written or generated to produce the data

	Share the report	Share the report by creating a link in an email message on the local client.
	View the report full-screen	View the report full screen. (Press ESC to return to regular size viewing.)
	Refresh Report	Refresh the report. This will rerun the reports.
	Dashboard Options	Create a new dashboard, delete an existing one, save the dashboard lay, and rename and reset a dashboard's auto-refresh in minutes.

Changing the Default Timeframe

On the default report, you can select specify a different timeframe to be reported on by clicking the **Data and time range**(button at the top right of the screen. This opens a pop-up dialog that allows you to specify the date and time range to further drill down into the report.

Figure 20: Figure 2-7: Timeframe Indicator



Filtering a Report by Additional Timeframes

After zooming into one timeframe as shown in the previous section, you can filter the report by an additional timeframe in the report filters area as shown below.

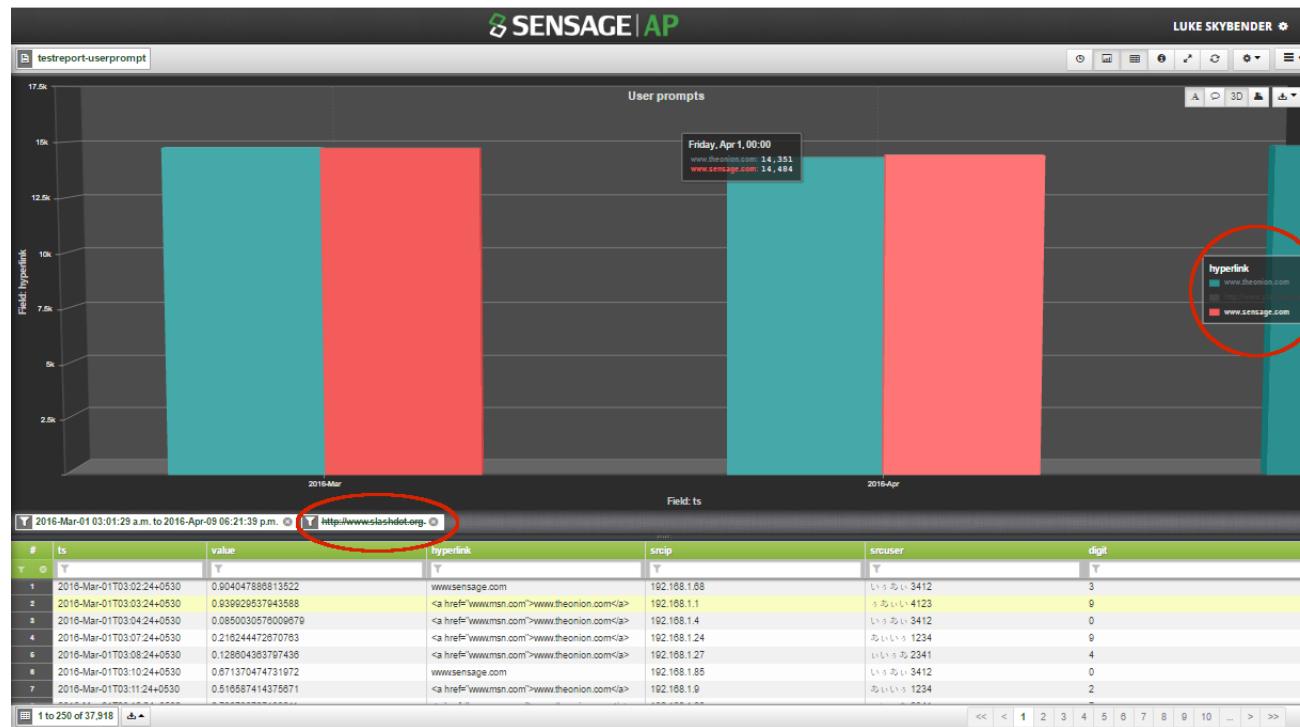
Figure 21: Figure 2-8: Report Filtering by Additional Timeframes



You can further drill down into the data by removing values. To remove the values click the labels displaying the values to the right of the chart. The removed text values are displayed at the bottom of the chart. For example, in the screenshot below the hits on the site <http://www.slashdot.org> are removed. The green bar in the chart is also removed and the selected label to the right of the chart is also greyed out. This results list at the bottom of the report no longer display items containing the hyperlink <http://www.slashdot.org>.

Note: Click a text area to display additional filters in the filter area of the report.

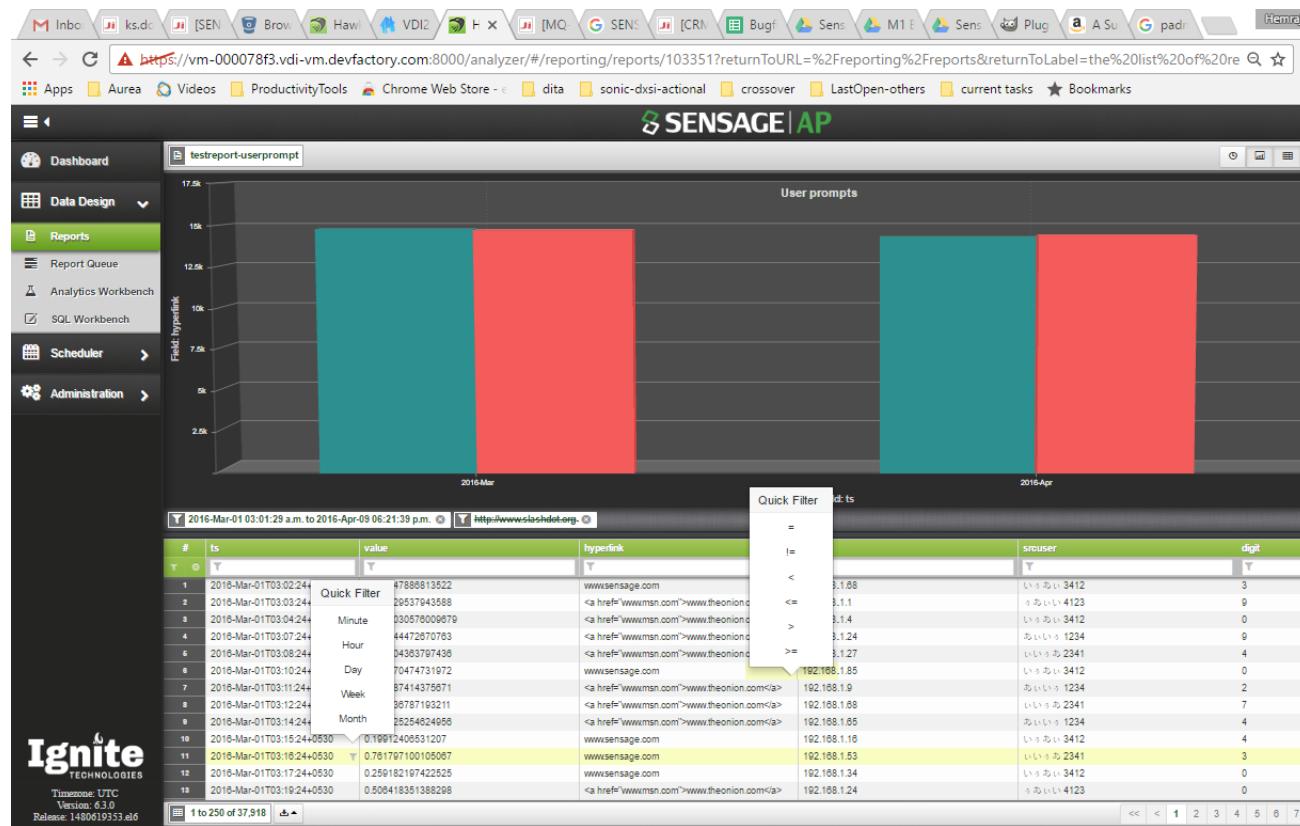
Figure 22: Figure 2-9: Report Drill-down



Using Quick Filters on Report Values

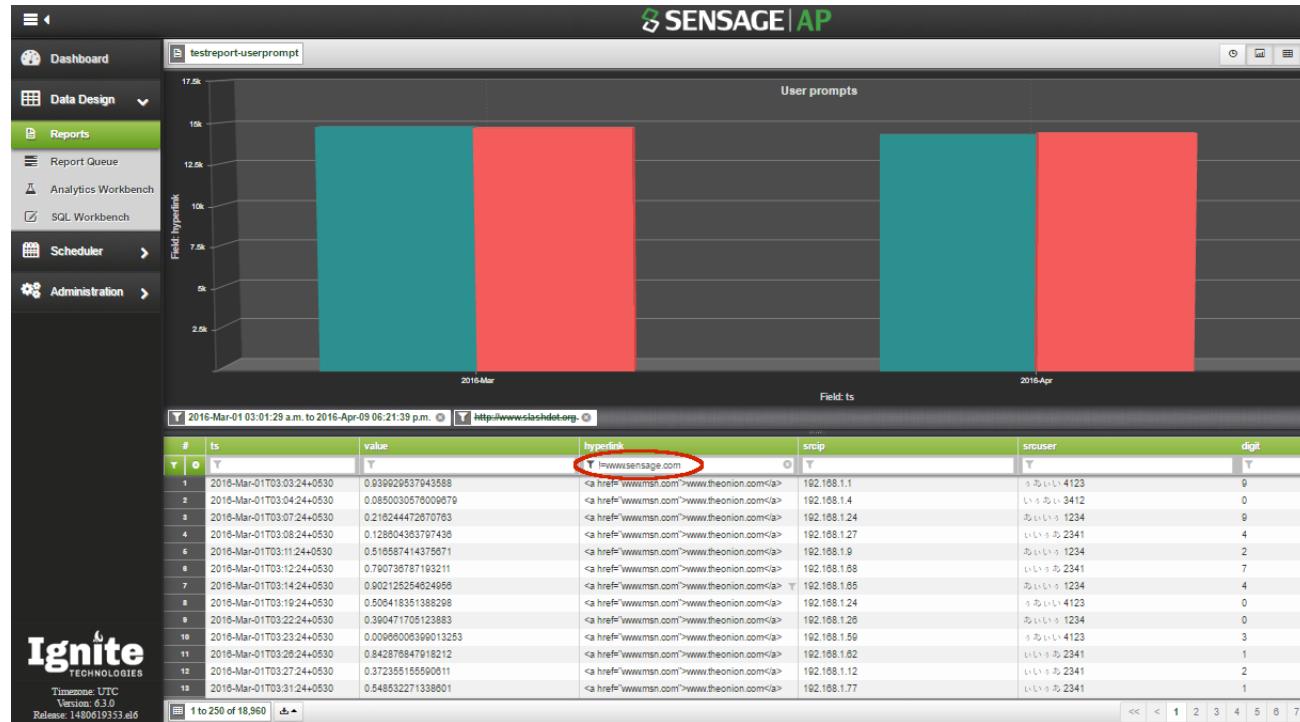
You can click the filter icon to the right of each value in the report grid and select from the list of available quick filters to automatically add the desired filter to that column. The quick filters available depends on the type of information displayed in the column. As shown in the image below, the time stamp (**ts**) column shows the time related filters like day, month, etc. The **hyperlink** column shows the quick filters related to string manipulation. You can apply only one quick filter per column at a time. Adding a new quick filter to a column already containing one will overwrite the older filter.

Figure 23: Figure 2-10: Quick Filter



For example in Figure 2-10-1 below, we can remove all items which contain the hyperlink value `www.sensge.com` by selecting the quick filter `!=`. The applied quick filter value (`!=www.sensge.com`) is visible in the filter text field (circled in red).

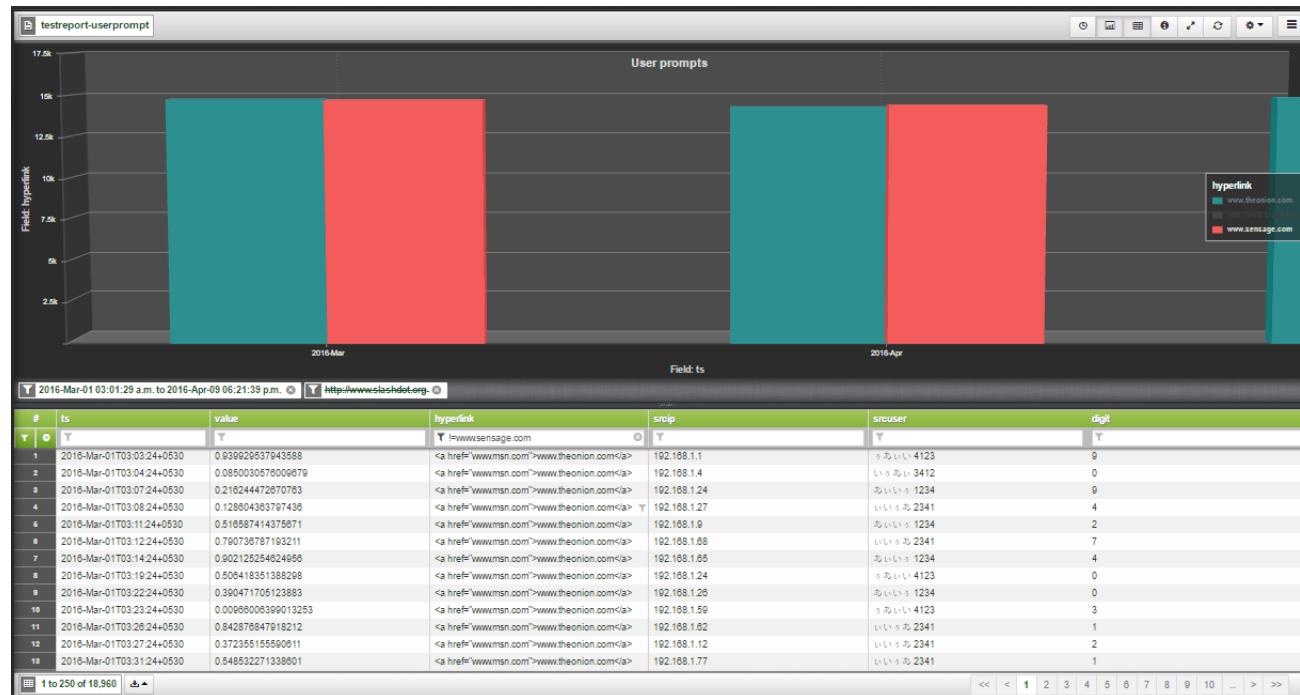
Figure 24: Figure 2-10-1



Removing Filters from a Report Display

To remove filters from the report display, click the x icon (available on the filter label, as shown in the screenshot below.

Figure 25: Figure 2-11-1: Applied filters



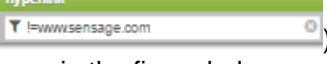
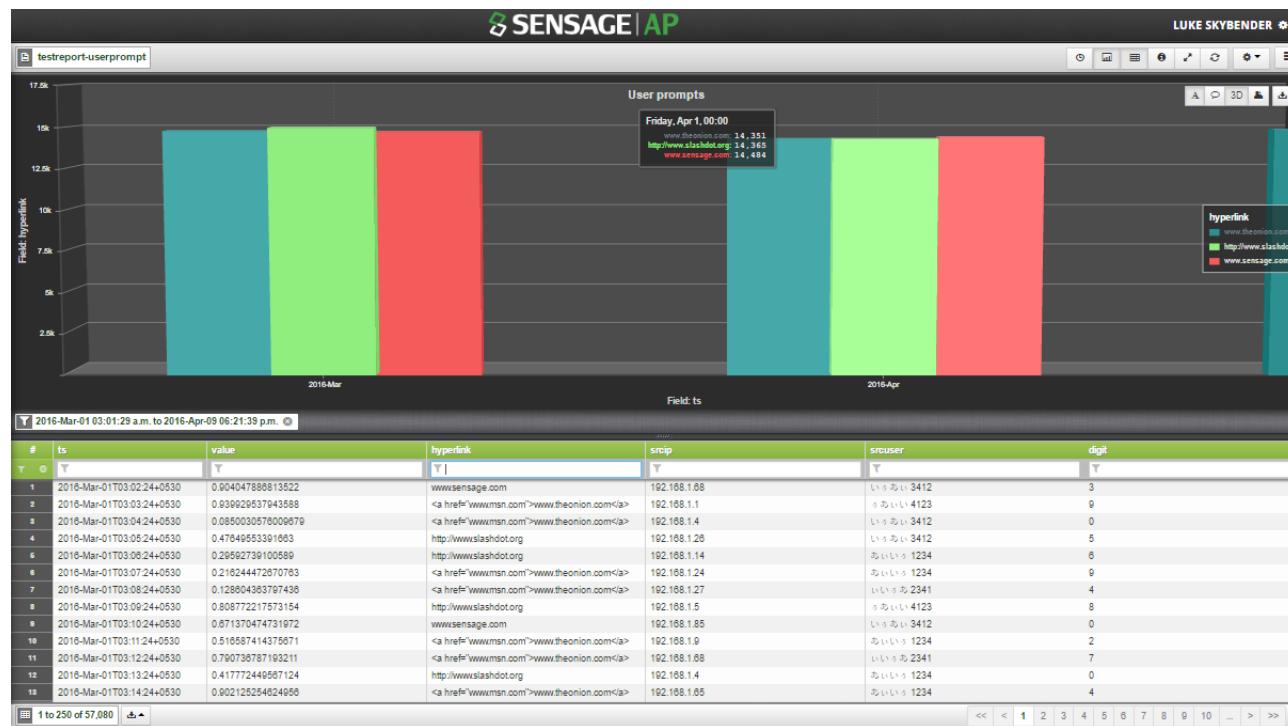
In the screenshot above, to remove the applied filter to the charts () and the quick filter applied to the **hyperlink** column (, click  on the labels. The resulting chart and the report are shown in the figure below.

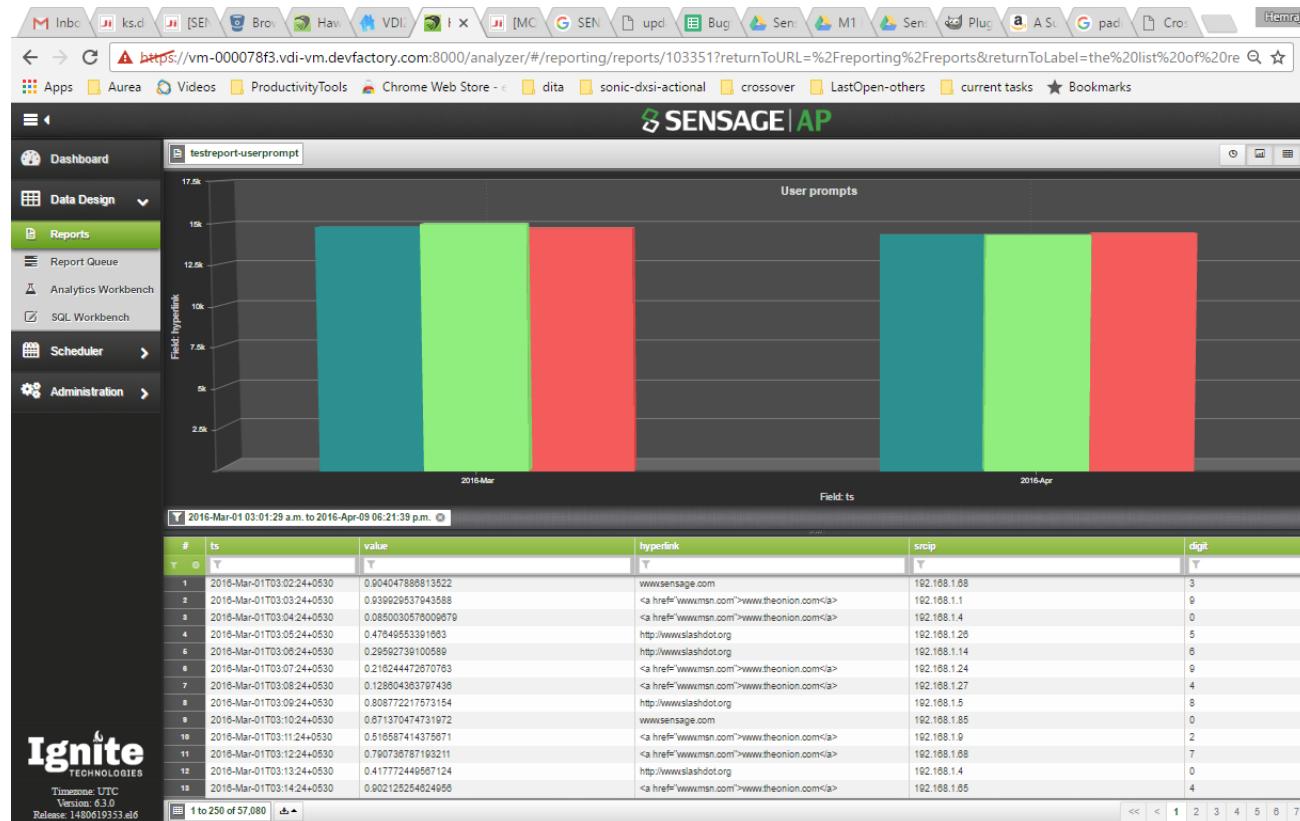
Figure 26: Figure 2-11-2

Removing and Choosing Columns for Report Display

To choose or to remove columns a report displays, hover the mouse over the upper-right corner

of the report grid to display the  icon. Click this icon to display the **Choose Columns** pop-up menu. You can remove a column or add back a removed column by selecting the checkbox next to each column item.

Figure 27: Figure 2-11: Specifying Columns for Report Display



Using Filters to find a Report

As the number of reports you create increases, it will be useful to group the reports into different categories. You can create different category tags and apply them to the reports you create. This will help you manage your reports and find them more quickly. If a report falls into multiple categories, you can apply multiple category tags to the same report.

You can use any of the following methods described below to narrow down and retrieve a specific report for viewing.

- You can select a tag by clicking in the -- *filter by tags* -- drop-down list and select a tag (category) under which the report is categorized. For example, in the screenshot below, selecting the tag **Administrative Reports** narrows the list of reports to those categorized as administrative reports.

Figure 28: Figure 2-12-1

The screenshot shows the SENSAGE AP interface for managing reports. At the top, there's a navigation bar with a logo, the text 'SENSAGE AP', and a user name 'LUKE SKYBEND'. Below the navigation bar is a toolbar with various icons for creating, running, and managing reports. A dropdown menu labeled 'Run in:' is open. To the right of the toolbar is a search bar and some filter options. The main area is titled 'Manage Reports' and contains a table with the following columns: Report Name, Owner, Last Updated, History Count, Space (MB), and Tags. There are seven rows of data in the table. A red circle highlights the 'Tags' column header, which is currently set to 'Administrative Reports'. The table data is as follows:

Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
testsql-datelimits	test1	07/12/2016 19:20	1	30	(Administrative Reports)
testreport-notable-swap	test1	07/12/2016 19:21	0		(Administrative Reports)
testreport-datelimits	test1	07/12/2016 19:15	19	132	(Administrative Reports)
testreport-!filtertest3	test1	07/12/2016 19:16	1	11	(Administrative Reports)
testSQLreport-namespace swap	test1	07/12/2016 19:16	18	31	(Administrative Reports)
RunOnSchemaChange	test1	07/12/2016 19:30	0		(Administrative Reports)

Note: You can repeat the process to filter the list by multiple tags.

- Click in the **Report Name** filter and type part of a name of a report that you want to find. All the reports having the search text as part of their name are listed. For example, typing **schema** in the **Report Name** filter resulted in three reports in the list having **schema** in their names.

Figure 29: Figure 2-12-2

Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
testreport-uninschemac...	testadmin1	07/12/2016 19:18	11	135	(2)Change Reports (1)Authorization Reports (1)Administrative Reports
testSQLReport-noschem...	test1	07/12/2016 19:17	0	0	
RunOnSchemaChange	test1	07/12/2016 19:30	0	0	(1)Administrative Reports

Similarly, you can type the username of the owner in the Owner filter and get the list of reports owned by the user. The following filter shows the list of reports owned by the user **test1**.

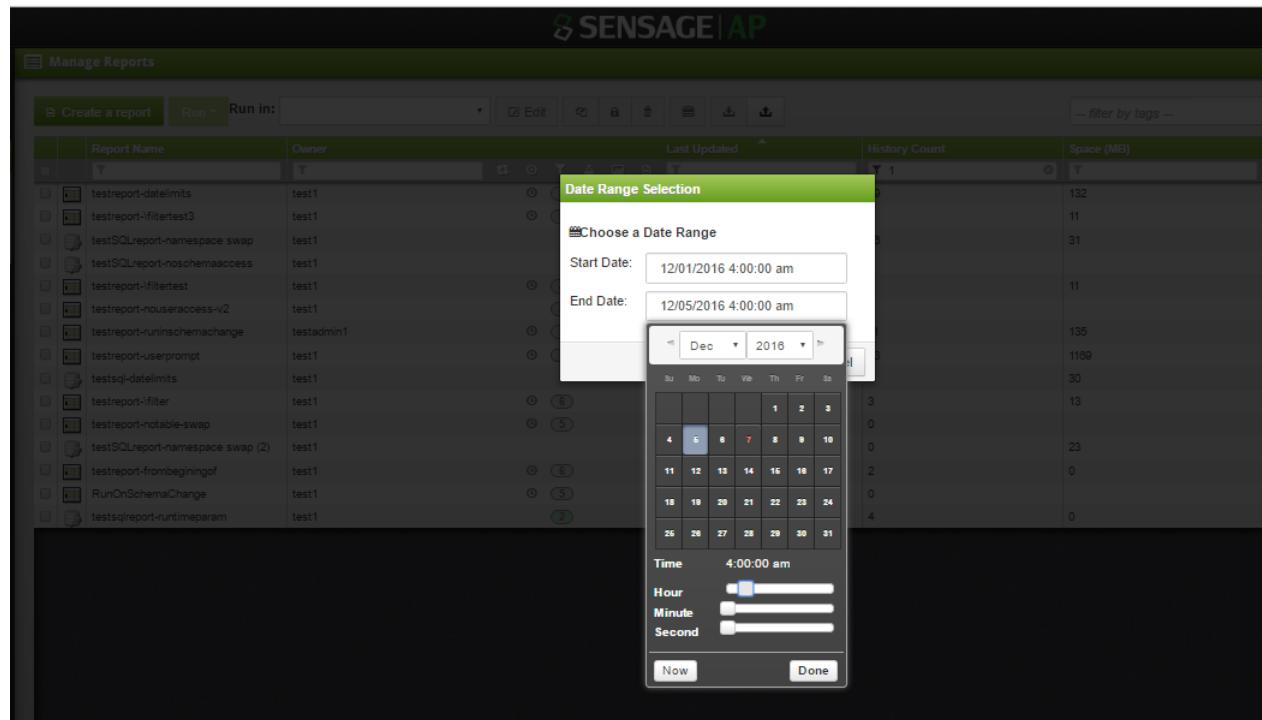
Figure 30: Figure 2-12-3

Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
testreport-datalimits	test1	07/12/2016 19:15	19	132	(1)Administrative Reports
testsreport-runtimeparam	test1	07/12/2016 19:31	4	0	(4)Resource Access Reports
testreport-frombeginningof	test1	07/12/2016 19:30	2	0	(2)Change Reports
RunOnSchemaChange	test1	07/12/2016 19:30	0	0	(1)Administrative Reports
testSQLReport-namespac...	test1	07/12/2016 19:22	0	23	(4)Resource Access Reports
testsol-datalimits	test1	07/12/2016 19:20	1	30	(1)Administrative Reports
testreport-userprompt	test1	07/12/2016 19:19	13	1169	(4)Resource Access Reports
testreport-nouseraccess...	test1	07/12/2016 19:18	0	0	(1)Authorization Reports
testreport-notable-swab	test1	07/12/2016 19:21	0	0	(1)Administrative Reports
testSQLReport-noschem...	test1	07/12/2016 19:17	0	0	(1)Authorization Reports
testSQLReport-namespac...	test1	07/12/2016 19:16	16	31	(1)Administrative Reports
testreport-iffiltertest3	test1	07/12/2016 19:16	1	11	(1)Administrative Reports
testreport-iffiltertest	test1	07/12/2016 19:18	1	11	(3)Network Activity Reports
testreport-if-filter	test1	07/12/2016 19:20	3	13	(3)Network Activity Reports

Note: The Report Name is case-sensitive. The list of reports will be filtered by reports with the same string in their name as what you typed.

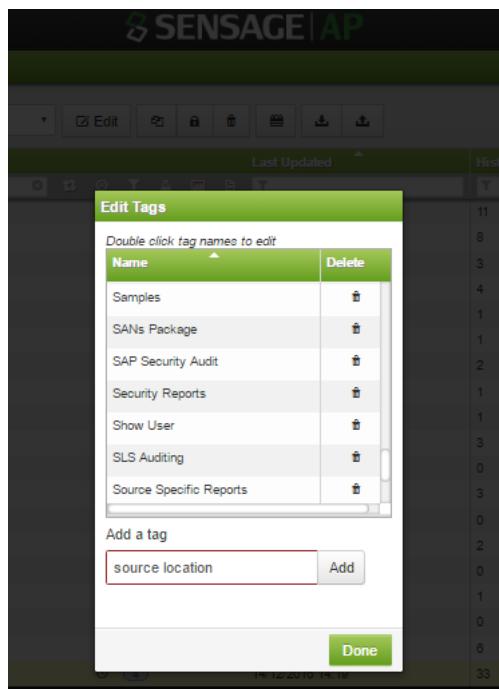
- Filter for reports created in a specific date range using the **Last Updated** field. Click in the filter field to get the **Date Range Selection** dialog. Clicking the in the Start Data and End Date of the data range in the date calculator pop up dialog. You can also narrow the Hour, Minute, Second granularity as required. The screenshot below shows the date range selector with the date calculator.

Figure 31: Figure 2-12-4



You can add, remove, or modify the tag (category) list. To add a new tag, perform the following steps:

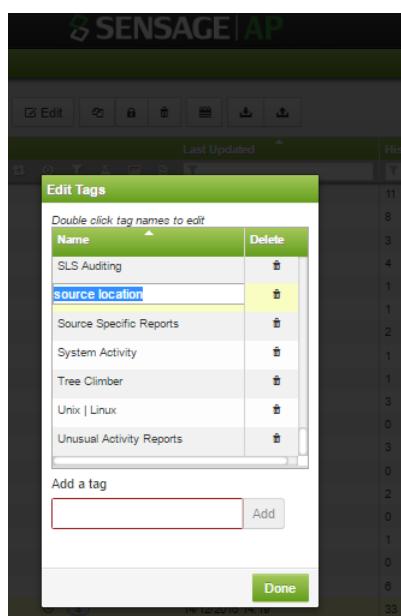
- Click . The **Edit Tags** dialog displays.



2. Enter a new tag name in the **Add a tag** text box.
3. Click **Add**. The new tag appears in the list of tags.

To edit an existing tag name, perform the following:

- Click . The **Edit Tags** dialog displays.
- Double click the tag name you want to edit. The tag is highlighted in the text box.



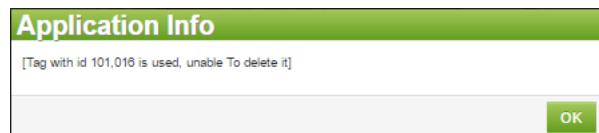
- Edit the tag name and press **Enter**. The tag name gets updated.

Note: Any reports tagged with the previous tag name are also updated and tagged with the new name.

To delete a tag name, perform the following:

- Click . The **Edit Tags** dialog displays.
- Click  in the **Delete** column of the tag name you want to delete.

If a report is already tagged with the tag you want to delete, the following message pops up:

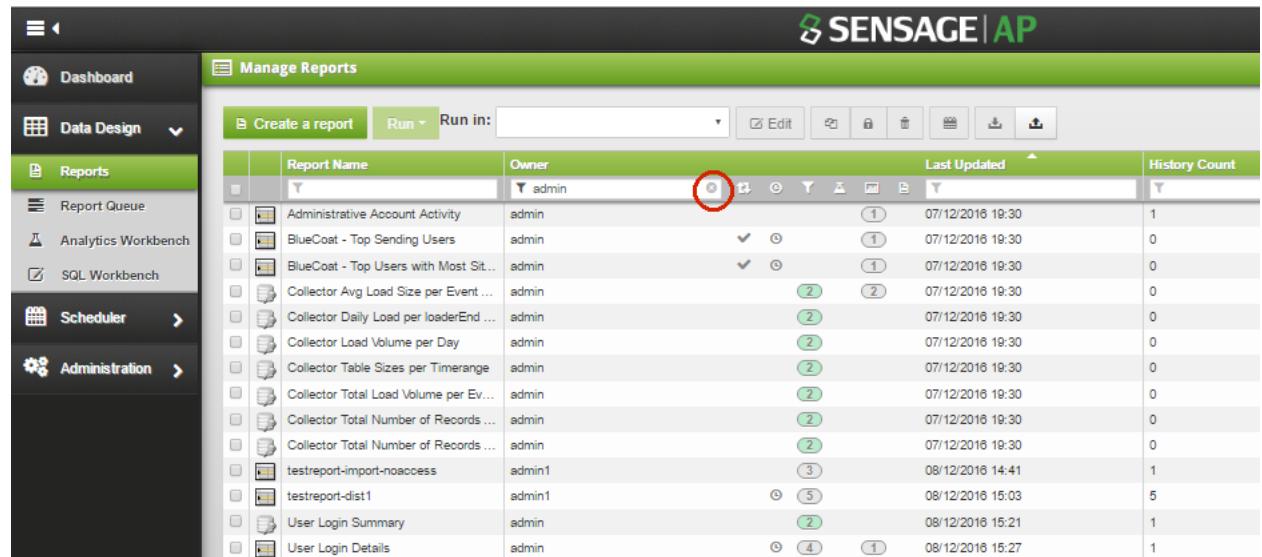


If the tag name is not in use, it is deleted from the list.

Removing a Report Filter

You can find the reports you need by using the filters available at the top of each column. In the screenshot below, the reports are filtered by the **Owner** column, to get the list of all reports owned by the **admin**. To remove the filter condition, click the **x** to the right of the filter label (circled in red in the figure below).

Figure 32: Figure 2-13: Removing a Filter Condition



Report Name	Owner	Last Updated	History Count
Administrative Account Activity	admin	07/12/2016 19:30	1
BlueCoat - Top Sending Users	admin	07/12/2016 19:30	0
BlueCoat - Top Users with Most Sit...	admin	07/12/2016 19:30	0
Collector Avg Load Size per Event	admin	07/12/2016 19:30	0
Collector Daily Load per loaderEnd	admin	07/12/2016 19:30	0
Collector Load Volume per Day	admin	07/12/2016 19:30	0
Collector Table Sizes per Timerange	admin	07/12/2016 19:30	0
Collector Total Load Volume per Ev...	admin	07/12/2016 19:30	0
Collector Total Number of Records ...	admin	07/12/2016 19:30	0
Collector Total Number of Records ...	admin	07/12/2016 19:30	0
testreport-import-noaccess	admin1	08/12/2016 14:41	1
testreport-dist1	admin1	08/12/2016 15:03	5
User Login Summary	admin	08/12/2016 15:21	1
User Login Details	admin	08/12/2016 15:27	1

Using Sort to Find a Specific Report Attribute

You can specify any of the label icons circled as shown in Figure 2-14 below to sort all reports by a specific report attribute. This allows you to find reports by attributes that cannot be filtered.

Figure 33: Figure 2-14: Sorting Report by Attributes

The screenshot shows a software interface titled "Manage Reports". At the top, there are buttons for "Create a report", "Run", "Edit", and "Delete". Below the toolbar is a search bar labeled "filter by tag". The main area displays a list of reports in a grid format. The columns include "Report name", "Last updated", and "Tags". Each report entry has a small circular icon next to it, which is highlighted with a red oval. The "Report name" icon is at the top left of the first row, "Last updated" is in the center of the first row, and "Tags" is at the top right of the first row. The list contains several entries, each with a unique report name, a timestamp, and a set of tags.

The following is a description (from left to right) of each available sort attribute:

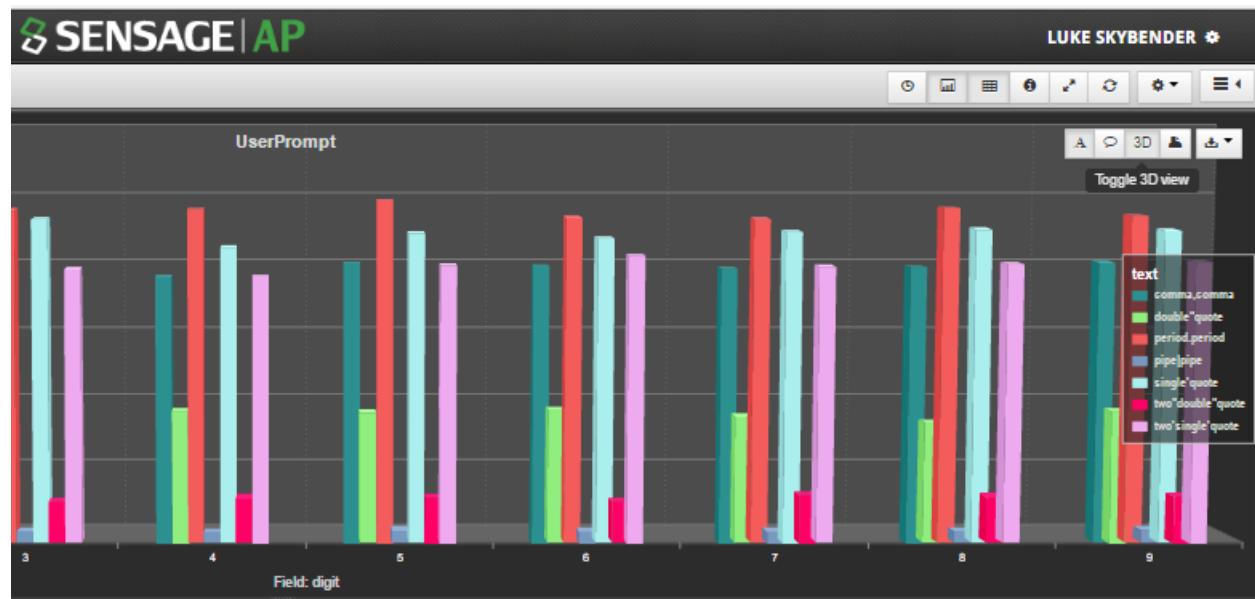
Sort Attribute	Description
Report Type	Either Wizard report or SQL Workbench Reports
Report Name	Name of the report
Summary Reports	Wizard reports that have aggregation are indicated with a checkmark.
Timestamp Reports	Wizard reports that have the time range limit set to a field of type datetime. Hover the mouse over the clock icon to see the name of the field that is set in the report definition.
Field Value Filters	An integer count of the number of fields used as filters in the report definition. If any of the filters are required for entry at report run time, the color of the integer is teal-green. Hovering the mouse over the clock icon will display the list of filters.
Analytics Models	Reports that have models connected to this report that are automatically run after the report runs and which process the report results.
Chart Types	Reports that have charts configured for the report. Hover the mouse over this icon to display the chart type.
Associated Reports	An integer count of the number of drill-downs configured to associated reports for each report. Hover the mouse over the icon to display the names of the associated reports.
Last Updated	The date and time the report was last updated.

Sort Attribute	Description
History Count	The number of report versions within the report's history retention period.
Space (MB)	The size of the report in megabytes.
Tags	Report tags (categories) under which the report is categorized.

Using Viewing Features for Charts and Graphs

On a chart screen, viewing options are presented as icon items that are displayed when you hover the mouse over the upper-right portion of a graph as shown in Figure 2-15 below:

Figure 34: Figure 2-15: Chart Viewing Options



The following table describes the use of each chart option icon for viewing:

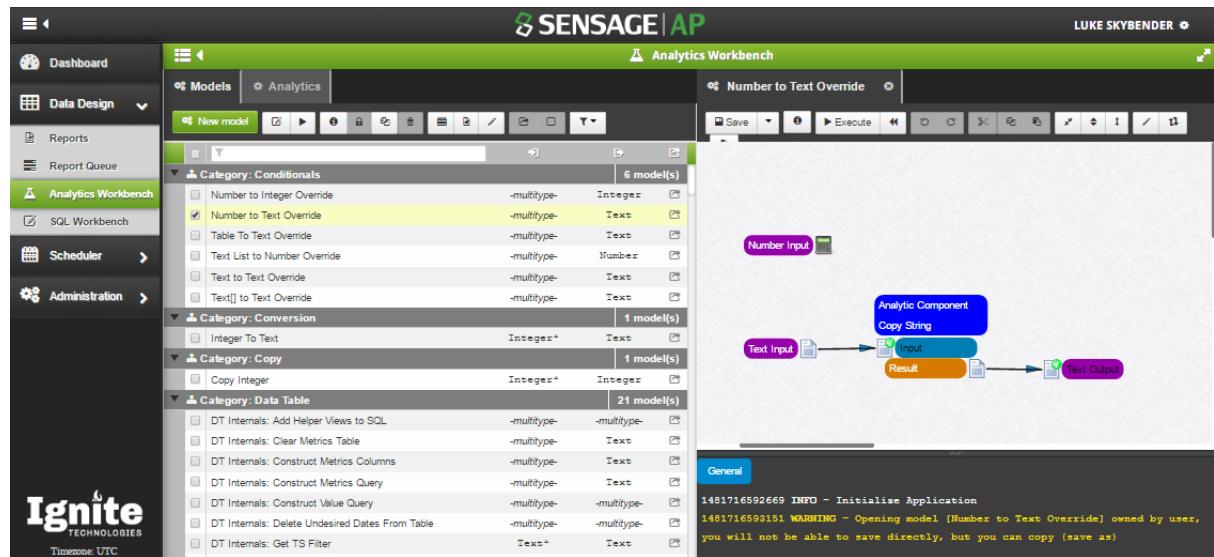
icon	Name	Use to...
A	Axis Labels Toggle	Toggle the axis labels on and off.
C	Data Labels Toggle	Toggle the data labels on and off.
3D	3D View Toggle	Toggle the 3D view of the chart.
Print	Browse Print	Print the report using browser printing to send the chart to a local printer.
Export	Export Chart	Export the chart in one of 3 file types. For details, see Exporting Charts on page 186.

Viewing Models

To view models:

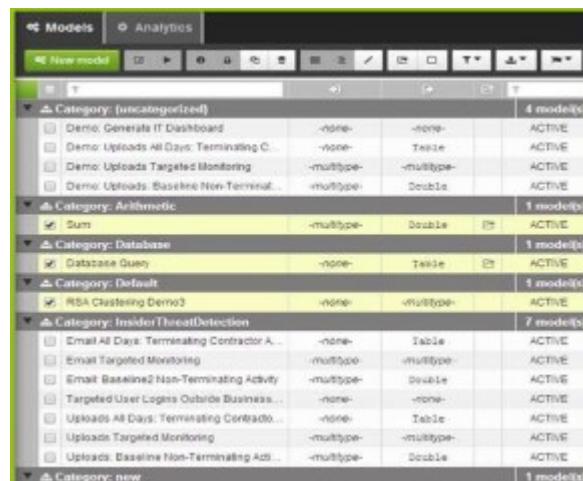
1. Go to the Analyzer dashboard, select Data Design from the dropdown list, and click Analytics Workbench, make sure the Models tab is selected, and click New Model. The palette and model canvas are displayed as shown below.

Figure 2-16: Palette and Model Canvas



2. Expand the entire model libraries menu by clicking on the black triangle icon to the left of a category and pressing the shift + click (Figure 2-17). All models in the system to which you have access are displayed. You can press shift + click again to collapse them all at once.

Figure 35: Figure 2-17: Model Libraries



3. To view a model:
 - a. Select the checkbox to the left of the model name, you want to view.

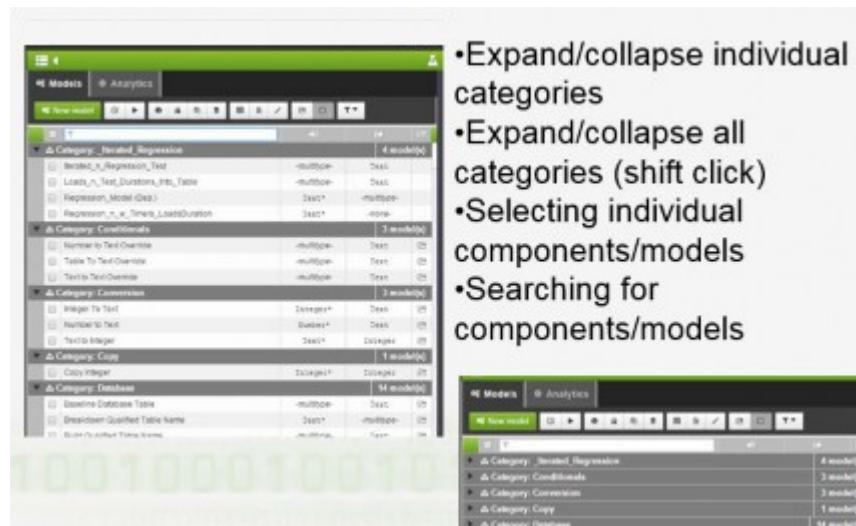
Figure 36: Figure 2-18: Viewing a Model



- b. Click  to render the model in the canvas.
- c. To search for a model, you can type the full or partial name of the model in the text box below the model menu. The list of models will be filtered by the string that you provide.
- d. To expand a category of models, click the triangle to the left of the category name. If you hold down the shift key when you click, all the categories will be expanded or collapsed at once.

Note: To close a category of models, click again, the triangle to the left of the category name.

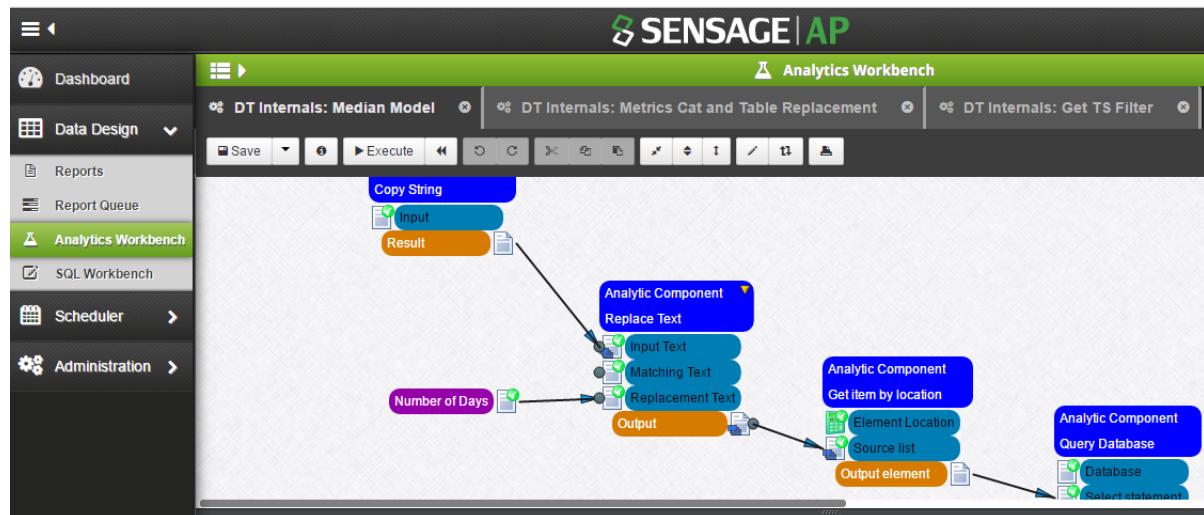
Figure 2-19:Model Viewing



- Expand/collapse individual categories
- Expand/collapse all categories (shift click)
- Selecting individual components/models
- Searching for components/models

- e. You can render multiple models and they are all placed as tabs in the canvas. Click a tab to view the rendered model. See the screenshot below.

