Ignite Technologies
Security and Compliance Solutions

SenSage AP Analyzer Guide (DRAFT)

SenSage Standard 2016 (v. 6.1.1)

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PREFACE

This book, the *SenSage AP Analyzer Guide*, describes the 6.1.1 version of SenSage AP.

This Preface contains the following sections:

AUDIENCE FOR THIS BOOK

This book in 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:

Chapter 1: Getting Started—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.

Chapter 2: Viewing Reports, Charts, and Models—Describes describes how to use SenSage AP Analyzer to view and filter reports and charts, and display data models.

Chapter 3: Creating and Modifying a Dashboard—Describes how to create an initial, default dashboard, add dashboards, modify them, and use their features.

Chapter 4: Creating, Modifying, and Running a Report—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.

Chapter 5: Creating and Modifying Charts for a Report—Describes how to use SenSage AP Analyzer to create and modify a chart corresponding to a report.

Chapter 6: Using Analytics Workbench for Advanced Data Modeling—Describes how to use SenSage AP Data Analytics Workbench, interactive and visual Data Modeling tool, to create, alter, and execute data models.

Chapter 7: Using SQL Workbench for Code and Queries—Describes how to use the Analyzer's Data Analytics Workbench, interactive and visual Data Modeling tool, to create, alter, and execute

data models.

Chapter 7: Managing Report and Analytics Schedules—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.

Chapter 10: Using Import, Export, and Download Features—

Chapter 9: Administering SenSage AP Users (DRAFT)—Describes how to use SenSage AP Analyzer to administer SenSage AP users, including maintenance of their assigned roles and groups.

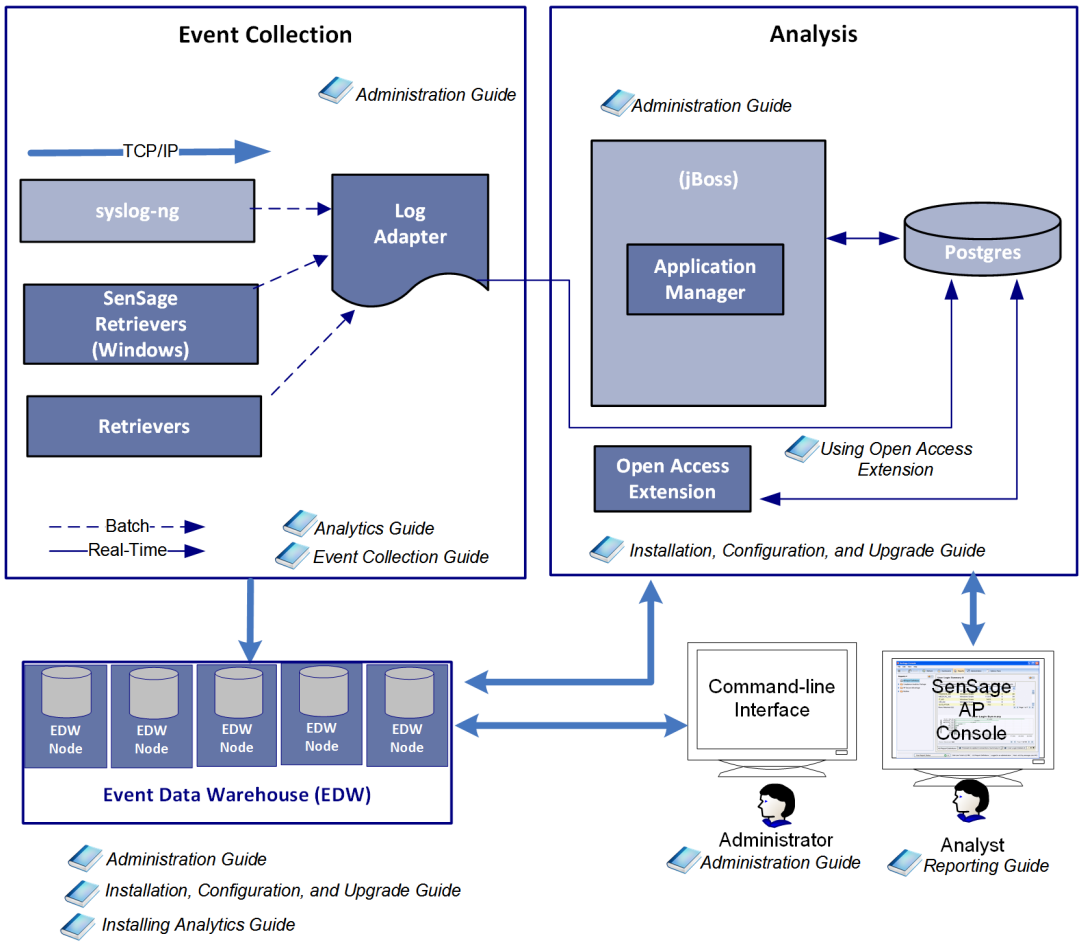
Appendix A: Namespace Access Procedures—Contains both the SenSage AP version 5.x.x and 6.x.x procedure to limit a user's access to a namespace(s).