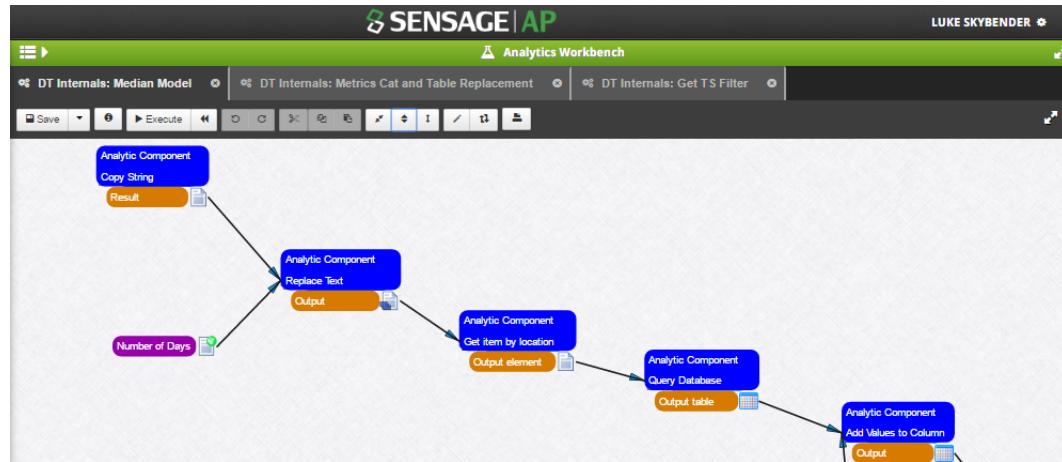
Figure 2-20: Model Canvas Example



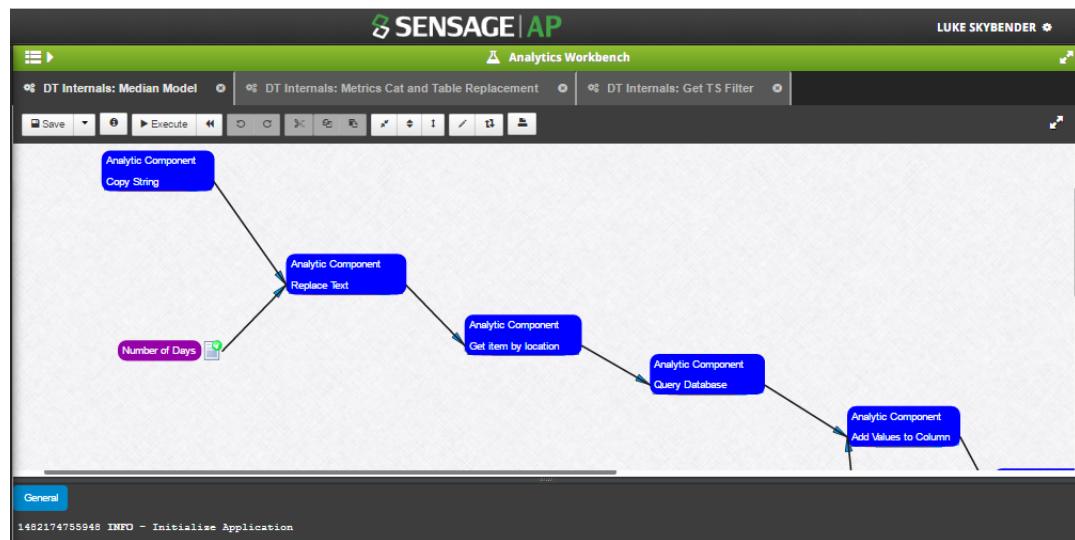
4. To collapse the model or expand (basic) or expand all parts of the model on the canvas, click the corresponding icon on the Model menu.



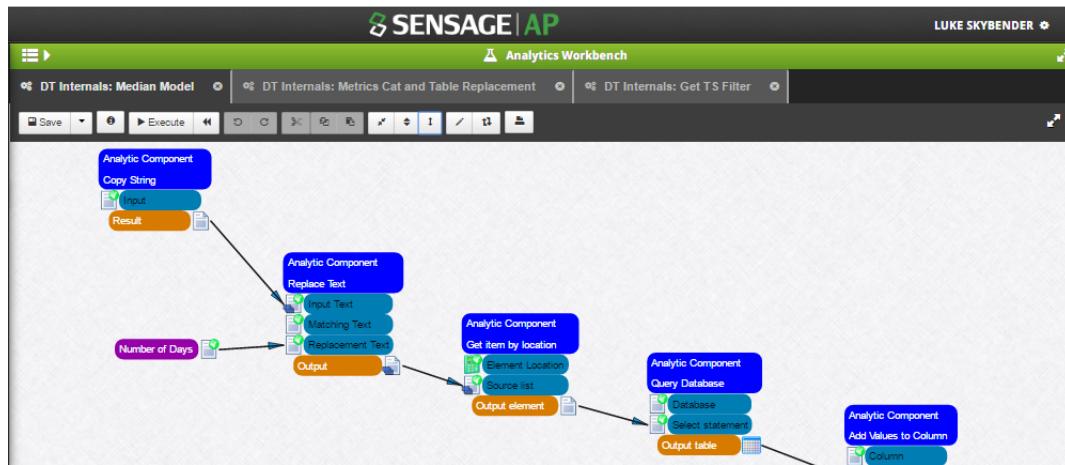
In the screenshot below, "Expand (basic)" shows all input and output parameters.



In the screenshot below, use the collapse button to collapse all input and output parameters.



As shown in the screenshot below, "Expand (all)" lets you expand all input and output parameters.



3

Creating and Modifying a Dashboard

If you have "Editor" rights to create dashboards, you can create a dashboard from scratch and set up a default dashboard for users to view and rearrange.

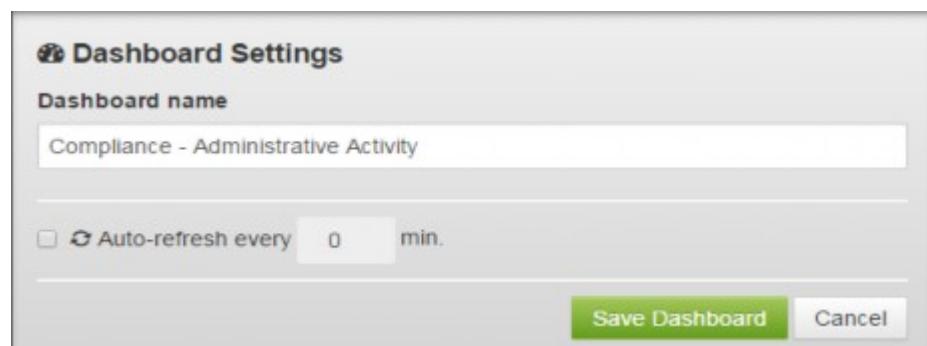
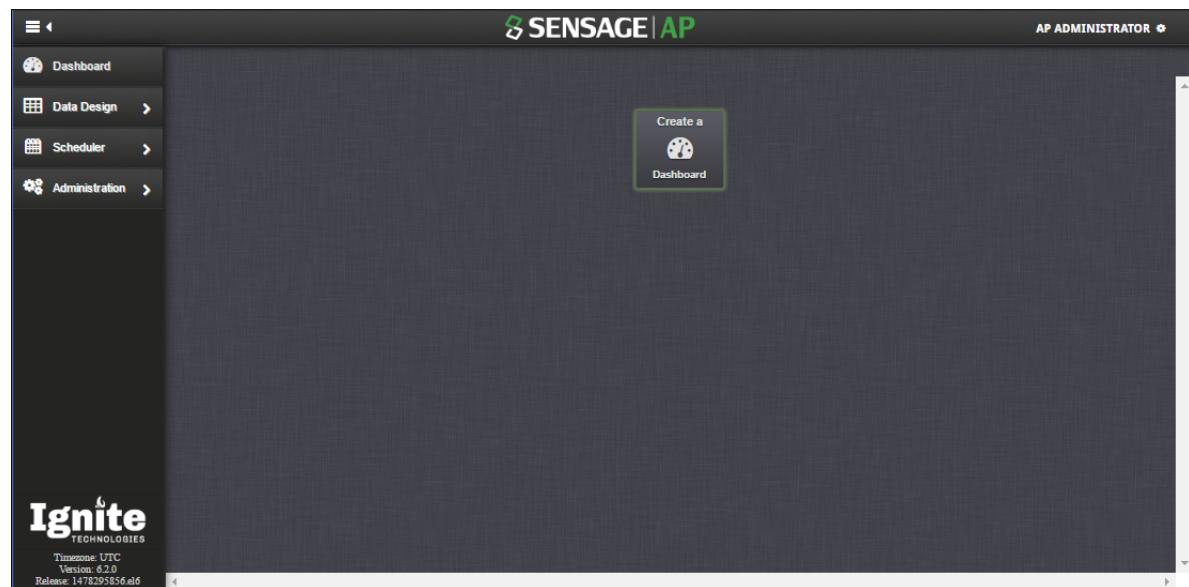
This chapter contains these sections:

- [Setting Up the Initial Analyzer Dashboard](#) on page 61
- [Adding Dashboards](#) on page 63
- [Modifying a Dashboard](#) on page 63
- [Adding Reports to a Dashboard](#) on page 64

Setting Up the Initial Analyzer Dashboard

If you have Analyzer "Administrator" privileges and you are setting up Analyzer for the first time, you will need to create an initial dashboard. After logging into Analyzer, you will be prompted to "Create a Dashboard" through a large icon in the center of the page as shown in Figure 3-1 below. Click this icon.

Figure 3-1: Create a Dashboard prompt



A dashboard settings box is displayed to define your new dashboard. Figure 3-2 Dashboard Settings To set your dashboard:

1. Provide a name for the dashboard. Note that if you leave the name field blank, you will not be able to save the dashboard.
2. If desired (optional), select to have your dashboard automatically refresh on a periodic basis. This is appropriate if you have low-impact reports (over short timeframes) that are scheduled to run on a regular basis.

Note: If this option is selected, then whenever a user has the dashboard displayed in a browser, all reports on the dashboard will run at the specified interval.

3. If desired (optional), to set the dashboard to automatically refresh, click the checkbox to the left of "Auto-refresh every" and provide an integer for the number of minutes between refreshes.

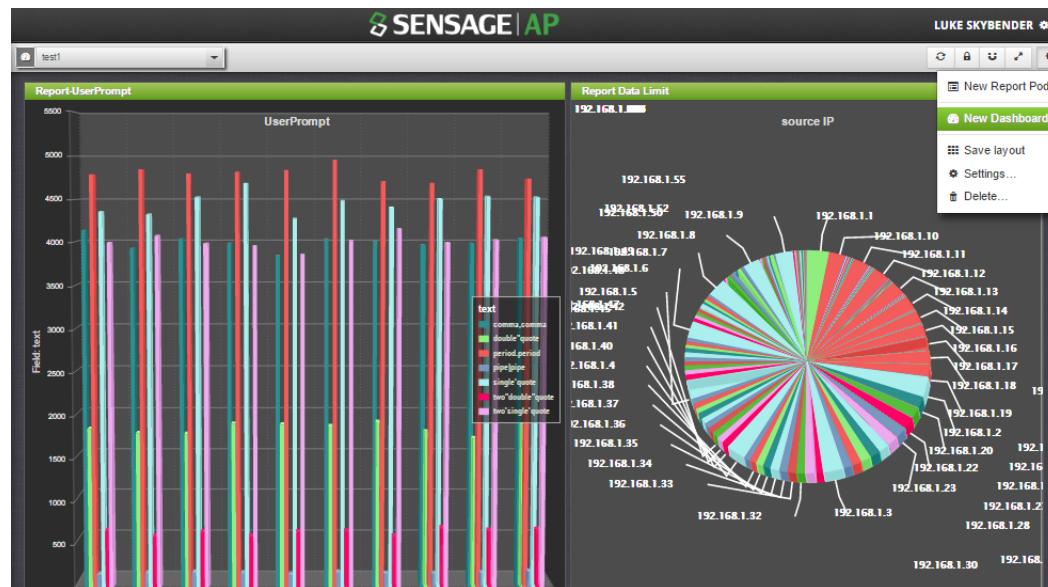
Note: It is recommended to set this lower than every 60 minutes.

4. To save the dashboard, click **Save Dashboard**.
5. To add reports to the dashboard, see [Adding Reports to a Dashboard](#) on page 64.

Adding Dashboards

After the first dashboard exists, you will see a "gear" icon in the upper right corner of the screen. Click this icon to display the Dashboard settings menu and then click New Dashboard to display the new dashboard screen. NEEDS NEW SCREENSHOT

Figure 3-3: Adding a Dashboard



Follow steps 1-5 outlined in [Setting Up the Initial Analyzer Dashboard](#) on page 61.

Modifying a Dashboard

If you want to rename the dashboard or change the auto-refresh setting, click the "gear" icon to display the Dashboard settings menu and select "Settings...".

Figure 3-4: Modifying Dashboard Settings



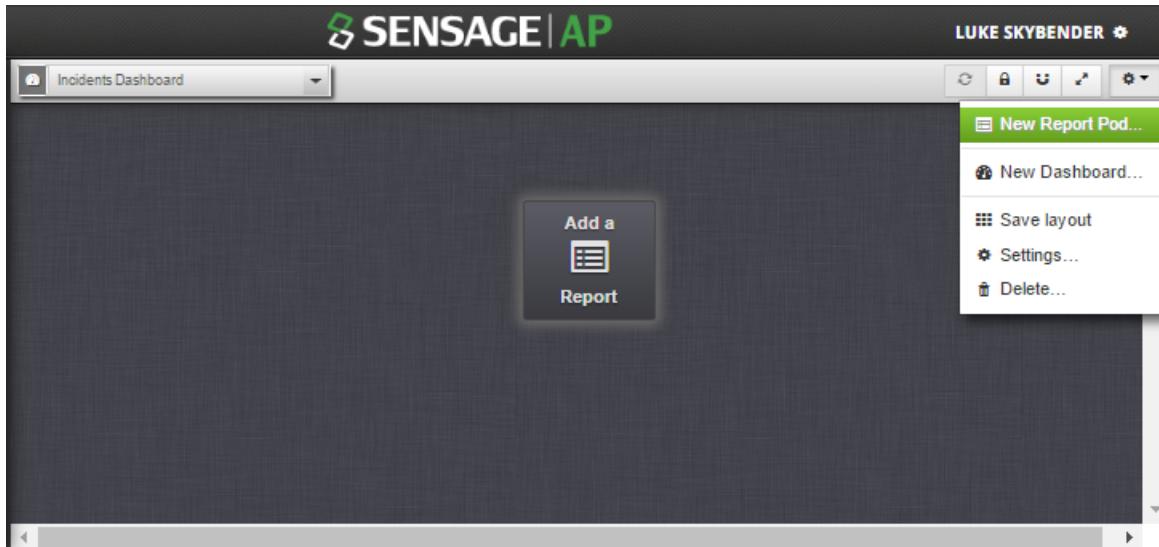
A Dashboard Settings box is displayed as shown in [Setting Up the Initial Analyzer Dashboard](#) on page 61.

To make modifications, see steps 1-5 of [Setting Up the Initial Analyzer Dashboard](#) on page 61. Note that in addition to making changes to the dashboard settings, you can also change the dashboard name.

Adding Reports to a Dashboard

After you have saved the dashboard, you will see the name of the dashboard that you provided in the upper left corner of the screen. The new dashboard will be empty with only one large "Add a Report" icon.

Figure 3-5: Adding a Report to a Dashboard

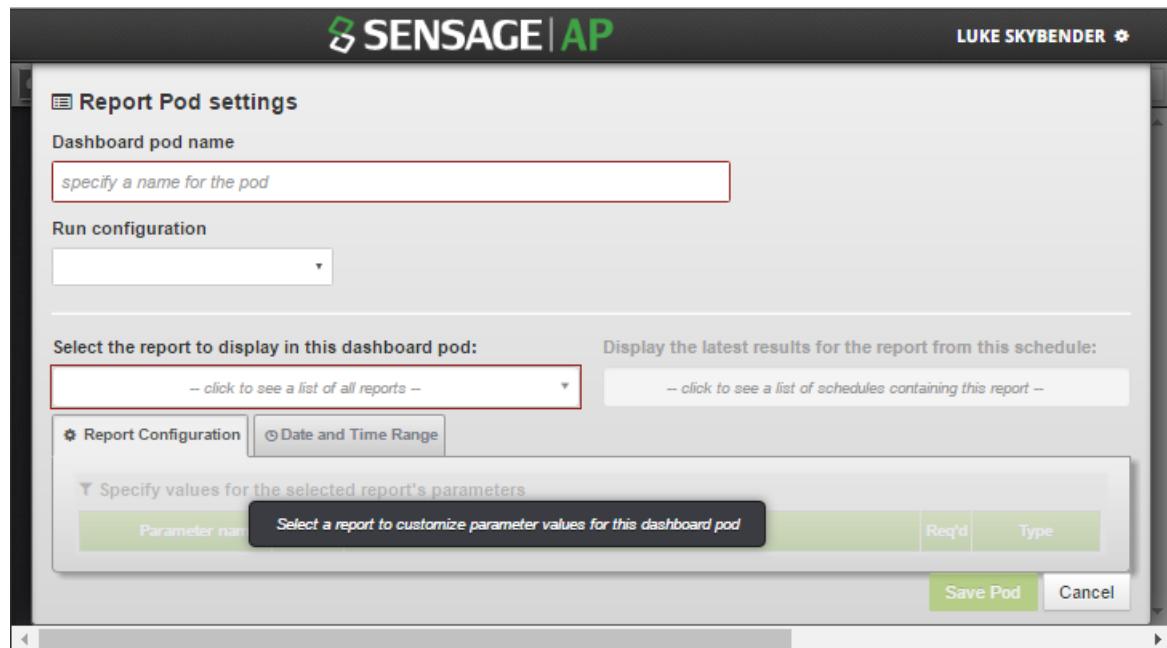


To add reports to the dashboard:

1. Either click the large "Add a Report" or click the "Gear" icon for the dashboard settings menu and select "New Report Pod."

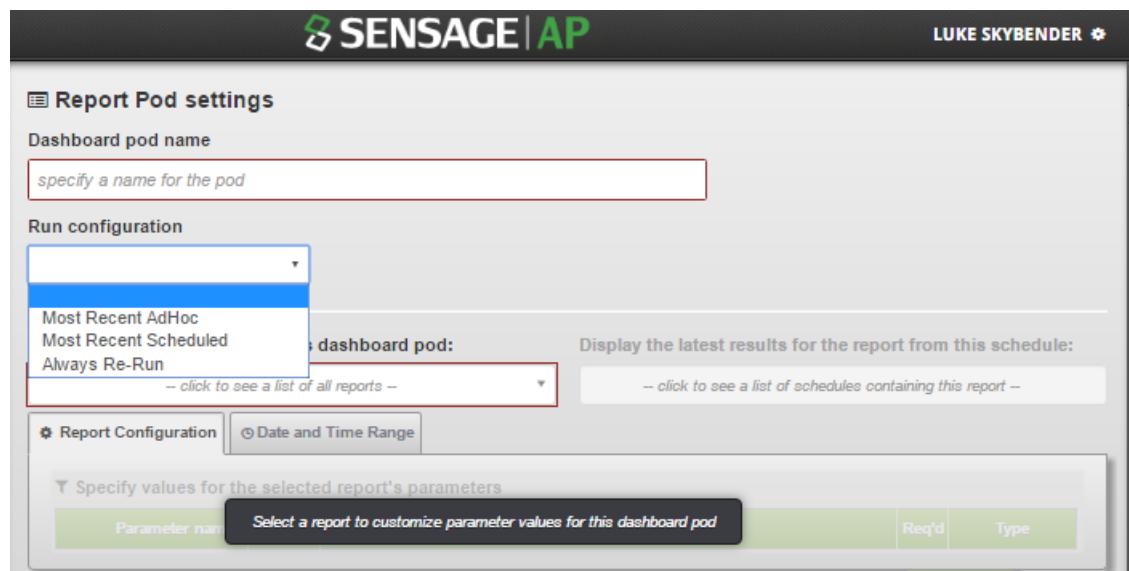
Note: Each report pod contains one report.

Figure 3-6: Naming the Dashboard Pod



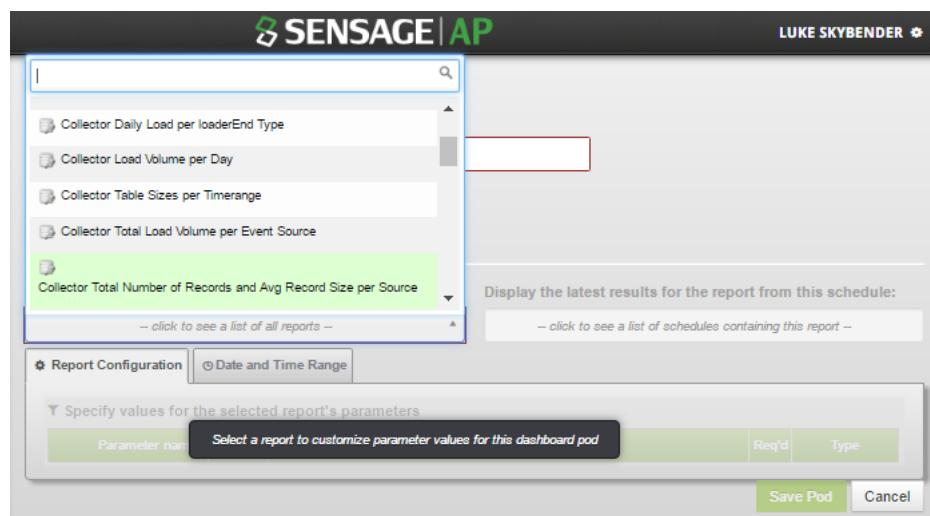
2. If desired, enter an optional name for the dashboard pod.
3. To select the run configuration for the dashboard pod report, click the dropdown triangle to the right of the box below and select one of the following:
 - a. **Most Recent AdHoc** retrieves report data from the user's latest run of the specified report.
 - b. **Most Recent Scheduled** retrieves report data from the latest scheduled results of the specified report.
 - c. **Always Re-Run** always re-runs report data to show current results and saves it to history.

Figure 3-7: Naming the Dashboard Pod



4. To select the report, click the dropdown triangle on the right of the box below the label "Select the report to display in this dashboard pod. To find the report you want to add, scroll through the dropdown list to find the report or type part of the report name in the search box.

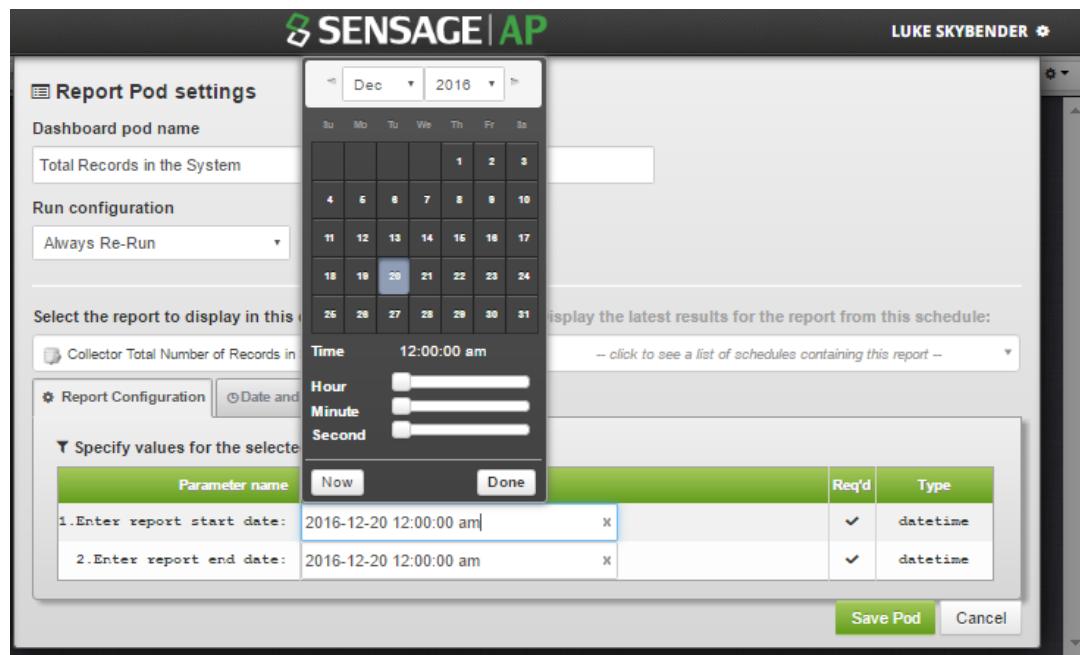
Figure 3-8: Finding and Selecting a Report for a Dashboard



Note: By default the pod will be named the same as the report you select. The pod name is displayed as the title in the green heading on each report pod. You can change this from the report name by editing the box "Dashboard pod name."

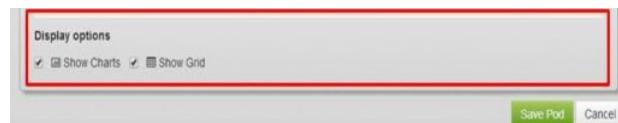
5. If the report you are adding has parameterized filters, you will see a grid with the list of filters. You can specify the Operator and Parameter value for each parameter. If the parameters are required, you must provide these values in order to save the report.

Figure 3-9: List of Parameterized Filters for Dashboard Pod

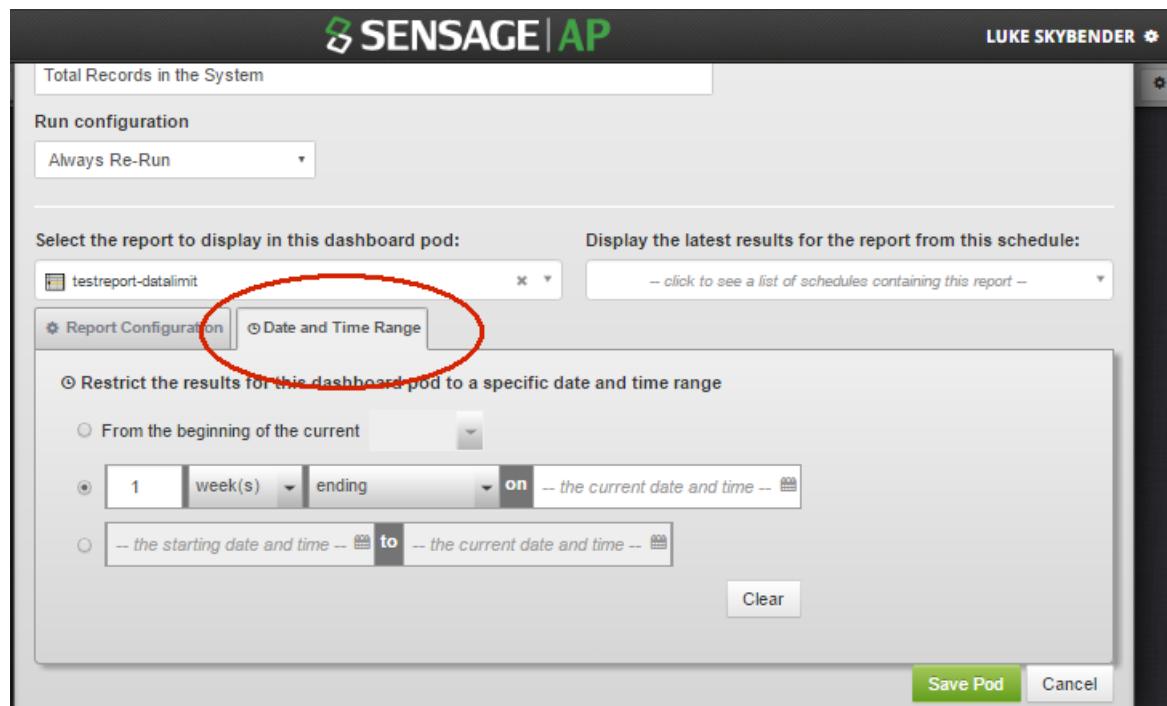


- If a chart has been configured for the report, the area of the screen below your parameter settings will have options to display either the chart, the grid, or both. To do this, click the checkboxes corresponding to the "Show Charts" and "Show Grid" labels.

Figure 3-10: Show Charts or Grids for Report on Dashboard Pod



- If a field has been selected as the limit for the date and time range of the report, you have the option of changing the date and time range limit on the "Date and Time Range" tab.

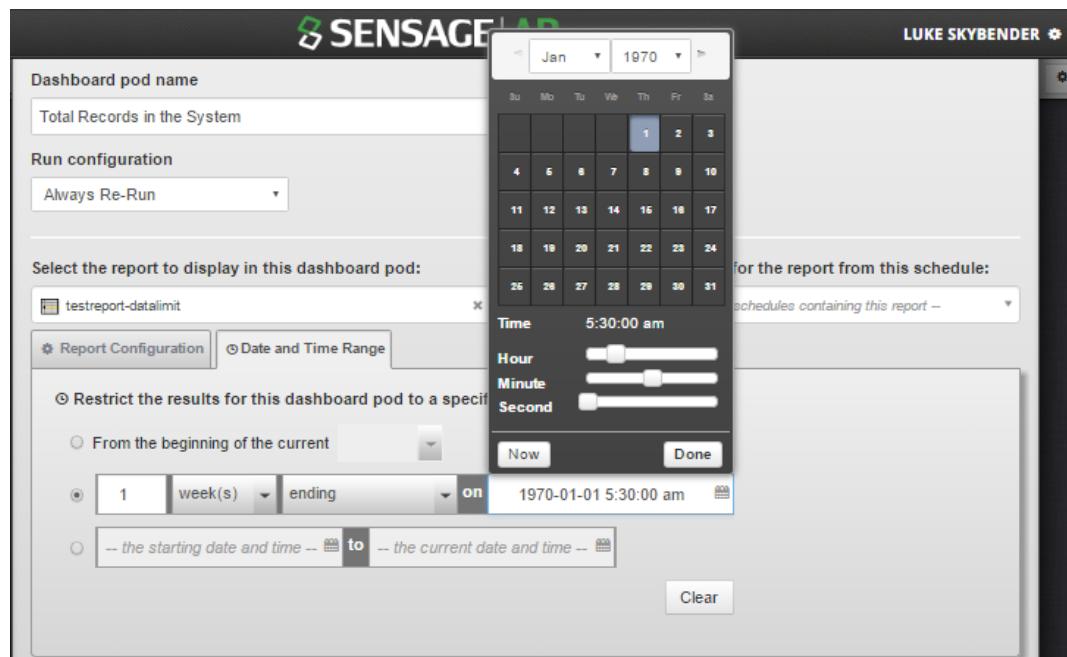


Note: Click Now for current date and time, or click applicable dates in the calendar choosing the month and the year through the dropdown and choosing the date for the desired month and dragging the slider for desired hour, minute, and second.

8. Click Done.

The date and time are automatically populated in the Date and Time Range box.

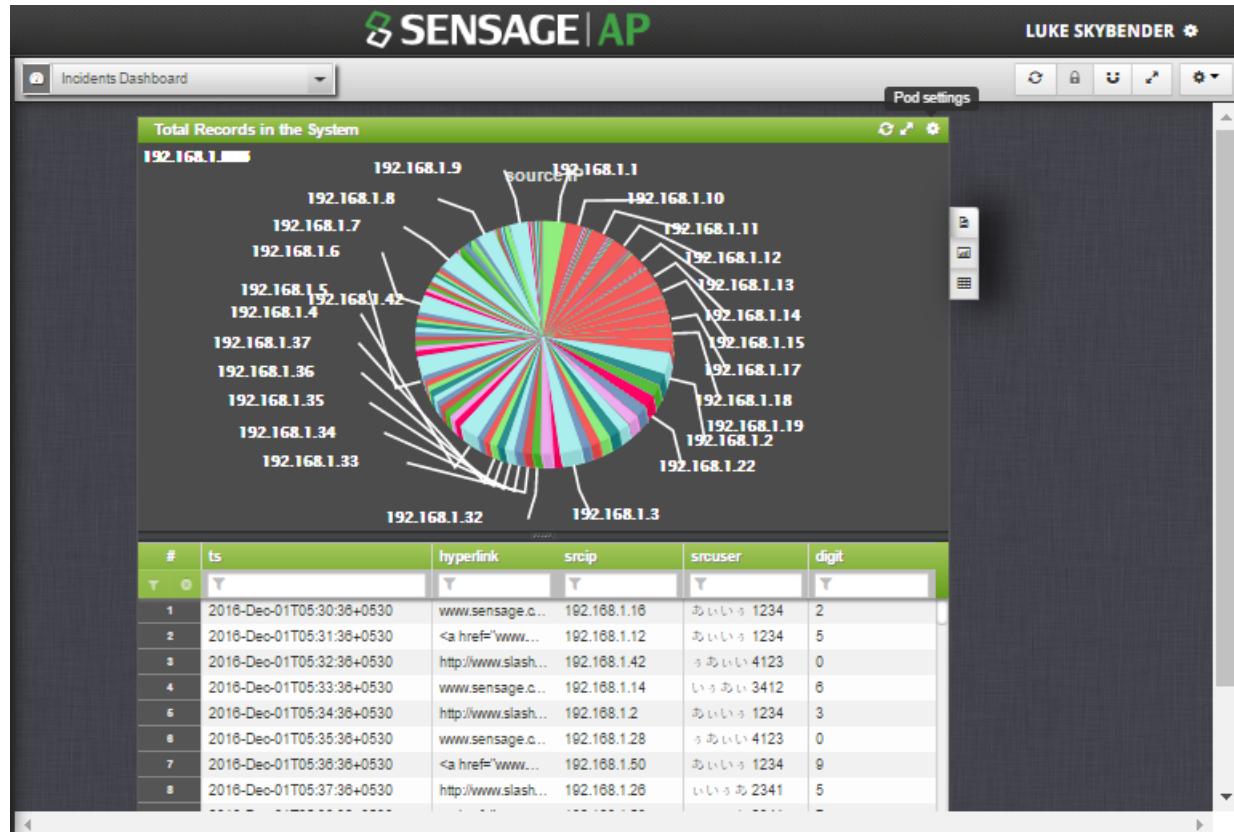
Figure 3-11: Date and Time Range for Dashboard Pod



9. Click Save Pod.

You will see the dashboard now displayed with your specified report as shown in the sample below.

Figure 3-12: Dashboard with Report Display



Note: If necessary, you can return to the previous screens to modify the settings of the pod. To do this, hover the mouse over the upper right corner of a pod until the pod settings icon is displayed; click this icon to view the pod settings menu and select Settings...

You can add upto 20 reports to a dashboard.

4

Creating, Modifying, and Running a Report

This chapter describes how to use the Analyzer Report Creation Wizard to create a basic report along with optional configuration features such as runtime parameters, complex data filters, and integration with data models.

Note: Because it is best to run your report before configuring a chart, details on creating and configuring charts for your report is presented as a separate chapter. If you choose to configure a chart for your report, see Chapter 5: Creating and Modifying Charts for a Report after you have run the report.

After you create a report, you can edit the report at any time and use the Report Creation Wizard features to make your changes.

This chapter contains the following topics:

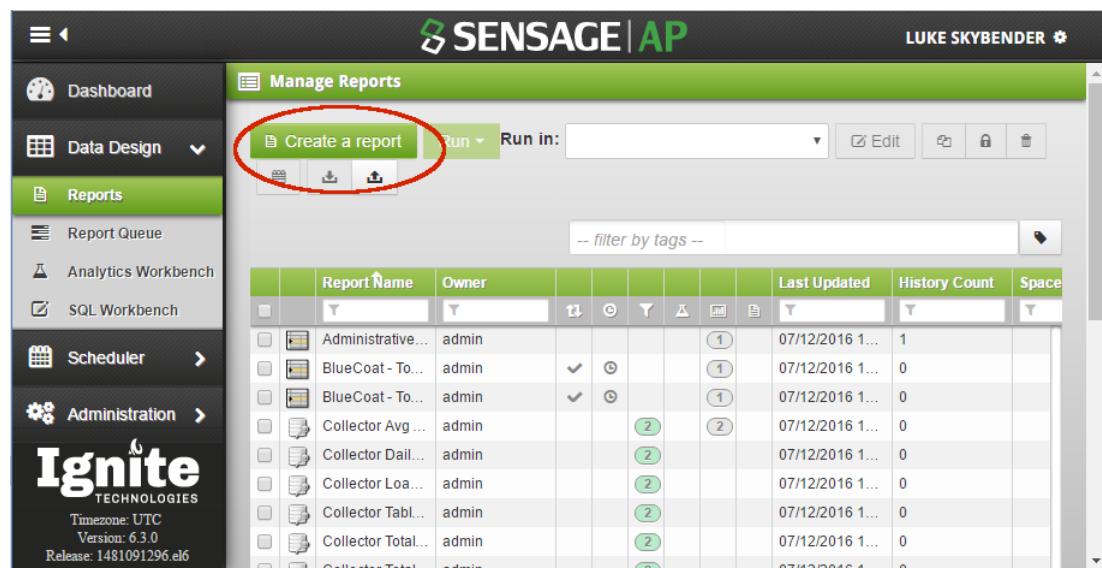
- [Creating a Report](#) on page 72
- [Running a Report](#) on page 77
- [Viewing Report Run Status](#) on page 80
- [Modifying a Report](#) on page 81
- [Joining Multiple Tables in the Report](#) on page 83
- [Specifying a Summary Report](#) on page 87
- [Providing a Date Limit Prompt in the Report](#) on page 90
- [Setting Report Retention for Report History](#) on page 91
- [Providing Interactive Runtime Parameters for the Report](#) on page 91
- [Specifying Data Filters for the Report](#) on page 94
- [Integrating Data Models with the Report](#) on page 96
- [Associating the Report with a Related Report for Drill-down](#) on page 98
- [Copying, Renaming, and Deleting Reports](#) on page 101

Creating a Report

To create a report in Analyzer, perform the following tasks:

1. Go to the Analyzer dashboard, select Data Design from the dropdown list, click Reports, and click the Create a Report button.

Figure 4-1: Create a Report Button

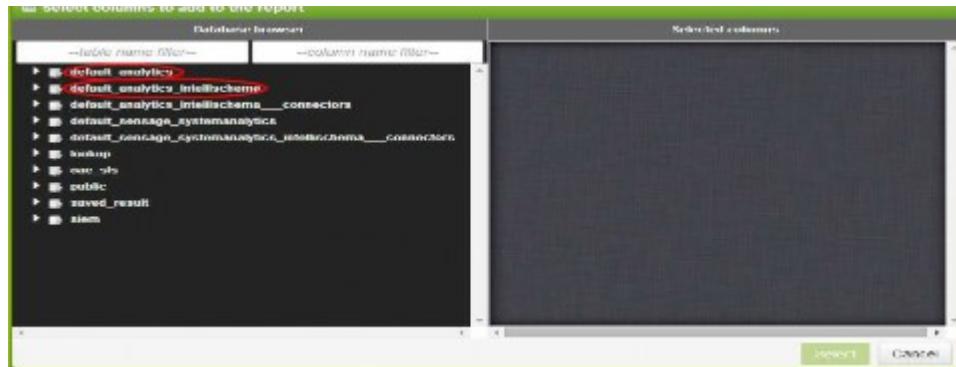


The first screen that is displayed lets you select the schema in which your data resides.

2. Click the triangle to the left of the schema that you want to use as shown in the three sample screens below.

Note: Each schema is either a schema local to the PostgreSQL database or represents a Namespace in the Event Data Warehouse. Namespaces can be hierarchical only in the EDW, so when viewed in PostgreSQL the dots (“.”) are replaced with underscores (“_”).

Figure 4-2: Select Columns to Add to a Report



As shown in Figure 4-3 and Figure 4-4, in a typical default deployment with a default EDW instance name, the Schema “default_analytics” contains tables with the raw data collected from all sources in your environment, and “default_analytics_intellischema” contains event-based normalized views of the same data.

Figure 4-3: default_analytics Tables

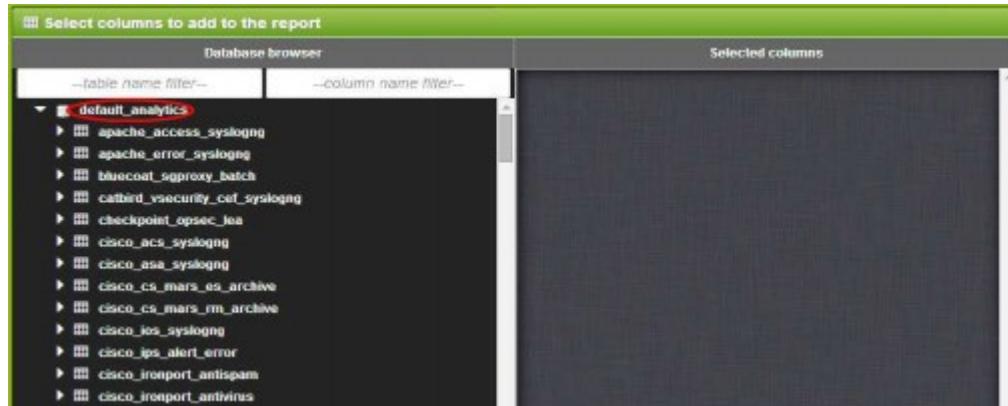
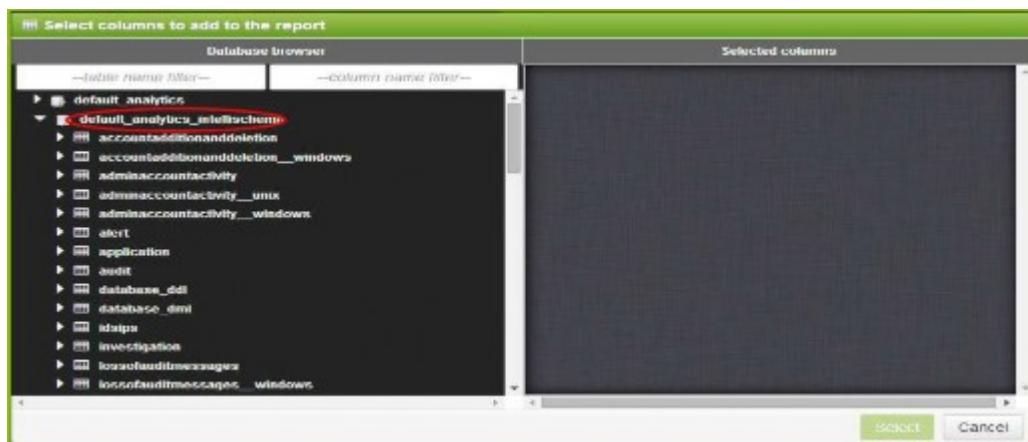


Figure 4-4: default_analytics_intellischema Views

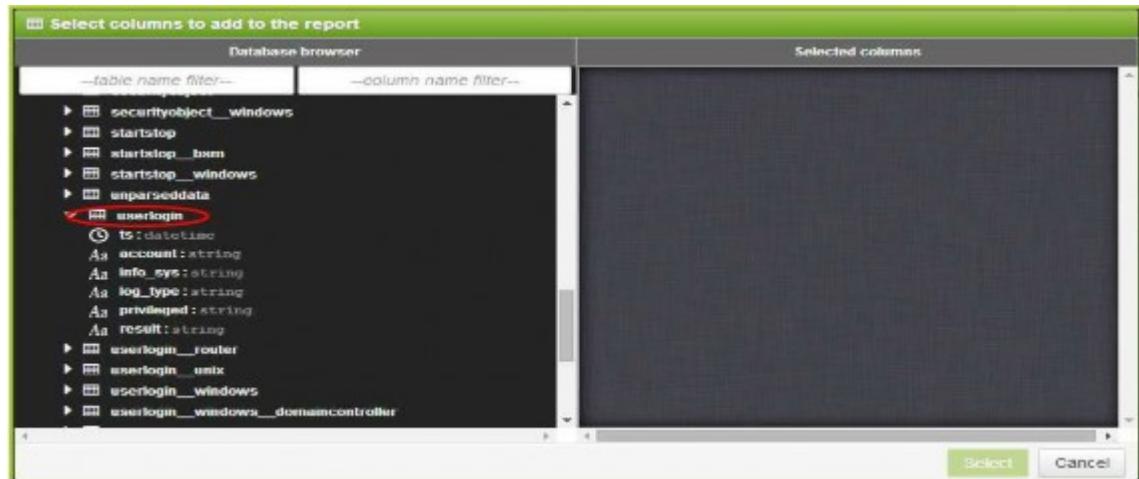


Also the Schema "default_sensage_systemanalytics" contains raw data collected from the SenSage AP installation itself, and the Schema "default_sensage_systemanalytics_intellischema" contains event-based normalized views of that data.

Schemas ending with the name "...connectors" are not normally used for reporting however they may be helpful in debugging IntelliSchema views.

- From the column dropdown list, click a raw data table or normalized view such as the view userlogin below to see the columns in the table.

Figure 4-5: userlogin View

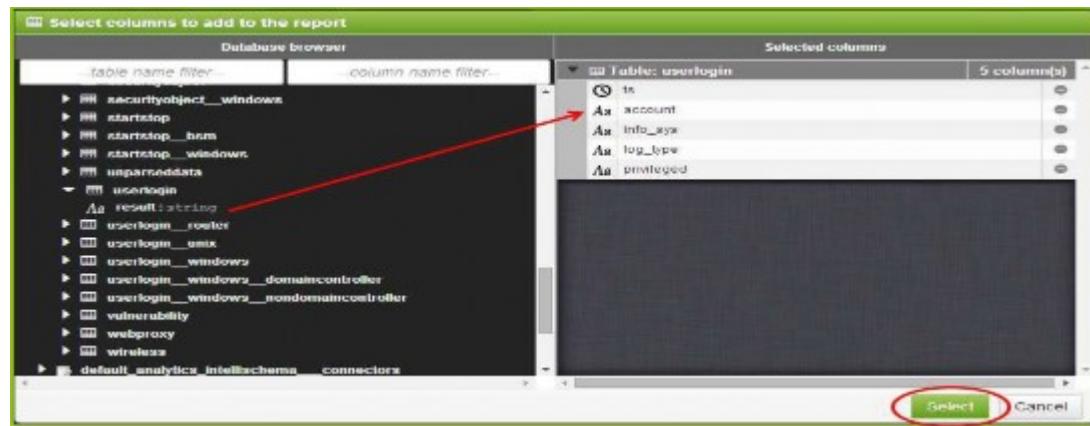


- Click each column that you want to use in your report. As you click, the column is immediately moved to the right-pane.

Note: Keep in mind few columns will have better performance due to the nature of columnar databases with true column-based storage systems.

- Click the Select button to complete selection of your columns.
- Click a raw data table or normalized view such as the view "userlogin" above to see the columns in that table.
- Click each column you want to use in your report. As you click, the columns you select will immediately move to the right-pane.

Note: TIP: Due to the nature of columnar databases with true column-based storage system, limit the number of columns for better performance.



- Click Select when you have completed selecting your columns.

The next screen that is displayed allows you to configure your report.

Note: In the Report Fields screen, the grid has a row that represents each column in the report. The datatype is represented by the second column in the grid and may be string, number, or datetime. Also note that as you set up your report fields, you can save your report with one of the following Save options: Save and close, Save run and retain (for report history), or Save and run once (no history), letting you view the report as you create it.

Figure 4-6: Database Table Report Settings

- If desired, provide a more user-friendly name for the heading of any field in the final report. To do this, double-click the name in the "Report Column Header" column.

Figure 4-7: Report Column Header Column

The screenshot shows the 'Report Fields' interface with several tabs at the top: Report Fields, Date Limits, Data Filters, Analytics, Charting, Associations, and Output Formats. The 'Report Fields' tab is selected. Below the tabs is a toolbar with 'Add Fields' and 'Add table'. A large grid displays report fields. The first column contains handles for reordering rows. The second column contains the field name and its description. The third column contains the report column header and a 'Report Column Header' dropdown. The fourth column contains sorting options under 'Sort By'. A checkbox labeled 'This is a summary report' is checked. At the bottom right are 'Save report' and 'Cancel' buttons.

#	Column Name	Report Column Header	Sort By
1	# none audit_parse_success	audit_parse_success	
2	# none criticality	New Name	
3	# none eventid	eventid	
4	# none eventnumber	eventnumber	
5	# none winseqid	winseqid	

10. If desired, change the sort order of the report. All the options for sorting are on the right of the grid under the "Sort By" heading.

- Click the checkbox of the row(s) representing the column(s) you want to sort by.
- If you want to sort by more than one column you can change which column is the primary sort condition and which is the secondary sort condition. Click the up or down arrow to increase or decrease the sort order of that field. By default sorting is in ascending order. To change it to descending order, click the arrows to the far right.

Figure 4-8: Sorting by Column

This screenshot shows the same 'Report Fields' interface as Figure 4-8, but the 'Sort By' section is highlighted. The 'Sort By' section includes a 'Sort Order' dropdown set to '1' and two circular arrows for adjusting the sort order of the second column. The rest of the interface is identical to Figure 4-8.

11. To change the order that columns will appear in the report (left to right), re-order the columns (top to bottom). To do this, drag the rows up and down with the "handles" in the second column.

Figure 4-9: Reordering Column Order

This screenshot shows the 'Report Fields' interface after reordering the columns. The second column now has handles at the top, indicating it has been moved. The 'Sort Order' dropdown in the 'Sort By' section is now set to '2'. The rest of the interface is identical to Figure 4-8.

12. If you want to:

- Join multiple tables in the report, see [Joining Multiple Tables in the Report](#) on page 83.
- Create the report as a report summary, see [Specifying a Summary Report](#) on page 87.
- Define the report to have a data limits prompt for users to enter date ranges, see [Providing a Date Limit Prompt in the Report](#) on page 90.
- Create the report with runtime parameters, see [Setting Report Retention for Report History](#) on page 91.
- Specify a retention period for the report's history, see [Setting Report Retention for Report History](#) on page 91.

Note: Note that if no retention is specified, the default is seven days.

- Create the report with complex data filters, see [Specifying Data Filters for the Report](#) on page 94.
- Integrate Data Models for the report, [Integrating Data Models with the Report](#) on page 96.
- Creating the report with a related report that shares the same column for more in-depth drill-down, see [Associating the Report with a Related Report for Drill-down](#) on page 98.

13. Run the report to make sure your configuration is accurate. See the next section, [Running a Report](#) on page 77.

Note: To add a chart to the report, see [Creating and Modifying Charts for a Report](#) on page 105.

14. Make any changes by modifying the report and re-running. See [Modifying a Report](#) on page 81.

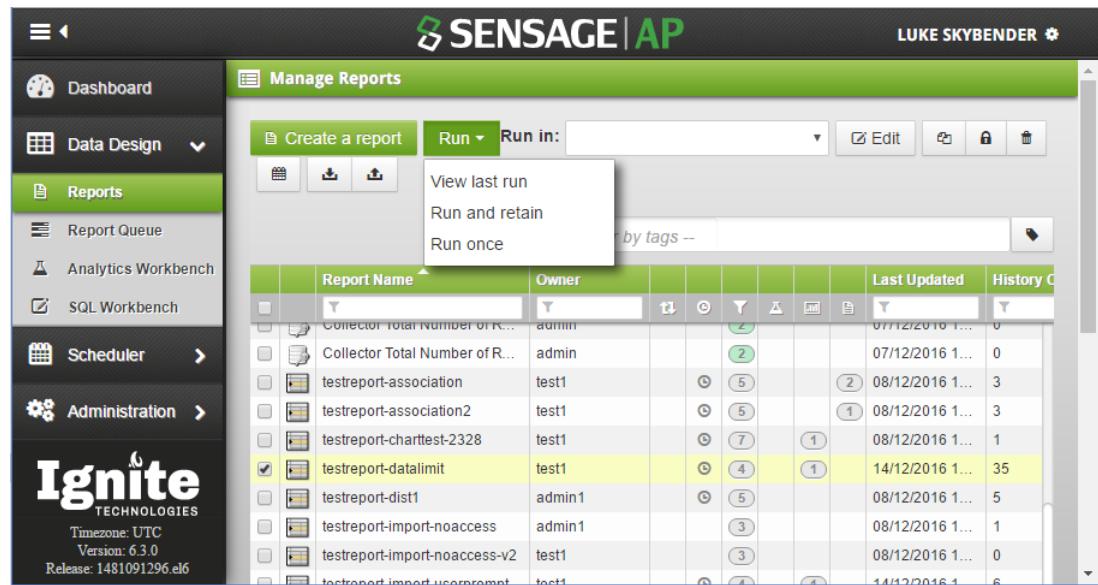
Running a Report

To run a report:

1. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
2. First scroll or use filters to find the desired report. For details on finding reports, see Chapter 2: Viewing Reports. Then select the report:
 - a If you want to view a report's last run, check the desired report, click the Run button, and from the dropdown list, select View Last Run. Otherwise, see Step 3.

Note: The View Last Run option will access which ever is the latest report from the report's history; the last report run can be either an ad hoc or scheduled report.

Figure 4-10: Selecting Report to Run



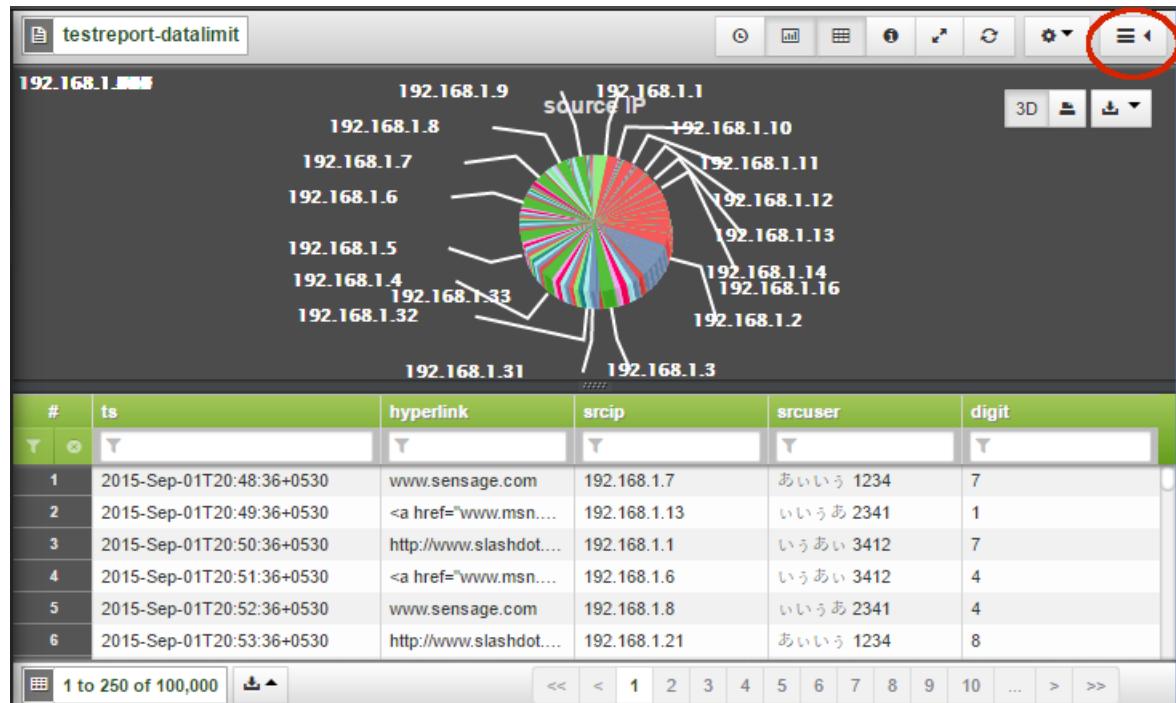
3. If selecting a report to run instead of viewing a last run of a report, choose one of the desired Run options described below:

Note: You may check only one report to run at one time; however, you can select other reports without waiting for the previous report to complete. If you have logged out of a session in which reports are running, they will continue to run, but will not be available for viewing in the Report Queue.

Figure 4-11: Selecting Run Option

	Report Name	Owner	Last Updated	History
1	Collector Total Number of R...	admin	07/12/2016 1...	0
2	Collector Total Number of R...	admin	07/12/2016 1...	0
3	testreport-association	test1	08/12/2016 1...	3
4	testreport-association2	test1	08/12/2016 1...	3
5	testreport-charttest-2328	test1	08/12/2016 1...	1
6	testreport-datalimit	test1	14/12/2016 1...	35
7	testreport-dist1	admin1	08/12/2016 1...	5
8	testreport-import-noaccess	admin1	08/12/2016 1...	1
9	testreport-import-noaccess-v2	test1	08/12/2016 1...	0
10	testreport-import-useragent	test1	14/12/2016 1...	6

- To run the report and retain a copy of the report for historical purposes, select Run and Retain. The report's run history is retained up to a specified retention period that is set for the report (see "Setting Report Retention for Report History", on page 74).
- To run the report once and save it only for the duration of the session, select Run Once. After you end your session and log out, the report no longer exists in the system and no history of the run is recorded.

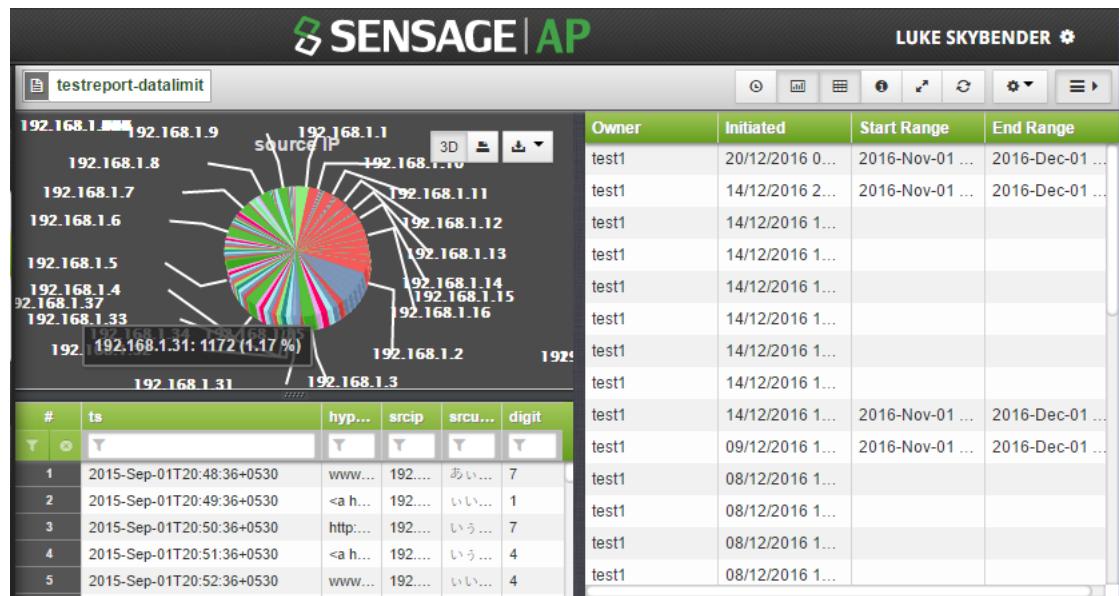


A sample report is displayed in the screenshot above..

Note: If your report does not display immediately, you can go to the Report Queue to see the status of your report run. For details see, “Viewing Report Run Status”, on page 65.

- c. To review the report history for the report you have just run, click the last icon on the toolbar as shown in the red-circle above to display the report with history as shown in Figure 4-13.

Figure 4-13: Report Display with History



Note: You can select the Information icon (in upper right of the screen, third icon from the right) to view the SQL code for the current result set which can provide you with information such as parameters used in the report.

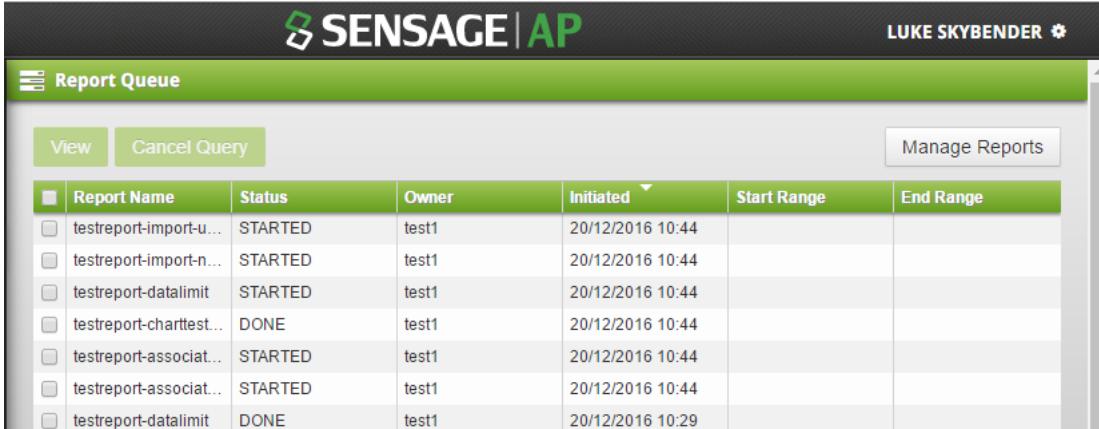
Viewing Report Run Status

To view the report status of all ad-hoc report runs:

1. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Report Queue.

The Report Queue screen with the current run status of reports is displayed. A report can have one of the following statuses: STARTED, DONE, DONE_EMPTY, ERROR, CANCELLED. The Owner is the creator of the report; Initiated is the date and time the report was requested; Start and End Range is the coverage dates specified in the report.

Figure 4-14: Report Queue



The screenshot shows the SENSAGE|AP Report Queue interface. At the top, there's a header bar with the SENSAGE|AP logo and a user name 'LUKE SKYBENDER'. Below the header is a green navigation bar with the title 'Report Queue' and buttons for 'View' and 'Cancel Query'. To the right of the navigation bar is a 'Manage Reports' button. The main area is a table with the following columns: Report Name, Status, Owner, Initiated, Start Range, and End Range. There are seven rows in the table, each representing a report run. The 'Initiated' column shows dates like '20/12/2016 10:44' and '20/12/2016 10:29'. The 'Status' column includes entries like 'STARTED' and 'DONE'. The 'Owner' column consistently lists 'test1'.

	Report Name	Status	Owner	Initiated	Start Range	End Range
<input type="checkbox"/>	testreport-import-u...	STARTED	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-import-n...	STARTED	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-datalimit	STARTED	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-charttest...	DONE	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-associat...	STARTED	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-associat...	STARTED	test1	20/12/2016 10:44		
<input type="checkbox"/>	testreport-datalimit	DONE	test1	20/12/2016 10:29		

2. Use the View button to get the report for a selected run. The report is displayed on your screen. For details on viewing it, see “Viewing Reports”, on page 31.
3. To cancel a report that is currently running, select the desired report and click Cancel Query.
4. To view the list of available reports that you can run, you can click the Manage Reports screen. A listing of all reports is displayed. For details on viewing it, see “Viewing Reports”, on page 31.

Modifying a Report

To modify a report, perform the following tasks:

1. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
2. Scroll or find the desired report, check the report that you want to modify, and click Edit.

Figure 4-15: Edit a Report

The screenshot shows the Ignite Technologies SENSAGE|AP application. The left sidebar contains navigation links: Dashboard, Data Design (selected), Reports, Report Queue, Analytics Workbench, SQL Workbench, Scheduler, Administration, and system information (Timezone: UTC, Version: 6.3.0, Release: 1481091296.el6). The main area is titled 'Manage Reports' and displays a table of reports. The table columns include Report Name, Owner, Last Updated, History Count, and Space. An 'Edit' button is located in the toolbar above the table, which is circled in red.

	Report Name	Owner			Last Updated	History Count	Space
1	Administrative...	admin		(1)	07/12/2016 1...	1	
2	BlueCoat - To...	admin	✓	(1)	07/12/2016 1...	0	
3	BlueCoat - To...	admin	✓	(1)	07/12/2016 1...	0	
4	Collector Avg ...	admin		(2)	07/12/2016 1...	0	
5	Collector Dail...	admin		(2)	07/12/2016 1...	0	
6	Collector Loa...	admin		(2)	07/12/2016 1...	0	
7	Collector Tabl...	admin		(2)	07/12/2016 1...	0	
8	Collector Total...	admin		(2)	07/12/2016 1...	0	
9	Collector Total...	admin		(2)	07/12/2016 1...	0	

The edit definition screen (Database Table Report Settings) for the report is displayed, as shown below.

Figure 4-16: Report for Editing

The screenshot shows the 'Database Table Report Settings' screen. At the top, there are fields for 'Report title' (testreport-ipaddr) and 'Tags' (with a placeholder 'assign tags to this report'). Below these are tabs for Report Fields, Date Limits, Data Filters, Analytics, Charting, Associations, and Output Formats. The main area is divided into two sections: 'Add fields' and 'Add a table'. Under 'Add fields', there is a table with columns: #, Cast ..., Column Name, Report Column Header, and Sort By. The table contains five rows with data: 1. ts, ts; 2. ipaddr, ipaddr; 3. randint, randint; 4. link, link; 5. symstr, symstr. A checkbox labeled 'This is a summary report' is checked. At the bottom, there is a 'Run in:' dropdown and buttons for 'Save report' and 'Cancel'.

#	Cast ...	Column Name	Report Column Header	Sort By
1	none	ts instance_8072_myd...	ts	
2	none	ipaddr instance_8072_myd...	ipaddr	
3	none	randint instance_8072_myd...	randint	
4	none	link instance_8072_myd...	link	
5	none	symstr instance_8072_myd...	symstr	

3. Make any necessary configuration changes. Refer to Steps 9-14 in the previous section, Creating a Report.

Note: After each change, be sure to Save your report or choose one of the Save options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Joining Multiple Tables in the Report

You can have an existing table in your report joined by one or more specified tables from your data source. To add tables to your report:

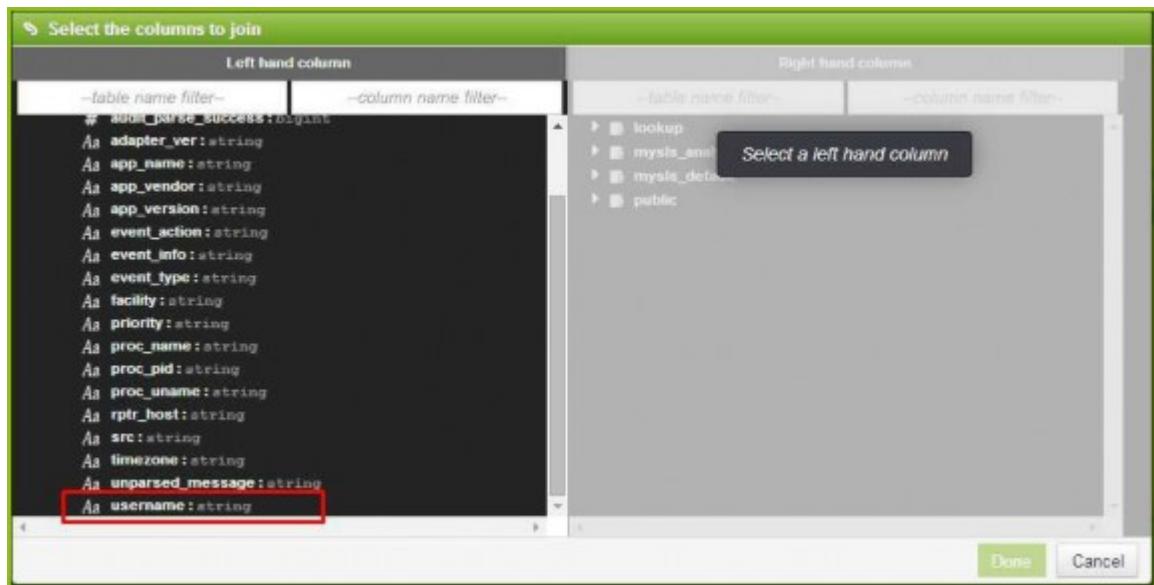
1. Perform step a or b to select table(s) for the join:
 - a. If you are not certain which table(s) to join or you want to use a field for the join that you have not already selected, click the Add a table button. Go to Step 2.
 - b. If you do know which field you want to use to join the tables and you have selected that table (so that it is showing in the field list), click the 'link' icon to the right of the field name. This will save a step in the next dialog box. Go to Step 3.

Figure 4-17: Selecting Table/Field to Join

#	Cast ...	Column Name	Report Column Header	Sort By
1	none	ts instance_8072_mydefault...	ts	
2	Aa	hyperlink instance_8072_mydefault...	hyperlink	
3	Aa	srcip instance_8072_mydefault...	srcip	
4	Aa	srcuser instance_8072_mydefault...	srcuser	
5	#	digit instance_8072_mydefault...	digit	

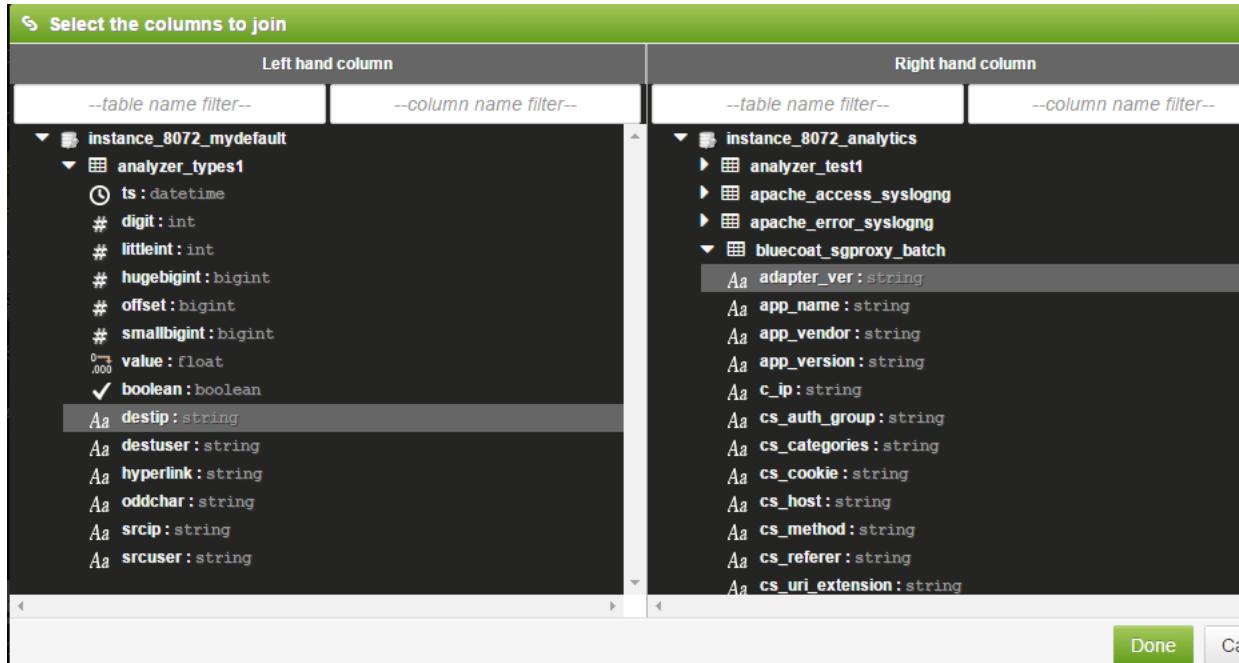
2. If you clicked the Add a table button, you first need to select the columns that you want to use to join the tables on the left side of the dialog box. You can filter to specific fields quickly by typing in the "column name filter" box.

Figure 4-18: Select the First Column(s) for Join



- After the column(s) is selected, choose the second column you want to use. Click the arrow next to a schema to expand the list of tables in that schema. Then click the arrow next to the table to expand the list of columns in that table. To quickly find specific tables or columns, type part of the name in the "table name filter" or "column name filter" boxes respectively.

Note: The second column(s) can be from any table in any namespace; however, it must be of the same datatype as the first field.



- Click the column name(s) that you want to use and then click Done.

Figure 4-19: Second Column(s) for Join

The relationship that you just defined is now applied in a new grid below the fields grid. You can now add more conditions for the join to the same table or add more joins to other tables.

Note: The second column from the new table is not listed in the original fields grid. To add columns from the second table for viewing in the report, click the Add fields button. Also note that a "left join" is performed on joined tables and currently no options are provided to perform a "center" or "right join."

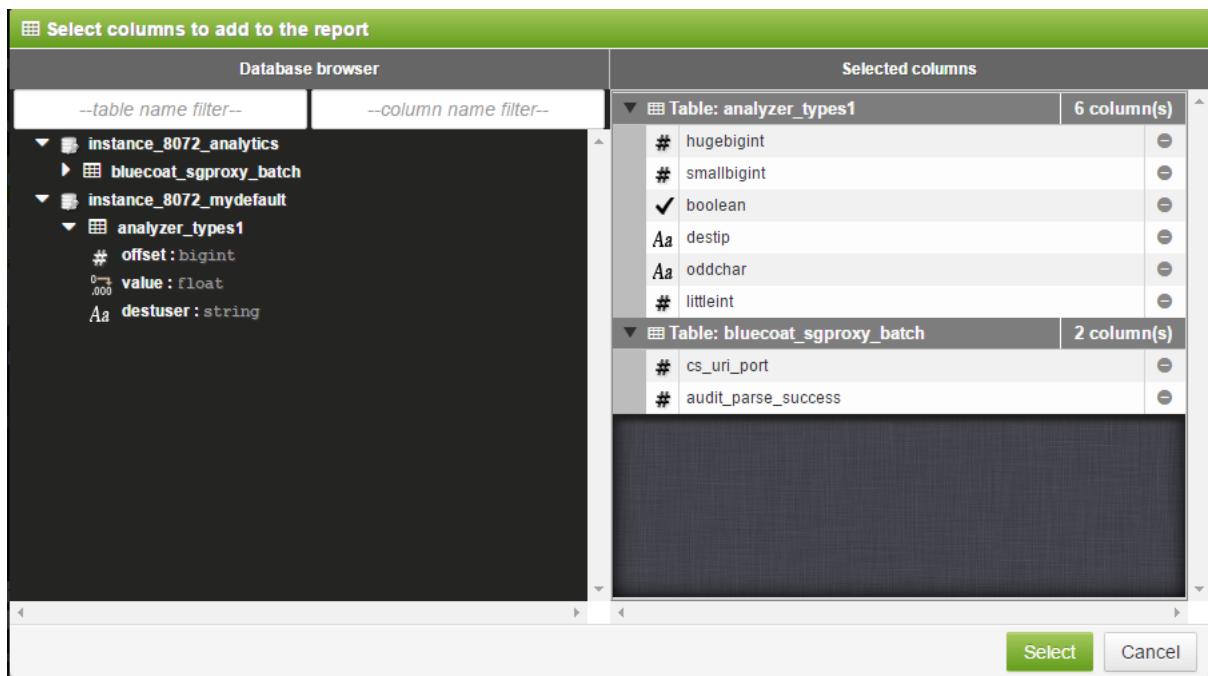
Figure 4-20: Add Fields from Second Table for Display

The screenshot shows the 'Database Table Report Settings' dialog box. At the top, there's a green header bar with the SENSAGE|AP logo and the user name LUKE SKYBENDER. Below the header, the title 'Database Table Report Settings' is displayed. The main area contains two sections: 'Report Column Header' and 'Sort By' on the right, and a table of fields on the left. The table has columns for '#', 'Cast ...', 'Column Name', 'Report Column Header', and 'Sort By'. There are five rows in the table, each corresponding to a field: ts, hyperlink, srcip, srcuser, and digit. Below the table is a section titled 'Column links' with two tabs: 'Source Column and Table' and 'Linked Column and Table'. The 'Source Column and Table' tab shows 'destip' from 'instance_8072_mydefault.analyser_type...' and 'Aa' from 'adapter_ver'. The 'Linked Column and Table' tab shows 'instance_8072_mydefault.analytics.bluecoat...'. The entire dialog box is set against a dark background.

As you select each new field that you want to appear in the report, the field will move from the left side to the right side of the dialog box.

- When finished selecting your fields, click Select.

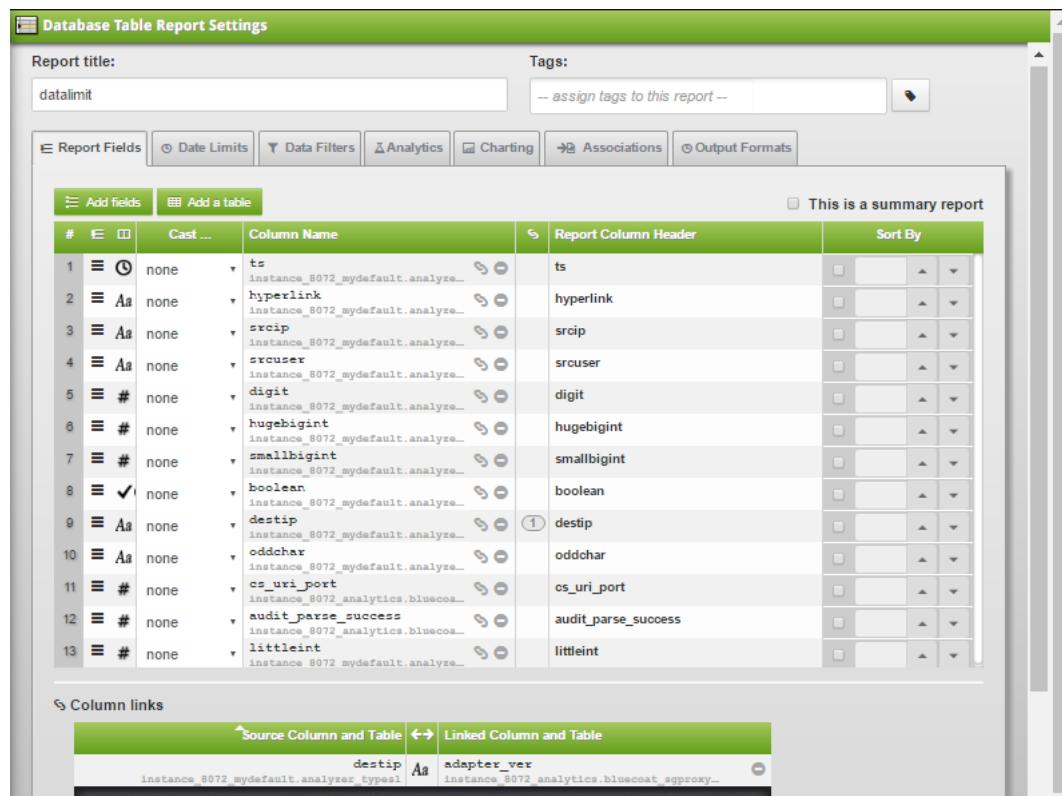
Figure 4-21: Select Columns to Add to Report



After you have selected your additional fields, all fields are displayed in one grid as shown in Figure 4-22. The small gray text under each field shows the name of the table. To avoid confusion, you can rename the headers in fields that may have an identical name in both tables.

- When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Figure 4-22: Completed Join Display



Specifying a Summary Report

A summary (also known as an aggregation report) displays an aggregated count of fields in the report.

To specify the report as a summary report:

1. In the Report Wizard, click the checkbox next to the label "This is a summary report" in the upper right corner.

Two additional columns are displayed with the following headings: "Group By" and "Display Value. By default, each column displays an aggregation function, "Count" for string fields and "Sum" for number fields.

Note: At this point the report is not yet ready to run as at least one field to "group by" is required that will drive the aggregation functions

Figure 4-23: Specifying Summary Report

The screenshot shows the 'Database Table Report Settings' page. On the left is a navigation sidebar with 'Reports' selected. The main area has a title 'Report title: datalimit' and a 'Tags' field. Below these are tabs for 'Report Fields', 'Date Limits', 'Data Filters', 'Analytics', 'Charting', 'Associations', and 'Output Formats'. The 'Report Fields' tab is active, displaying a table of fields. A checkbox at the top right of the table is checked and circled in red, with the text 'this is a summary report' next to it. The table columns include '#', 'Column Name', 'Report Column Head...', 'Group By', 'Display Value', and 'Sort By'. Several rows have their 'Group By' checkboxes checked, and the 'Display Value' column shows various aggregate functions like 'Count', 'Field value', 'Sum', and 'Count' again.

- To select fields to "group by" click the checkbox in the row(s) that represent the field(s) that you want to drive the aggregation.

Each time you check the Group By box that row will be duplicated and the value in the Display Value column of the original row will change to "Field Value". These are the only columns which will show actual data from the source table. The remaining columns show the aggregate function (summary information) of the source raw data in that field.

Figure 4-24: Specifying Fields to Group By for Report Summary

This screenshot is identical to Figure 4-24, showing the 'Database Table Report Settings' page. The 'Report Fields' tab is active, and the 'Group By' checkboxes for rows 1 and 2 are now checked and circled in red. The 'Display Value' column for these rows also contains the text 'Field value' and is circled in red. The rest of the table and interface are the same as in Figure 4-24.

- To change the type of aggregate function, click the dropdown arrow to see the options in the Display Value column. The options are different for each datatype.

Figure 4-25: Specifying Aggregate Function for Summary Report

	Report Column Header	Group By	Display Value	Sort By
ts (Count)			Count	
cs_bytes (Sum)			Sum	
sc_bytes (Sum)			Sum	
time_taken (Sum)			Sum	
cs_host (Count)			Count	
cs_method	<input checked="" type="checkbox"/> 2		Field value	
cs_method (Count)			Count	
cs_username	<input checked="" type="checkbox"/> 1		Field value	
cs_username (Count)			Count	
sc_filter_result (Count)			Count	
sc_status (Count)			Count	
s_ip (Count)			Count	
s_action (Count)			Count	

4. If you are grouping by more than one field, the order in which the aggregation is calculated may impact the results. To change the order of aggregation, hover the mouse over the number in the Group By column. When two arrows are displayed, click the up or down arrow to increase or decrease the order of that field.

Note: By default, a sort order is added along with the aggregation order. You can change both the sort and aggregation orders. Refer to the Step 10 on page 61 in Creating a Report and to the aggregation ordering instructions in Steps 3 and 4 above of these instructions.

Figure 4-26: Specifying Aggregation Order

Report Column Header	Group By	Display Value	Sort By
ts (Count)		Count	
cs_bytes (Sum)		Sum	
sc_bytes (Sum)		Sum	
time_taken (Sum)		Sum	
cs_host (Count)		Count	
cs_method	<input checked="" type="checkbox"/> 1	Field value	
cs_method (Count)		Count	
cs_username	<input checked="" type="checkbox"/> 2	Field value	
cs_username (Count)		Count	
sc_filter_result (Count)		Count	
sc_status (Count)		Count	
s_ip (Count)		Count	
s_action (Count)		Count	

5. When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

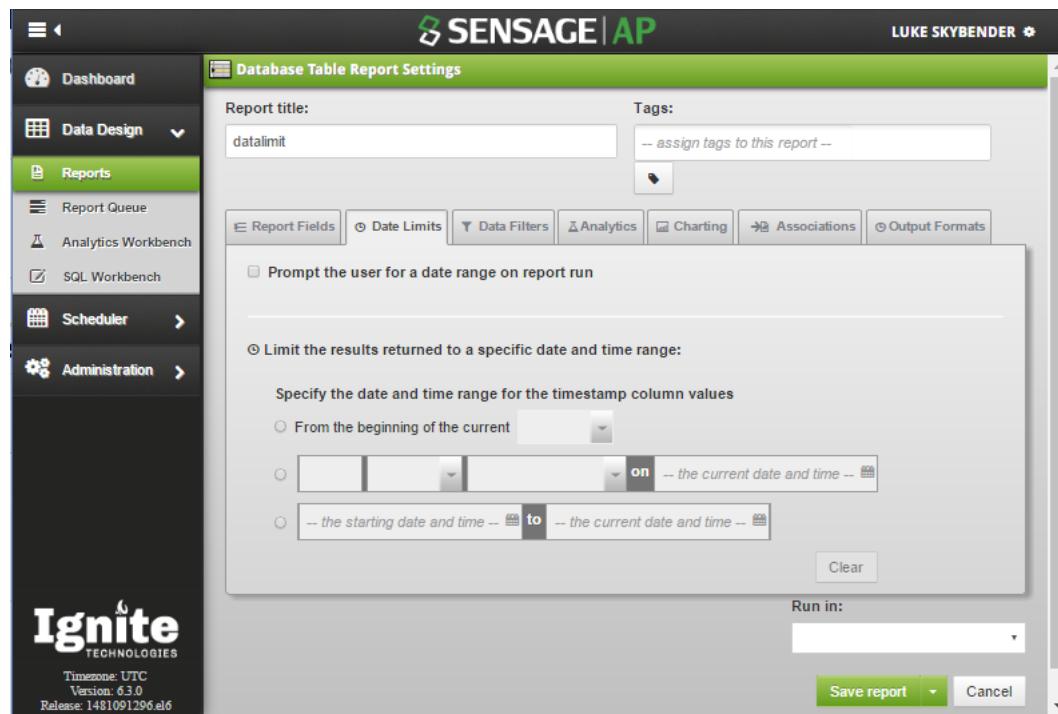
Providing a Date Limit Prompt in the Report

In the report, you can specify that users be prompted for a date range that the report will include or specify a date and time range limit for the reporting results.

To provide a date limit prompt in the report:

1. Click the Date Limits tab in the Report Wizard to specify your date limit settings.

Figure 4-27: Date Limits Tab



2. Check the first box on the screen to specify that the system prompt the person running a report to change the time range.

Note: A date/time popup will be displayed and populated with the time range used previously, but allow the person running the report to change the value if desired.

3. Specify a time range for a report (if working with EDW tables and OAE During); otherwise, if working with Postgres tables, the feature is disabled as the system will automatically provide the time range by working only with the timestamp.

Note: When you specify a time range or configure the time zone within your user profile, your own local timezone (the location of the client) in GMT format is assumed as the timezone of that selection.

4. When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

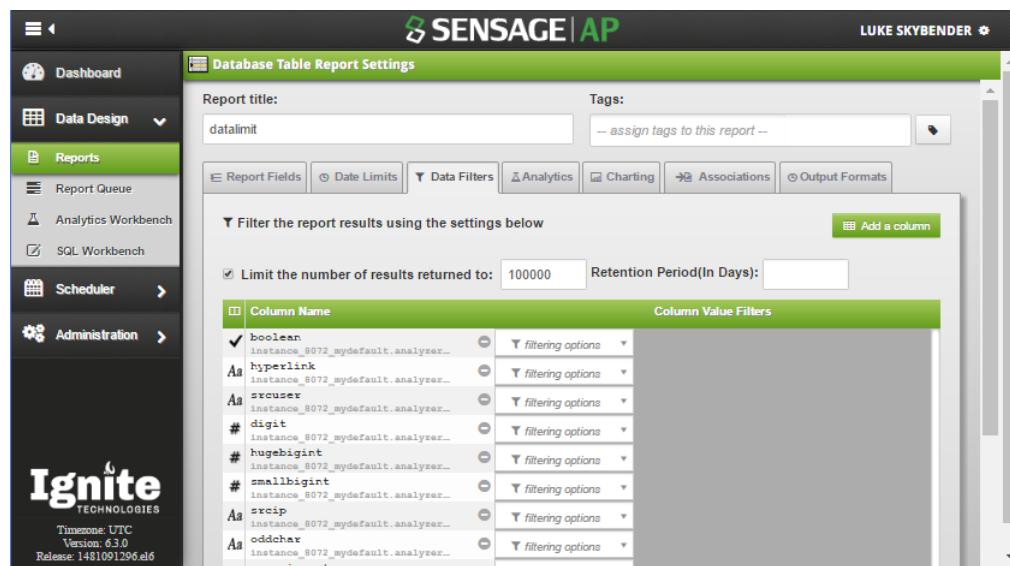
Setting Report Retention for Report History

When you create a report, it is set up by default to record history up to a retention period of seven days.

To change the default report history retention period for a given report:

1. Click the Date Filters tab in the Report Wizard for the report.
2. Specify the retention period in days.

Figure 4-28: Data Filters Tab



3. Click Save or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Providing Interactive Runtime Parameters for the Report

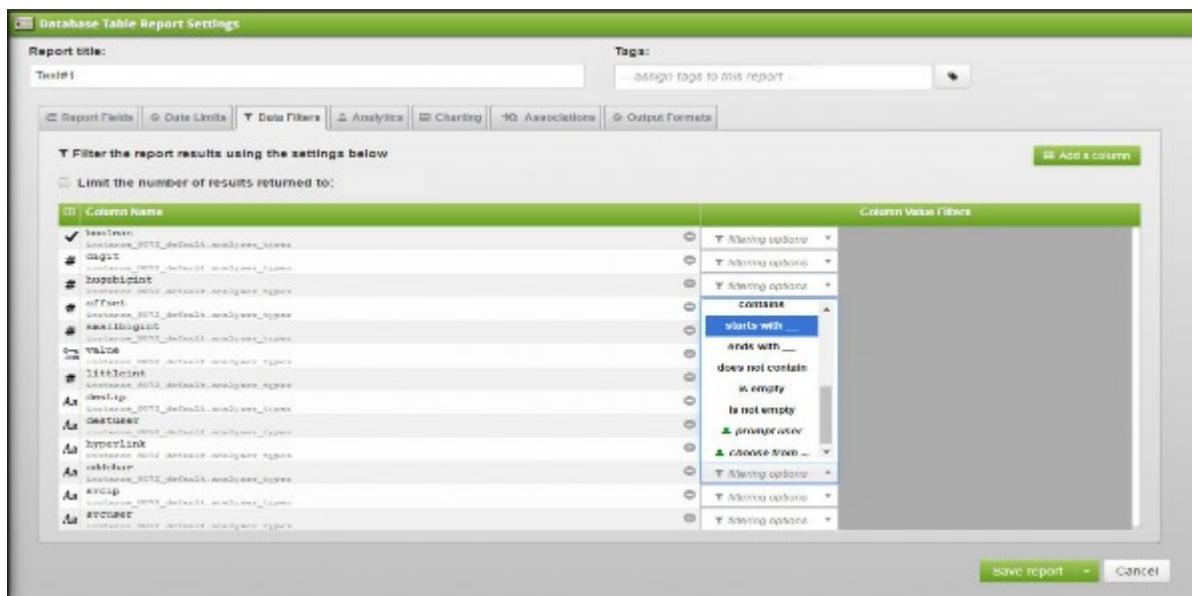
You can specify an interactive report in which the Analyzer will filter data based on what parameters the user specifies when running the report.

For details on defining complex filters based on report fields or for creating filters on report fields not displayed in the report, see the following section, [Specifying Data Filters for the Report](#) on page 94.

To provide an interactive parameter-based runtime report:

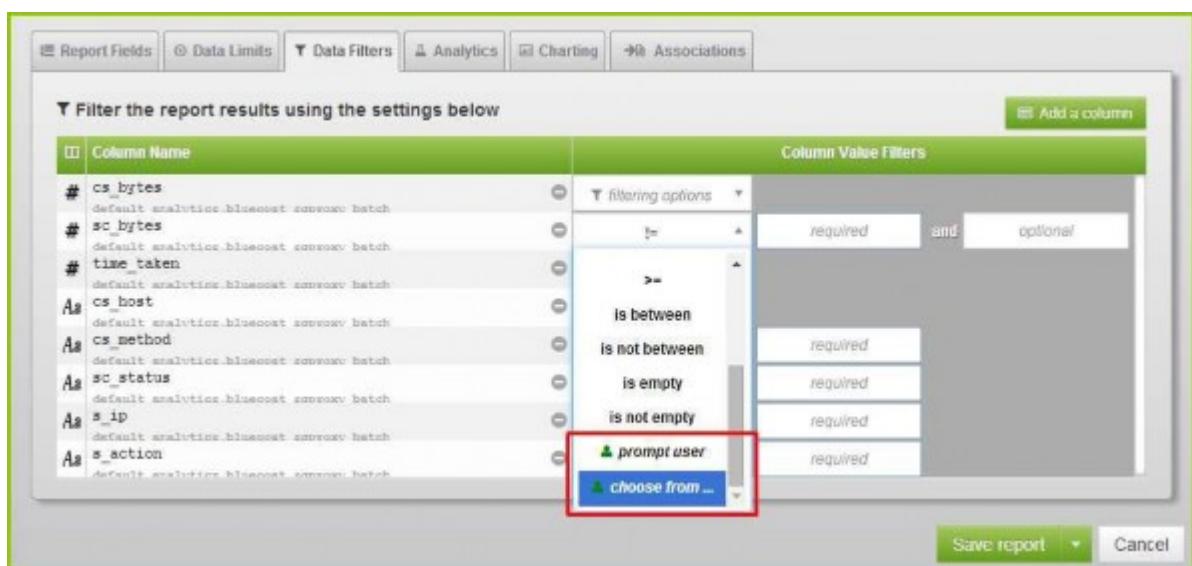
1. Click the Date Filters tab in the Report Wizard to specify available parameters for the report column.

Figure 4-29: Data Filters Tab



2. Select filters of the type "prompt user" or "choose from..." and note the following rules below:

Figure 4-30: "Prompt user" and "choose from" Options



For fields with filter type "prompt user" you have the option of requiring that the user enter a value or letting the user run with no filter:

- To require that user enter a value, select the checkbox to the left of the label "require a value".
- To present the user with a default value, enter the value into the "default value" box.