Appendix B: SenSage AP Permission Requirements—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 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	• 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	*Analyzer Guide*

Role	Tasks	Documentation
Business Analyst or System Administrator	• Learn about Analytics • Use IntelliSchema views • Learn about the Foundation and Compliance Analytics packages • Learn about additional Analytics packages	*Analytics Guide*
Developer, Report Developer or Security Analyst	• 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	*Event Data Warehouse Guide*
Security System Administrator	• Configure retrievers, receivers, and collectors • Enable/disable log adapters • Configure SenSage APRetriever • Create log adapter PTL files	*Collector Guide*
System Administrator	• Install SenSage AP • Configure SenSage AP and its components • Configure Vmware	*Installation, Configuration, and Upgrade Guide*
System Administrator	• 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	*Administration Guide*
Legal	Monitor third-party licenses	*Third-Party Open Source Licensing*

TIP: You can access the manuals listed above from:

- SenSage AP Welcome page

  Click the **Documentation** hyperlink.

CONVENTIONS USED IN SENSAGE AP DOCUMENTATION

This convention...	Indicates...	Example
bold text	Names of user interface items, such as field names, buttons, menu choices, and keystrokes	Click **Clear Filter**.
italic text	Indicates a variable name or a new term the first time it appears	`http://<host>:<port>/index.mhtml` 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`
SMALL 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] <host>:<port> -`

`|`	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: `<option>[, <option>[…]]`

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.	`atquery --user=administrator \`
		`--pass=pass:p@ss localhost:8072\`
		`-e='SELECT * FROM system.users;'`

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.

CHAPTER 1

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?

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.

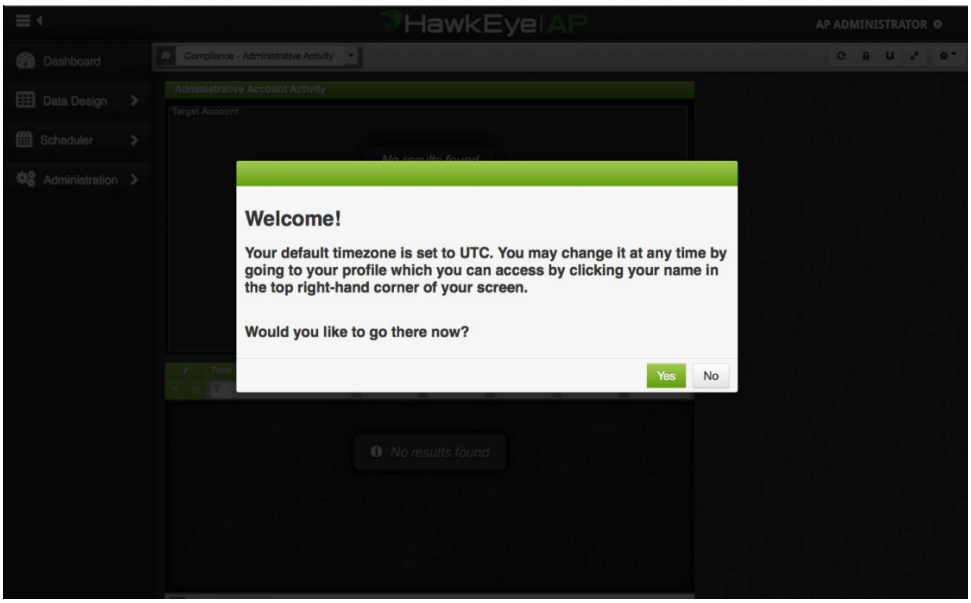
NEW SCREENSHOT NEEDED

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.

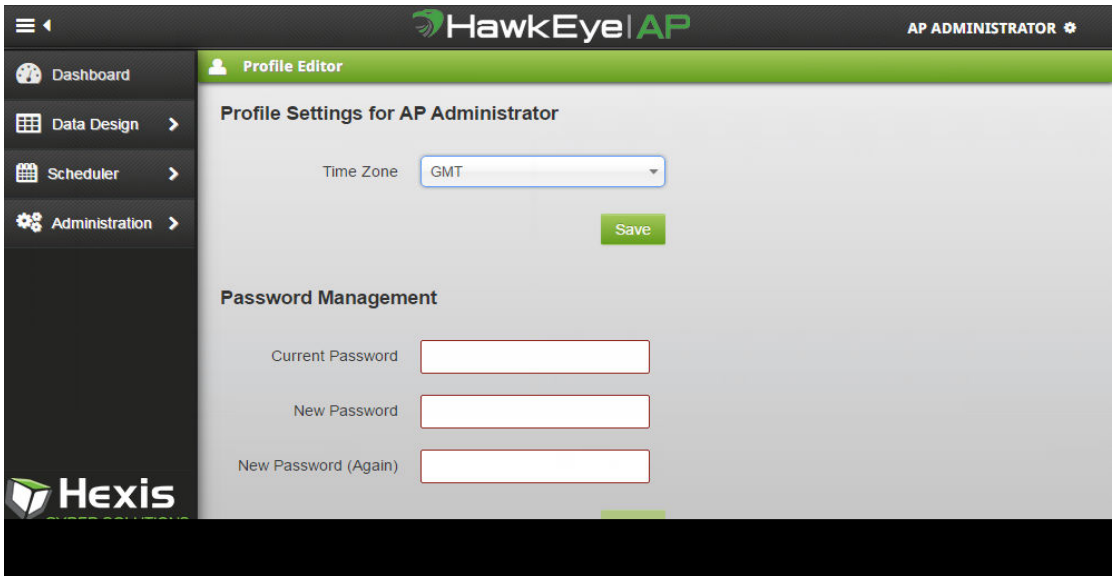
Figure 1-2: Analyzer Login Time Zone Prompt



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**.

NEW SCREENSHOT

Figure 1-3: Profile Setting for Timezone

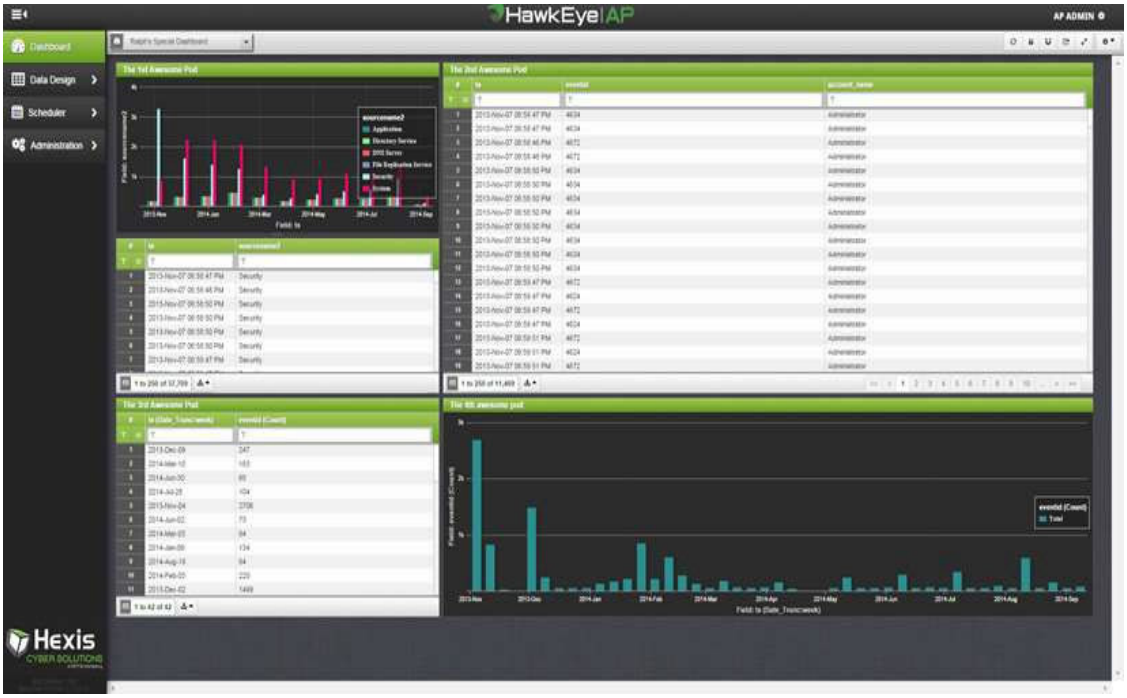


After your timezone has been saved, this change now applies to all time zones displayed throughout the SenSage AP UI.

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.

NEW SCREENSHOT NEEDED

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.

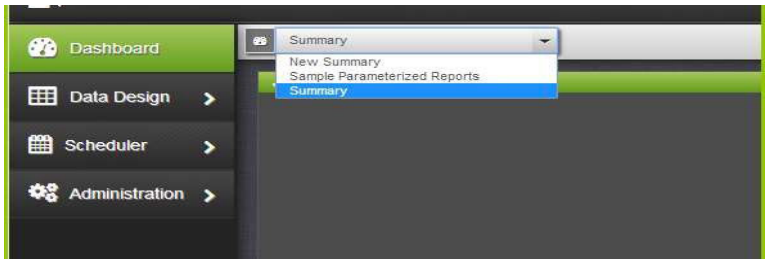
If you want to resize your browser, but keep the pods in place, click the "Lock" button (magnet icon). Your browser will then add scroll bars to resize without affecting the pods positioning.