3. If you chose "choose from...." filter type to specify an interactive report that prompts the user with a distinct list of values, click the Add Options button that is displayed to the right.

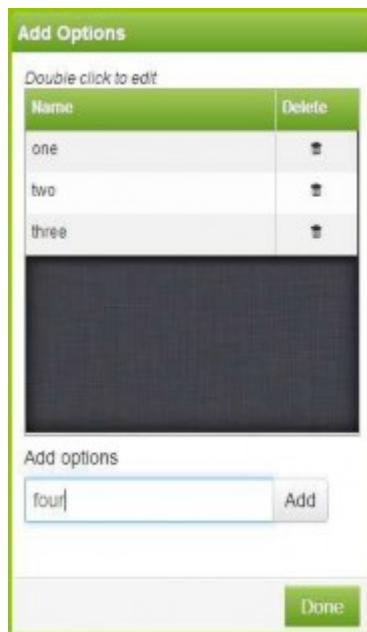
Note: If the report has already been defined and you are editing the filters, you will see an Edit Options button instead.

Figure 4-31: Add Options Button

The screenshot shows the 'Database Table Report Settings' screen. At the top, there are tabs for Report Fields, Date Limits, Data Filters, Analytics, Charting, Associations, and Output Formats. Below these are filter settings: 'Limit the number of results returned to:' set to 100000, and 'Retention Period(In Days)' with a dropdown menu. A large table lists column names with their data types and retention periods. To the right of the table, a 'Column Value Filters' section is expanded, showing filtering options for each column. A tooltip 'Edit options' points to the 'choose from ...' button, which has a dropdown menu with 'Add options'.

Add values to the end-user runtime dialog box. Type one value at a time at the bottom of the dialog in the field labeled “Add options”. Click the “Add” button after each entry. Once you have all the options listed click Done.

Figure 4-32: Adding Options



- When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Specifying Data Filters for the Report

The data filter features provided for your report let you:

- Define complex data filters for any given field; these filters include the following: =, !=, <, <=, >=, is between, is not between, contains, does not contain, empty, is not empty, starts with and ends with.

Depending on the datatype for a column in your report, applicable filter options are presented for your selection. Boxes to enter your filter values also inform you whether an entry is required or optional.

- Create filters in the report for fields not displayed in the report.
- Set options to limit rows returned in a result set and retention period for your report's history.

To specify data filters for your report:

1. Click the Data Filters tab in the Report Wizard.
2. If desired, provide entries for the following options:

- a. To set a limit for the number of rows returned in the result set, check the box: "Limit the number of results returned to:", which enables your configurable parameter to the number specified.

Note: By default, the limit is 2500, however, you can change this limit to any positive integer. Generally, this setting is used for the "Top 100" type reports noted in the Analytics Guide.

- b. Change the retention period for retaining the report's history. The default is seven days.

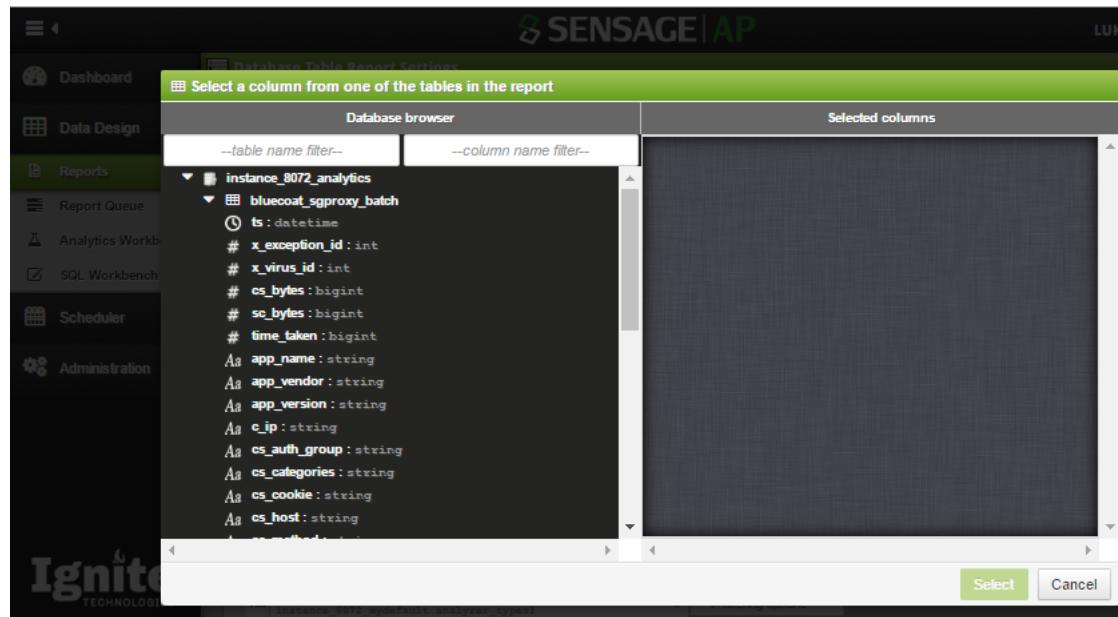
Figure 4-33: Limiting Number of Results

Column Name	Column Value Filters
boolean instance_8072_mydefault.analyzer_types1	filtering options
hyperlink As instance_8072_mydefault.analyzer_types1	filtering options
As srcuser instance_8072_mydefault.analyzer_types1	filtering options
digit # instance_8072_mydefault.analyzer_types1	filtering options
hugebigint # instance_8072_mydefault.analyzer_types1	filtering options

3. If desired, to filter the report by fields not displayed in the report (without corresponding rows on the Report Fields tab), click the Add a column button in the upper right corner.

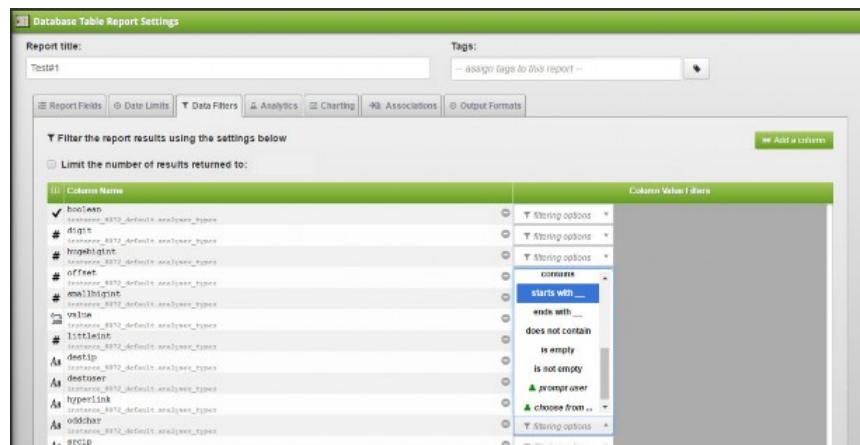
A dialog box similar to the initial field selector dialog box (when you first defined the report) is displayed listing additional fields from the same source table.

Figure 4-34: Filtering Report with Undisplayed Fields

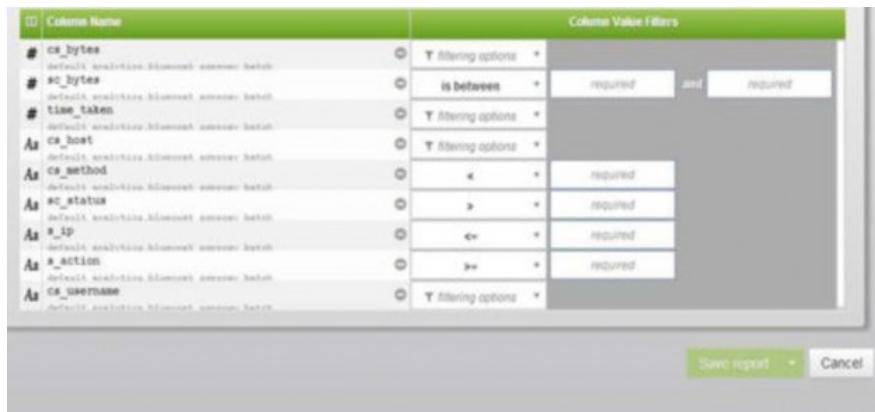


- To set the filter for any given field, click the dropdown arrow on the row corresponding to the field you want to filter by. The options for filtering type for that field are displayed.

Figure 4-35: Filtering Type Options



After you select the filter type, entry boxes appropriate for that type of filter are displayed on the right. For details on "prompt user" and "choose from..." filter types, see [Providing Interactive Runtime Parameters for the Report](#) on page 91.



5. Enter valid report values in these filter type entry boxes. Figure 4-36: Entering Values for Filter Type Options
6. When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Integrating Data Models with the Report

Data models are used for processing data with a library of functions for augmentations, annotations, or manipulations. They are an alternative for downloading report results and importing the data into third party tools, such as Microsoft Excel, and processing the data there.

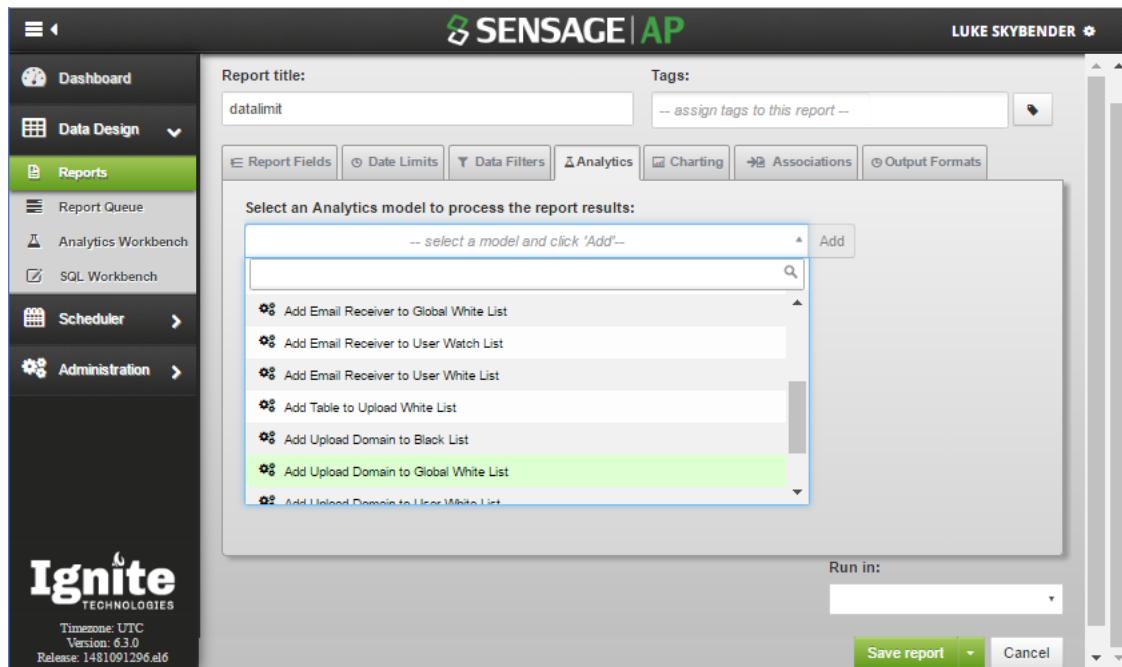
In a data model the report data can be combined with any other data including data outside of databases. For instance you may have a report with the geo locations of IP addresses – a model could run through the location results and run a script to look at the historic temperature of each location at the time of the event on wunderground.com.

To specify a data model for integration with your report:

1. In the Report Wizard, click the Analytics tab and then click the dropdown arrow under "Select an Analytics to process the report results" as shown in Figure 4-37.

A list of models that have input parameters appropriate for processing the result of your report is displayed. (So not all models in the library are shown on this dropdown.) The models displayed are generally with the input parameter of type "Table".

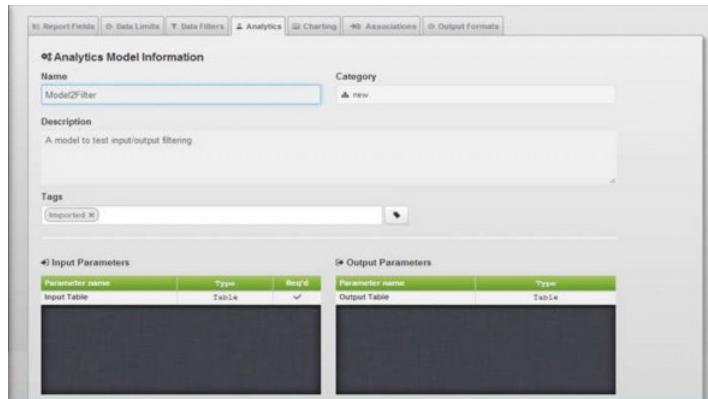
Figure 4-37: Specifying a Data Model for Report Integration



- Click the specific model you would like to integrate with your report, then click Add.

Your report is now integrated with the model you selected. The screen below shows details of the model including the name, category, description, tags, and a complete list of the input and output parameters.

Figure 4-38: Details of Model for Report Integration



- When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

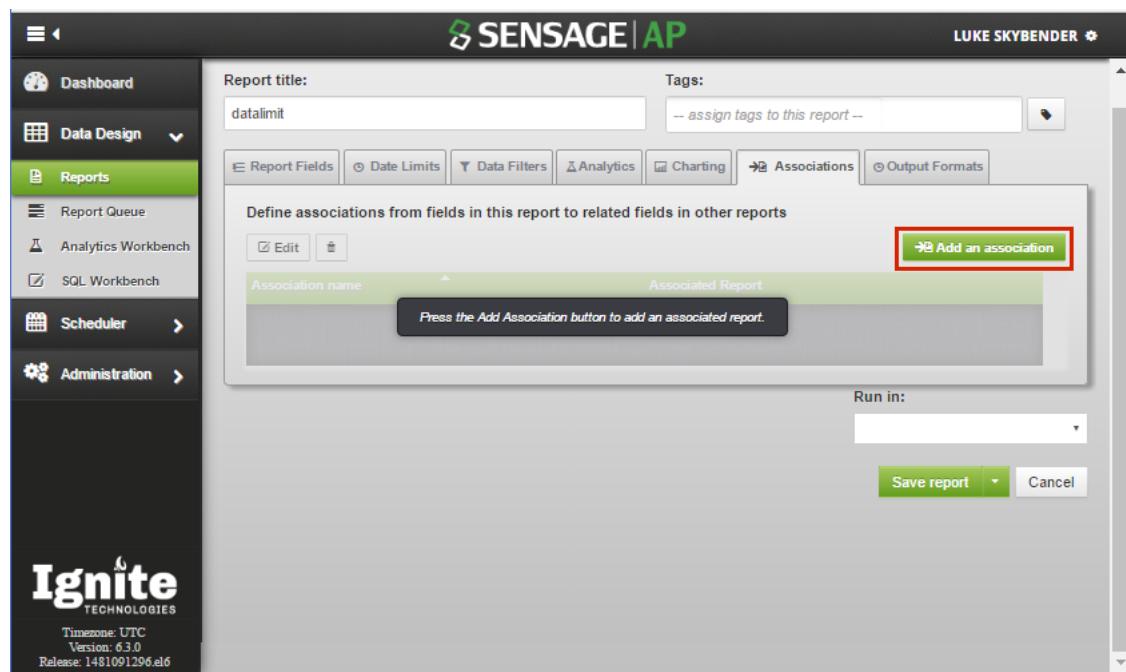
Associating the Report with a Related Report for Drill-down

Associated reports are two reports that are related by one or more columns that each have the same meaning in the two different reports. The association enables users to quickly drill down from the source report to a target report automatically filtered to the specific set of rows that the user selects in the source report.

The report you are currently working on will be the source report. You need to specify the target report and which field(s) in the source report relate to which field(s) in the target report. You may have any number of target reports.

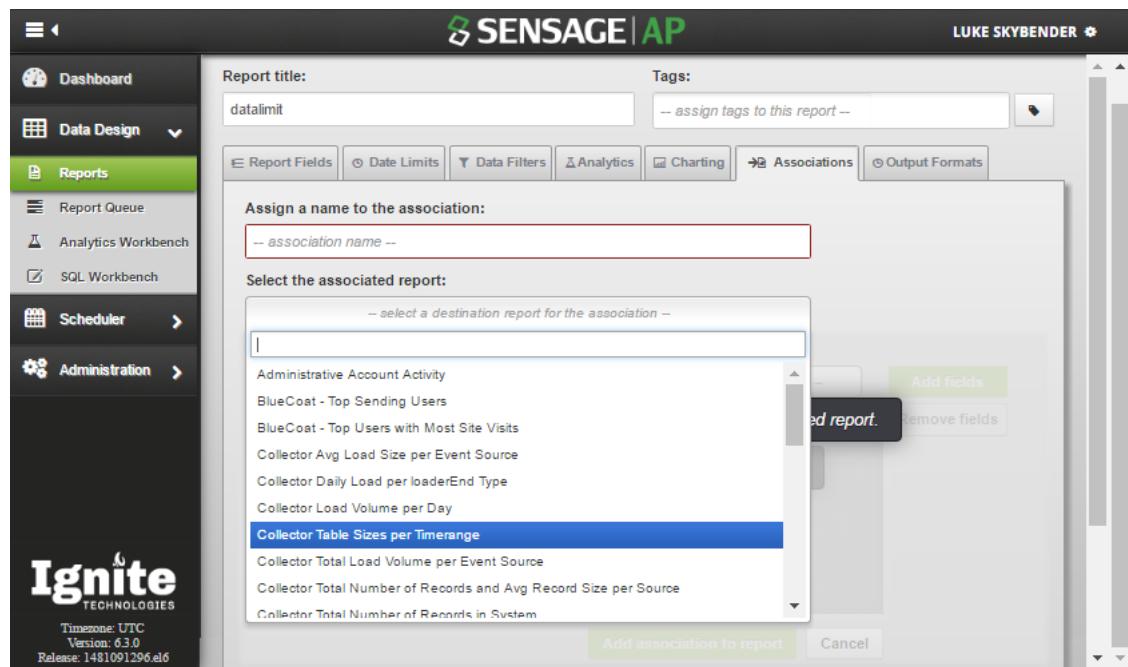
1. In the Report Wizard, click the Associations tab and then click the Add an Association button as shown in Figure 4-39 below.

Figure 4-39: Add an Associated Report



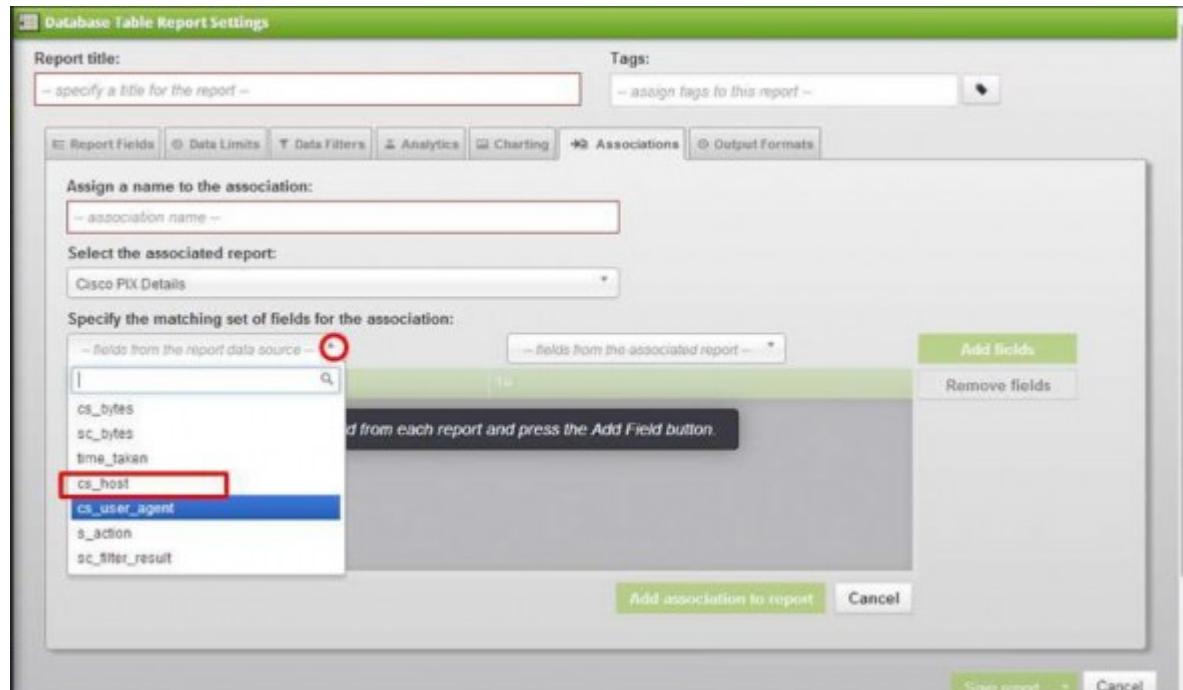
2. Click the dropdown arrow under the label "Select the associated report".

A list of all other reports that you have read access to in the system is displayed, except the report that is currently in progress.



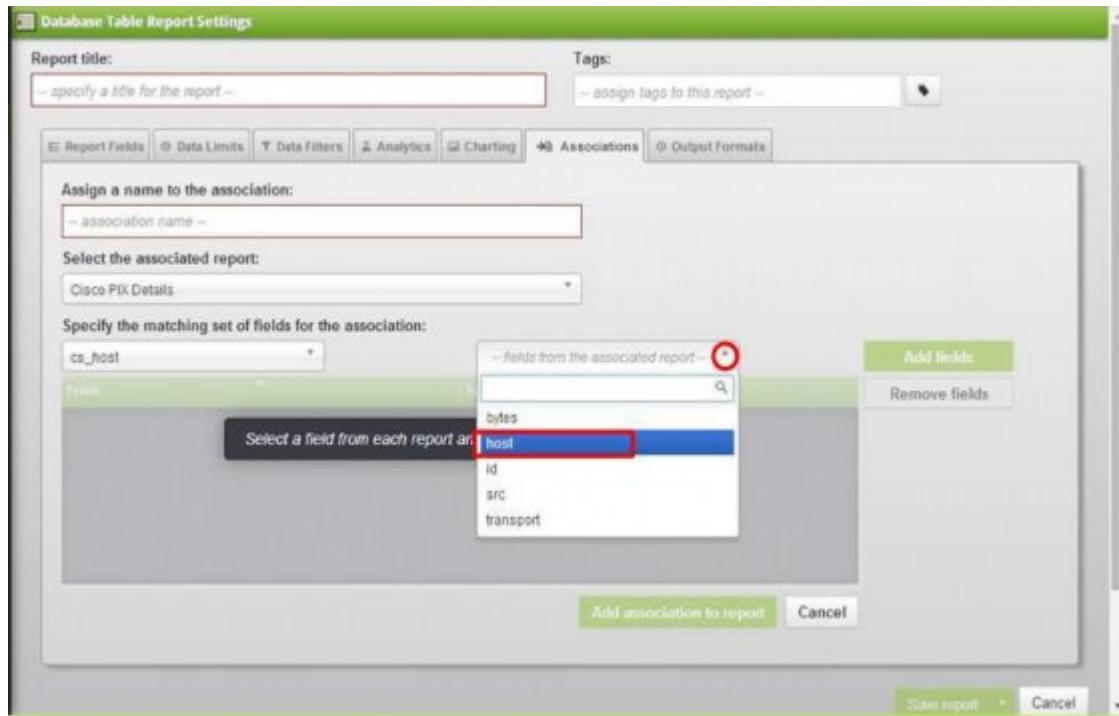
3. Select the specific report that you want to associate with the current report. Figure 4-40: Specify Report for Association - NEED NEW SCREENSHOT
4. Click the dropdown arrow next to the field with the text "fields from the report data source" and then click on the specific field you want to be the related field in the source report.

Figure 4-41: Specify Related Field in the Source Report



5. Click the dropdown arrow next to the field with the text "fields from the associated report" and then click on the field you want as the related field in the source report.

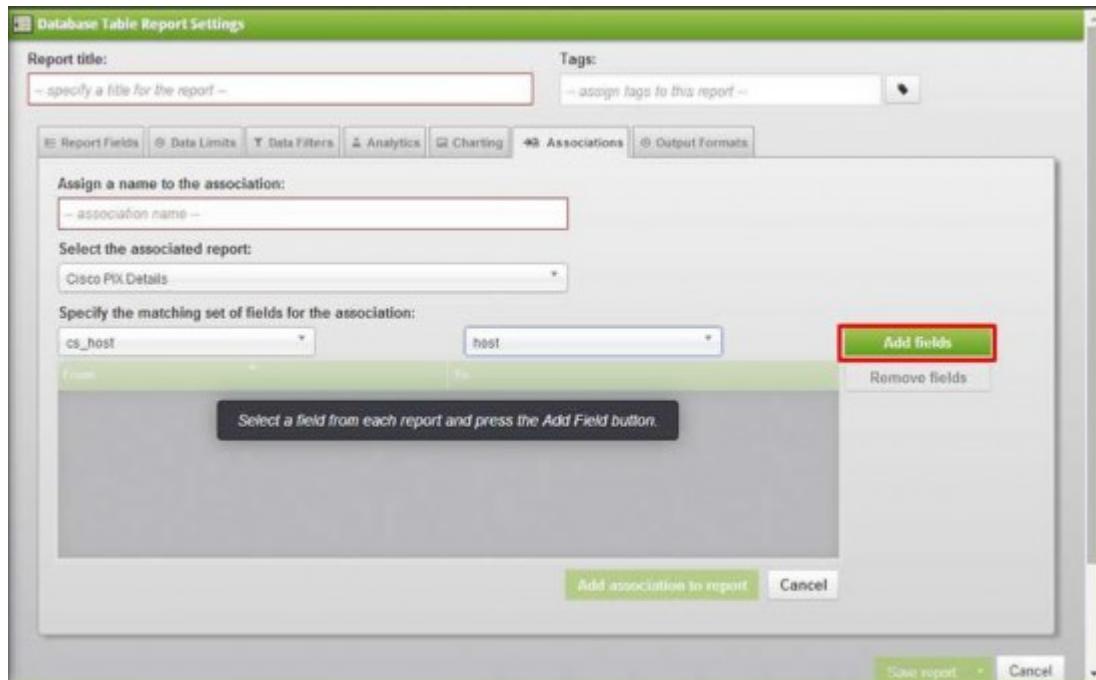
Figure 4-42: Specify Related Field in the Source Report



6. Click the Add Fields button.

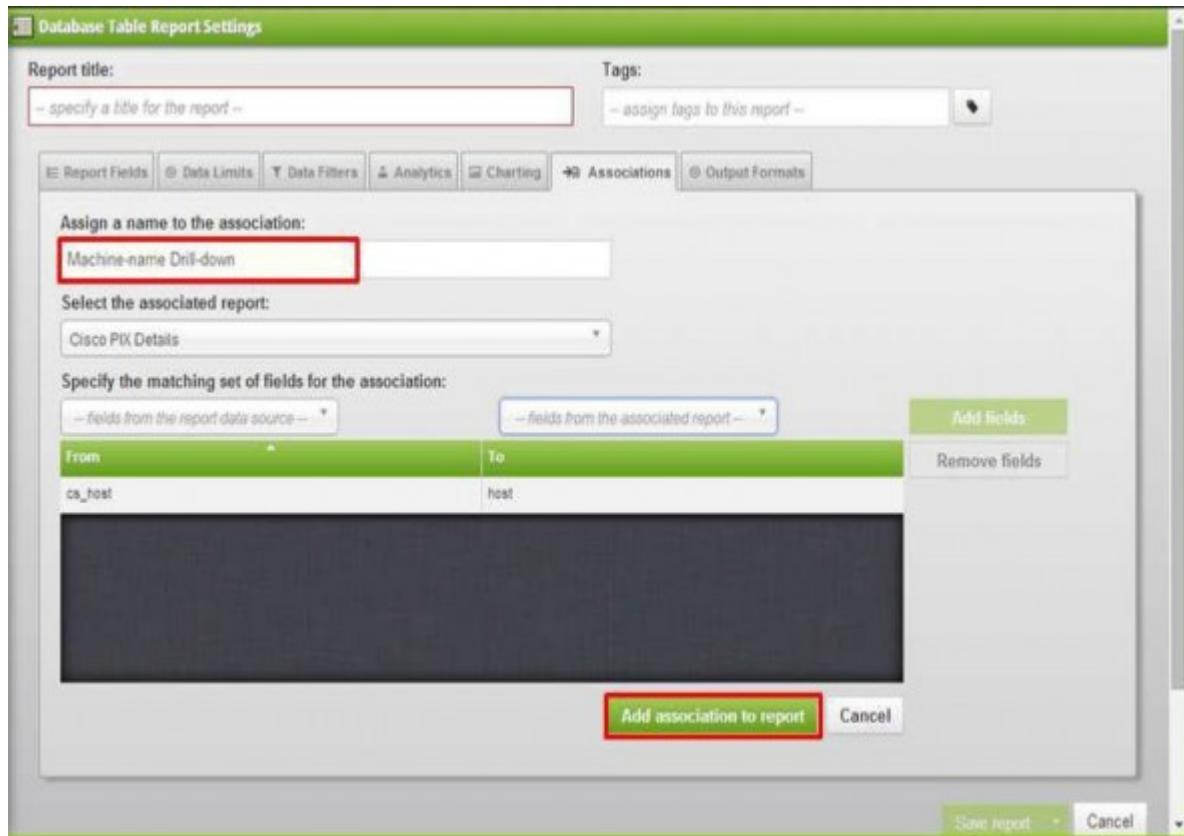
You may repeat Steps 5-6 to add additional relations between the reports.

Figure 4-43: Add Additional Relations between Reports



Note: To remove incorrect associations, select fields in the report that you want to remove and click the Remove Fields button.

Figure 4-44: Add Association to Report



- When you are finished, click **Save** or choose one of the following Save Options: Save and close, Save run and retain (for report history), or Save and run once (no history).

Copying, Renaming, and Deleting Reports

To maintain your reports, you may be required to copy, rename, or delete them.

Copying Reports

To copy report(s):

- Go to the Analyzer dashboard, select Data Design from the dropdown list, click Reports. The Manage Report screen with the current listing of reports is displayed.
- Check the reports that you want to duplicate.
- Click the Duplicate button on the top menu.

Figure 4-45: Duplicating Reports

The screenshot shows the SENSAGE|AP interface with the 'Reports' section selected in the sidebar. The main area is titled 'Manage Reports' with a sub-header 'Report Name'. A tooltip 'Duplicate report(s)' is shown over the 'Edit' button. The report list includes columns for Report Name, Owner, Last Updated, History Count, Space (MB), and Tags. Two entries for 'BlueCoat - Top...' are visible, both owned by 'admin' and last updated on 07/12/2016 at 19:30. The second entry for 'BlueCoat - Top...' has '(2)' next to its name, indicating it is a duplicate.

	Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
<input type="checkbox"/>	Administrative...	admin	07/12/2016 19:30	1		(2).Change Report
<input checked="" type="checkbox"/>	BlueCoat - Top...	admin	07/12/2016 19:30	0		BlueCoat Proxy
<input checked="" type="checkbox"/>	BlueCoat - Top...	admin	07/12/2016 19:30	0		BlueCoat Proxy
<input type="checkbox"/>	Collector Avg...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Daily...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Load...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Table...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Total...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Total...	admin	07/12/2016 19:30	0		Collector Load
<input type="checkbox"/>	Collector Total...	admin	07/12/2016 19:30	0		Collector Load
<input checked="" type="checkbox"/>	datalimit	test1	20/12/2016 14:05	0	0	
<input type="checkbox"/>	testreport-ass...	test1	08/12/2016 10:34	4	118	
<input type="checkbox"/>	testreport-ass...	test1	08/12/2016 10:45	4	118	
<input checked="" type="checkbox"/>	testreport-char...	test1	08/12/2016 10:19	2	0	
<input type="checkbox"/>	testreport-data...	test1	14/12/2016 14:45	38	384	
<input type="checkbox"/>	testreport-dist1	admin1	08/12/2016 15:03	5	1	

The report is now duplicated and appears after the original report in the Report Listing. It is identified by its version number. For example, if this is the only duplicate, it is identified with a (2) after the report name.

Renaming Report(s)

To rename a report, you can use one of the following two methods listed below.

Note: Keep in mind that either method does not perform a **Save As** of the report, but actually renames the same report.

1. Rename the report from the report listing:

- Go to the Analyzer dashboard, select Data Design from the dropdown list, click Reports.

The Manage Report screen with the current listing of reports is displayed.

- Double-click a report and edit its name in place as shown in Figure 4-46.

Figure 4-46: Renaming a Report - NEED NEW SCREENSHOT

	Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
1	BlueCoat - Top...	admin	07/12/2016 19:30	0	0	BlueCoat Proxy
2	BlueCoat - Top...	admin	07/12/2016 19:30	0	0	BlueCoat Proxy
3	Collector Avg ...	admin	07/12/2016 19:30	0	0	Collector Load
4	Collector Daily...	admin	07/12/2016 19:30	0	0	Collector Load
5	Collector Load...	admin	07/12/2016 19:30	0	0	Collector Load
6	Collector Table...	admin	07/12/2016 19:30	0	0	Collector Load
7	Collector Total...	admin	07/12/2016 19:30	0	0	Collector Load
8	Collector Total...	admin	07/12/2016 19:30	0	0	Collector Load
9	Collector Total...	admin	07/12/2016 19:30	0	0	Collector Load
10	Data Limit	test1	20/12/2016 14:05	0	0	
11	testreport-ass...	test1	08/12/2016 10:34	4	118	
12	testreport-ass...	test1	08/12/2016 10:45	4	118	
13	testreport-char...	test1	08/12/2016 10:19	2	0	
14	testreport-data...	test1	14/12/2016 14:45	38	384	
15	testreport-dist1	admin1	08/12/2016 15:03	5	1	

2. Rename the report from the report listing:

- Go to the Analyzer dashboard, select Data Design from the dropdown list, click Reports.

The Manage Report screen with the current listing of reports is displayed.

- Scroll or use filters to find the report you want to rename. For details on finding reports, see Chapter 2: Viewing Reports.
- Check the report that you want to rename and click the Edit button.
- On the report's screen, retype the name in the Report Title box.

- Click Save and Close.

The report is now displayed with its new name in the Manage Reports screen.

Deleting Report(s)

To delete a report:

- Go to the Analyzer dashboard, select Data Design from the dropdown list, click Reports. The Manage Report screen with the current listing of reports is displayed.
- Check the reports that you want to delete.
- Click the Delete button on the top menu.

Figure 4-47: Deleting Reports

The screenshot shows the SENSAE|AP application's 'Manage Reports' screen. On the left, there is a navigation sidebar with the Ignite Technologies logo and system information: Timezone: UTC, Version: 6.3.0, Release: 1481091296.el6. The main area has a green header bar with 'SENSAE|AP' and 'LUKE SKYBENDER'. Below the header is a toolbar with buttons for 'Create a report', 'Run', 'Edit', 'Delete', and others. A table lists various reports with columns for Report Name, Owner, Last Updated, History Count, Space (MB), and Tags. One row, 'Data Limit', is selected and highlighted in yellow. A tooltip 'Delete report(s)' points to the delete icon in the toolbar.

	Report Name	Owner	Last Updated	History Count	Space (MB)	Tags
1	BlueCoat - Top...	admin	07/12/2016 19:30	0		(BlueCoat Proxy)
2	BlueCoat - Top...	admin	07/12/2016 19:30	0		(BlueCoat Proxy)
3	Collector Avg ...	admin	07/12/2016 19:30	0		(Collector Load)
4	Collector Daily...	admin	07/12/2016 19:30	0		(Collector Load)
5	Collector Load...	admin	07/12/2016 19:30	0		(Collector Load)
6	Collector Table...	admin	07/12/2016 19:30	0		(Collector Load)
7	Collector Total...	admin	07/12/2016 19:30	0		(Collector Load)
8	Collector Total...	admin	07/12/2016 19:30	0		(Collector Load)
9	Collector Total...	admin	07/12/2016 19:30	0		(Collector Load)
10	Data Limit	test1	20/12/2016 14:05	0	0	
11	testreport-ass...	test1	08/12/2016 10:34	4	118	
12	testreport-ass...	test1	08/12/2016 10:45	4	118	
13	testreport-char...	test1	08/12/2016 10:19	2	0	
14	testreport-data...	test1	14/12/2016 14:45	36	384	

5

Creating and Modifying Charts for a Report

This chapter describes how to use SenSage AP Analyzer to create and modify a chart corresponding to a report. To use this chapter.

IMPORTANT: First read general information on Creating or Editing a chart and then go to the application section for details on how to fill out the Chart Settings screen to create or modify a specific chart type.

This chapter contains these sections:

- [Creating a Chart](#) on page 106
- [Editing a Chart](#) on page 108
- [Creating or Modifying a Bar Chart](#) on page 113
- [Creating or Modifying a Pie Chart](#) on page 116
- [Creating or Modifying a Heat Map](#) on page 118
- [Creating or Modifying a Custom Chart](#) on page 120
- [Creating and Modifying a Trending Chart](#) on page 122

Creating a Chart

IMPORTANT: Before you begin creating and configuring a chart:

- Be sure you have run its corresponding report. This way the system has already verified the datatypes of each field in the reporting results, giving you the opportunity to review the results and decide which fields are best to use in the chart.
- Be sure your system meets the requirements noted in Appendix ???? if you are creating a custom chart.

To create a chart for a corresponding report, you can use one of the following two methods listed below.

1. To run the report and add the chart from the report results view
 - a. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
 - b. Scroll or find the desired report, check the report, and click Run.
 - c. From the view results screen for the report, click the Gear icon, and choose Add a Chart from the dropdown list.
 - d. Go to Step 3.

Figure 5-1: Add a Chart



2. Add the chart from Edit Report definition screen:
 - a. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
 - b. Scroll or find the desired report, check mark the report that requires the chart, and click Edit.

Figure 5-2: Select Report for the Chart.

The screenshot shows the SENSAge|AP software interface. The top navigation bar includes 'SENSAge|AP' and 'LUKE SKYBENDER'. The left sidebar has sections for 'Dashboard', 'Data Design' (selected), 'Reports' (selected), 'Analytics Workbench', 'SQL Workbench', 'Scheduler', 'Administration', and 'Ignite TECHNOLOGIES' with version information (Version: 6.3.0, Release: 1481091206.a16). The main area is titled 'Manage Reports' with tabs for 'Create a report' and 'Run'. A search bar says 'Run in:' followed by a dropdown and several icons. Below is a table with columns: Report Name, Owner, Last Updated, History Count, Space (MB), and Tags. The table lists several reports, including 'Collector Total...', 'Data Limit', 'testreport-ass...', 'testreport-ass...', 'testreport-char...', 'testreport-data...', 'testreport-dist1', 'testreport-imp...', and 'testreport-imp...'. The 'Data Limit' report is selected, highlighted in yellow.

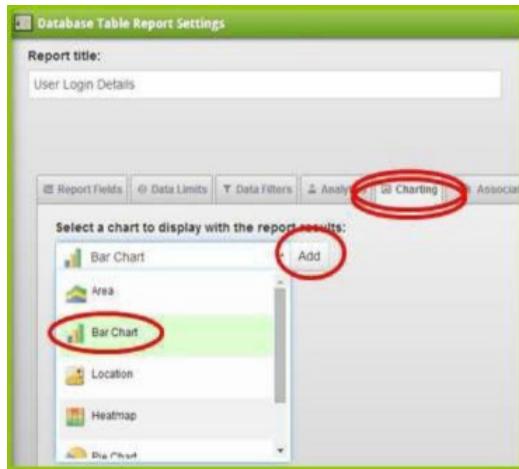
The Database Table Report Settings screen to define the report is displayed.

Figure 5-3: Database Table Report Settings Screen

The screenshot shows the 'Database Table Report Settings' screen. At the top, there are tabs for 'Report Fields', 'Date Limits', 'Data Filters', 'Analytics', 'Charting' (selected), 'Associations', and 'Output Formats'. The main area shows report fields like 'Time', 'Information System', 'Event Source', 'Account', and 'Result'. A 'Report Columns Header' section is also visible. A context menu is open at the bottom right, listing 'Save report', 'Save and close', 'Save run and retain', and 'Save and run once'.

- Click the Charting tab and select a chart type from the dropdown list; then click Add to bring up the applicable chart type configuration box to create the chart.

Figure 5-4: Charting Tab



Note: Chart types include: Area Chart, Bar Chart, Location Map, Heatmap, Pie Chart, and Trending Chart.

4. Go to the relevant section of this chapter for details on providing chart information for your specified chart type:
 - [Creating or Modifying an Area Chart](#) on page 110
 - [Creating or Modifying a Bar Chart](#) on page 113
 - [Creating or Modifying a Pie Chart](#) on page 116
 - [Creating or Modifying a Heat Map](#) on page 118
 - [Creating or Modifying a Custom Chart](#) on page 120
 - [Creating and Modifying a Trending Chart](#) on page 122

After you have created and saved a chart, you can modify it. See [Editing a Chart](#) below.

Editing a Chart

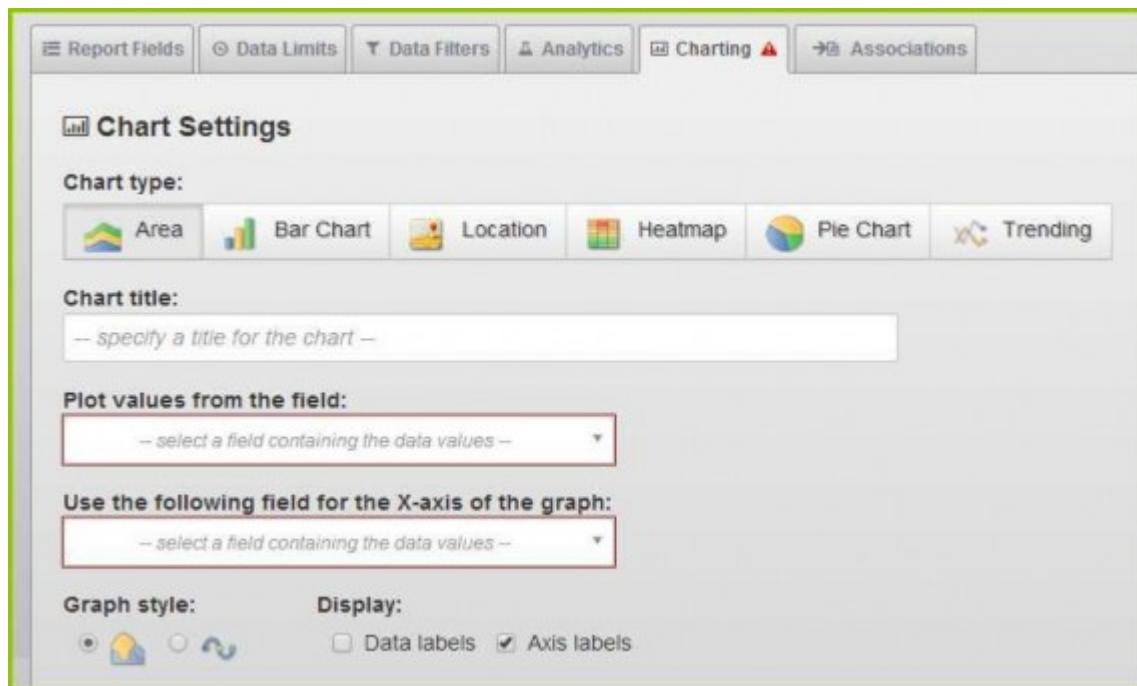
To edit a chart for a corresponding report:, you can use one of the following two methods listed below:

1. To edit the chart from the report results view (if desired, after running the report):
 - a. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
 - b. Scroll or find the desired report, check the report, and click Run. (if desired) or click Edit.

- c. From the view results screen for the report, click the Gear icon, and choose Edit a Chart from the dropdown list.
 - d. Go to Step 3.
2. To edit an existing chart from the Edit Report definition screen:
 - a. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Reports. The Manage Report screen with the current listing of reports is displayed.
 - b. Scroll or find the desired report, check the report, and click Edit. Go to Step 3.
 3. Click the Charting tab.

Note: If a red triangle is displayed next to the Charting tab as shown in Figure 5-5, this indicates the chart has not been completely configured or has an error in the configuration. As long as the chart is not configured completely and correctly, you will be unable to save the chart. When working within the Edit Report Definition screen, you can switch to alternate tabs; however, the red triangle indicates why you cannot save the report, since the chart is not configured correctly.

Figure 5-5: Chart Settings Screen



4. Go to the relevant section of this chapter for details on entering chart information for your specified chart type

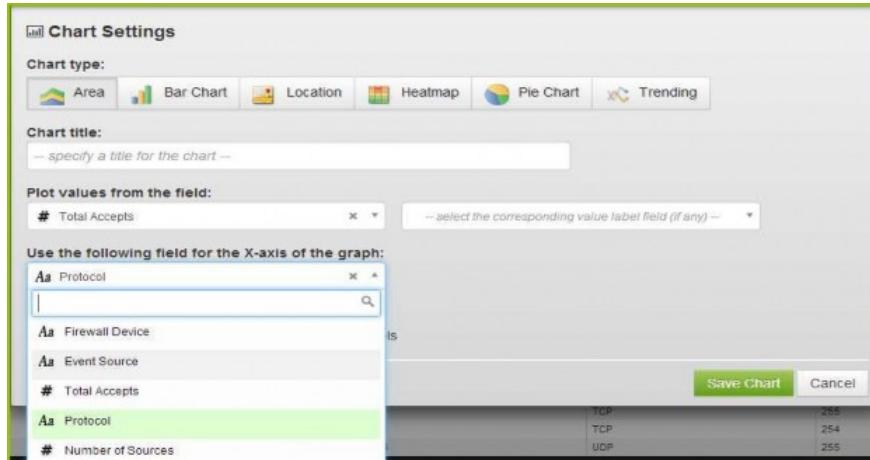
Creating or Modifying an Area Chart

An Area Chart consists of an X-axis and a Y-axis. To create or edit an Area Chart:

1. Access the area chart settings screen (for instructions see [Creating a Chart](#) on page 106 or [Editing a Chart](#) on page 108).
2. If desired, enter (in this optional field) a title for the chart for descriptive purposes only.
3. Specify the datatype for the Y-axis (the vertical dimension) under the dropdown box labelled "Plot values from the field:" shown in Figure 5-6.

Note: It is generally good practice to use a field with a numeric datatype for the Y-axis. If you select a string datatype the system will automatically add the count() aggregation function to determine the vertical height of elements in the chart, this can lead to unexpected results.