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 1-5: Dashboard Menu

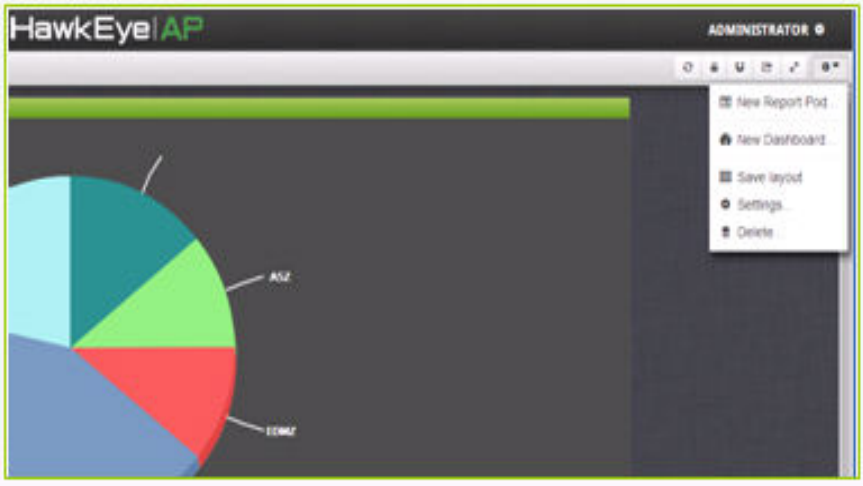


USING DASHBOARD FEATURES

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.

NEW SCREENSHOT NEEDED

Figure 1-6: Dashboard Icons



The following table describes the use of each Dashboard Icon:

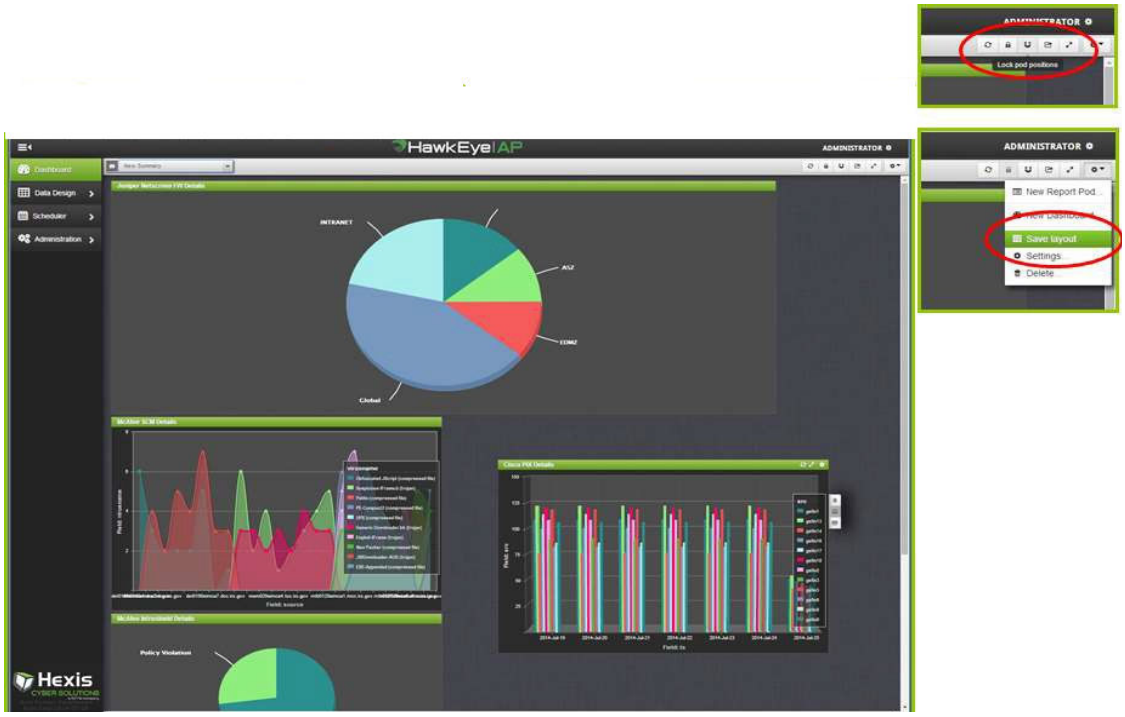
icon	Name	Use to...
	Refresh Dashboard	Refresh the dashboard. This will rerun the reports that make up each pod on the dashboard.
	Access Control	Modify access control to the dashboard if you have dashboard edit privileges.
	Lock Pods	Lock the pods into position for the remainder of the session if you want to resize your browser. For more details, see “Moving and Re-organizing Pods”, on page 21.
	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 49

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.

NEW SCREENSHOT NEEDED

Figure 1-7: Moving and Re-organizing Pods



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

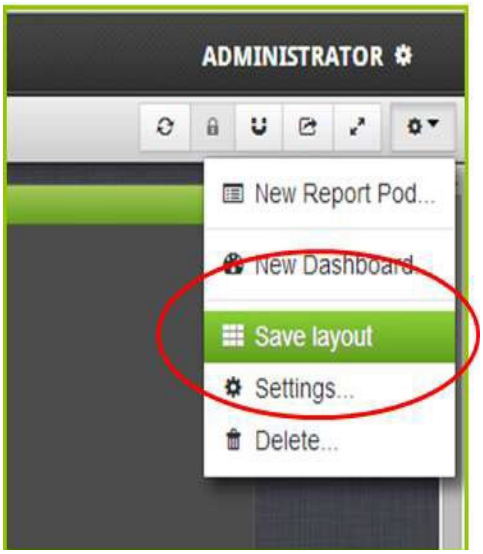
You can resize any of the pods by holding the mouse over the edge of the pod you want to move and using the mouse to slide the edge larger or smaller. For example:

Figure 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 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 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 Export Pod feature in Figure 1-11.

- Toggle 3D View of the chart
- 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

NEW SCREENSHOT NEEDED

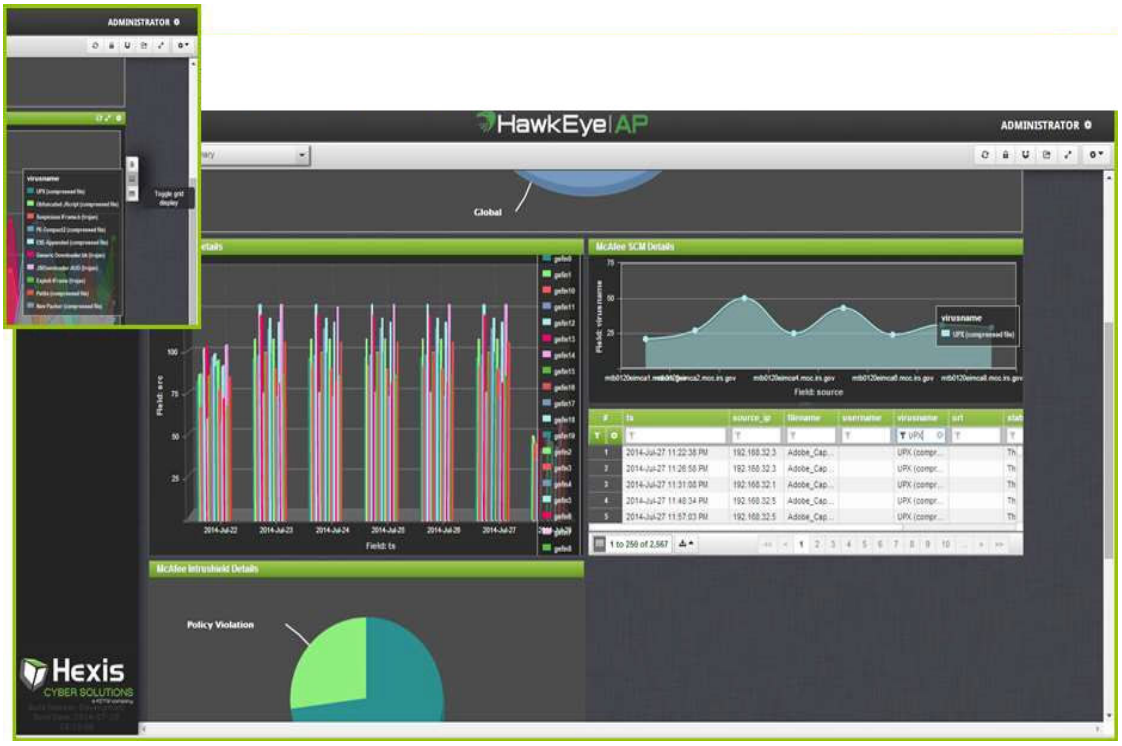
Figure 1-11: Export Pod

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 31. When accessed, the Dashboard always displays the most recent run of the report.