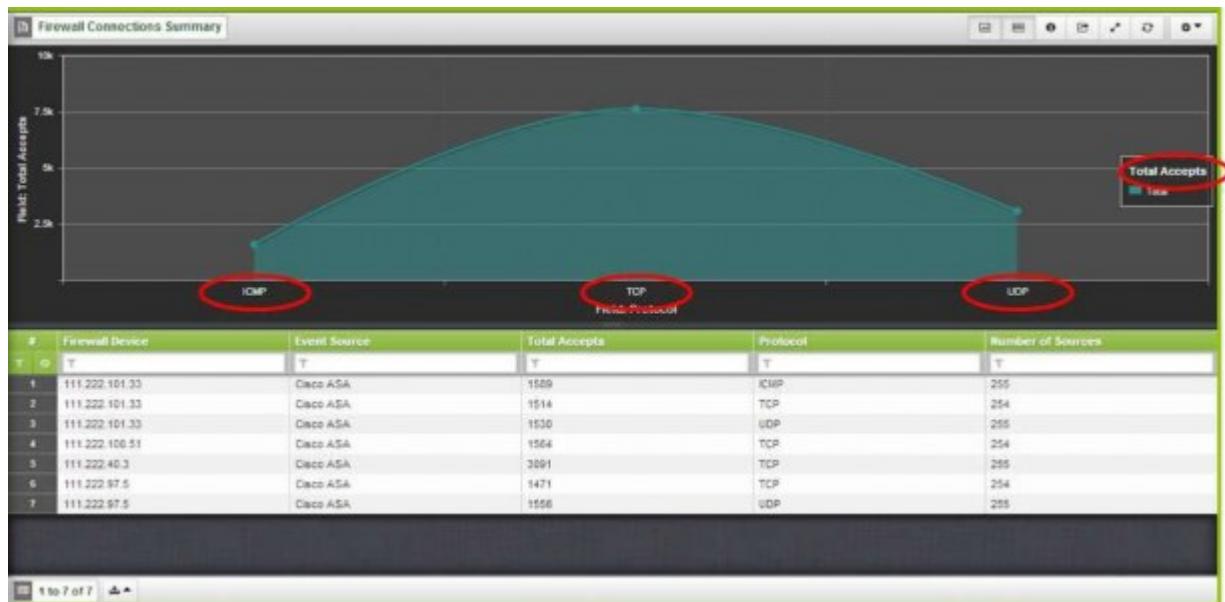
Figure 5-6: Defining Area Chart



4. Specify the datatype for the X-axis (the horizontal dimension of the chart) under the dropdown box labelled "Use the following field for the X-axis of the graph:" shown in Figure 5-6. The values in this field will be listed as labels in the chart itself. You can use fields of either string or number datatypes for the Y-axis.
5. Click Save.

Figure 5-7 shows the results of the configuration implemented so far. Note the name of the Y-axis field shows in the "Key" box on the right and values from the field "Protocol" show as labels for each value across the bottom of the report.

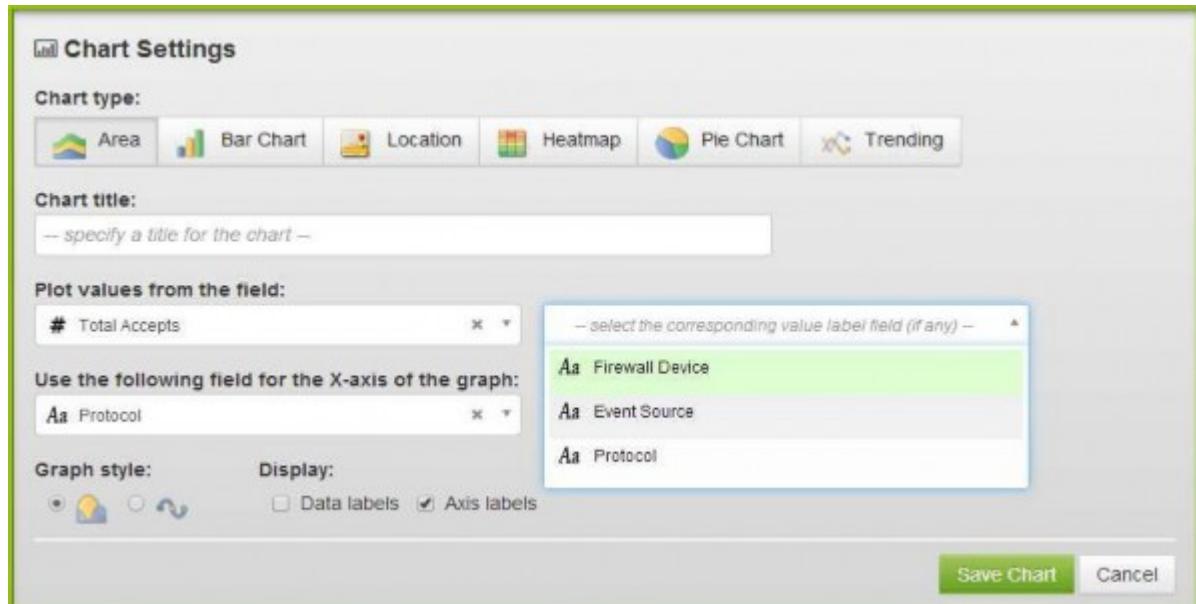
Figure 5-7: Area Chart Configuration



6. Optionally, to display more information than the number in the Y-axis field, you can select another field for break down; to do this, select the second field in the box "--select the corresponding value label field (if any) --" as shown in Figure 5-8 in which "Firewall Device" is chosen.

Note that the box for the second field is displayed whenever a field of numeric datatype is used.

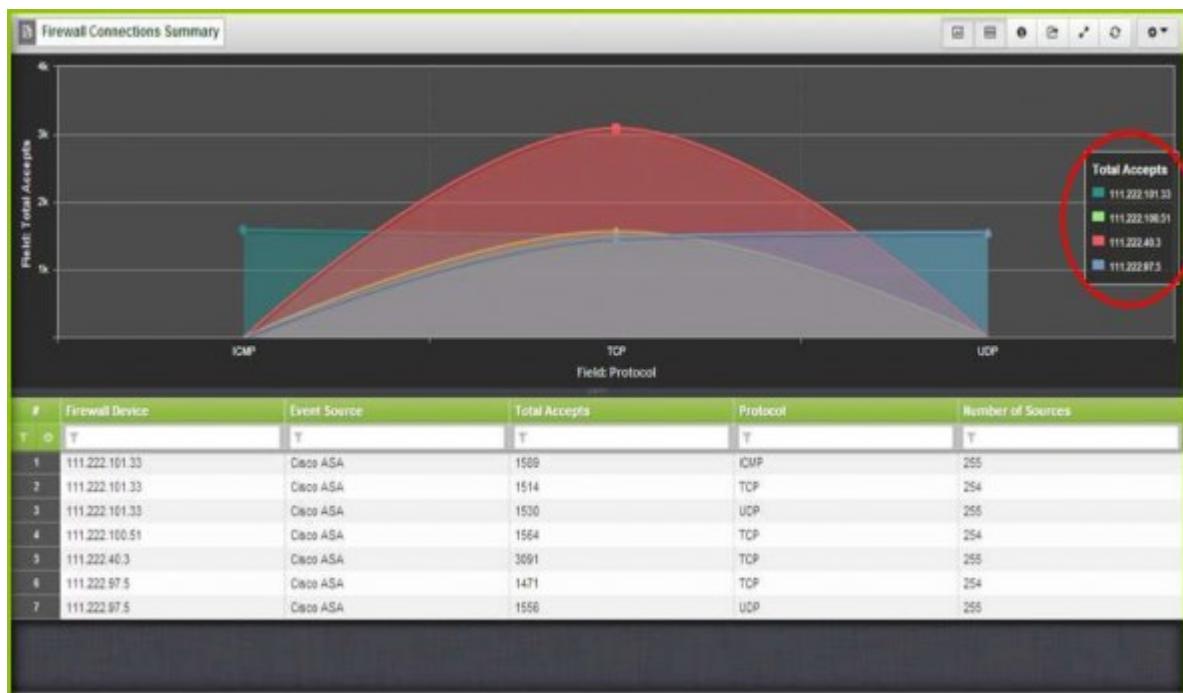
Figure 5-8: Display "Firewall Device" in "Y" Axis Field of Area Chart



7. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

At this point multiple “areas” are displayed on the chart as shown in Figure 5-9. Note the new listing of labels in the Key box on the right.

Figure 5-9: Labels in the Areas Chart



8. Click the gear icon and select Edit to display the chart settings screen for the chart.

Figure 5-10: Area Chart Settings Screen

Chart type:

- Area
- Bar Chart
- Custom Chart
- Heatmap
- Pie Chart
- Trending

Chart title:

-- specify a title for the chart --

Chart values from the field:

eventnumber

-- select an additional group by field (if any) --

Use the following field for the X-axis of the graph:

eventid

Orientation: Stacking: Display: Data labels Axis labels 3D view

Note:

Note the following additional viewing options at the bottom of the chart settings screen: Orientation, Stacking, and Display

The “Graph style:” allows you to removing the shading below the line, converting an Area Chart into a Line Chart.

The “Display:” box allows you to show or hide the labels on each axis.

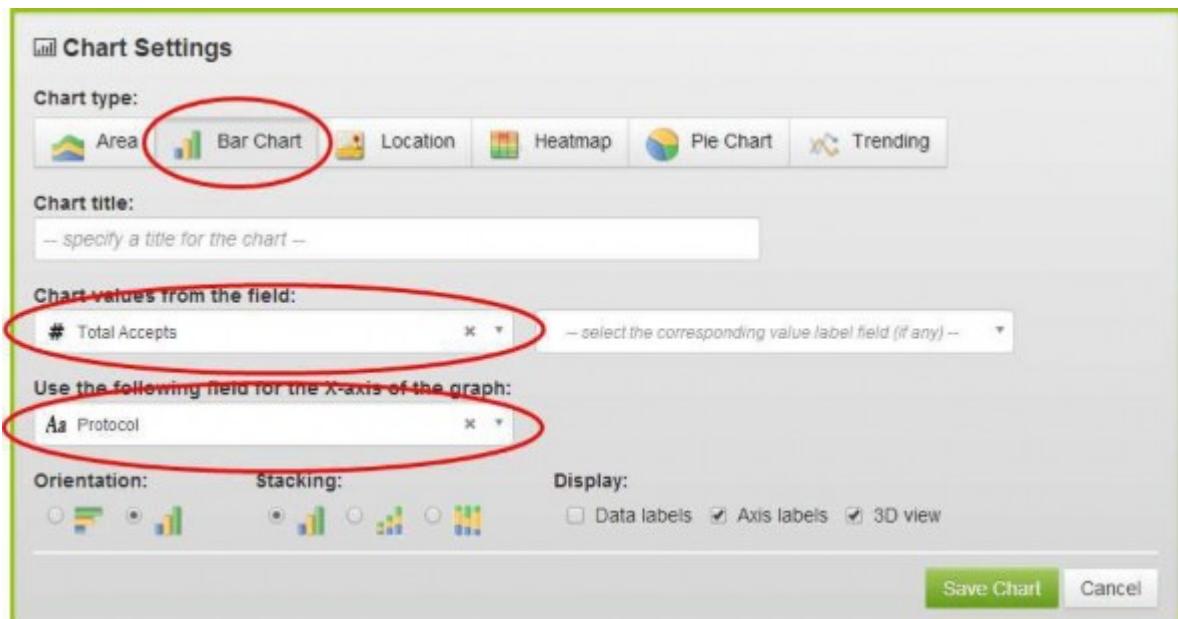
Creating or Modifying a Bar Chart

A Bar Chart is similar to an area chart and consists of an X-axis and a Y-axis. To create or modify a Bar Chart:

1. Access the area chart settings screen (for instructions see “Creating a Chart”, on page 91 or “Editing a Chart - THIS NEEDS VERIFICATION and SCREENSHOTS”, on page 94).
2. If desired, enter (in this optional field) a title for the chart for descriptive purposes only.
3. Specify the datatype for the Y-axis (the vertical dimension) under the dropdown box labelled “Chart values from the field:” shown in Figure 5-11.

Note: It is generally good practice to use a field with a numeric datatype for the Y-axis. If you select a string datatype the system will automatically add the count() aggregation function to determine the vertical height of elements in the chart, this can lead to unexpected results.

Figure 5-11: Bar Chart Settings Screen



4. Specify the datatype for the X-axis (the horizontal dimension of the chart) under the dropdown box labelled “Use the following field for the X-axis of the graph:” shown in Figure 5-11. The values in this field will be listed as labels in the chart itself. You can use fields of either string or number datatypes for the Y-axis.
5. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

Figure 5-12 shows the results of the configuration implemented so far. Note the name of the Y-axis field shows in the “Total Accepts” box on the right and values from the field “Protocol” show as labels for each value across the bottom of the report.

Figure 5-12: Bar Chart Configuration



6. Optionally, to display more information than the number in the Y-axis field, you can select another field for break down; to do this, select the second field in the box "--select the corresponding value label field (if any) --" as shown in Figure 5-13 in which "Firewall Device" is chosen.

Note that the box for the second field is displayed whenever a field of numeric datatype is used.

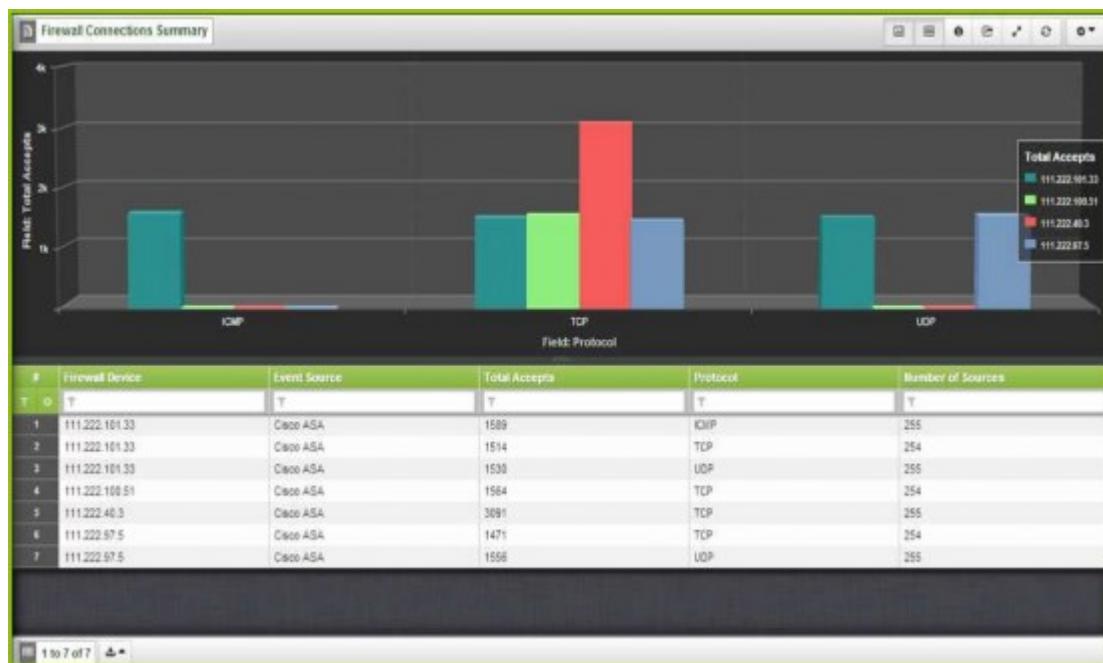
Figure 5-13: Display "Firewall Device" in "Y" Axis Field of Bar Chart

The dialog box is titled "Chart Settings". It includes fields for "Chart type" (Bar Chart selected), "Chart title" (empty), "Chart values from the field" (Total Accepts and Firewall Device selected), "Use the following field for the X-axis of the graph" (Protocol selected), "Orientation" (Horizontal selected), "Stacking" (None selected), "Display" (Data labels, Axis labels, 3D view checked), and buttons for "Save Chart" and "Cancel".

7. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

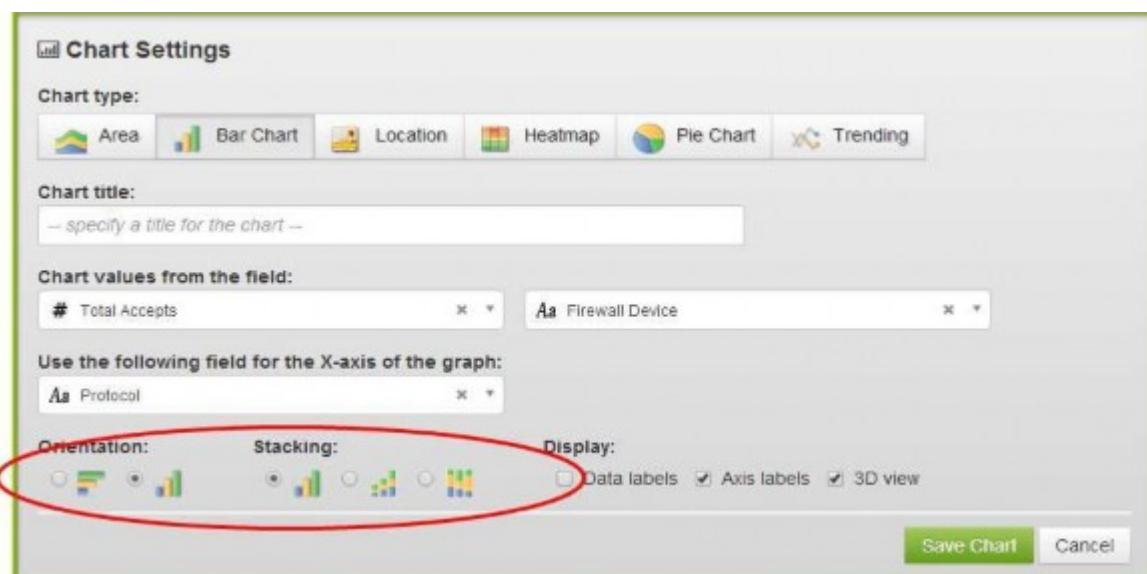
Figure 5-14 shows the results of the configuration implemented so far, sub-totaled by Firewall Device.

Figure 5-14: Bar Chart Configuration sub-totaled by Firewall Device



- Click the gear icon and select Edit to display the chart settings screen for the chart.

Figure 5-15: Bar Chart Settings Screen Additional Viewing Options



Note the following additional viewing options at the bottom of the chart settings screen:

- Orientation - Displays information charted horizontally instead of vertically. When this option is set to horizontal the X-axis becomes the vertical dimension and the Y-axis becomes the horizontal dimension.
- Stacking - Displays the different sub-totals stacked on top of each other - either with normal value-based sizing or with %-based sizing.

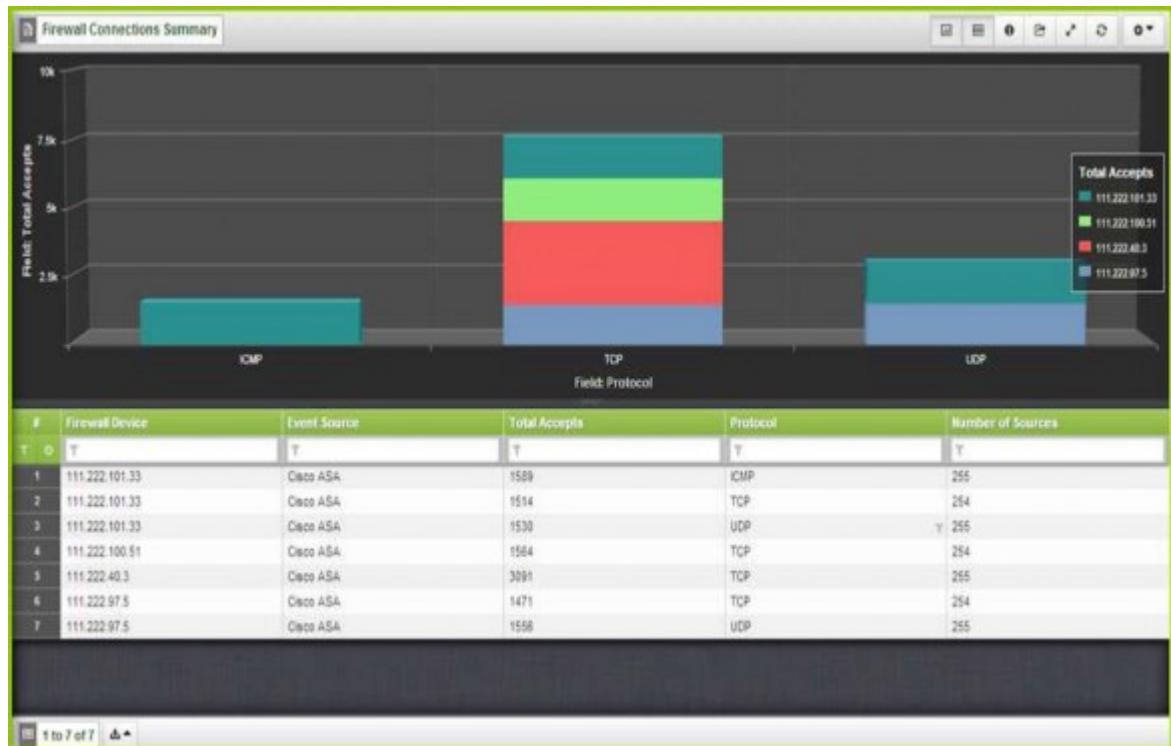
Note: This option is only effect when "--select the corresponding value label field (if any)--" in Step 7 above is set.

- Display - Depending on setting, shows or hides the labels on each axis and turns on or off the 3D effect on the graph.

9. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

Figure 5-16 shows the results of the additional viewing options that are implemented. Bars are stacked to display sub-totals by Device Firewall.

Figure 5-16: Bar Chart Configuration with Additional Viewing Options



Creating or Modifying a Pie Chart

A Pie Chart has one required field that requires configuration: your chosen field to display chart values.

If a field with a string datatype is selected for the chart values from the field, the system will automatically aggregate that field with the count() function and display areas of the chart proportional to the number of occurrences of each value in that field. However, if a field with a numeric datatype is selected the system will use the values in that field to proportionally size the areas of the chart.

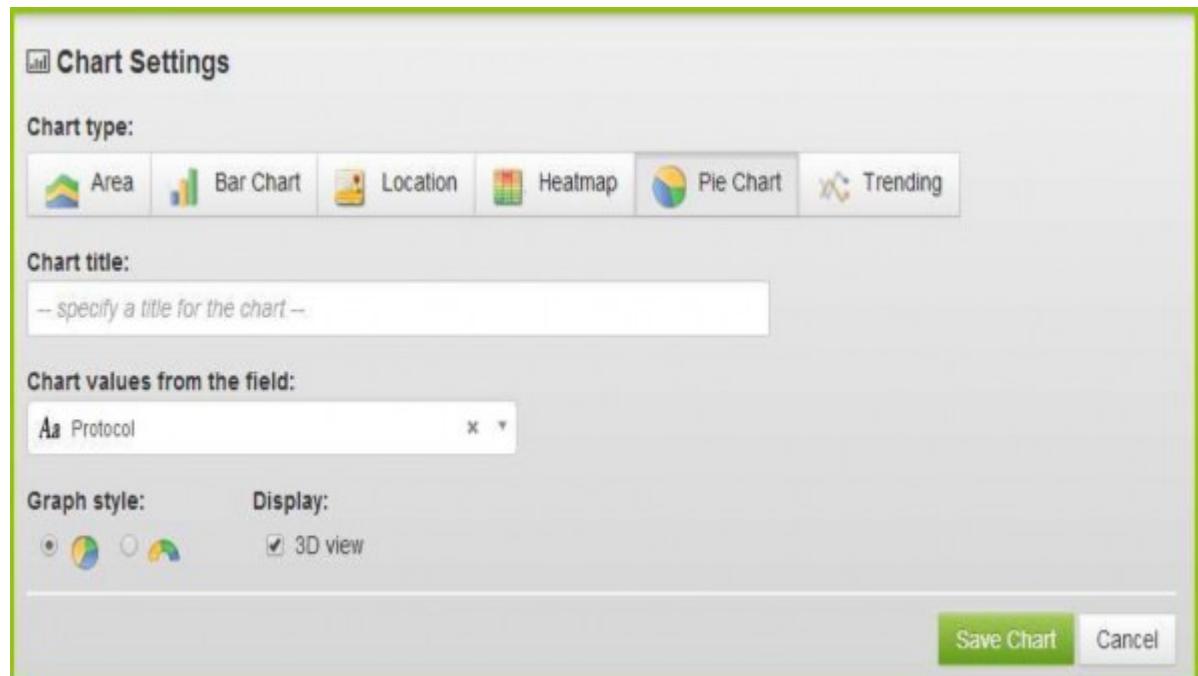
To create or modify a Pie Chart:

1. Access the area chart settings screen (for instructions see "Creating a Chart", on page 91 or "Editing a Chart - THIS NEEDS VERIFICATION and SCREENSHOTS", on page 94).
2. If desired, enter (in this optional field) a title for the chart for descriptive purposes only.

3. Specify your chosen field for the chart from the dropdown box labelled "Chart values from the field:" :
 - See Step 4 if you are selecting a field with a string datatype.
 - See Step 5 if you are selecting a field with a numeric datatype.

4. In the Figure 5-17 example below, the field "Protocol" is chosen, which has a string datatype.

Figure 5-17: Pie Chart Settings



- a. Click Save to apply your own setting. DOES CLICKING SAVE DISPLAY THE CHART?

Figure 5-18 shows the results of the configuration implemented with chart values from the field "Protocol", which will look similar to your own setting.

- b. Hover the mouse over each section of the chart to see the actual percentages for your chosen field.

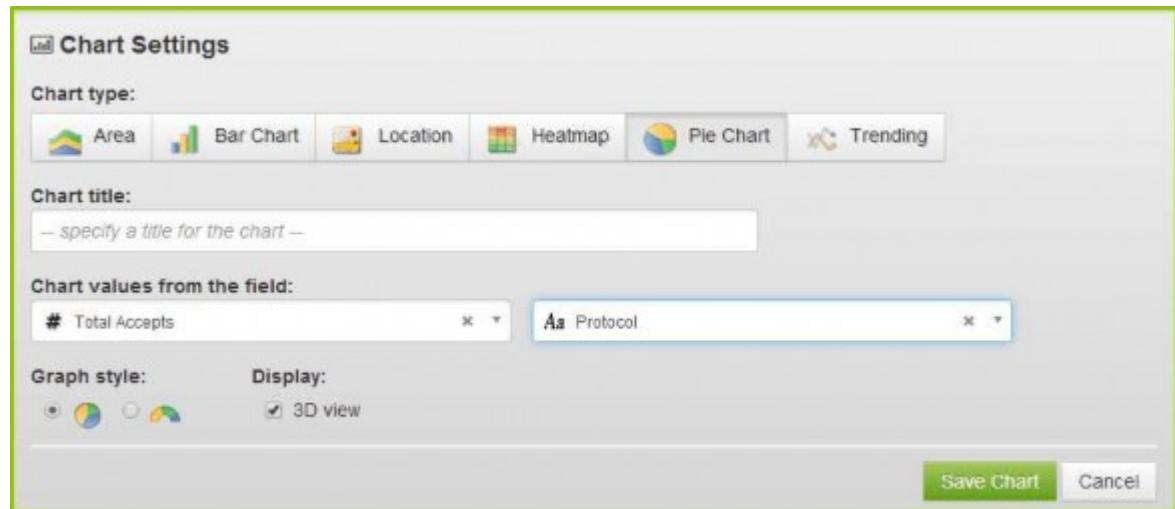
Figure 5-18: Pie Chart Configuration



5. In Figure 5-19 below, the field "Total Accepts" is chosen, which has a numeric datatype.

Note: The box for the second field is displayed whenever a field of numeric datatype is used.

Figure 5-19: Pie Chart Settings with "Total Accepts" Selected



The following additional viewing options are listed at the bottom of the chart settings screen:

- Graph Style - Allows you to WHAT DOES THIS DO?
- Display - Turns on or off the 3D effect on the graph.

6. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

Creating or Modifying a Heat Map

A heat map is a two dimensional plot with color showing the value of a third field. The third field must be a number datatype.

To create or modify a heat map:

1. Access the area chart settings screen (for instructions see "Creating a Chart", on page 91 or "Editing a Chart - THIS NEEDS VERIFICATION and SCREENSHOTS", on page 94).
2. If desired, enter (in this optional field) a title for the chart for descriptive purposes only.
3. Specify the value for the Y-axis (the vertical dimension) under the dropdown box labelled "Select a field for the vertical axis of the map grid:". In Figure 5-20 "Firewall Device" is selected as the value for the Y-axis.
4. Specify the value for the X-axis (the horizontal dimension) under the dropdown box labelled "Select a field for the horizontal axis of the map grid:". In Figure 5-20 "Number of Sources" is selected as the value for the Y-axis.

Note: The box for the second field is displayed whenever a field of numeric datatype is used. In Figure 5-20 "Protocol" is selected as the value for the second field.

5. Specify the field that you want for determining the color of each point on the map under the dropdown box labelled "Use the values from this field for the grid values:" In Figure 5-20 "Total Accepts" is selected as the value for the field.

Figure 5-20: Heat Map Chart Settings

The screenshot shows the 'Chart Settings' dialog box with the following configuration:

- Chart type:** Heatmap (selected)
- Chart title:** (empty input field)
- Select a field for the vertical axis of the map grid:** Firewall Device
- Select a field for the horizontal axis of the map grid:** Number of Sources and Protocol
- Use the values from this field for the grid values:** Total Accepts
- Display:** Data labels (unchecked), Axis labels (checked)
- Buttons:** Save Chart, Cancel

Observe the following additional viewing options at the bottom of the chart settings screen:

- Display - Turns on or off the 3D effect on the graph.

6. Click Save. DOES CLICKING SAVE DISPLAY THE CHART?

Figure 5-21 shows the results with heat map. Note the values of the color are shown in the key to the right of the map.

Figure 5-21: Heat Map Configuration Results



Creating or Modifying a Custom Chart

A heat map is a two dimensional plot with color showing the value of a third field. The third field must be a number datatype.

To create or modify a heat map:

1. Access the area chart settings screen (for instructions see [Creating a Chart](#) on page 106 or [Editing a Chart](#) on page 108).
2. If desired, enter (in this optional field) a title for the chart for descriptive purposes only.
3. Specify the value for the Y-axis (the vertical dimension) under the dropdown box labelled "Select a field for the vertical axis of the map grid:". In Figure 5-20 "Firewall Device" is selected as the value for the Y-axis.
4. Specify the value for the X-axis (the horizontal dimension) under the dropdown box labelled "Select a field for the horizontal axis of the map grid:". In Figure 5-20 "Number of Sources" is selected as the value for the Y-axis.

Note: The box for the second field is displayed whenever a field of numeric datatype is used. In Figure 5-20 "Protocol" is selected as the value for the second field.

5. Specify the field that you want for determining the color of each point on the map under the dropdown box labelled "Use the values from this field for the grid values:" In Figure 5-20 "Total Accepts" is selected as the value for the field.

Figure 5-22: Heat Map Chart Settings

Chart Settings

Chart type:

Area Bar Chart Location Heatmap Pie Chart Trending

Chart title:
— specify a title for the chart —

Select a field for the vertical axis of the map grid:
 Firewall Device

Select a field for the horizontal axis of the map grid:
 # Number of Sources Protocol

Use the values from this field for the grid values:
 # Total Accepts
(leave empty to count coincident occurrences of the axis field values)

Display:
 Data labels Axis labels

Save Chart **Cancel**

Note the following additional viewing options at the bottom of the chart settings screen:

- Display - Turns on or off the 3D effect on the graph.

6. Click Save.

Figure 5-21 shows the results with heat map. Note the values of the color are shown in the key to the right of the map.

Figure 5-23: Heat Map Configuration Results



Creating and Modifying a Trending Chart

This chapter describes how to create data models for advanced analytics, which can be later integrated with a report as described in [Integrating Data Models with the Report](#) on page 96.

- [What is a Data Model?](#) on page 123, [Next](#)
- [Defining a Model](#) on page 124
- [Creating and Editing a Data Model](#) on page 126
- [Creating a New Model Based on an Existing One](#) on page 131
- [Nesting \(embedding\) a Model into an Existing Model](#) on page 131
- [Adding and Modifying Model Components to a New or Existing Model](#) on page 132
- [Using Model Menu Items to Perform Model tasks](#) on page 140
- [Sharing Models](#) on page 142
- [Creating a Report with the Selected Model](#) on page 143
- [Creating a Schedule with the Selected Model](#) on page 143

6

Using Analytics Workbench for Advanced Data Modeling

What is a Data Model?

A data model is a blueprint for manipulating data with multiple different steps. Each step performs an independent operation on the data, not just a single query against a database returning a single result set. The data may originate from an EDW query; however, it may also originate from a file, from an LDAP directory, from PostgreSQL or other database sources, or from user input. The model is created in a standard HTML web browser and is executed on the Analyzer's server within a SenSage AP deployment.

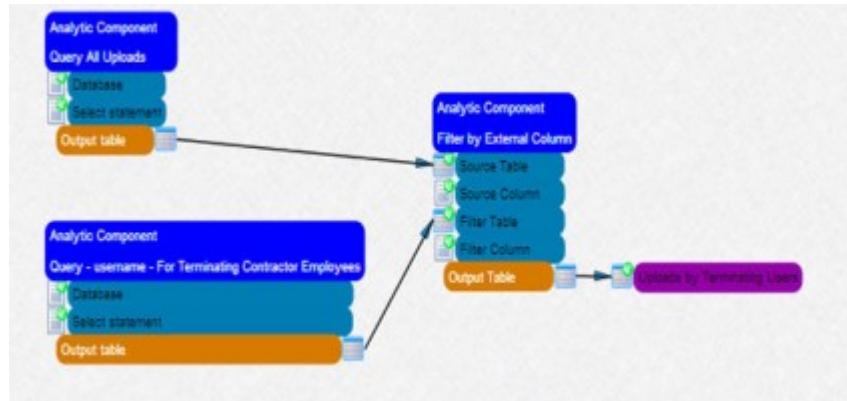
In Analyzer, models may be created, saved, reused, or even scheduled to execute periodically. A primary goal of SenSage AP's modeling capability is to avoid the need for exporting data from the Event Data Warehouse (EDW) and manipulating data by scripts or with third-party tools such as Microsoft Excel.

Analytics Workbench

The Analytics Workbench is a tool in the SenSage AP Analyzer that allows users to execute advanced analytics data processing on the log event data stored in the Event Data Warehouse or other databases. In Analyzer, a set of analytics processing components put together in the Analytics Workbench is known as a data model. The Analytics workbench has a drag and drop graphical programming functionality to provide advanced analytic processing capability.

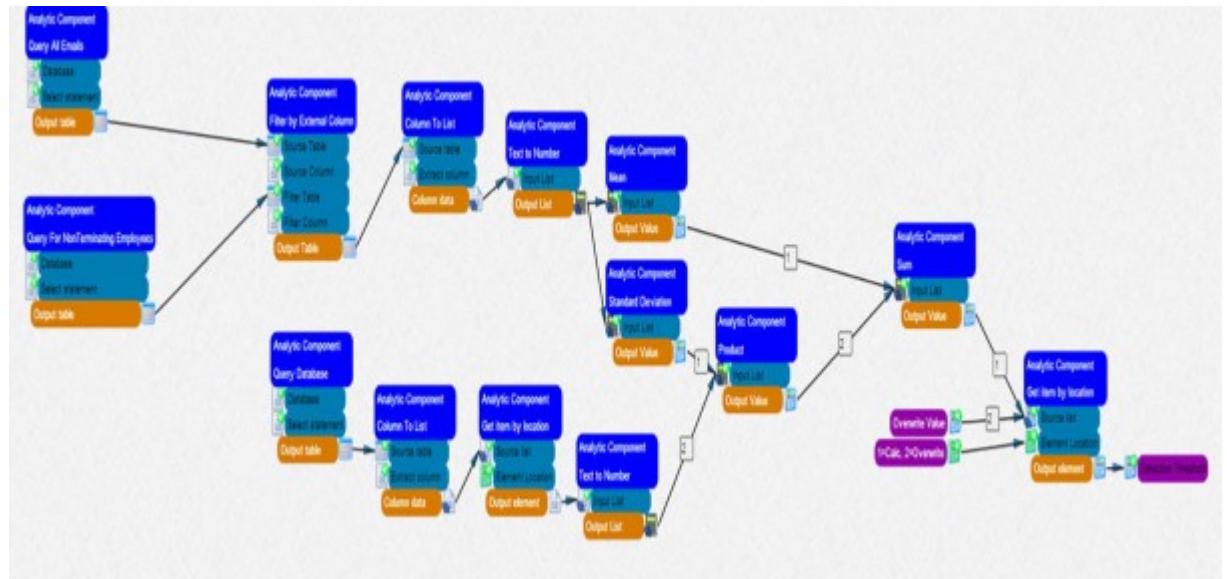
Models created in the Analytics workbench can be simple as shown in Figure 6-1 with a few components as an input to another component.

Figure 6-1: Example of a Simple Model



The Analytics workbench is also capable of creating arbitrarily complex models as shown in Figure 6-2. Models can be saved as components to be nested (re-used) in other models with unlimited levels of nesting.

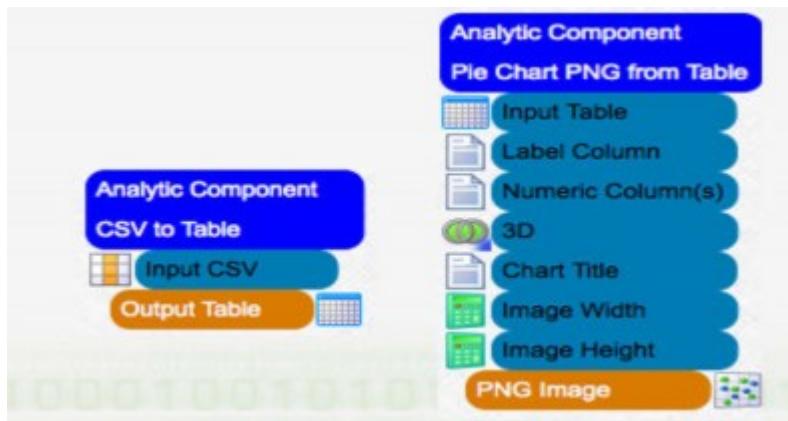
Figure 6-2: Example of a Complex Model



Defining a Model

A model component is derived from a component library which defines its functionality, analogous to a Function in Microsoft Excel. It generally contains input parameters, datatype identifiers, and output parameters. Figure 6-3 summarizes these model parts.

Figure 6-3: Parts of a Model

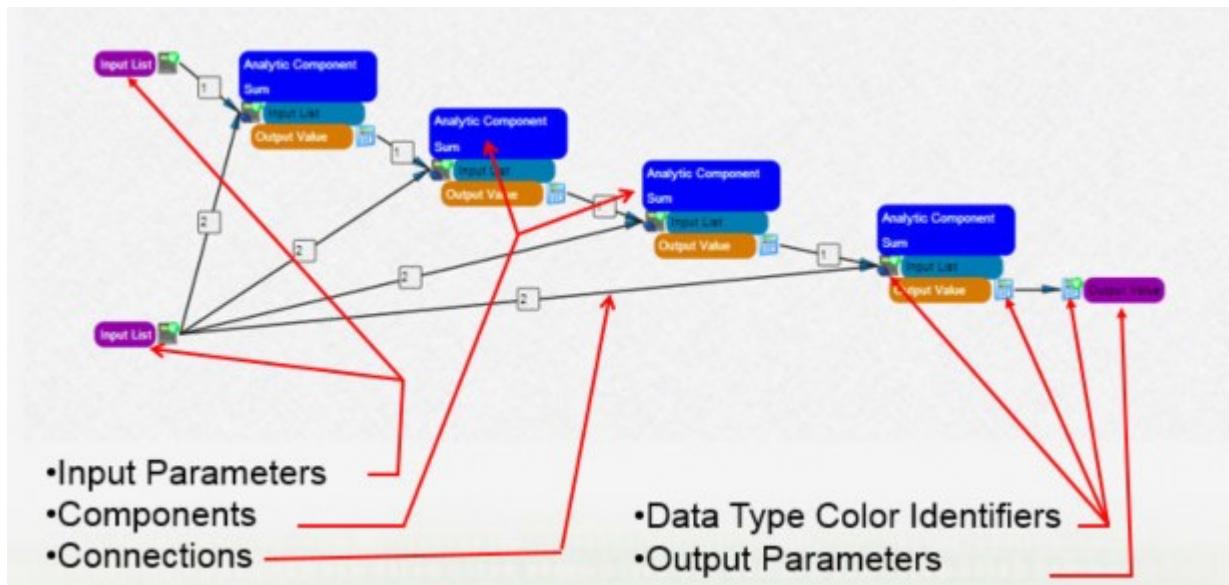


Parts of a Model Component

Each component has its associated data types and input and output properties. Generally the value of input properties are set by the preceding component or by an input parameter. Output properties generally set the value of the next component or an output parameter.

The model pictured in Figure 6-4 below has four components all with the same label “Analytic Component Sum”.

Figure 6-4: Sample Model with Four Components



Following is an in depth description of each part of the model:

Item	Description
Input parameters	Data elements that are likely to change each time the model runs. These parameters can be set manually in the model or can be set (over-ridden) when the model is scheduled. The model in Figure 6-4 has two input parameters both labeled “Input List”.

Connections	Lines that connect input and output parameters and properties. These lines define the logical flow of data through the model. There is no limit to the number of branches a model can have. If an input property has more than one connection numbers will appear that define the order of precedence for data coming in from the different connections. Connections are depicted in black in the model pictured in Figure 6-4.
Data Type Identifiers	Used to identify the type of data that is applicable for any given input or output parameter or property. Types are represented with a different icon for each data type. See “Adding and Modifying Model Components to a New or Existing Model”, on page 119 for a list of icons. For example in the model pictured above the calculator icon represents a single number and the calculator with multiple blue rectangles represents a list of numbers.
Output Parameters	The final result of the model execution. There can be any number of output parameters. The values of the output parameters are shown in a dialog box after model execution. If the output parameter is of type file, the file is generated on the Analyzer and a link is provided in the dialog box.

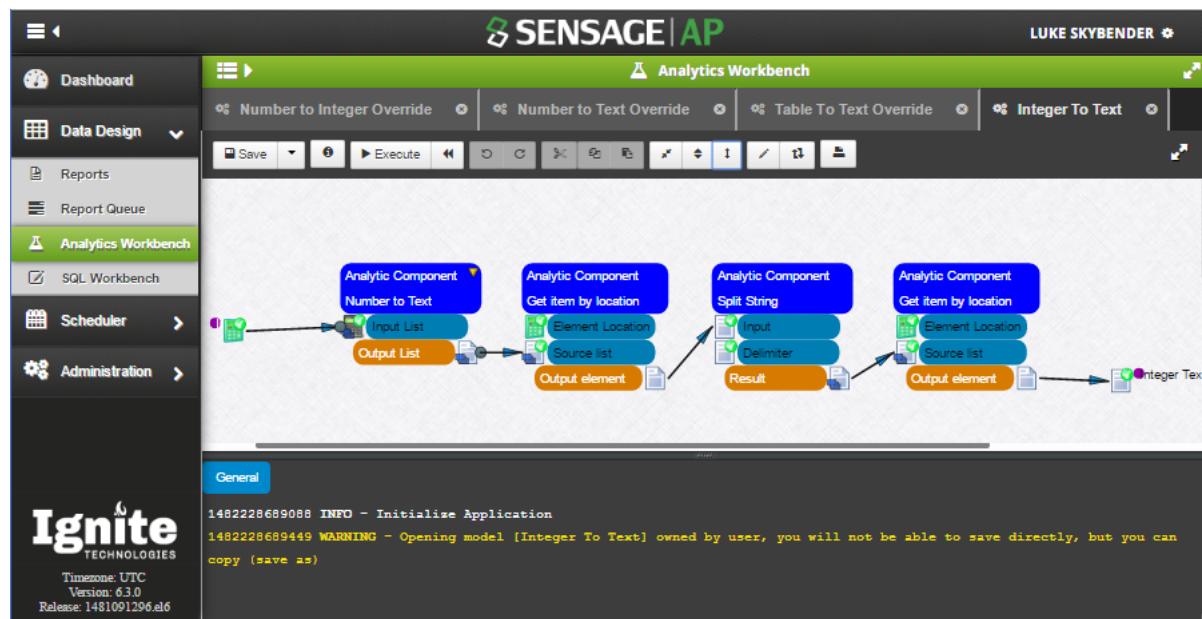
Creating and Editing a Data Model

To create or edit a data model, perform the following tasks:

1. Access the Analytics Model Information screen. See step a below, to create a model or step b, to edit a model.
 - a. If creating a new model, go to the Analyzer dashboard, select Data Design from the dropdown list and click Analytics Workbench, and Analytics. Go to step 2.
 - b. If editing a model, go to the Analyzer dashboard, select Data Design from the dropdown list and click Analytics Workbench, and Models. Find the model you want to edit. See Viewing a Model for methods to access a model and then click the Information icon next to the Save button.

A sample model canvas is displayed. Note that the libraries menu is collapsed, so only the canvas is displayed without the libraries palette.

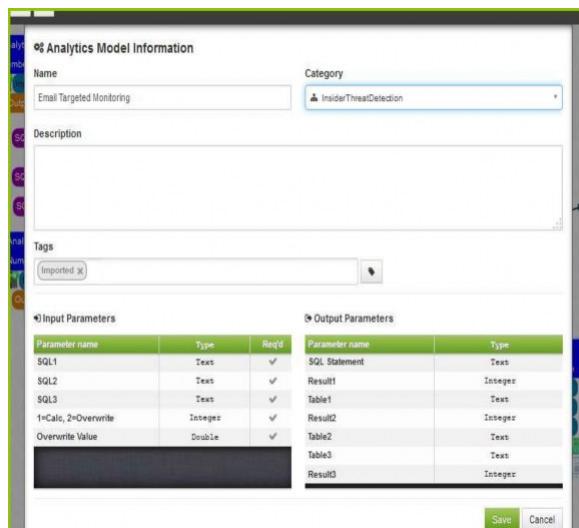
Figure 6-5: Sample Model Canvas



- When you see the Analytics Model information screen, as shown below, define or edit existing model information (Name, Category, Description, Tags, and Input/Output) parameters by filling or revising the information screen as shown Figure 6-6 below.

Note: Category is required for selection whether creating a new model or editing an existing one.

Figure 6-6: Analytics Model Information Screen



- Click Save when you have finished.

If the current model wasn't previously saved, the system saves it as a new model and displays the model canvas.

4. Create the model on the canvas or edit a model's canvas:
 - a. If creating a new model or editing an existing one, use the model library to create the new/revised components for the model on the model canvas. For details on using the "model library" and adding/revising model components, see "Adding and Modifying Model Components to a New or Existing Model", on page 119. See the icons used to draw models on the canvas on page 125.
 - b. If adding a model component to a new or existing model, see page 119 for details. To edit model components, see step d.
 - c. If adding a model to embed in your existing model, access the model library to add the embedded model. For details, see "Nesting (embedding) a Model into an Existing Model", on page 118.
 - d. If editing a model component input or output parameter, see "Adding and Modifying Model Input and Output Parameters", next.

Adding and Modifying Model Input and Output Parameters

Models can accept input parameters and can return results. The count of input and output parameters inside a function will be equal to this count when you drop a model inside another model. You can see the equality of parameters on the slide with red, green, blue and pink lines. Count of input and output parameters is unlimited. DON'T SEE THIS ON THE SLIDE.

On a model component, when you want to add either an input or output parameter:

1. Right-click the "input" or "result" icon on a model.
2. Select "Make model input".

A purple model input icon is displayed to enter your input. Provide the name of your input or output parameter. The system provides a datatype identifier to identify the type of data that is applicable for any given input or output parameter or property. IS AN ERROR MESSAGE DISPLAYED IF THE DATATYPE IS INCORRECT?

Note: Types are represented with a different icon for each data type. Depending on the datatype of your parameter, you will see one of the following icon types beside your parameter entry as noted in Figure 6-7.

Figure 6-7: Icon Types for Parameters



Figure 6-8 below displays the icons for the following datatypes: the green calculator icon represents an integer, the grey calculator icon represents a number, the text icon represents a text, the calendar icon represents a timestamp.

Figure 6-8: Example of Icon Types in a Component

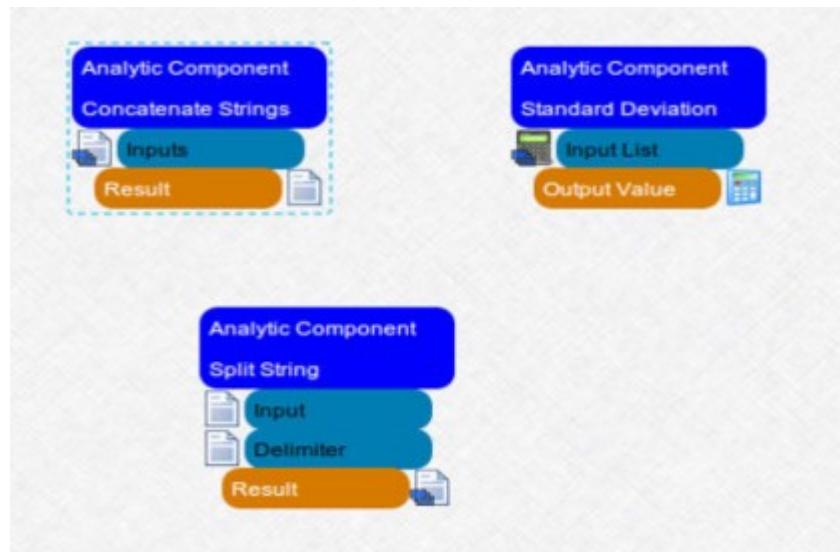


- If you have a list of parameter values that are required with your Analytic Component, you will be prompted to provide the value in a text. A list is a data structure consisting of a collection of elements of the same data type. CHECK THIS. After you click Save, a blue rectangular box appears in the datatype icon to denote that more than one parameter value is assigned.

Figure 6-9 provides an example of three components that accept a list of values. Concatenate Strings accepts a list of text values and returns a concatenated text in a single text variable.

Standard Deviation accepts a list of numbers and returns a standard deviation value of the input numbers. Split String component accepts Input and Delimiter values and returns a list of text values.

Figure 6-9: Example of Input Parameter List



4. Click Save.

Note: The count of input and output parameters inside a function will be equal to this count when you drop this model inside another model. You can see the equality of parameters on the slide with red, green, blue and pink lines. Count of input and output parameters is unlimited.

To modify either an input or output parameter:

1. Right-click the "input" or "result" icon on a model.
2. Click the option corresponding to what you want to modify as noted below (see Figure 6-10 and Figure 6-11).
 - To rename a parameter, click "Rename Parameter" in the popup menu. Change the name of the parameter in the text box and click the Save to right of the text box.
 - To assign a default value to an input parameter, allowing this value for use if the parameter for this model is not assigned, click "Set Parameter Value" in the popup menu. Change the value in the text box and click Save to the right of the text box.
 - To delete a parameter, click "Delete" in the popup menu. Click Save. CHECK THIS TO SEE IF SAVE APPEARS
 - To copy a parameter, click "Copy" in the popup menu. Then go to the model component where you want to copy the parameter. Click the "input" or "result" icon and paste the parameter name in text box.
 - To specify a bounded/unbounded state for the parameter, right-click "Make Bounded (List)" or "Make Unbounded (List)" Click Save. NEED TO CHECK THIS.

Figure 6-10: Setting Model Input Parameter

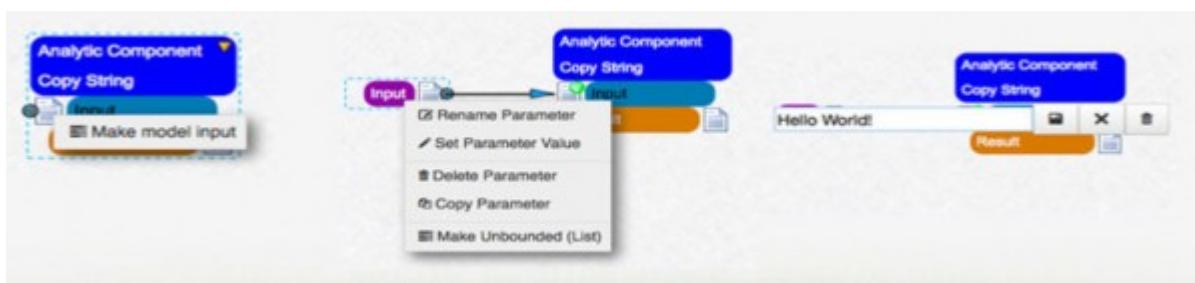
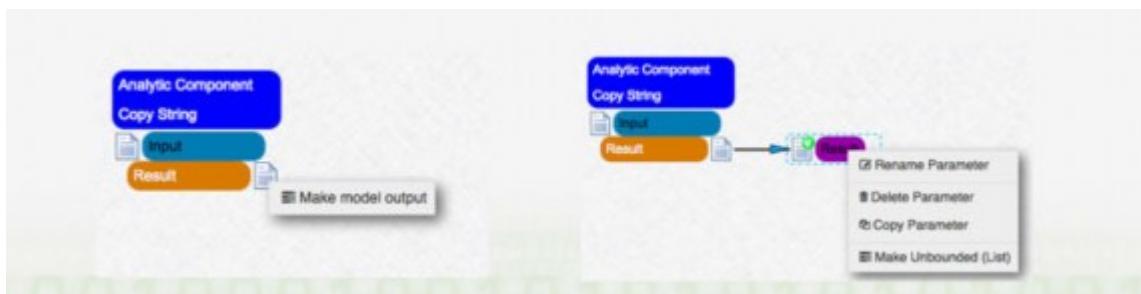


Figure 6-11: Setting Model Output Parameter



Creating a New Model Based on an Existing One

To add a new model to the Library based on one already in the Models library:

1. Go to the Analyzer dashboard, select Data Design from the dropdown list, click Analytics Workbench, and click the Models tab.

The model canvas is displayed and when the Libraries Menus is expanded, you can display a listing of all models in the system to which you have access.

2. Select the existing model and click the Save button and provide a new name for model or make a duplicate copy of the model by clicking the "copy" icon at the menu bar. For icon information, see page 127

Note: To open a category of models, click the triangle to the left of the category name. If you hold down the shift key when you click, all the categories will be expanded or collapsed at once. To close a category of models, click again, the triangle to the left of the category name.

3. Access the Analytics tab to edit the model

Nesting (embedding) a Model into an Existing Model

Models can be simple or arbitrarily complex. Models can also be saved as components for nesting (re-use) in other models; the number of nesting level is unlimited. Components saved as models are typically used to process data.

Model components can exist without any input and output parameters unless they are created inside the model. For details on setting up default parameters inside a model component, see Step 2 in the procedure "To modify either an input or output parameter:" on page 117.

Note: Inputs and outputs from a model that is nested becomes part of the newly-formed model.

1. Go to the Analyzer dashboard, select Data Design from the dropdown list and click Analytics Workbench.
- The model canvas is displayed and when the Libraries Menus is expanded, you can display a listing of all models in the system to which you have access.
2. Click and drag the model you want to display on the canvas; then click and drag the model or component you want to embed in the model you have first displayed. As shown in the example in Figure 6-12, the count of created input parameters is equal to the count of input parameters at the model component. The same is true for the output parameters.

Figure 6-12: Model Component Input and Output Parameters



Note: The parameter datatypes defined inside model components are the same as the outside (resulting) parameters.

3. If necessary, you may have to re-add the nested model to the existing one. The need for this occurs when the alteration is ?????NEED MORE INFORMATION.

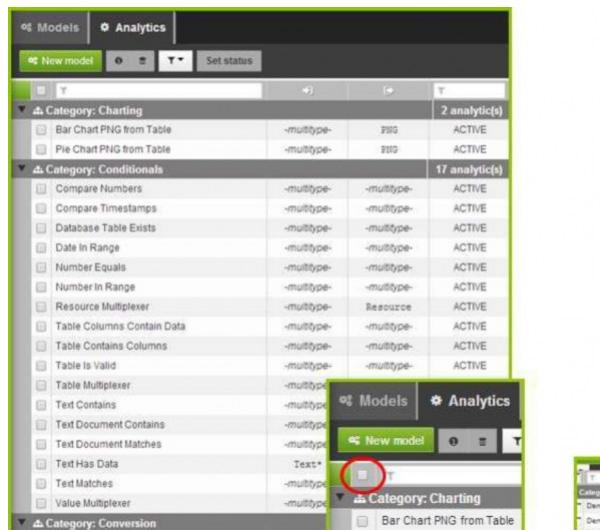
Adding and Modifying Model Components to a New or Existing Model

1. Go to the Analyzer dashboard, select Data Design from the dropdown list, click Analytics Workbench, and click the Analytics tab.

The expands the Component listing showing all components in the system which you have permission to access. Component menu options are displayed across the top of the model listing. For details on these menu items, see Component Menu Options.

THIS MAY NEED NEW SCREENSHOT. TRAINING DOCS DO NOT SHOW DELETE (trash) AS AN OPTION

Figure 6-13: Components Listing



2. You can select a component for viewing in the following ways:

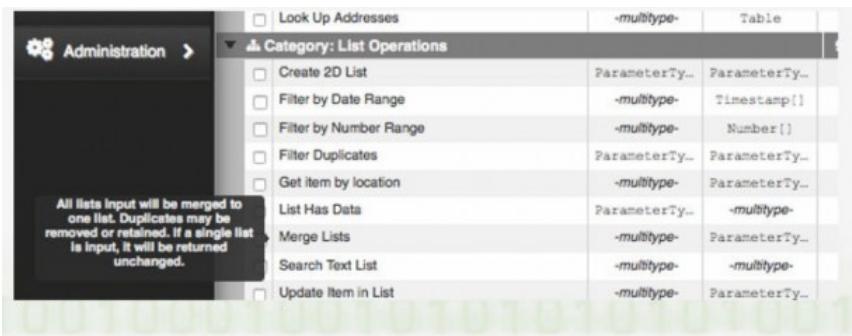
- To select a component, check the box to the left of the component name. To de-select, click the box again.
- To select all components, check the box at the top of all the checkboxes. To de-select, click the box again.
- To search for a component by name, type in the text box just below the component menu. When you type the list of components will be filtered by the string that you type.
- To open and close each category of components, the triangle to the left of the category name. If you hold down the shift key and click, all the categories will be expanded or collapsed at once.

Figure 6-14: Component Listing with Model Canvas



Note: When scrolling over components in categories, additional information will pop up.

Figure 6-15: Information Popup on List Operations



- To place components on the canvas, use your mouse to drag components from the mouse onto the canvas:

Figure 6-16: Dragging Component to Canvas



Note: After you have selected a component, you will see the model canvas menu, allowing you to perform actions on the model currently on your canvas. For details on each option represented by an icon on the menu, see [Using Model Canvas Menu Options to perform Model Actions](#) on page 138.

- To connect components on the canvas, see “Connecting Components”, next

Connecting Components

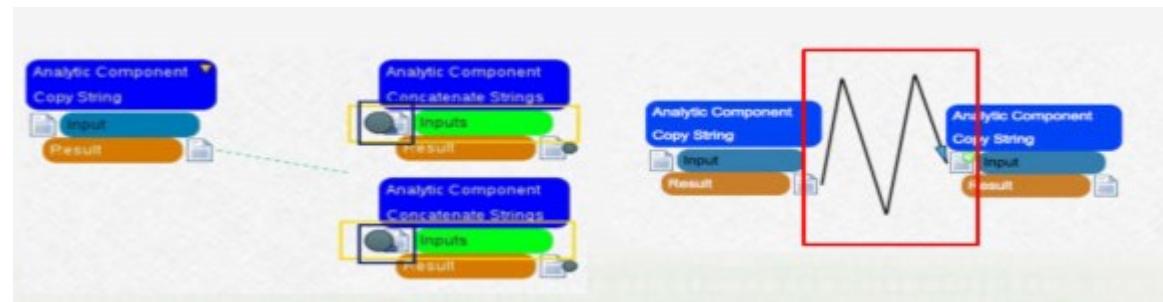
When connecting components, you can make a single component connection or multiple component connections. Refer to the following sections for details for performing each type of connection.

Providing a Singular Input Connection

When making a singular input connection:

- From the output of the source component, click the "result" icon and then click the "input" icon on the target component that will be connected to the source component (see Figure 6-17). NEED TO USE THIS HANDS-ON TO VERIFY HOW IT WORKS

Figure 6-17: Singular Input Connection



- When you connect an input to an output within a source component, valid inputs will change from blue to green (see Figure 6-17). NEED TO USE THIS HANDS-ON TO VERIFY HOW IT WORKS
- After a connector is established, you can redirect it to another component input. (see Figure 6-17). NEED TO THIS HANDS-ON

Providing Multiple Input Connections

When making a multiple input connections:

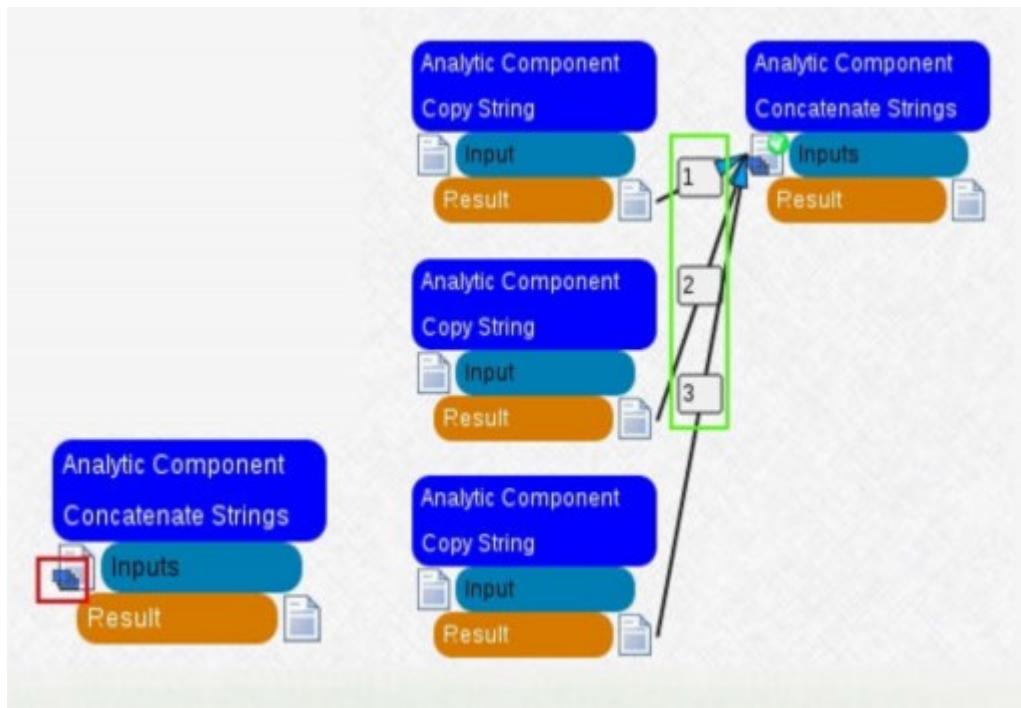
- From the output of each source component, click the "result" icon and then click the "input" icon on the target component that will be connected to a source component (see Figure 6-18). There are no limits to the number of connections you can define to a target component.

Note: When an input target component has more than one source component as its input, a "blue" brick appears in the input icon on the target component.

Click the "blue" brick on a target component to view all of its inputs, which will appear in numbered boxes in the order in which each parameter input was set to the target component.

- After connectors are established, you can redirect them to another component input. (see Figure 6-18) NEED TO THIS HANDS-ON

Figure 6-18: Multiple Input Connections



Converting Data with Analytic Components

The following "conversion" analytic components are available:

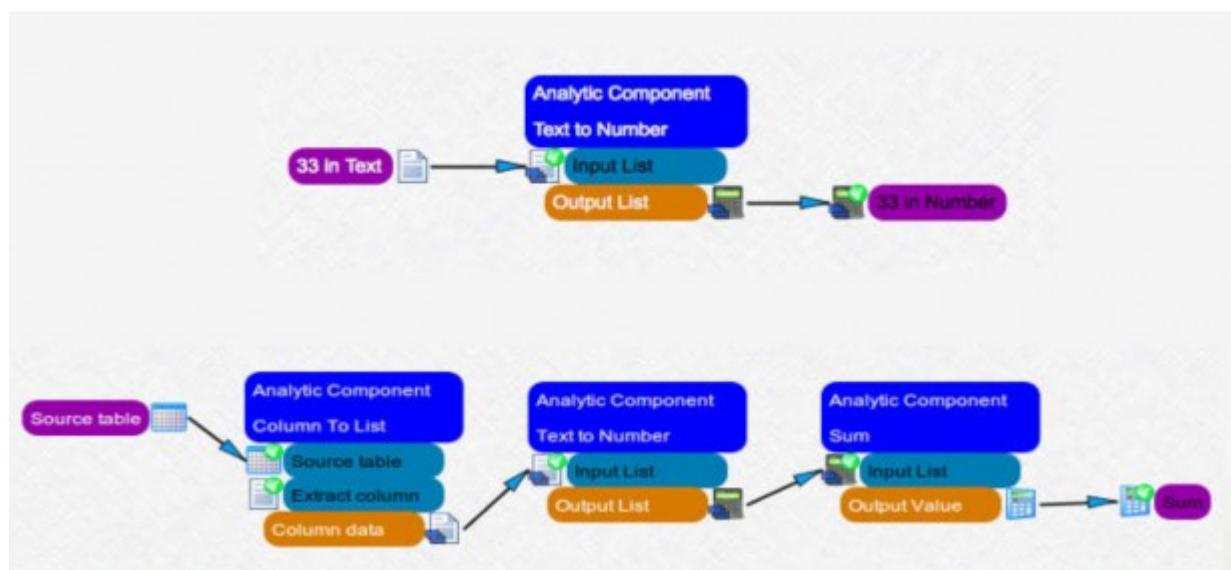
Create Excel	Integer to Double	Table to HTML
CSV to Table	Number to Text	Text to Boolean
Double to Integer	PDF to Text	Text to Number
Data Type Identifiers	Standardize Date Text	Text to Timestamp
Integer to Boolean	Table to CSV	

Datatype Conversion Example

Figure 6-19 illustrates how to convert the text datatype to the number datatype. The Column To List component extracts all values from a table column; the extracted values are text values.

Because sum component accepts only number values, this is the reason why the Text to Number component is used to convert the text values to numbers.

Figure 6-19: Sample Text Datatype to Number Datatype Conversion



Analytics Component Menu Options

The following table describes the use of each Components Menu Icon when the Analytics tab is selected.

icon	Name	Use to...
	New Model	Create new model
	Analytics Information	Manage properties for the selected component
	Delete one or more components	THIS ICON IS NOT IN TRAINING DOCS - WAS IT REMOVED FOR 6.1.0?
	Filter by Input or Output	Display components by input(s) or output(s)
	Set Status	Set analytic component status (Active, Hidden, Deprecated [Admin only].)

Filtering Components Display

In Figure 6-20, below the menu options is a gray bar to specify how you want to filter the components list for display.

Figure 6-20: Bar to Filter Components Listt



The following table describes the use of each filter icon when the Analytics tab is selected.

icon	Name	Use to...
	Unshare component	Unshare selected component
	Filter on component name	Display component by name beginning with entry
	Filter by Input/Output Parameters	Display component by input or output parameter
	Share component	Unshare selected component
	Filter on component status	Display component by status beginning with entry (Active, Hidden, Deprecated). For use by Admin only).

Using Model Canvas Menu Options to perform Model Actions

The following table describes the use of each Model Canvas Menu Icon when creating or editing a model on the canvas:

icon	Name	Use to...
	After selecting a model Category and one or more tags, save the model as is (overwriting the previous version) or save the model as another name (preserving the previous version) as shown below: 	Base a new model on an existing one (equivalent to a Save As under a new name) or overwriting an existing model when revisions are made. Save As Tips: <ul style="list-style-type: none">• Use to share model not owned by current user to get a copy of the model.• Use to make copies of the model after modifications are made.
	Edit model information	For details, see “Creating and Editing a Data Model”, on page 112.
	Reset the execution status and execute the model	
	Undo and Redo	Undo the last command or redo the last command.
	Cut, Copy, and Paste	Cut, copy, or paste what is highlighted on the model canvas.

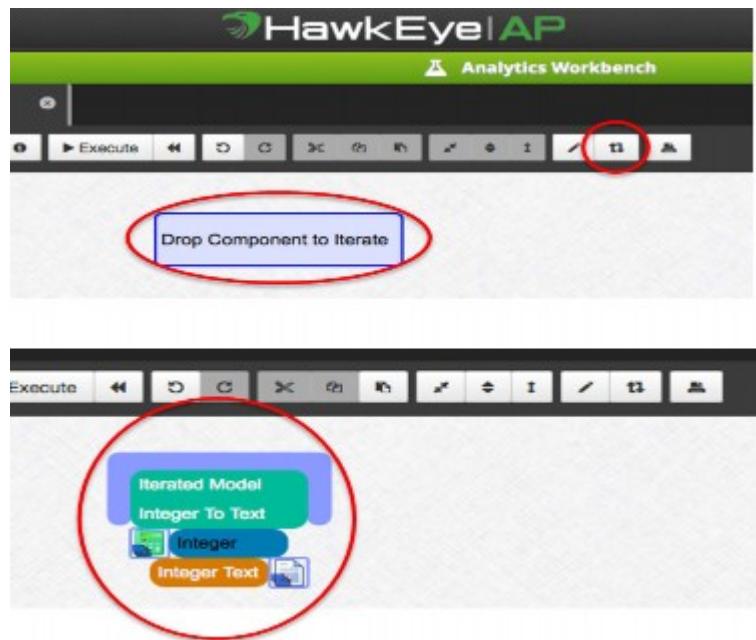
icon	Name	Use to...
	Collapse, Expand Basic, and Expand All	For details, see ??????
	Add Annotation	Add notes about the model.
	Add an Iterator	Adds looping function to a parameter. For details, see "Adding an Iterator to a Parameter", on page 128.
	Print the model to a local printer	Prints the model to a local printer.

Adding an Iterator to a Parameter

An iterator is equivalent to a looping function. It is added through the iterator button. To specify that an input parameter requires an iterator:

- From the Model Canvas menu, select the icon for the iterator as noted in the table above. A "Drop Component to iterate" box is displayed as shown Figure 6-21.

Figure 6-21: Drop Component to Iterate



- Drag and drop model for iterating. If there are multiple input parameters, the iterator will ask which parameter it should iterator upon.

The following table describes the use of each Models Menu icon when the Models tab is selected:

icon	Name	Use to...
	New Model	Create new model
	Open Model	Open the selected model

icon	Name	Use to...
	Execute Model	Execute the selected model
	Manage Properties	Manage properties for the selected model
	Set Access Control (not currently supported)	Set access control for the selected model
	Duplicate	Duplicate (copy) the selected model
	Delete	Delete the selected model
	Create a Schedule	Create a schedule with the selected model
	Create a Report	Create a report with the selected model
	Create a Request	Create a request with the selected model
	Share or Unshare Model(s)	Share or Unshare selected model(s)
	Filter by Tag or Parameter	Display models by specified tag or parameter
	Import Models or Export Models	Imported (Admin user only) or export selected models (All users)
	Set Model Status	Set model status to active, hidden, or deprecated (Admin only)

Using Model Menu Items to Perform Model tasks

The following table describes the use of each Models Menu icon when the Models tab is selected:

icon	Name	Use to...
	New Model	Create new model
	Open Model	Open the selected model
	Execute Model	Execute the selected model
	Manage Properties	Manage properties for the selected model
	Set Access Control (not currently supported)	Set access control for the selected model

icon	Name	Use to...
	Duplicate	Duplicate (copy) the selected model
	Delete	Delete the selected model
	Create a Schedule	Create a schedule with the selected model
	Create a Report	Create a report with the selected model
	Create a Request	Create a request with the selected model
	Share or Unshare Model(s)	Share or Unshare selected model(s)
	Filter by Tag or Parameter	Display models by specified tag or parameter
	Import Models or Export Models	Imported (Admin user only) or export selected models (All users)
	Set Model Status	Set model status to active, hidden, or deprecated (Admin only)

Filtering Model Display

In Figure 6-20, below the menu options is a gray bar to specify how you want to filter the models list for display.

Figure 6-22: Bar to Filter Model List



The following table describes the use of each filter icon when the Models tab is selected.

icon	Name	Use to...
	Unshare model	Unshare selected model
	Filter on model name	Display model by name beginning with entry
	Filter by Input/Output Parameters	Display model by input or output parameter
	Share model	Unshare selected model
	Filter on model status	Display model by status beginning with entry (Active, Hidden, Deprecated). For use by Admin only.

Sharing Models

By default, a model is only accessible to the user who created it. When a user initially creates a model, they are only able to view it. To allow others to view the model, the user who created the model must "share" it.

Models are shared through the following methods:

- Using the Shared button on the Model Listing or the Models Menu bar
- Using the Models Export or Import option. For details see

Using the Shared Button Option

The Shared Button option is found on the Models Menu bar and the current sharing status is found on the Model Listing, which allows you to filter by the status, as shown in Figure 6-23.

To share a model with another user you need to select desired models and click the "Share model" button. Shared models are visible to all users.

Figure 6-23: Model Listing with Sharing Status

Name	Type	Subtype	Action	Status
Basic: Breakpoints	-multitype-	-multitype-	Share	ACTIVE
Basic: Change Check on Save	Text*	Text	Share	ACTIVE
Basic: Conversion Components	-multitype-	-multitype-	Share	ACTIVE
Basic: Text Components	-multitype-	-multitype-	Share	ACTIVE
Custom Model: Add 1 to an Integer	Integer*	Integer	Share	ACTIVE
Custom Model: Advanced Iterators - D...	-none-	HTML	Share	ACTIVE
Custom Model: Convert Days Employee...	Integer*	Timestamp	Share	ACTIVE
Custom Model: Iterated Add 1	-multitype-	Integer []	Share	ACTIVE

To remove sharing selected models you can click on "Unsharing model" button.

Creating a Report with the Selected Model

Creating a Schedule with the Selected Model

Using SQL Workbench for Code and Queries

The SQL Workbench is a tool used to run SQL queries or to create SQL code for the purposes of creating a report.

Note: If you are an OAE administrator writing a pass-through query, note that OAE will prohibit and grant access in queries based on permissions. Thus, all objects referred to in an OAE query must have necessary Postgres permissions required to execute the query.

This chapter contains these sections:

- [Creating an SQL Query](#) on page 145
- [Saving an SQL Query as a Report](#) on page 148

Creating an SQL Query

There are two ways to create and run SQL queries in the SQL Workbench:

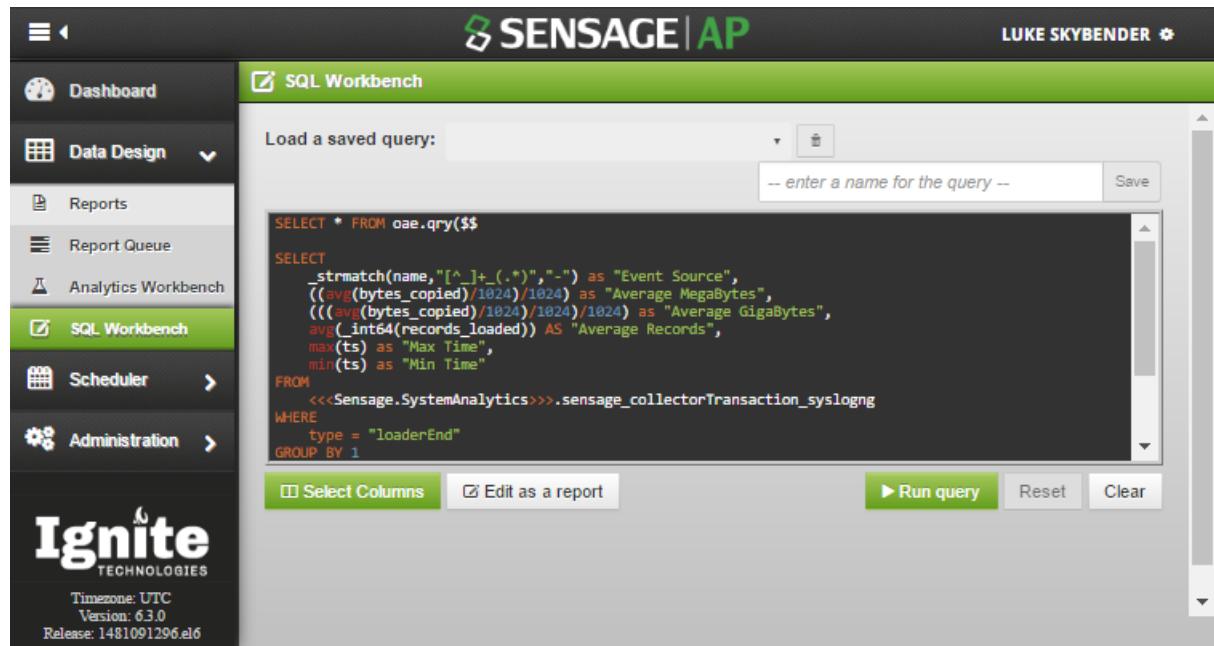
- Create a query manually as described in the procedure below.
- Load a saved query to modify (see [Loading a Query](#) on page 147).

To create a query manually and run it:

1. From Data Design, navigate to SQL Workbench.

The SQL Workbench is displayed as shown in Figure 7-1.

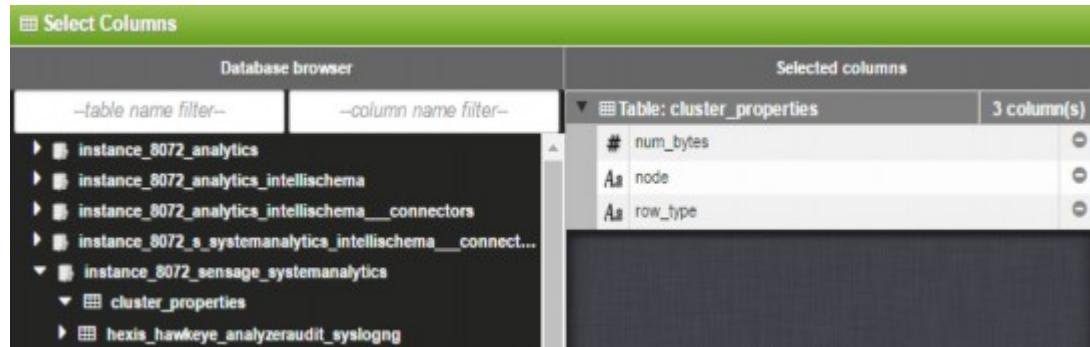
Figure 7-1: SQL Workbench:



- Type the query manually as shown in Figure 7-1 or click Select Columns which puts columns in your query. Note, by default, there are no pre-set queries provided.

If you selected Select Columns, the Select Columns screen appears as shown in Figure 7-2.

Figure 7-2: Select columns for SQL Workbench:



- From the left pane, select the table and columns and click Select. The tables you want are included in the query.
- At any time you can use the following the Reset and Clear buttons at the bottom of the screen:
 - Reset:** This option resets the query with the last successfully run query or with the default query.
 - Clear:** This option clears the query from the editor. You can still restore the last successfully run query using the Reset option.
- To run the query, click Run Query. The query data is displayed below the workbench as shown in Figure 7-3.

Figure 7-3: Run Query from SQL Workbench:

node	row	row_type
ao-dev-02.sensage.com		NODE_EXISTS
ao-dev-02.sensage.com		DSM_EXISTS
ao-dev-02.sensage.com		DSM_SIBLING
ao-dev-02.sensage.com		NODE_INFO
ao-dev-02.sensage.com		DEVICE_SPACE_TOTAL
ao-dev-02.sensage.com		DEVICE_SPACE_FREE
ao-dev-02.sensage.com		DEVICE_SPACE_AVAILABLE
ao-dev-02.sensage.com		MEMORY_RAM_TOTAL
ao-dev-02.sensage.com		MEMORY_RAM_FREE
ao-dev-02.sensage.com		MAX_OFCI_FILES

6. If you want to filter the query results without running a new query, click the icon located at the right-hand side of column and toggle the columns to show or hide, as shown in the Figure 7-4.

Figure 7-4: Filter the query results:

node	row	row_type	Choose Columns:
ao-dev-02.sensage.com		NODE_EXISTS	<input checked="" type="checkbox"/> num_bytes
ao-dev-02.sensage.com		DSM_EXISTS	<input checked="" type="checkbox"/> node
ao-dev-02.sensage.com		DSM_SIBLING	<input checked="" type="checkbox"/> row_type
ao-dev-02.sensage.com		NODE_INFO	
ao-dev-02.sensage.com		DEVICE_SPACE_TOTAL	
ao-dev-02.sensage.com		DEVICE_SPACE_FREE	
ao-dev-02.sensage.com		DEVICE_SPACE_AVAILABLE	

Loading a Query

To load a saved query to run or modify:

You can retrieve every query you save for later use. All queries you have saved are displayed in a dropdown list.

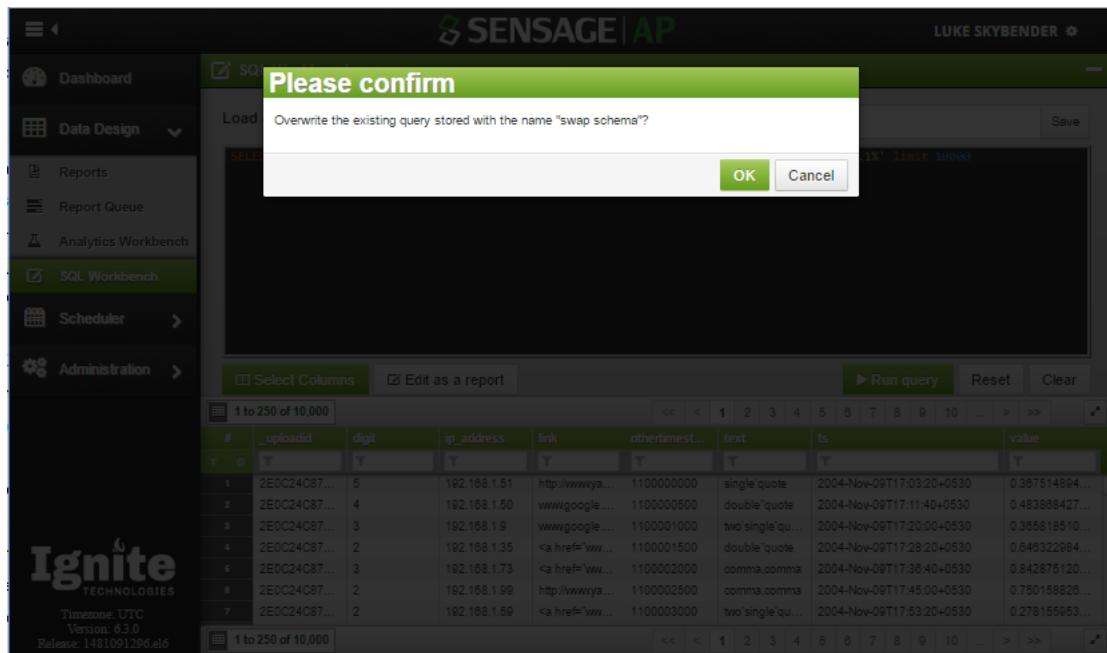
1. Select a query using the Load a saved query dropdown list as shown in the Figure 7-5.

Figure 7-5: Select Saved query on SQL Workbench:

The screenshot shows the SENSAGE|AP application interface with the 'SQL Workbench' tab selected. On the left, there's a navigation sidebar with 'Dashboard', 'Data Design', 'Reports', 'Report Queue', 'Analytics Workbench', 'SQL Workbench' (which is highlighted in green), 'Scheduler', and 'Administration'. In the main area, there's a dropdown labeled 'Load a saved query:' containing four items: 'EventLoadSize', 'cisco runtime', 'runtime date', and 'swap schema'. Below the dropdown are buttons for 'Select Columns', 'Edit as a report', 'Run query', 'Reset', and 'Clear'.

2. Make modifications to the query if desired. You can use the Select Columns button to add more columns to your query.
3. As shown Figure 7-6 in the Save for later use as: field, provide a name for the query and click Save.

Figure 7-6: Save the query in SQL Workbench:



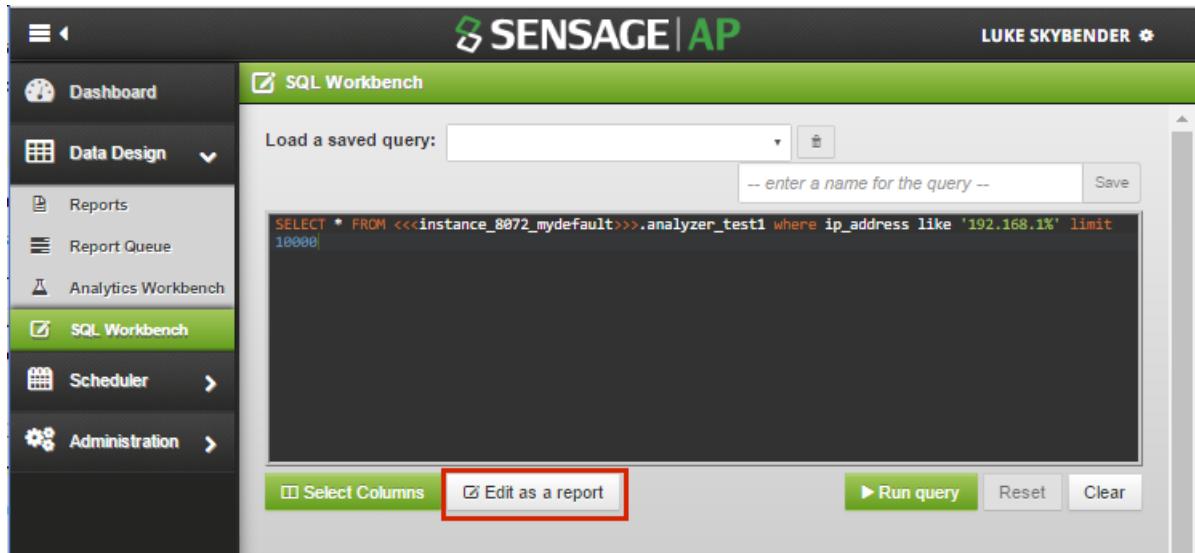
Saving an SQL Query as a Report

You can create reports using the contents of the SQL query which you have prepared in the workbench.

To edit and save a query as a report:

1. In the SQL Workbench screen, click the Edit as a report button.

Figure 7-7: Edit Query as a Report:



The SQL Query Report Settings screen is displayed.

Figure 7-8: SQL Query Report Settings

Report title: Class C Network

Tags:

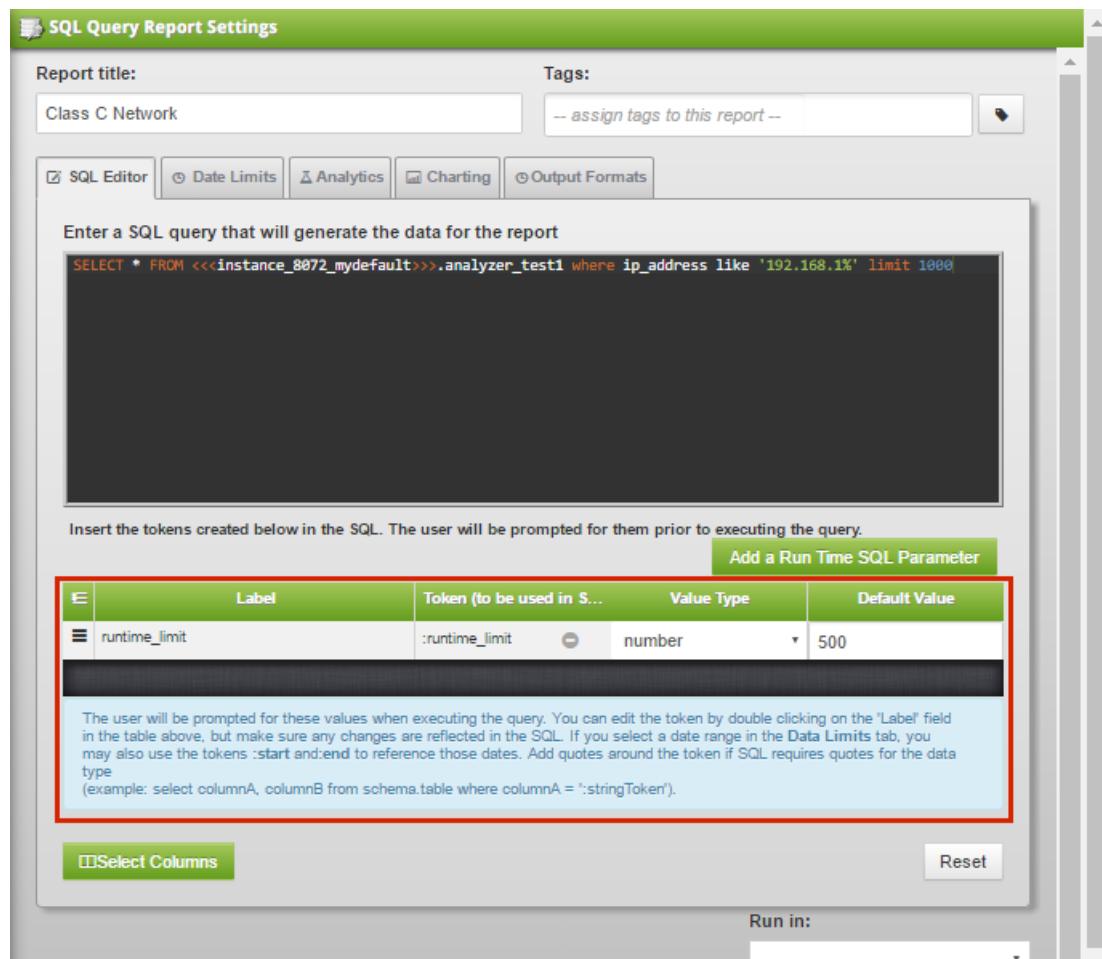
SQL Editor Date Limits Analytics Charting Output Formats

Enter a SQL query that will generate the data for the report

```
SELECT * FROM <<<instance_8072_mydefault>>>.analyzer_test1 where ip_address like '192.168.1%' limit 1000
```

- As shown in the Figure 7-8, click Add a Run Time SQL Parameter button to add parameters in the SQL. Click the button multiple times to add more tokens, as shown in the figure below.

Figure 7-9: Add Run Time SQL Parameter



3. To edit the token, double-click on the parameters under the Label column. When edited, make sure that any changes are reflected in the SQL.
4. If you select a date range in the Data Limits tab, you may also use the tokens :start and :end to reference those dates. Add quotes around the token if SQL requires quotes for the data type. Example: select columnA, columnB from schema.table where columnA = ':stringToken').
5. Click Save Report button. For more information on running a report, and adding charts, see [Creating, Modifying, and Running a Report](#) on page 71 and see [Creating and Modifying Charts for a Report](#) on page 105.

8

Managing Report and Analytics Schedules

The Scheduler feature is accessed through the Scheduler Menu on the Analyzer Dashboard. Through the Scheduler, users can assign schedules for report execution and view the output of scheduled reports. This chapter describes how to manage report schedules and contains the following topics:

- [Scheduler Overview](#) on page 151
- [Creating a Report Schedule](#) on page 152
- [Creating a Schedule for a Model](#) on page 157
- [Creating a Schedule for Distribution](#) on page 161
- [Viewing Results of Scheduled Reports](#) on page 162
- [Viewing Results of Scheduled Analytics](#) on page 163

Scheduler Overview

To access the Scheduler, go to the Analyzer left-hand navigation menu, click the Scheduler menu, and the Schedules sub-menu. To schedule reports, select the Report Schedules tab.

The section on the main menu is used for scheduling both reports and models.

Note: If a model is associated with a report, the model will run every time the report runs, whether manually or by a schedule.

Figure 8-1: Schedules Listing

The screenshot shows the SENSAGE|AP application's Scheduler module. The left sidebar has a dark theme with white text and icons. It includes links for Dashboard, Data Design, Scheduler (which is currently selected), Schedules, Results, and Administration. The main area is titled 'Scheduler' and contains two tabs: 'Report Schedules' (selected) and 'Analytics Schedules'. Below the tabs is a toolbar with buttons for 'Add a schedule', 'Edit', 'Results', and other management functions. A message box at the top right says 'Last updated: 20 Dec 2016 19:51:46'. A checkbox for 'Enabled schedules only' is checked. A table lists five scheduled reports with columns for Schedule name, Report(s), Run in, Frequency, and Start. All entries show 'Every day' as the frequency and various start times.

	Schedule name	Report(s)	Run in	Frequency	Start
1	testschedule-s...	testsqlreport1...	-- default --	Every day	08/12/2016 15:51
2	testschedule1	testreport-data...	-- default --	Every day	07/12/2016 22:34
3	testschedule2	testreport1-dat...	-- default --	Every day	07/12/2016 22:42
4	testschedule3	testreport2-dat...	-- default --	Every day	07/12/2016 22:44
5	testschedule4	testreport3-dat...	-- default --	Every day	07/12/2016 22:45

On this screen (Figure 8-1), you can see all the schedules currently configured in the system. The controls across the top let you perform basic management tasks, including editing a schedule, viewing the results of a schedule, duplicating schedules, and controlling access to the schedule, and disabling a schedule.

Creating a Report Schedule

To create a new schedule for a report:

1. After you have accessed the Scheduler in the Analyzer menu, click the Schedules sub-menu, and click the Add a schedule button as shown below.