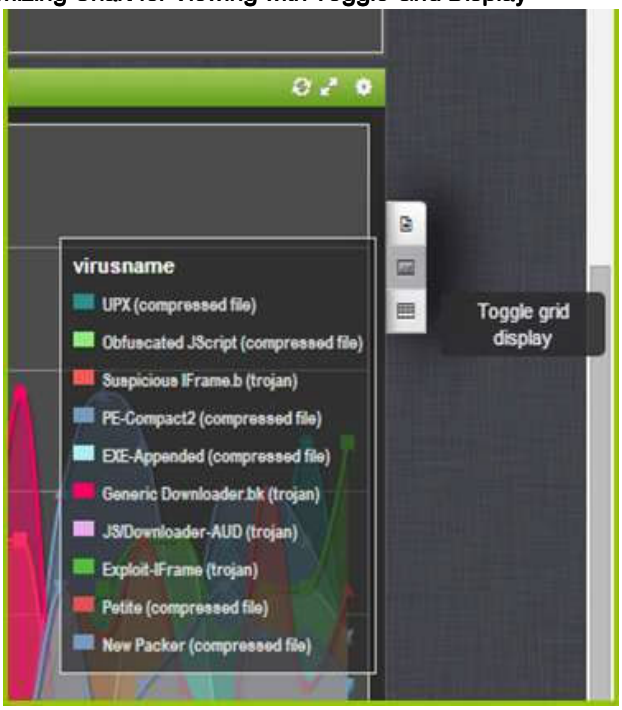
NEW SCREENSHOT NEEDED

Figure 1-12: Dashboard Report Viewing



Go to the dashboard pod where you want to access the report chart, right click, and choose the middle icon as shown below to toggle the grid off for larger chart viewing.

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



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.

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

Figure 1-14: Analyzer 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.

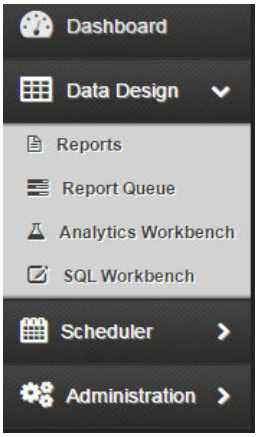
Dashboard

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, see Chapter 3: Creating and Modifying a Dashboard.

Data Design

The Data Design tab show below has three submenus.

Figure 1-15: Data Design Tab

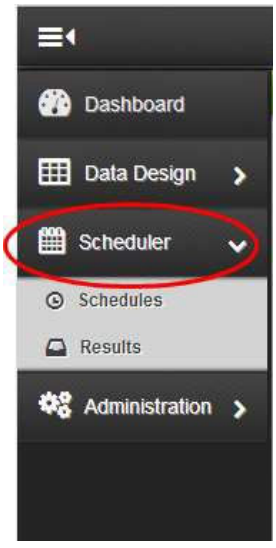


The following is a brief description of each submenu:

- 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.



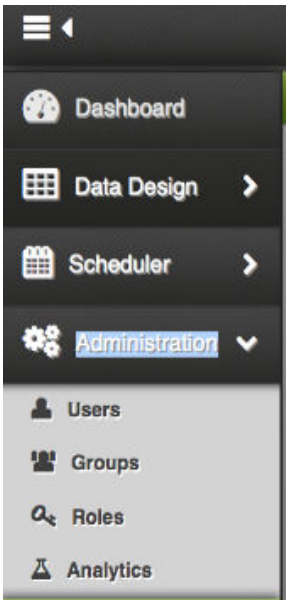
The following is a brief description of each submenu:

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

Administration

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

Figure 1-16: Administration Tab



- 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 (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.

IMPORTANT: 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.

CHAPTER 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.

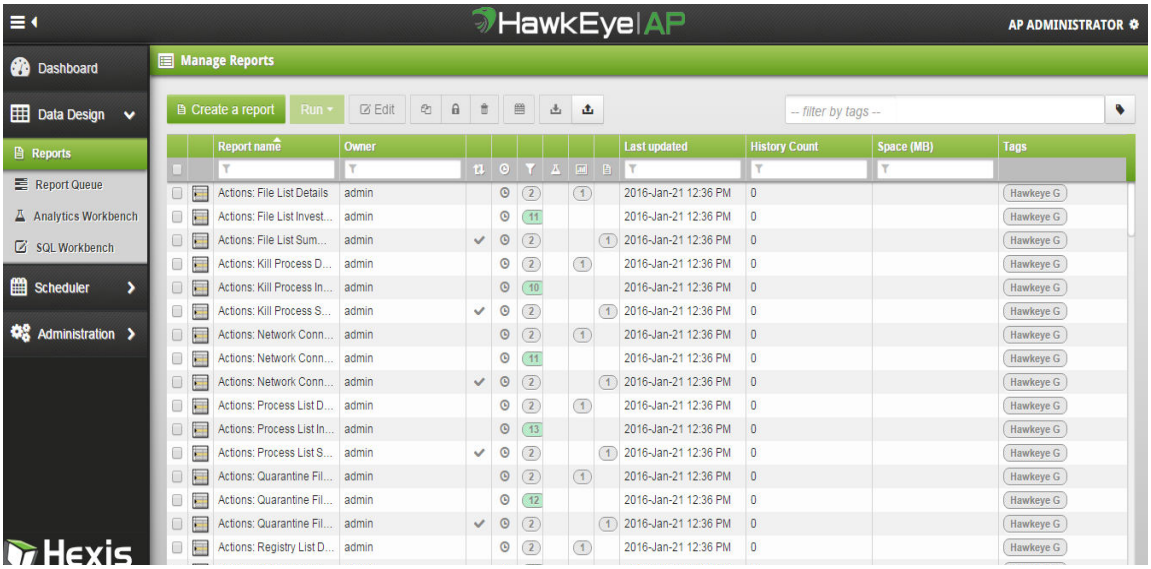
This chapter contains these sections:

Viewing Reports

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 is displayed as shown in Figure 2-1. NEW SCREENSHOT NEEDED

Figure 2-1: Manage Reports Screen

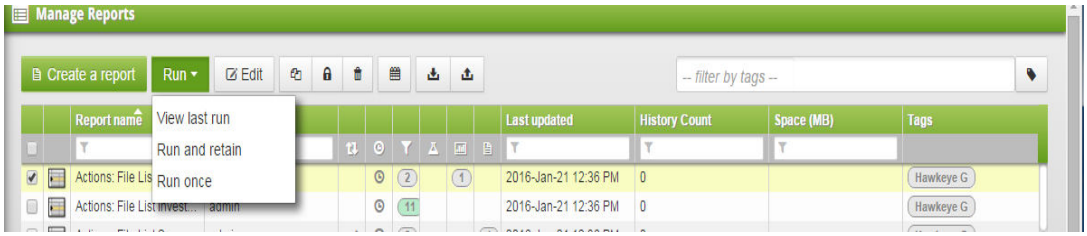


Note that the Manage Reports screen lets you find a report by name, last updated, history count, space, and by a report tag. Six icons provide additional information on each report letting you know if a report is a summary, its date range limit (timestamp), number of fields

used as filters, models, chart type, and associated reports. For more details, see the table under “Using Filters to find a Report”, on page 41.

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”, next.

Figure 2-2: Run Latest Report for Viewing



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 63.

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 91.

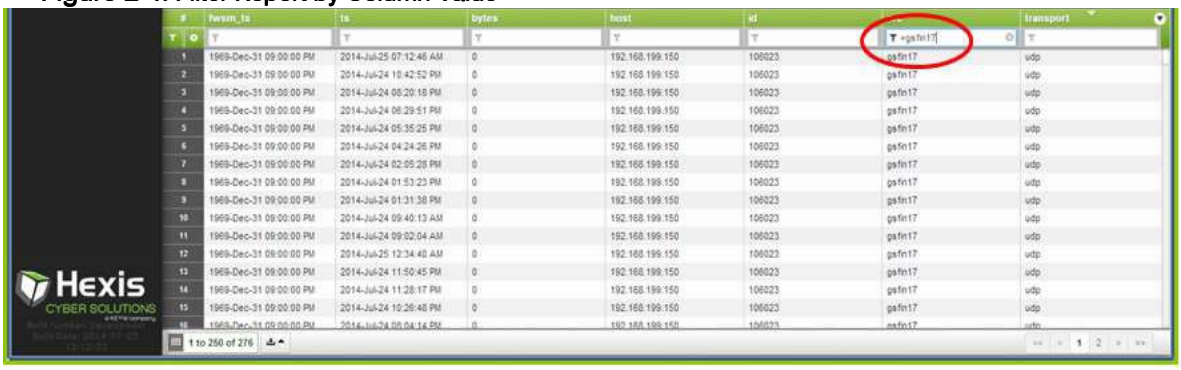
Note also that you can click on a column label of a report which will sort the report by that column. Clicking on the same column again sorts the report in the alternative direction. NEW SCREENSHOT NEEDED

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. NEW SCREENSHOT NEEDED

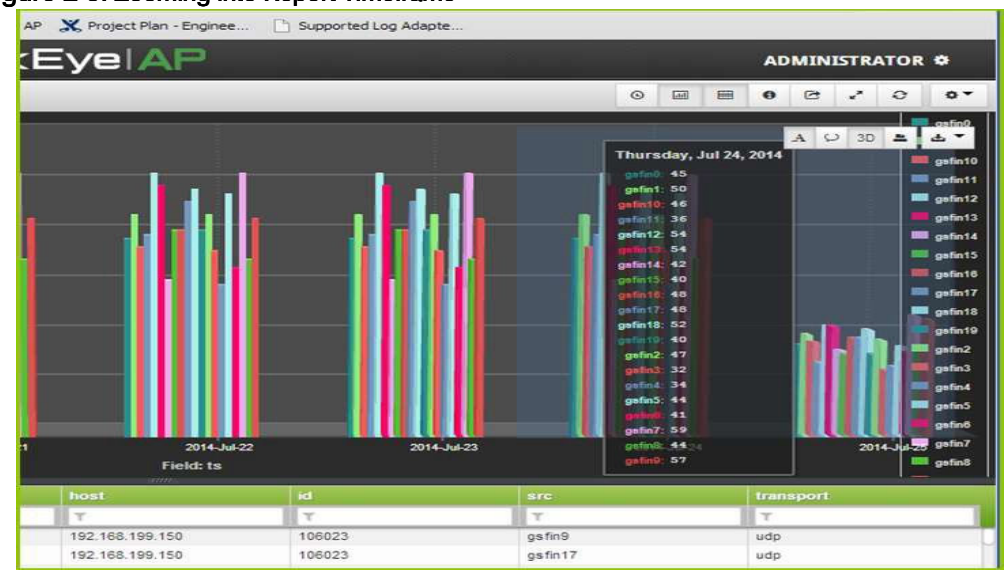
Figure 2-4: Filter Report by Column Value