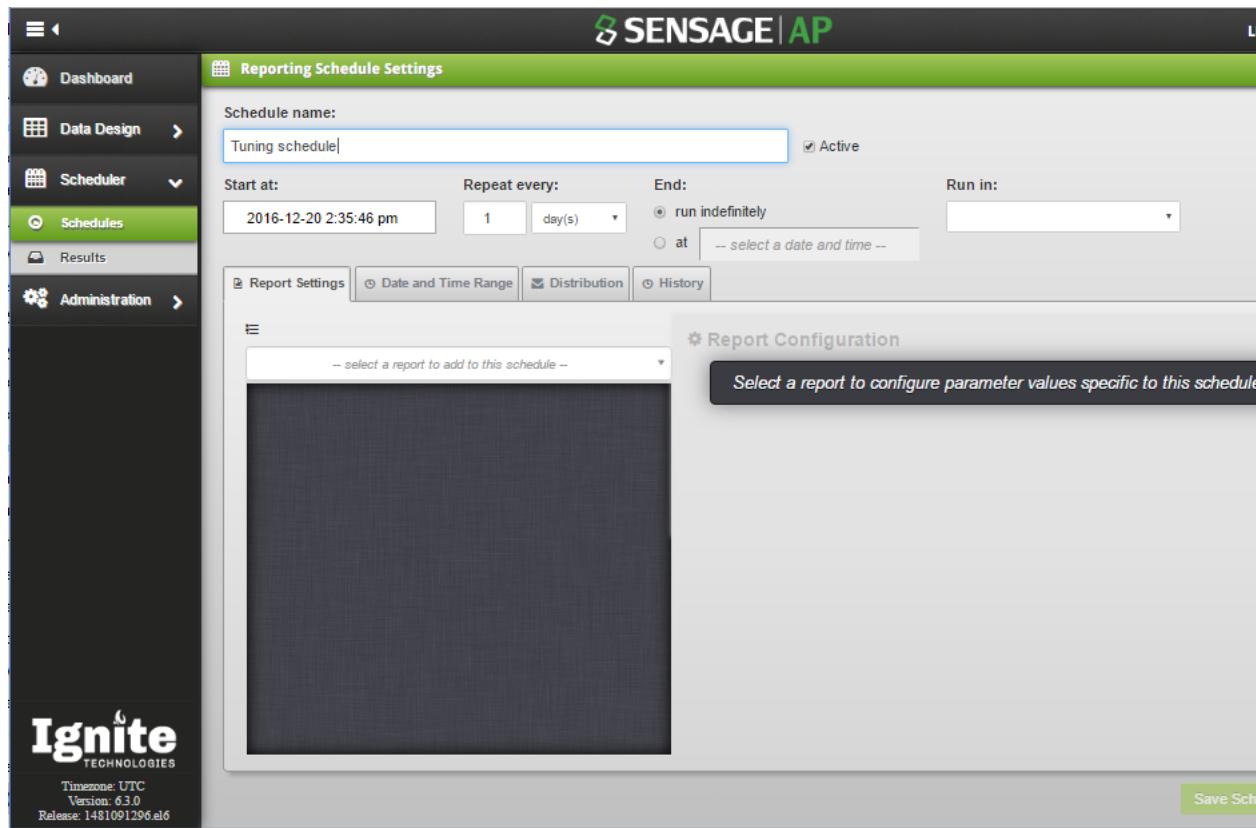
Figure 8-2: Adding a Schedule

This screenshot is identical to Figure 8-1, but the 'Add a schedule' button in the toolbar is highlighted with a red box. The rest of the interface, including the sidebar, tabs, and table of existing schedules, remains the same.

The Reporting Schedule Settings screen is displayed to enter your report scheduling information for the new schedule.

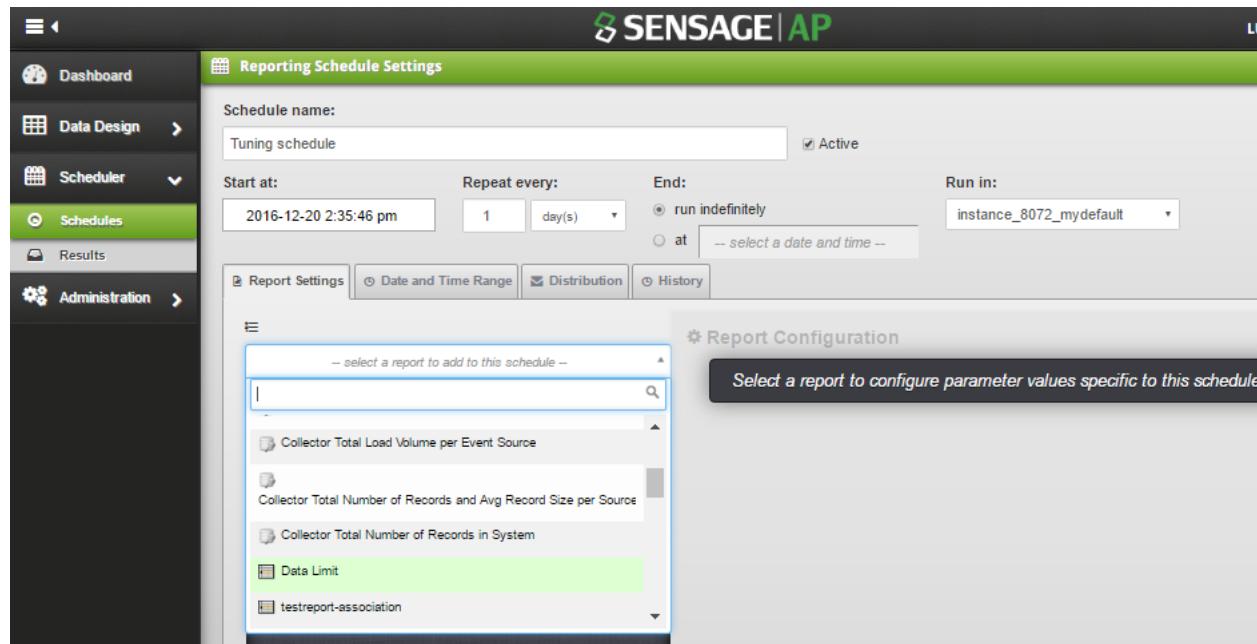
2. Provide a name for your schedule as shown below. Note in order to save the schedule, you must specify a schedule name.

Figure 8-3: Report Schedules Settings Screen



3. Click the triangle in the box labeled, "Select a Report to add to this schedule" to display the dropdown list of reports that you have permission to access.

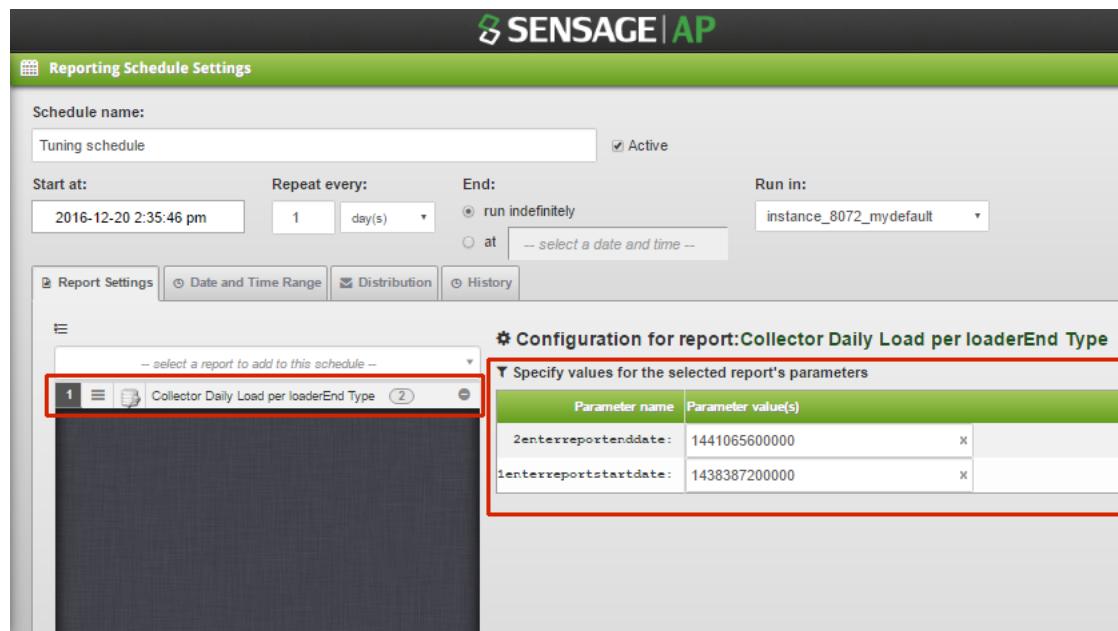
Note: You can type part of the report name to filter the list of reports that have the name matching the string you typed.



4. From the dropdown list, click the desired report. Figure 8-4: Selecting Report to Add to Schedule
If the report was defined with parameters, they will appear to the right of the report dropdown list.
5. Enter the desired parameters and any parameters required for the report.

Note: If the report definition has any parameters configured as "required," then a checkbox is displayed in the "Req'd" column and you must provide values for those parameters before saving the schedule.

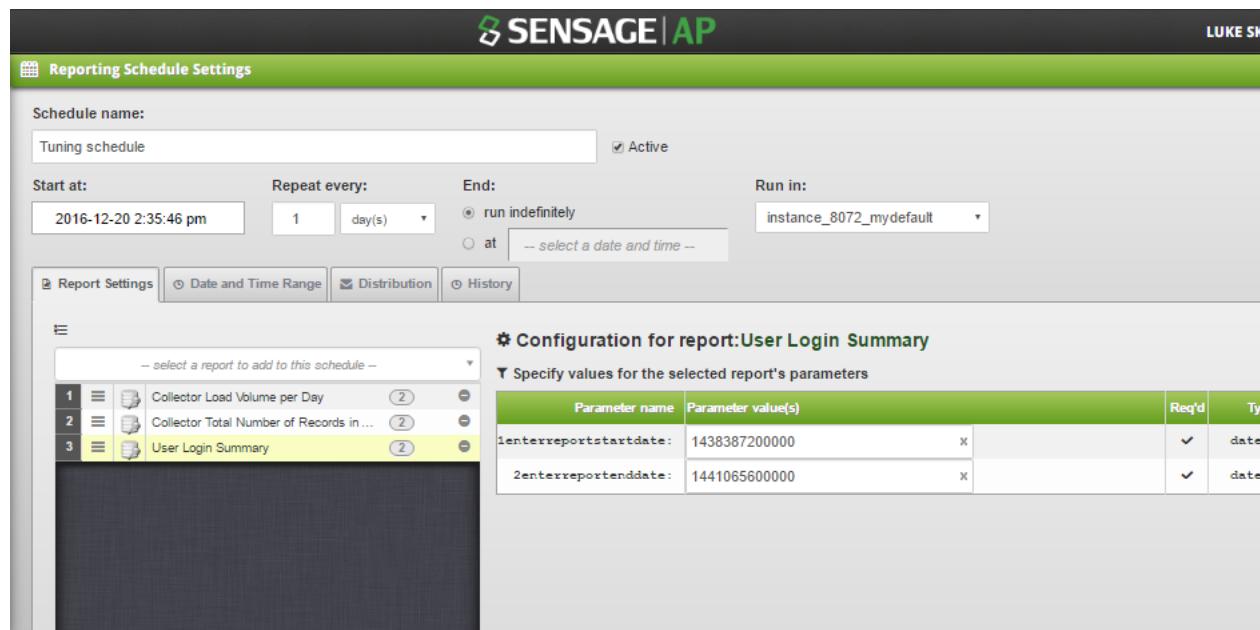
Figure 8-5: Selecting Parameters for the Report



The icon with the number of parameters in red will be displayed in the list of reports to be run with the schedule. You will also be alerted in "red" text if you partially complete any parameter such as selecting the Operator, but not filling in a parameter value for it.

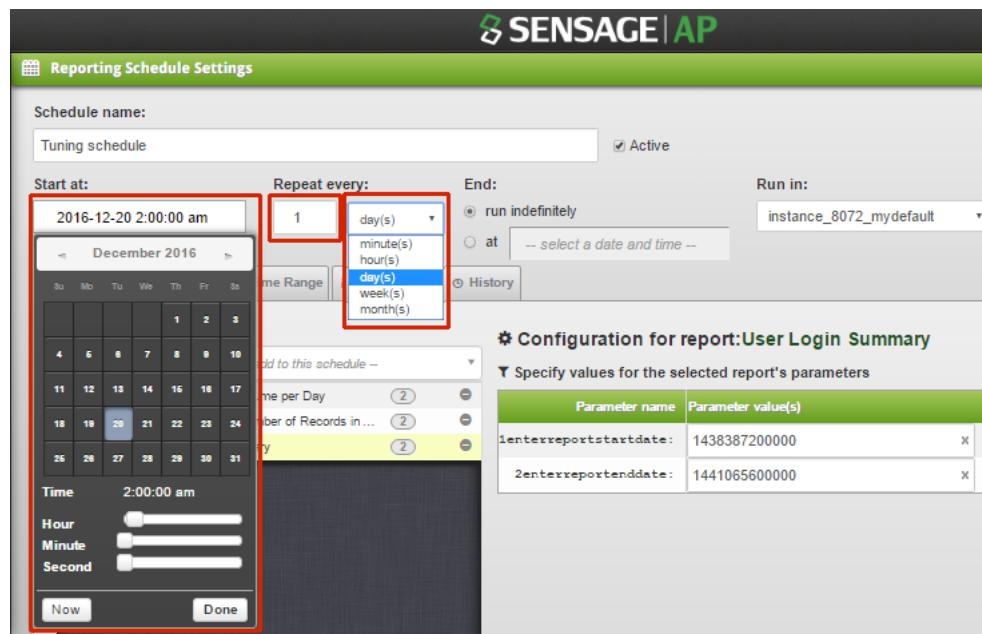
6. Select any additional reports (no limit) you want to schedule. When you click the name of each selected report, the parameter configuration options for that report is displayed.

Figure 8-6: Selecting Additional Reports to Schedule



7. To specify the run time for these reports, enter the values for the fields labeled Start at: and Repeat every: For example, the report shown below will run everyday at 2:00 AM GMT. This setting is independent of the time range data in the report configured on the Next tab.

Figure 8-7: Sample Report Schedule



Note: If you use the manual picker to schedule the time and provide a time in the past, your job will not run until the next scheduled time. Providing a time in the past is the same as scheduling the first run in the future.

If you want to schedule a report to run at 1 am every Monday, then schedule the report to start the next Monday. If you want the report to run “now”, then select “now”, let the report run, and then update the schedule for next Monday. This sets the schedule for the next run at your desired day and time.

Creating a Schedule for a Model

You can schedule a model that you created for email distribution in PDF, CSV, or Hyperlink format. To do this, perform the following steps:

1. Expand the nodes **Data Design > Analytics Workbench** in the left panel and select the **Models** tab. The Analytics Workbench is shown in the screenshot below.

The screenshot shows the SENSAGE|AP Analytics Workbench interface. The left sidebar has categories: Dashboard, Data Design (Reports, Report Queue, Analytics Workbench selected), Scheduler, and Administration. The main area is titled 'Analytics Workbench' with tabs for 'Models' (selected) and 'Analytics'. A sub-header says 'Create a new schedule with this model'. Below is a toolbar with icons for New model, Create Schedule (highlighted with a red box), and other actions. The main content is a tree view of models:

- Regression Test Snapshot
- Test - Add Report Table to IT List
- Category: InsiderThreatScoringTree** (1 model(s))
 - Branch - Email
- Category: List Operations** (2 model(s))
 - Generate Series
 - List Count
- Category: Log** (1 model(s))
 - Log Level to Integer
- Category: Model Configuration** (4 model(s))
 - Create Model Configuration Database Table
 - Get Model Configuration** (checkbox checked)
 - Schema Name Configuration
 - Set Model Configuration
- Category: Notification** (2 model(s))
 - Event Router: Create Event Routing Table
 - Event Router: Process Email Router
- Category: Samples** (35 model(s))
 - Sample: Add Reference Table: Join Several Tables
 - Sample: Basic: Arithmetic Operations

2. Select a model you want to schedule, click the checkbox besides the listed model. Click (create a new schedule with this model).

The Analytics Model Schedule Setting window opens.

Schedule name: ModelConfigChange_WeeklyCheck Active

Start at: 12/21/2016 02:00 **Repeat every:** 4 week(s) **End:**

- run indefinitely
- at - select a date and time -
- after 4 executions(s)

Select an Analytics model to schedule:

Scheduled Models:

Get Model Configuration	Schema Name Configuration	<input type="button" value="Remove Model"/>
-------------------------	---------------------------	---

Concurrent

Specify the model input parameters, model: 'Get Model Configuration'

Parameter name	Parameter value(s)	Req'd	Type
Key:	INTELLISchema_EDW	<input checked="" type="checkbox"/>	Text
Table name:	aa_it_model_internals.it_model_confs	<input checked="" type="checkbox"/>	Text

Note: The Selected model **Get Model Configuration** is already in the **Scheduled Models** list box.

3. Set the following fields:

- Enter a name for the model's schedule in the **Schedule Name** textbox.
- To schedule the start date and time, to run the selected model, click in the **Start at** text box. Set the date and time in calendar popup. You can also manually enter or modify the values in the text box. The screenshot in step 2, shows the model is scheduled to start at 2 am on the 21st of December.
- To repeat the scheduled run once or more at intervals, specify the values in the **Repeat Every** fields: 1. specify the number of times in the textbox and 2. select the required interval from the dropdown list. The screenshot in step 2 shows that the model is scheduled to run at the scheduled time once every week for 4 weeks.
- Add more models to the schedule, from the **Select an Analytical Model to schedule** dropdown list, and click **Add Model**.
- To run the scheduled models at the same time, check the **Concurrent** checkbox.
- To specify the input parameters for a scheduled models, select the required model in the **Specify the model input parameters, model: <Scheduled Model Name>** table. Each model has its own input parameter table. The following screenshot shows the table for the model **Schema Name Configuration**.

The screenshot shows the 'Analytics Model Schedule Settings' dialog box. It includes the following sections:

- Schedule name:** ModelConfigChange_WeeklyCheck (checkbox checked for Active)
- Start at:** 12/21/2016 02:00
- Repeat every:** 1 week(s)
- End:** Options include 'run indefinitely', 'at -- select a date and time --', and 'after 4 executions(s)' (radio button selected).
- Select an Analytics model to schedule:** Schema Name Configuration (checkbox checked for Add Model)
- Scheduled Models:** A list containing 'Get Model Configuration' and 'Schema Name Configuration'. A 'Remove Model' button is present next to the list.
- Concurrent:** A checkbox checked.
- Specify the model input parameters, model: 'Schema Name Configuration'**

Parameter name	Parameter value(s)	Req'd	Type
Set Schema Name:	New Schema Name	✓	Text

- Buttons:** Save Schedule, Cancel

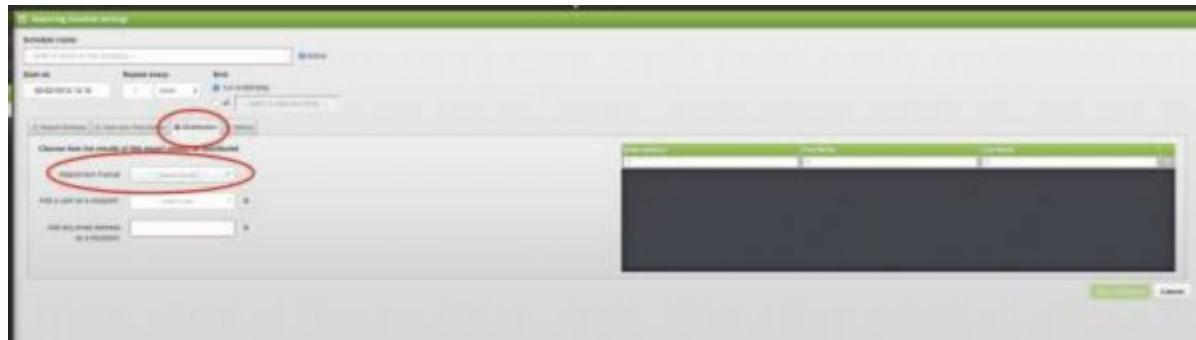
4. Click Save Schedule.

Creating a Schedule for Distribution

You can schedule a report that you created for email distribution in PDF, CSV, or Hyperlink format. To do this:

1. Navigate to the "Distribution" tab in the Schedule Settings screen. Select an attachment format (PDF, CSV, or Hyperlink).

Figure 8-8: Schedule Settings Screen



2. Add a user using one of two options: Select a system user from the dropdown menu provided, and click the "+" button or type in a valid email address, and the "+" button.

Figure 8-9: Adding a User



3. To remove a user from the distribution, click the trash can icon to the right of their name.

Figure 8-10: Removing a User



Note: For reports that are scheduled for email distribution, the system displays the time zone of the user who created the schedule.

Viewing Results of Scheduled Reports

The Report Scheduler option provides a screen for you to view report results from the scheduled report run. This option lets you use all the same viewing features for viewing a report, except no features are available to edit report definitions.

To view results from the scheduled report run:

1. After you have accessed the Scheduler in the Analyzer menu, click the Results sub-menu, the Report Schedules tab, and then the View button as shown below.

Figure 8-11: Viewing Schedules

Report(s)	Status	Last Start	Last End	Duration
Schedule: testschedule-sql1-timerange	DONE	20/12/2016 15:51	20/12/2016 15:52	15s
Schedule: testschedule1	DONE	20/12/2016 00:01	20/12/2016 00:02	1m17s
testreport-datalimit	DONE			
Schedule: testschedule3	DONE	20/12/2016 00:01	20/12/2016 00:02	1m13s
Schedule: testschedule4	DONE	20/12/2016 00:01	20/12/2016 00:01	32s
Schedule: testschedule2	DONE	20/12/2016 00:01	20/12/2016 00:01	17s
testreport1-datefilter-option1	DONE			

The report results are listed from the scheduled report run. You can click the desired report to view the scheduled runs for the report. An example of the report results is shown below. To return to the grid of scheduled results, click the blue heading.

Figure 8-12: Viewing Results from a Scheduled Run

Windows Security Event Details					
You are viewing report results generated at 2014-Aug-31 03:33:49 PM. Click here to return to the list of results.					
#	ts	wintns	audit_parse_s...	criticality	eventid
1	2014-Aug-31 01:00:24 AM	2014-Aug-31 01:00:24 AM	1	0	624
2	2014-Aug-31 01:00:33 AM	2014-Aug-31 01:00:33 AM	1	4	534
3	2014-Aug-31 01:01:16 AM	2014-Aug-31 01:01:16 AM	1	1	837
4	2014-Aug-31 01:01:25 AM	2014-Aug-31 01:01:25 AM	1	0	538
5	2014-Aug-31 01:02:08 AM	2014-Aug-31 01:02:08 AM	1	0	660
6	2014-Aug-31 01:02:16 AM	2014-Aug-31 01:02:16 AM	1	0	636
7	2014-Aug-31 01:03:00 AM	2014-Aug-31 01:03:00 AM	1	1	676

Viewing Results of Scheduled Analytics

To view the results of runs scheduled for Analytics and models, perform the following:

1. Select **Scheduler > Results** in the left panel to open the Scheduler window.
2. Select the Analytics Schedules tab.

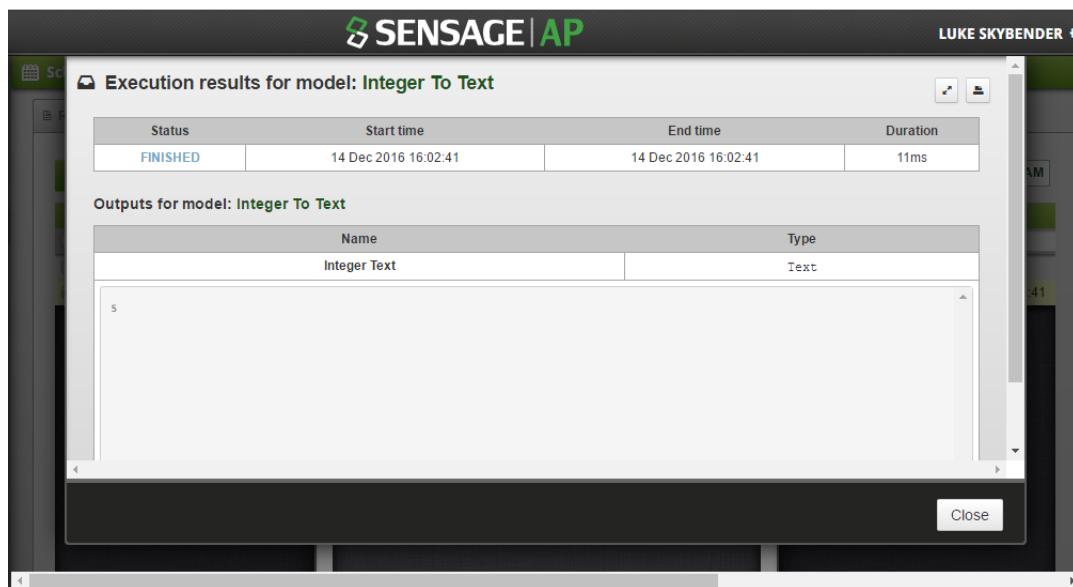
The Models and Analytics scheduled to run are listed.

The screenshot shows the SENSAGE|AP Scheduler interface. The left sidebar has tabs for Dashboard, Data Design, Scheduler (selected), Schedules (highlighted in green), Results, and Administration. The main area is titled 'Scheduler' and has tabs for 'Report Schedules' and 'Analytics Schedules' (selected). Below is a table with columns: Schedule name, Analytics Mo..., Frequency, Schedule start, and Schedule ends. One row is selected, showing 'testschedule-a...' with 'Integer To Text' as the analytic, 'Every day' as the frequency, '2012/08/08 16:02' as the start, and 'not specified' as the end. A checkbox is checked next to the schedule name.

3. Click the checkbox besides the model or analytic of interest and click . The **Results for the schedule:<Name of Analytic>** window displays. The screenshot below shows the list of scheduled runs completed for the analytic "testschedule-analytics3".

The screenshot shows the 'Results for schedule: testschedule-analytics3' window. It has a 'View' button and a timestamp 'Last Updated: 21 Dec 2016 02:36:11'. A table lists four completed jobs (Job Count: 4, Status: FINISHED) with their respective dates: 20/12, 14/12, 09/12, and 08/12. The entire window is highlighted with a red border.

4. Select a scheduled job from the list and click . The **Execution result for Model: <Name of Model>** displays.



5. Click **Close** to close the execution results view.

Administering Sensage AP Users (Draft)

This chapter describes how to use SenSage AP Analyzer to administer SenSage AP users, including maintenance of their assigned roles and groups.

Note: For details on SenSage AP user management concepts, including authentication mode (native, LDAP, or AD/LDAP) setup, Active Directory synchronization, and authorization through roles and groups, see the SenSage AP Administration Guide.

This chapter contains these sections:

- [Adding a SenSage AP Users](#) on page 168
- [Modifying a SenSage AP User](#) on page 170
- [Adding and Modifying Groups](#) on page 172
- [Deleting Groups](#) on page 174
- [Adding and Modifying Roles](#) on page 175
- [Deleting roles](#) on page 178
- [Synchronizing Users from Active Directory/LDAP](#) on page 179

Adding a SenSage AP Users

If you have Analyzer Administration privileges, you can add SenSage AP users and assign roles and groups for each user according to their level of responsibility. Note that roles determine what functionality a user will have in the SenSage AP application; roles are assigned to one or more users in an organization.

Note: For details on roles and types of permissions associated with each in the SenSage AP system, see [Appendix B: Sensage AP Permission Requirements](#) on page 197.

Note: Initially, when installing SenSage AP Analyzer, an Analyzer admin account is set up which provides the privilege to create SenSage AP user accounts with appropriate group and role permissions that match the user name of an LDAP or AD/LDAP user.

Before you proceed with managing SenSage AP users in a single or multi-realm environment, make sure that you have already configured your environment for AD/LDAP integration. For information on how to configure AD/LDAP integration, see the *SenSage AP Administration Guide*.

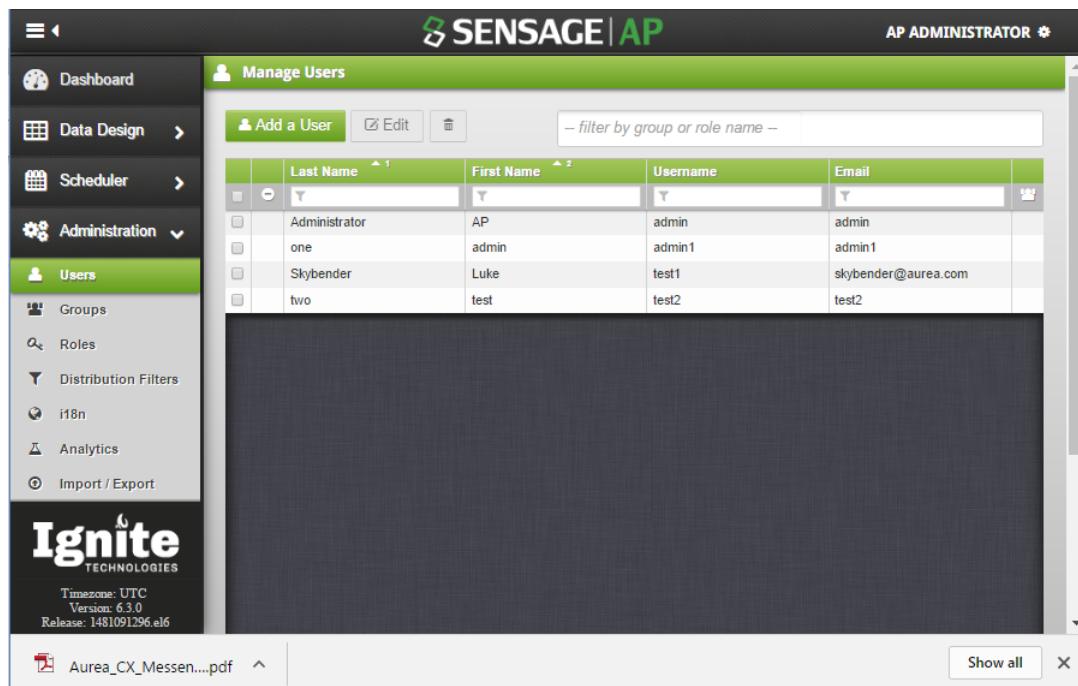
Adding a SenSage AP User in a Single/Multiple-AD Server Environment

This section describes how to manually create a user using Analyzer and how to map that user to a single LDAP/AD server or to multiple LDAP/AD servers.

To add a SenSage AP user

1. Go to Analyzer, select Administration --> Users from the dropdown submenu. The Manage Users screen is displayed as shown in Figure 9-1.

Figure 9-1: Manage Users Screen



2. To add a user, click **Add a User** (Add a User).

The pop-up window for adding a user displays.

Figure 9-2: Account Settings for Adding a New User

Edit User

Account Settings for New User

Username: akent

Email: akent@hexiscyber.com

Name: Ann Kent

Postgres User: analyzer_noradmin

AD/LDAP DN: CN=v1,OU=sensage,DC=dev1ap

AD/LDAP Location: 10.0.9.11:389

Roles

- AdministratorRole
- AnalyticsAdminRole
- AnalyticsUserRole
- QueryCreatorRole**
- ReportCreatorRole**

Groups

Cancel Save

3. In the popup window, enter the Username for the SenSage AP user, the user's email, the name of the user, the Postgres User.
4. Specify the LDAP/DN details for the user.
5. From the AD/LDAP Location dropdown list, select the AD server for this user.

Note: The dropdown list contains AD servers which were configured in Deployment Manager along with AD servers which are listed in the `ldap.properties` file.

6. In the lower part of the popup window, check the boxes next to the roles and groups you want to assign to this user.
7. Click **Save** when you are finished.
8. (Optional) Once the user is added, see "Synchronizing Users from Active Directory/LDAP", on page 162 to update the user in Analyzer.
9. Select a Postgres account which will be used to map this user. Note that this step is critical as the initial setup of the Analyzer admin account is not useable with this mapping. DO NOT select "sls" or "controller" accounts as these are reserved accounts.

If you need to create additional choices in Postgres, create the additional role using the following PSQL commands:

```
CREATE ROLE <<ROLE_NAME>> NOSUPERUSER CREATEDB NOCREATEROLE INHERIT LOGIN  
PASSWORD '<<PASSWORD>>';  
ALTER USER <<ROLE_NAME>> SET SEARCH_PATH = siem,saved_result,public';
```

Modifying a SenSage AP User

If you have Analyzer Administration (Admin) privileges, you can modify SenSage AP user information, reset SenSage AP passwords, and reassign roles and groups.

Note: When you make modifications to users in Analyzer, you also change the settings or users in Active Directory (AD). However, these changes will be over-written with settings from Active Directory whenever the user database is synchronized with AD. The AD synchronization updates all fields for all users. The only exception is if you have a SAM (Security Account Manager) account and no corresponding SAM account is found in Active Directory. For details on SAM, see *SenSage AP Administration Guide*.

Note: If you are deleting a user who is the owner of a specific report, schedule, or dashboard, these objects will continue to remain in the system. However, the ability to view, edit, run, and delete objects will be transferred automatically to the Admin user. To prevent this, the owner must transfer ownership of the report, schedule, or dashboard, before they are deleted. Only the owner, not the Administrator, is able to transfer ownership. The recovery process for the owner to use if the object is already deleted is to change ownership with SQL. For example:

```
sql to set the object owner to 'bob' for report with id  
100150 update acl_object_identity set owner_sid = (select id from acl_sid where  
sid = 'bob') where object_id_identity = 100150
```

To find the report id and the object_id identity value (100150 in the example above), enter the following commands:

```
t1.object_id_identity=t2.id and name='<<REPORT_NAME>>';
```

To modify a SenSage AP user:

1. Go to the Analyzer, select Administration --> Users from the dropdown submenu. The Manage Users screen is displayed as shown in Figure 9-1 of the previous section.
2. To modify a user, click the checkbox next to the user that you want to modify and click the Edit button.

Figure 9-4: Specifying a User for modification

	Last Name	First Name	Username	Email
<input type="checkbox"/>	Administrator	AP	admin	admin
<input type="checkbox"/>	one	admin	admin1	admin1
<input type="checkbox"/>	Skybender	Luke	test1	skybender@aurea.com
<input checked="" type="checkbox"/>	two	test	test2	test2

Note: If you check more than one box, the Edit button is grayed out and cannot be clicked.

The pop-up window for modifying a user is displayed as shown in Figure 9-2.

3. In the popup window, make any necessary modifications.
4. Click **Save** to save the changes.

Deleting a SenSage AP User

Note:

IMPORTANT: To first delete a SenSage AP user that is also in Active Directory, be sure to remove the user account in Active Directory first before removing the account in Analyzer. The AD synchronization will not delete any user in Analyzer. If you delete a user only in Analyzer without first deleting the user in AD, the user will re-appear whenever LDAP/AD synchronization is executed.

To delete a SenSage AP user:

1. Go to the Analyzer and click Administration --> Users from the dropdown submenu. The Manage Users screen is displayed.
 2. To delete a user, check the user you want to delete in Figure 6 below and click the Trash icon.
- Figure 9-5: Deleting a User

	Last Name	First Name	Username	Email
<input type="checkbox"/>	Administrator	AP	admin	admin
<input checked="" type="checkbox"/>	one	admin	admin1	admin1
<input type="checkbox"/>	Skybender	Luke	test1	skybender@aurea.com

A confirmation box is displayed asking you to confirm your deletion(s).

Adding and Modifying Groups

Groups are a way to define task actions limited to an organizational level. By defining a group, you control what data a group can view and what actions the group can perform on an object. In the case of synchronizing groups with one or more AD servers, you need to specify the AD server and the associated group DN so that the users within the group DN are synchronized with the group available in Analyzer.

Adding/Modifying Groups in a Single/Multiple-AD Server Environment

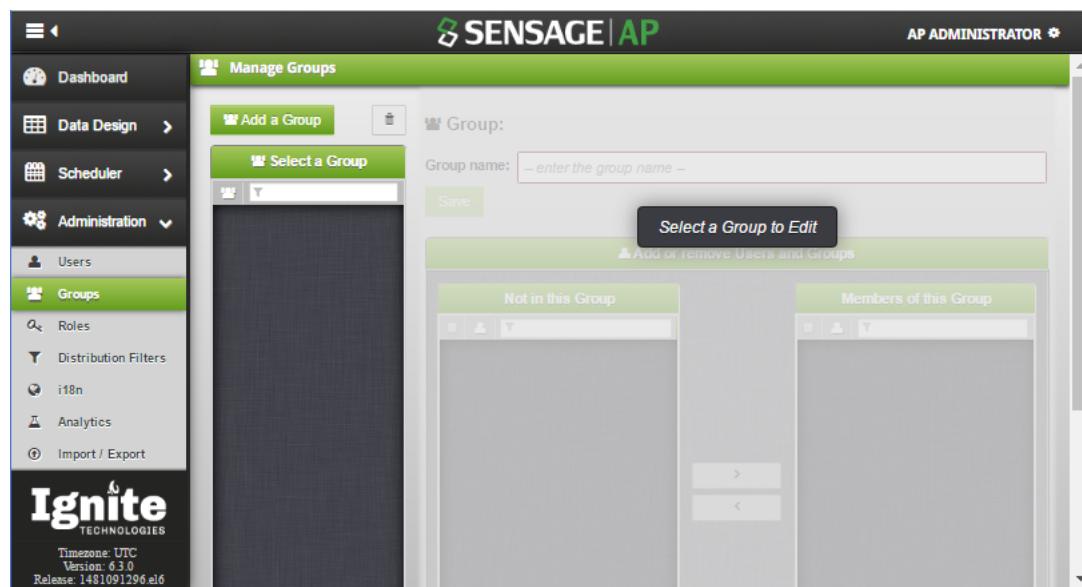
This section describes how to add or modify groups. In a single/multiple-AD server environment, this applies to those users who belong to a specific group DN (Distinguished Name) of an AD server. Refer to the applicable section below, depending on whether you are adding or modifying a group in a single-AD server environment or a multiple one.

Note: IMPORTANT: Before you proceed with group synchronization, be sure that each Analyzer user's information is in synchronization with Active Directory. For more information on how to synchronize AD users with Analyzer, refer to the SenSage AP Administration Guide.

To add/modify a SenSage AP group in a Single-AD Server Environment:

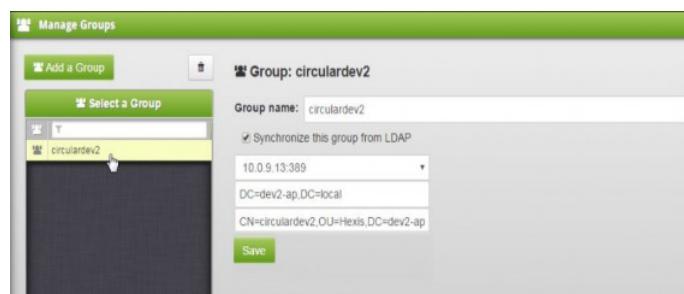
1. Go to the Analyzer, select Administration --> Groups from the dropdown submenu. The Manage Groups screen is displayed as shown in Figure 9-6. See step 2 or 3 depending on whether you are adding or modifying a group.

Figure 9-6: Manage Groups Screen



2. Click Add a Group button as shown in Figure 9-7 and enter a name for the new group. In the sample screen the name circulardev2 is entered.

Figure 9-7: Adding a New Group



3. If this group requires synchronization from LDAP, select the Synchronize this group from LDAP checkbox and enter the following details:
 - Select the AD server (displayed by IP address) from the dropdown list.
 - Specify the organization's DN.
 - Specify the group's DN.

-
4. If modifying a group, select the group that you want to change from the Select a Group dropdown. As shown in the example in Figure 9-8, when the Non_administrators group is selected, the information for the group is displayed. You can modify the group name and the LDAP configuration details.

Figure 9-8: Selecting a Group for Modification

Note: Make sure that if you modify the LDAP-related settings for a group with another LDAP server, upon synchronization, the existing users in the group will be removed and the new list of synced users is populated in the group.

5. Check users from the Not in this Group section that you want to be in the group. Click the right arrow to move them into the Members of this Group column.

6. Click Save to save the changes.

Under Members of the this Group column, a list of users that is synchronized with the group is displayed.

Note: If the group DN of the AD server contains those user accounts which are listed under the Analyzer users list (upon synchronization), those user accounts are not populated in the synched group.

7. If desired, you can select what the roles will be for users in this group. For details on creating roles, see Adding and Modifying Roles.

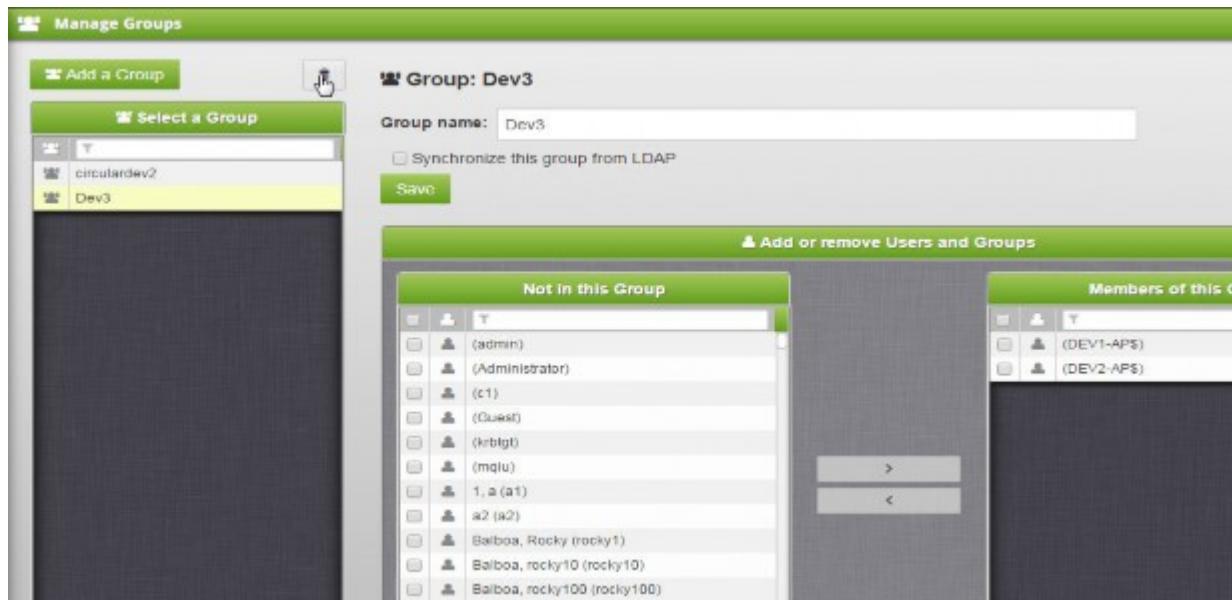
Deleting Groups

Note: When performing a group deletion, the group is deleted only in the Analyzer, not in Active Directory. Once the group is deleted from Analyzer, it is no longer possible to synchronize the group from Active Directory.

To delete a SenSage AP group:

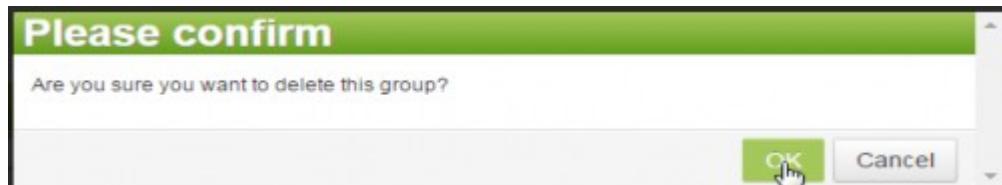
1. Go to the Analyzer, select **Administration > Groups** from the dropdown submenu and click Groups from the drop-down submenu.
2. Select the group for deletion in the Select a Group dropdown and click the trash icon as shown in Figure 9-9 below. Note that if the group has existing members you will not be able to delete it and will get an error message.

Figure 9-9: Deleting a Group



A confirmation box is displayed asking you to confirm your deletion(s).

Figure 9-10: Deleting Group Confirmation



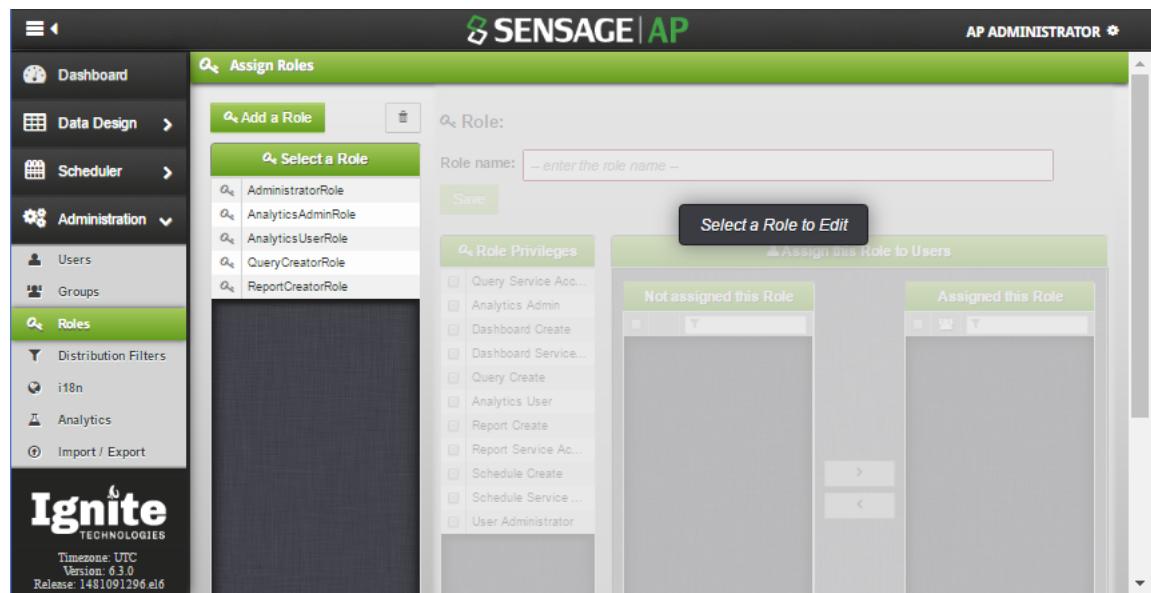
Adding and Modifying Roles

Roles are a way to define task actions limited to a job responsibility. Roles have a list of privileges that dictate what actions a user may perform. See Appendix B: SenSage AP Permission Requirements which lists supported permissions required to perform actions for specific SenSage AP applications such as scheduling, reporting, etc. Together with groups, roles control what services a user may view and what actions users and groups can perform on services and their objects. For conceptual details on defining roles, refer to the Administrative Guide.

To add/modify a SenSage AP AP role:

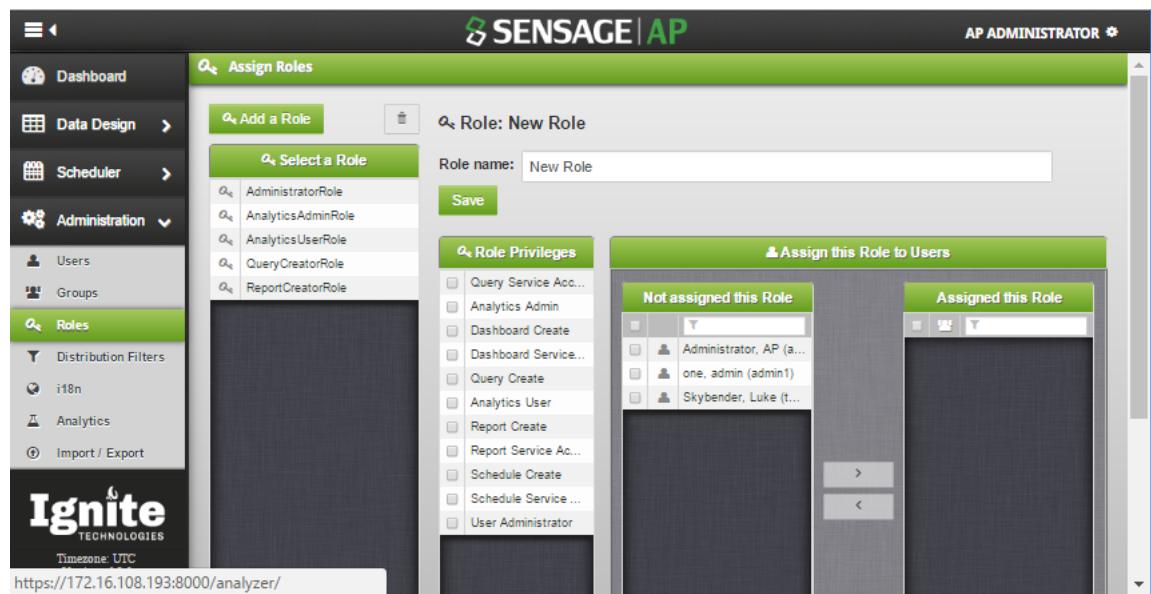
1. Go to the Analyzer, select **Administration > Roles** from the dropdown submenu. The Assign Roles screen is displayed as shown in Figure 9-11. See step 2 or 3 depending on whether you are adding or modifying a group.

Figure 9-11: Assign Roles Screen



2. If adding a new role, click the Add a Role button and enter a name for the role as shown in Figure 9-13 and click Save. In the sample screen note the name New Role is entered.

Figure 9-12: Adding a Role



After you click Save the role is created and is displayed in the Select a Role box. Select the role and go to Step 4 to assign users to the role or step and to step 5 to assign privileges.

3. If modifying a role, select the role that you want to change from the Select a Role dropdown list. The ReportCreatorRole is selected as shown in Figure 9-13.

Figure 9-13 Selecting a Role for Modification

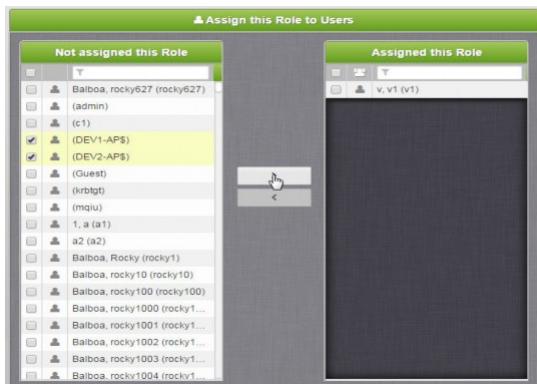


Note: Information for this role is displayed, including the Role Privileges and Assign this Role to Users and Groups area of the screen. Go to Step 5.

4. Check Users or Groups from the Not Assigned this Role that you want to be in the role. Click the right arrow to move them into the Assigned this Role column. For example, in Figure 9-14, two groups are selected and will be assigned from this role by clicking on the right arrow, which will move them to Assigned this Role.

Note: Use the arrows to move users back and forth between these columns.

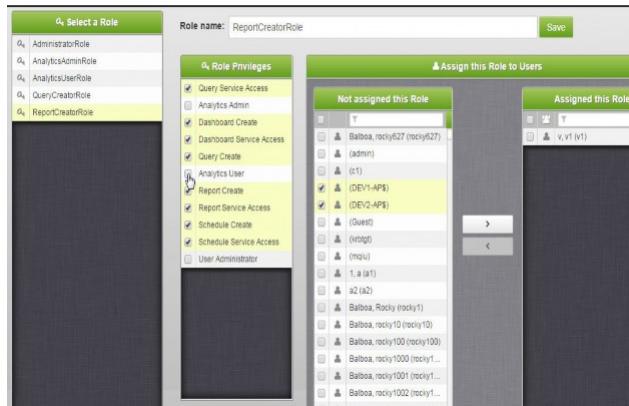
Figure 9-14: Assigning Privileges to a Role



Complete adding or removing the Users and Groups for your selected or new role.

5. Select what the privileges will be for the new/modified role. In the sample screen below (Figure 9-15), the Analytics User role privilege will be checked and assigned to the ReportCreatorRole.

Figure 9-15: Assigning Privileges to a Role



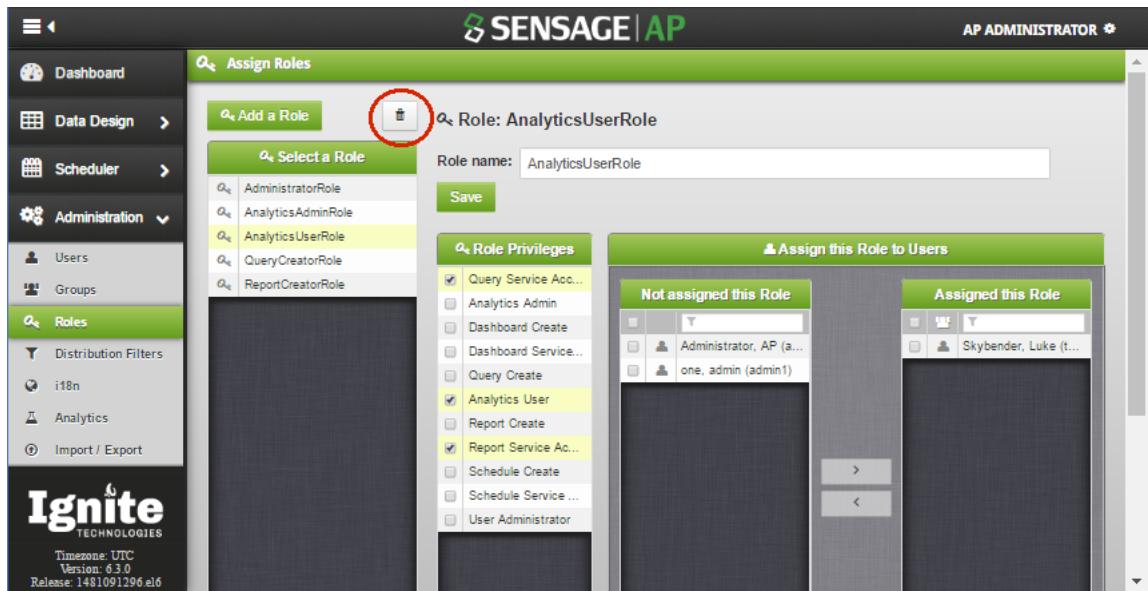
6. Click **Save** to save the new/modified role.

Deleting roles

To delete a SenSage AP role:

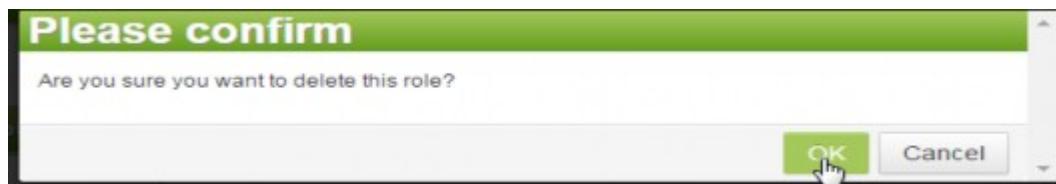
1. Go to the Analyzer and select Administration --> Roles from the dropdown submenu.
2. Select the group for deletion in the Select a Group dropdown and click the trash icon as shown in Figure 9-9 below. Note that if the group has existing members, you will not be able to delete it and will get an error message.

Figure 9-16: Deleting a Role



A confirmation box is displayed asking you to confirm your deletion(s).

Figure 9-17: Deleting Role Confirmation



Synchronizing Users from Active Directory/LDAP

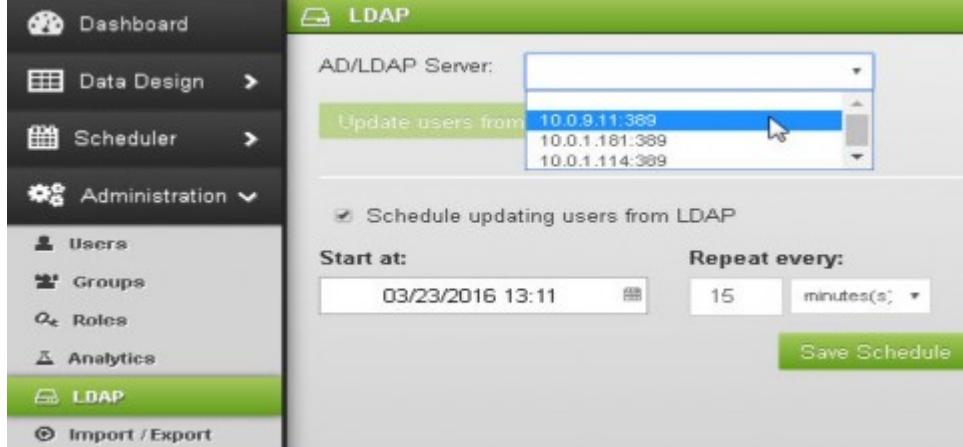
You may need to update LDAP users when adding a new Active Directory Server for integration with SenSage AP or to schedule periodic updates of users from AD/LDAP to ensure you have the most current user information in SenSage AP.

There are two ways to specify users for synchronization from AD/LDAP: on-demand and scheduled. When you choose to update on-demand you can selectively choose an individual AD server to synchronize with Analyzer. When you choose to create a schedule, then the user registry of Analyzer is updated with all the AD servers that are configured with the system.

To update users from LDAP:

1. Go to the Analyzer and select Administration --> LDAP from the dropdown submenu.
2. For Immediate Update:
 - a. Select the Active Directory/LDAP server where the users reside.

Figure 9-18: Immediate Update of Users from LDAP

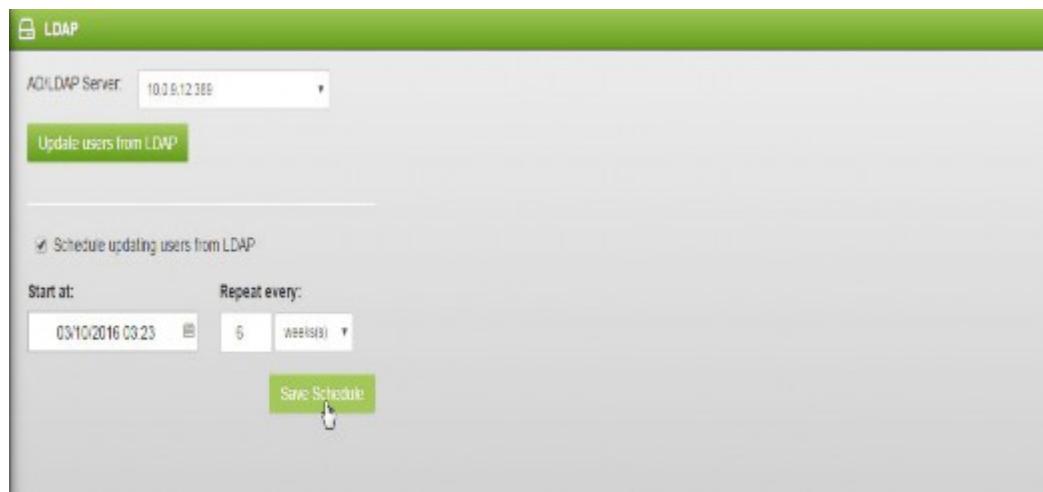


- b. Click Update users from LDAP for immediate update.

3. For Scheduled Update:

- a. Check Schedule updating users from LDAP.

Figure 9-19: IScheduled Update of Users from LDAP



- b. Enter Start at: time and date and how often to repeat the updates. c Click Save Schedule.

10

Using Import, Export, and Download Features

This chapter describes how to use SenSage AP Analyzer to import and export its data objects such as reports, charts, and dashboards.

This chapter contains the following topics:

- Importing/Exporting Reports
- Importing/Exporting Dashboards

Note: IMPORTANT: There is no way to import/export both reports and dashboards at the same time in one file. You can manually do this by editing an XML file. When you export the dashboard any underlying reports are also exported.

- Exporting Charts
- Downloading Grids in Charts
- Importing/Exporting Models

Importing/Exporting Reports

To import or export reports for use in another SenSage AP 6.2.x deployment:

1. Go to the Analyzer left-hand navigation menu, click the Administration menu, and the Import/Export sub-menu, and the Reports tab.

The Import and Export Data screen is displayed with the reports that you have permission to view.

Figure 10-1: Import and Export Data Screen with Reports Listing

The screenshot shows the SENSACE|AP interface. On the left, there's a navigation sidebar with options like Dashboard, Data Design, Scheduler, Administration (Users, Groups, Roles, Distribution Filters, i18n, Analytics), Import / Export, and Ignite TECHNOLOGIES branding. The Import / Export option is highlighted. The main area is titled 'Import and Export Data' and contains tabs for Dashboards and Reports. Below these are 'Export' and 'Import' buttons. A table lists reports with columns for Name and Owner. One report, 'BlueCoat - Individual IP Usage Detail', has a checked checkbox and is highlighted in yellow. Other reports listed include 'Administrative Account Activity', 'BlueCoat - High Offender List', 'BlueCoat - Top 10 Domains Visited', 'BlueCoat - Top Domains Visited by UserId', 'BlueCoat - Top Download Users', 'BlueCoat - Top Sending Users', 'BlueCoat - Top Users with Most Site Visits', 'Collector Avg Load Size per Event Source', 'Collector Collection Exceeds x Event per Day -- Exception Report', 'Collector Collection Exceeds x GB per Day -- Exception Report', 'Collector Daily Load - Trend', 'Collector Daily Load per Event Source', and 'Collector Daily Load per User/Event Type'.

2. Click the reports that you want to import or export.
3. Click the Export or Import button to export or import the reports you selected.
 - a. If you exporting a report, on the lower left-hand side of the screen, you will see the export file labeled reportAutoExport.xml, which is now stored in your download folder. Click the button to view the file.

Figure 10-2: Exporting a Report

Name	Owner
Administrative Account Activity	admin
Administrative Account Activity Top 100 Summary	admin
BlueCoat - High Offender List	admin
<input checked="" type="checkbox"/> BlueCoat - Individual IP Usage Detail	admin
BlueCoat - Top 10 Domains Visited	admin
BlueCoat - Top Domains Visited by UserId	admin
BlueCoat - Top Download Users	admin
BlueCoat - Top Sending Users	admin
BlueCoat - Top Users with Most Site Visits	admin
Collector Avg Load Size per Event Source	admin
Collector Collection Exceeds x Event per Day -- Exception Report	admin
Collector Collection Exceeds x GB per Day -- Exception Report	admin
Collector Daily Load - Trend	admin
Collector Daily Load per Event Source	admin
Collector Daily Load per Loader/Load Type	admin

- b. If you are importing a report, you will see a box where you can drag and drop an export file (.xml) for import. After your file is imported, you will see it in the Import listing under Name with the applicable version number. It will also be displayed on the Manage Reports screen.

Figure 10-3: Importing a Report

Name	Owner
Administrative Account Activity	admin
Administrative Account Activity Top 100 Summary	admin
BlueCoat - High Offender List	admin
<input checked="" type="checkbox"/> BlueCoat - Individual IP Usage Detail	admin
BlueCoat - Top 10 Domains Visited	admin
BlueCoat - Top Domains Visited by UserId	admin
BlueCoat - Top Download Users	admin
BlueCoat - Top Sending Users	admin
BlueCoat - Top Users with Most Site Visits	admin
Collector Avg Load Size per Event Source	admin
Collector Collection Exceeds x Event per Day -- Exception Report	admin
Collector Collection Exceeds x GB per Day -- Exception Report	admin
Collector Daily Load - Trend	admin
Collector Daily Load per Event Source	admin
Collector Daily Load per Loader/Load Type	admin

Note: If you import reports that are already on the dashboard, when you display the reports you will be able to identify them as copies, denoted with v2, v3, etc.

Importing/Exporting Dashboards

To import or export dashboards for use in another SenSage AP 6.1.x deployment:

1. Go to the Analyzer left-hand navigation menu, click the Administration menu, and the Import/Export sub-menu, and the Dashboards tab.

The Import and Export Data screen is displayed with the dashboards that you have permission to view.

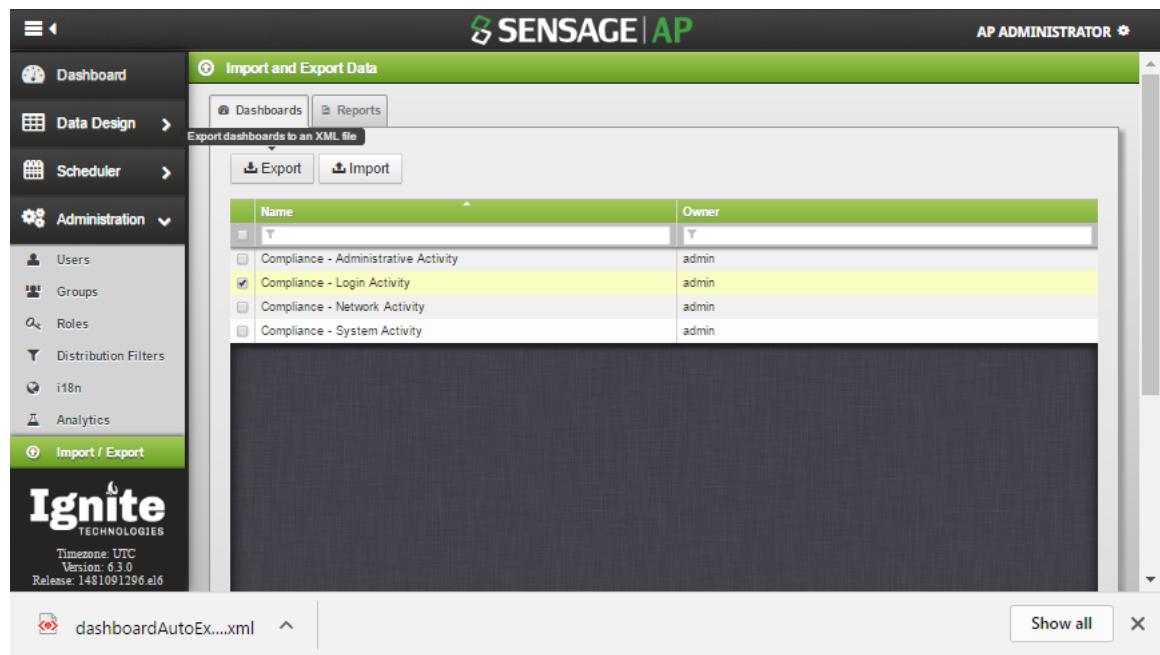
Figure 10-4: Import and Export Data Screen with Dashboards Listing

The screenshot shows the 'Import and Export Data' screen in the SenSage AP interface. The left sidebar has a 'Administration' section with 'Import / Export' selected. The main area is titled 'Import and Export Data' and shows a 'Dashboards' tab selected. There are 'Export' and 'Import' buttons. A table lists dashboards with columns for 'Name' and 'Owner'. One dashboard, 'Compliance - Login Activity', has a checked checkbox next to it. The table data is as follows:

Name	Owner
Compliance - Administrative Activity	admin
<input checked="" type="checkbox"/> Compliance - Login Activity	admin
Compliance - Network Activity	admin
Compliance - System Activity	admin

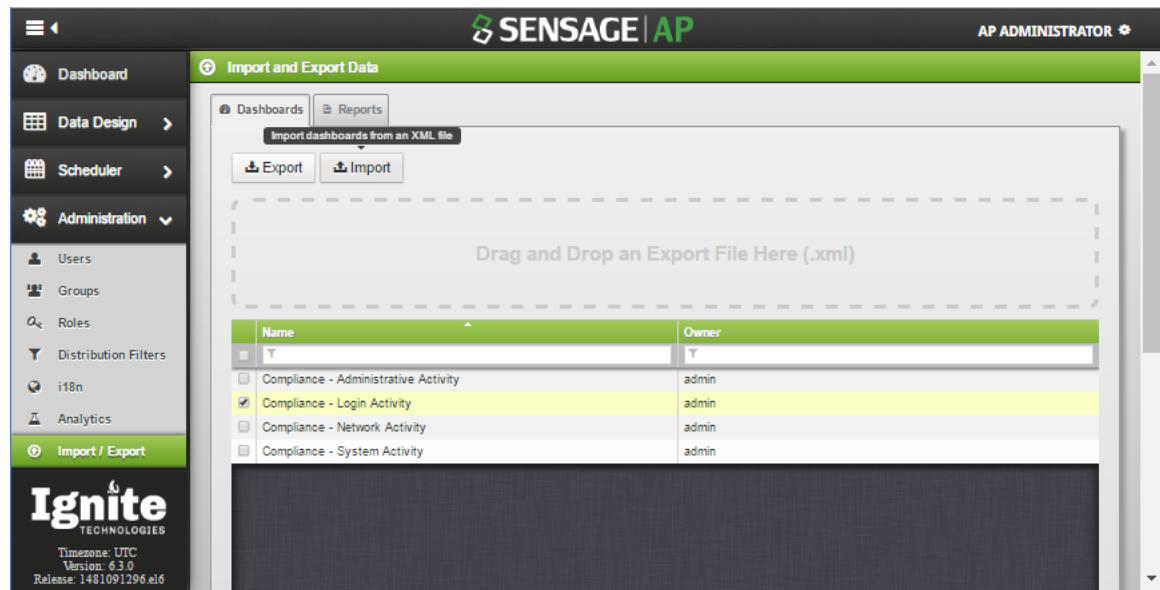
2. Check the dashboards that you want to import or export.
3. Click the Export or Import button to export or import the dashboards you selected.
 - a. If you exporting a report, on the lower left-hand side of the screen, you will see the export file labeled dashboardAutoExport.xml, which is now stored in your download folder. Click the button to view the file.

Figure 10-5: Exporting a Dashboard



- b. If you are importing a dashboard, you will see a box where you can drag and drop an export file (.xml) for import. After your file is imported, you will see it in the Dashboard listing under Name with the applicable version number. It will now also appear as a Dashboard selection.

Figure 10-6: Importing a Dashboard



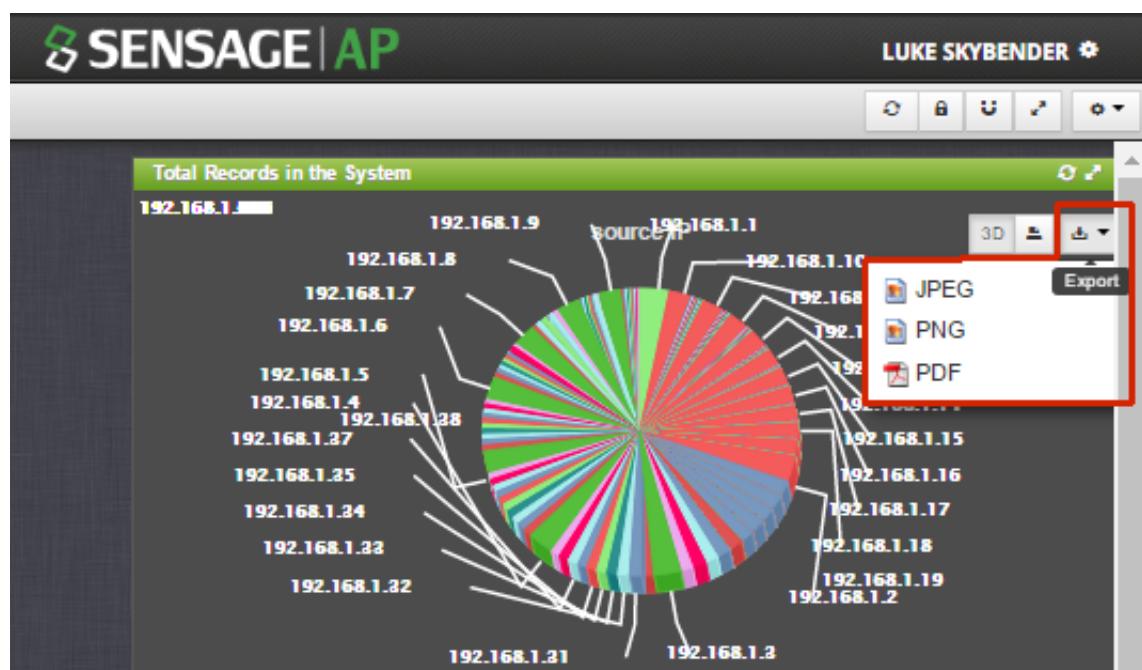
Exporting Charts

To export a chart:

1. Select or display the report containing the chart you want to export OR access or display the chart from a pod on the dashboard. (For details on accessing a report, see “Viewing Reports”, on page 31.)
2. On the chart screen, hover the mouse over the upper-right portion of a graph and select the Export icon shown below.

A pop-up menu (dropdown icon) presents three options for exporting the chart to three types of files: JPEG, PNG, and PDF as shown in Figure 10-7.

Figure 10-7: File Type Options for Exporting Charts



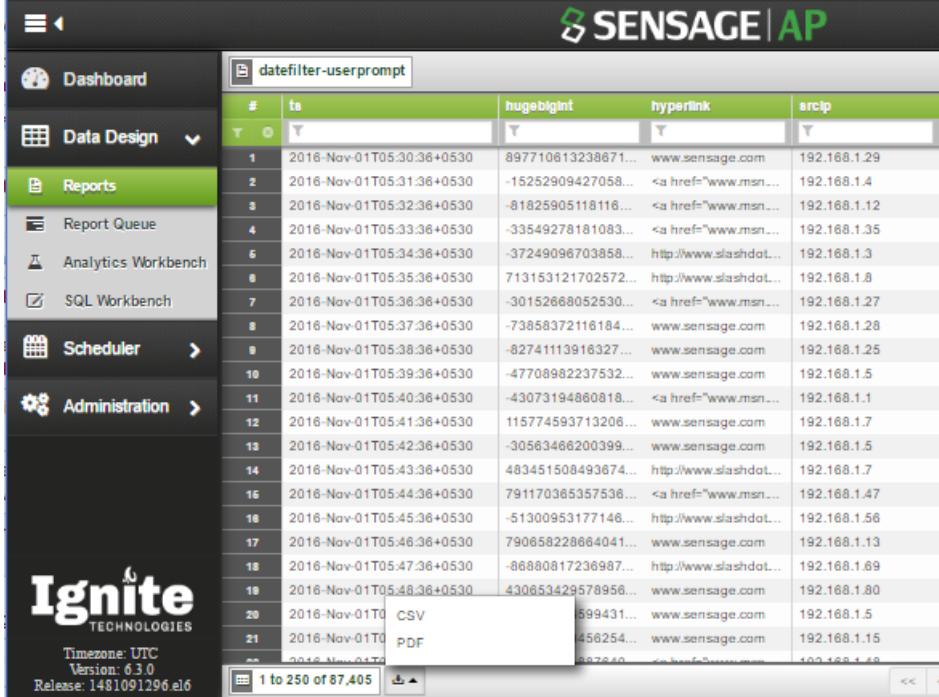
Exported charts are downloaded in the specified format to your local drive.

Downloading a Grid in a Chart

To download a grid in a chart

1. Select or display the report containing the chart with the grid you want to export OR access or display the chart from a pod on the dashboard. (For details on accessing a report, see “Viewing Reports”, on page 31.)
2. On the chart screen, hover the mouse over the bottom-left corner of the grid to display a pop-up with two file types for selection: CSV and PDF as shown in Figure 10-8 below.

Figure 10-8: File Type Options for Downloading Charts



The screenshot shows the SenSage AP interface with a sidebar containing 'Dashboard', 'Data Design' (selected), 'Reports', 'Report Queue', 'Analytics Workbench', 'SQL Workbench', 'Scheduler', and 'Administration'. The main area displays a table titled 'datefilter-userprompt' with columns: #, ts, hugebright, hyperlink, and srcip. The table lists 21 rows of data from November 2016. At the bottom of the table, there are buttons for 'CSV' and 'PDF'. Below the table, it says '1 to 250 of 87,405'.

#	ts	hugebright	hyperlink	srcip
1	2016-Nov-01T05:30:36+0530	897710613238671...	www.sensage.com	192.168.1.29
2	2016-Nov-01T05:31:36+0530	-15252909427058...	<a href="www.msn...	192.168.1.4
3	2016-Nov-01T05:32:36+0530	-81825905118116...	<a href="www.msn...	192.168.1.12
4	2016-Nov-01T05:33:36+0530	-33549278181083...	<a href="www.msn...	192.168.1.35
5	2016-Nov-01T05:34:36+0530	-37249096703858...	http://www.slashdot...	192.168.1.3
6	2016-Nov-01T05:35:36+0530	713153121702572...	http://www.slashdot...	192.168.1.8
7	2016-Nov-01T05:36:36+0530	-30152668052530...	<a href="www.msn...	192.168.1.27
8	2016-Nov-01T05:37:36+0530	-73858372116184...	www.sensage.com	192.168.1.28
9	2016-Nov-01T05:38:36+0530	-82741113916327...	www.sensage.com	192.168.1.25
10	2016-Nov-01T05:39:36+0530	-47708982237532...	www.sensage.com	192.168.1.5
11	2016-Nov-01T05:40:36+0530	-43073194860818...	<a href="www.msn...	192.168.1.1
12	2016-Nov-01T05:41:36+0530	115774593713206...	www.sensage.com	192.168.1.7
13	2016-Nov-01T05:42:36+0530	-30583466200399...	www.sensage.com	192.168.1.5
14	2016-Nov-01T05:43:36+0530	483451508493674...	http://www.slashdot...	192.168.1.7
15	2016-Nov-01T05:44:36+0530	791170365357536...	<a href="www.msn...	192.168.1.47
16	2016-Nov-01T05:45:36+0530	-51300953177146...	http://www.slashdot...	192.168.1.56
17	2016-Nov-01T05:46:36+0530	790658228664041...	www.sensage.com	192.168.1.13
18	2016-Nov-01T05:47:36+0530	-86880817236987...	http://www.slashdot...	192.168.1.89
19	2016-Nov-01T05:48:36+0530	430853429578956...	www.sensage.com	192.168.1.80
20	2016-Nov-01T05:49:36+0530	599431...	www.sensage.com	192.168.1.5
21	2016-Nov-01T05:50:36+0530	456254...	www.sensage.com	192.168.1.15
	2016-Nov-01T05:51:36+0530	987640...	<a href="www.msn...	192.168.1.49

Importing/Exporting Models

Note: If you are importing a model, follow these guidelines:

- Only an "Admin User" can import models.
- Import model files must already reside on the desktop.
- The imported model file will include the "imported" tags.

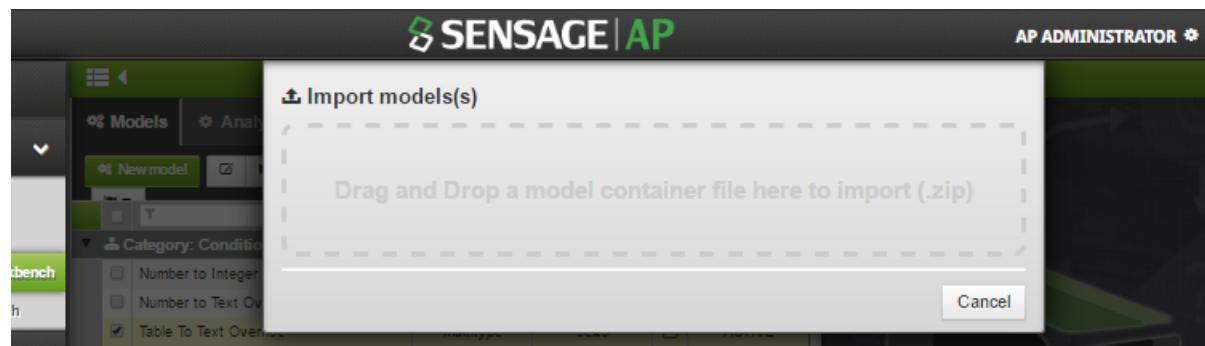
To import or export models for use in another SenSage AP 6.1.x deployment:

1. Select or display the model (For details on accessing a model, see [Viewing Reports, Charts, and Models](#) on page 33).
2. On the Model Menu bar (when the Model Tab is selected), select the import/export menu icon:



The import model(s) popup displays. Drag and drop the model container (ZIP file) you want to import.

Figure 10-9: shows an import pop-up.



If there are existing files on your desktop with the same name/ID, import will overwrite this file. Each ZIP file contains a JSON file for every model. You can convert the ZIP file into formats such as GIT, SVN, etc.

Note: Do not alter the ZIP file as it may corrupt the model file.

Administering Data Models

This chapter describes how to use SenSage AP Analyzer to administer data models for Analytics and contains the following sections:

- [Adding/Deleting a Data Model Category](#) on page 189
- [Displaying Model Execution Metrics](#) on page 191

Adding/Deleting a Data Model Category

If you have Analyzer Administration privileges, you can add SenSage AP data model categories to the Models Library. A data model category represents a grouping of models with a similar processing task.

To delete or add a data model category:

1. Go to the Analyzer dashboard, select the Administration menu on the left-hand side, and click Analytics from the dropdown submenu. The **Analytics Administration** screen is displayed as shown in Figure 11-1.

Figure 11-1: Analytics Administration Screen

The screenshot shows the SENSAGE|AP Analytics Administration interface. On the left, there's a navigation sidebar with options like Dashboard, Data Design, Scheduler, Administration (Users, Groups, Roles, Distribution Filters, i18n), Analytics (selected), and Import / Export. The main area has a title 'Analytics Administration'. Under 'Edit categories', there's a table with columns 'Category Name' and 'Actions'. The table lists various categories such as Arithmetic, Charting, Conditionals, Conversion, Copy, Data Table, Database, Default, Directory, Email, Format, Geospatial, InsiderThreatScoring, InsiderThreatScoringConfigur., InsiderThreatScoringSupport, InsiderThreatScoringTesting, and InsiderThreatScoringTree. One row is selected, showing a highlighted 'Y'. To the right of this is a table titled 'Model execution metrics' with columns Model Name, Executed, Succeeded, Last success, Failures, and Last failure. The table contains several rows of data.

2. To delete a category, select the checkbox of the category you want to delete. Click the - from the **Edit Categories** menu.

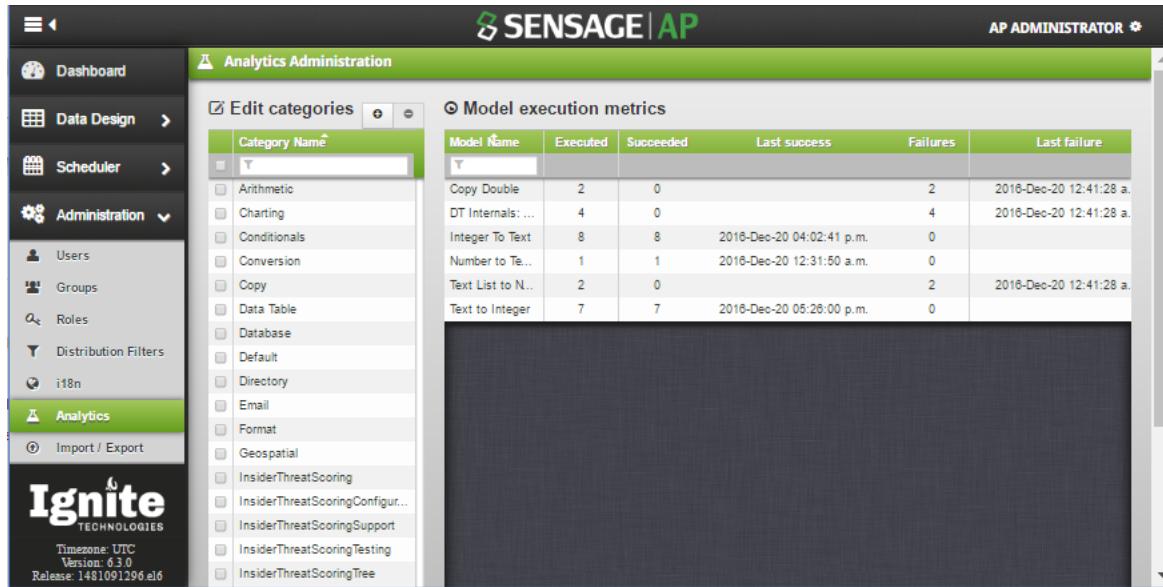
The **Please Confirm** dialog displays, click **Yes**.

Note: You can select multiple categories and delete them together.

3. To add a new category, click the + button from the **Edit Categories** menu. A new item called "New Category" is added to the list. Double click on the new item and edit its name.

Displaying Model Execution Metrics

The Analytics Administration window also displays the Model Execution metrics table.



The screenshot shows the SENSAGE|AP Analytics Administration interface. On the left, there is a navigation sidebar with the following menu items:

- Dashboard
- Data Design >
- Scheduler >
- Administration >
 - Users
 - Groups
 - Roles
 - Distribution Filters
 - i18n
- Analytics**
- Import / Export

Below the sidebar, the application header displays the SENSAGE|AP logo and the user 'AP ADMINISTRATOR'. The main content area is titled 'Analytics Administration' and contains two tabs:

- Edit categories
- Model execution metrics

The 'Model execution metrics' tab is selected, showing a table with the following data:

Model Name	Executed	Succeeded	Last success	Failures	Last failure
Copy Double	2	0		2	2016-Dec-20 12:41:28 a.m.
DT Internals: ...	4	0		4	2016-Dec-20 12:41:28 a.m.
Integer To Text	8	8	2016-Dec-20 04:02:41 p.m.	0	
Number to Te...	1	1	2016-Dec-20 12:31:50 a.m.	0	
Text List to N...	2	0		2	2016-Dec-20 12:41:28 a.m.
Text to Integer	7	7	2016-Dec-20 08:26:00 p.m.	0	

You can see the following properties:

- Model Name—name of the model.
- Executed—number of times the model was run.
- Succeeded—number of successful runs.
- Last success—date and time of the last successful run.
- Failures—number of failed runs.
- Last Failure—date and time of the last failed run.
- Avg.Time—Average run time of the model.

Appendix A: Namespace Access Procedures

This appendix contains both the SenSage AP version 5.x.x and 6.x.x procedure to limit a user's access to a namespace(s):

- [6.x.x Procedure to Limit a User's Access to a Namespace\(s\)](#) on page 193
- [5.x.x Procedure to Limit a User's Access to a Namespace\(s\)](#) on page 194

6.x.x Procedure to Limit a User's Access to a Namespace(s)

Note: The commands below are for Postgres role abc and schema default_analytics.

1. Create a Postgres user/role:

```
psql -h localhost -p5432 -d controller -U hexis -c "CREATE ROLE abc NOSUPERUSER NOCREATEDB NOCREATEROLE INHERIT NOLOGIN;"
```

2. Grant Access:

```
psql -h localhost -p5432 -d controller -U hexis -c "GRANT USAGE ON SCHEMA oae TO abc;"  
"psql -h localhost -p5432 -d controller -U hexis -c "GRANT USAGE ON SCHEMA default_analytics TO abc;"  
"psql -h localhost -p5432 -d controller -U hexis -c "GRANT SELECT ON ALL TABLES IN SCHEMA  
default_analytics TO abc;"
```

3. Update the Analyzer Application user's Postgres user setting.
 - a. Logon as admin.
 - b. Go to Administration tab and Manager Users screen.
 - c. Edit the user whose schema security you want to change.
 - d. Change the users Postgres User setting to the new Postgres user/role created in Step 1.
4. Verify that only the expected schemas exist.
5. Logon to the Analyzer Application as the user you edited in Step 3.
6. Create a new report.
7. Verify that the correct schemas show up in the list of available schemas.
8. Run a report that the user has privilege to access.
9. Run a report in which the user has no privilege to access.

5.x.x Procedure to Limit a User's Access to a Namespace(s)

Note: The commands below are for Postgres role abc and schema mysls_analytics.

1. Create a Postgres user/role:

```
psql -h localhost -p5432 -d controller -U lms -c "CREATE ROLE abc NOSUPERUSER NOCREATEDB NOCREATEROLE INHERIT NOLOGIN;"
```

2. Grant Access:

```
psql -h localhost -p5432 -d controller -U hexis -c "GRANT USAGE ON SCHEMA oae TO abc;" psql -h localhost -p5432 -d controller -U lms -c "GRANT USAGE ON SCHEMA mysls_analytics TO abc;" psql -h localhost -p54321 -d controller -U hexis -c "SELECT 'GRANT SELECT ON mysls_analytics.' || relname || ' TO abc ' FROM pg_class JOIN pg_namespace ON pg_namespace.oid = pg_class.relnamespace WHERE nspname = 'mysls_analytics' AND relkind IN ('r', 'v');"
```

3. Save the output and create a file mySavedGrants.sql.

```
psql -h localhost -p5432 -d controller -U lms -f mySavedGrants.sql
```

4. Update the Analyzer Application user's Postgres user setting.

- a. Logon as admin.
- b. Go to Administration tab and Manager Users screen.
- c. Edit the user whose schema security you want to change.
- d. Change the users Postgres User setting to the new Postgres user/role created in Step 1.

5. Verify that only the expected schemas are there

6. Logon to the Analyzer Application as the user you edited in Step 3.

7. Create a new report.
8. Verify that the correct schemas show up in the list of available schemas.
9. Run a report that the user has privilege to access.
10. Run a report that the user has no privilege to access.

Appendix B: Sensage AP Permission Requirements

This appendix lists role privileges and permissions that are required to perform specific actions (such as view, edit, run, delete, etc.) in each feature of the SenSage AP application (reporting, scheduling, etc). It is intended to be a guide in setting up roles and groups and providing SenSage AP users with the appropriate permissions to perform their tasks and responsibilities.

For more details on User Management, see the SenSage AP Administration Guide. For details on using the "Manage Users" interface in the SenSage AP application see "SenSage AP Permission Requirements", on page 177.

Table 1: Table 1: Permissson Requirements for AP Features

Feature	Action Sup-ported in Feature	Role Privilege (service that is accessible)	Access Permis-sions on that Service	Uses Equivalent Feature and Action
REPORT				
	View	Report Service Access	View	
	Edit	Report Service Access	View, Edit	
	Run	Report Service Access	View	
	Delete	Report Service Access	View, Delete	

Feature	Action Sup-ported in Feature	Role Privilege (service that is accessible)	Access Permis-sions on that Service	Uses Equivalent Feature and Ac-tion
	Create	Report Service Access, Report Create		
	Set Security	Report Service Access	Owner	
	Export Reports			Export Reports same as Report - View
	Import Reports			Import Reports same as Report - Create
REPORT RESULT				
	View			Report Result View same as Report - View
	Export to CSV		Report Export to CSV	Report Export to CSV same as Report - View
	Export to PDF		Report Export to CSV	Report Export to PDF same as Report - View
DASHBOARD				
	View	Dashboard Service	View	
	Edit	Dashboard Service Access	View, Edit	
	Refresh Report Results	Dashboard Service Access	View	Refresh Report Results same as Report - Run
	Delete	Dashboard Service Access	View, Delete	
	Create	Dashboard Service Access, Dashboard Create		
	Set Security	Dashboard Service Access	Owner	
DASHBOARD POD				

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions on that Service	Uses Equivalent Feature and Action
	View			Dashboard Pod View same as Dashboard - View and Report - View
	Edit			Dashboard Pod Edit same as Dashboard - Edit
	Refresh Report Result			Dashboard Pod Refresh Report Result same as Report - Run
	Delete			Dashboard Pod Refresh Report Result same as Report - Edit
	Create			Dashboard Pod Create same as Dashboard - Edit and Report - View
	Export to CSV			Dashboard Pod Export to CSV same as Report - Export to CSV
	Export to PDF			Dashboard Pod Export to CSV same as Report - Export to PDF
SCHEDULE				
	View	Schedule Service Access	View	
	Edit	Schedule Service Access	View, Edit	
	Execute	Schedule Service Access	View, Execute	
	Delete	Schedule Service Access	View, Delete	
	Create	Schedule Service Access, ScheduleCreate		Schedule Create same as Report - Run
	Set Security	Schedule Service Access	Owner	

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions on that Service	Uses Equivalent Feature and Action
SCHEDULE RESULTS				
	View			Schedule Results View same as Report - View (which is same as Schedule - View OR same as Dashboard - View)
QUERIES				
	View	Query Service Access	View	
	Edit	Query Service Access	View, Edit	
	Execute	Query Service Access	View, Execute	
	Delete	Query Service Access	View, Delete	
USERS				
	View			
	Edit	User Administrator		
	Delete	User Administrator		
	Create	User Administrator		
ROLES				
	View			
	Edit	User Administrator		
	Delete	User Administrator		
	Create	User Administrator		
GROUPS				
	View			
	Edit	User Administrator		

Feature	Action Sup-ported in Feature	Role Privilege (service that is accessible)	Access Permis-sions on that Service	Uses Equivalent Feature and Action
	Delete	User Administrator		
	Create	User Administrator		
TAGS (Note there are no Permissions with Tag feature.)				
	View			
	Edit			
	Delete			
	Create			

Appendix C: Setting up Analyzer for Custom Charts

This appendix contains instructions for setting up Analyzer to accept Custom Charts for reports that you have created using the Add a Chart feature. For details on adding the actual chart to the interface, see [Creating or Modifying a Custom Chart](#) on page 120.

The Add a Chart feature contains a tab to create custom reports. In order for this feature to work you must be sure that you have configured your system to handle custom reports. To do this, perform the following steps:

Note: You may need to consult with your System Administrator to set up custom reports.

1. In Tomcat, modify the context.xml file in the tomcat conf directory to accept aliases. Include the context attribute of context.xml as shown in the configuration example below:

```
<Context reloadable="true" aliases="/" /custom=/opt/hexis/hawkeye-ap/analyzer/custom">;
```

2. Restart Tomcat for the change to take effect.
3. Open the service directory folder at: /opt/hexis/hawkeye-ap/analyzer.
4. Within that folder, create the custom folder so the path now is: /opt/hexis/hawkeye-ap/analyzer/custom.
5. Place the following in the custom folder:
 - <body> section of the custom HTML page
 - supporting Java script and css files
 - optionally, a custom chart page that includes <HAWKEYE_AP_ANALYZER_REPORT_RESULTS/> to get the report results

Note: Results of the executed report will be used to generate the chart.

6. After you create a report, from the Add a Chart dialog, select Custom Chart and be sure to enter the same HTML file name that is included in the /opt/hexis/hawkeye-ap/analyzer/ custom folder.
 7. When entering the name of the HTML file in the dialog box, be sure to prefix the HTML file name with /analyzer/custom.
-

Note: For details on using the interface to request the chart, see [Creating or Modifying a Custom Chart](#) on page 120.