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. NEW SCREENSHOT NEEDED

Figure 2-5: Zooming into Report Timeframe

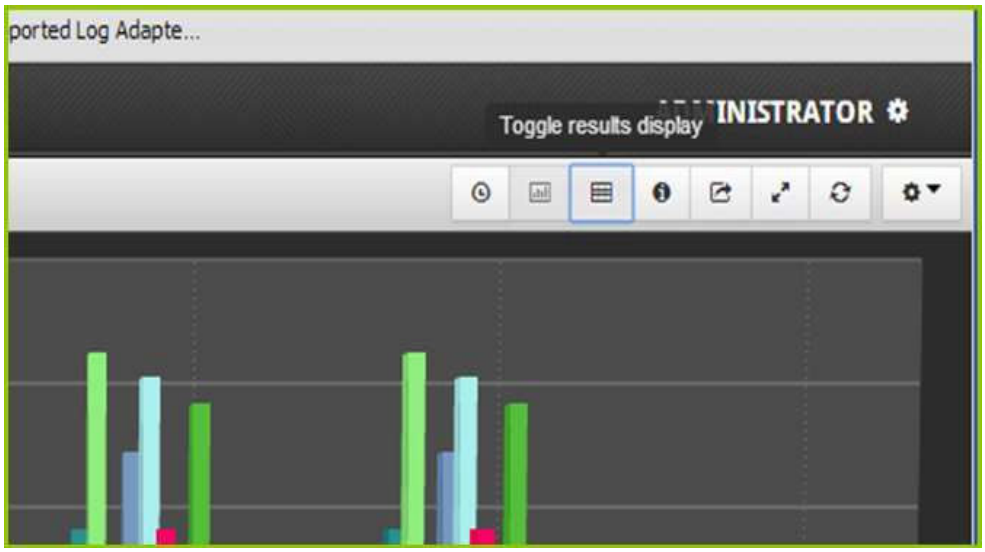


For details on changing timeframe default, see “Filtering a Report by Additional Timeframes”, on page 37.

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 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.

icon	Name	Use to...
	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 timeframe indicator at the top of the screen as shown below.

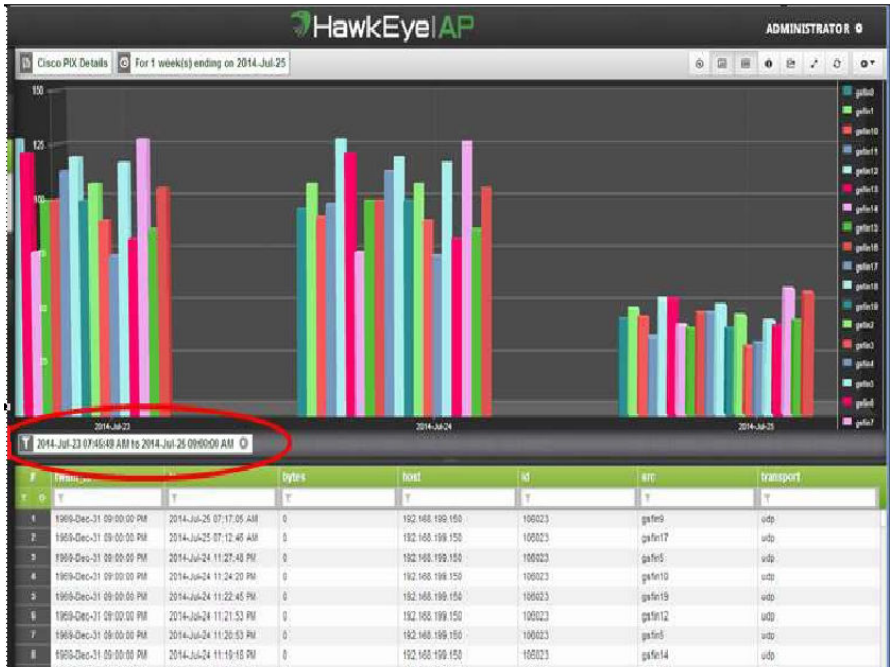
NEW SCREENSHOT NEEDED

Figure 2-7: Timeframe Indicator

FILTERING A REPORT BY ADDITIONAL TIMEFRAMES

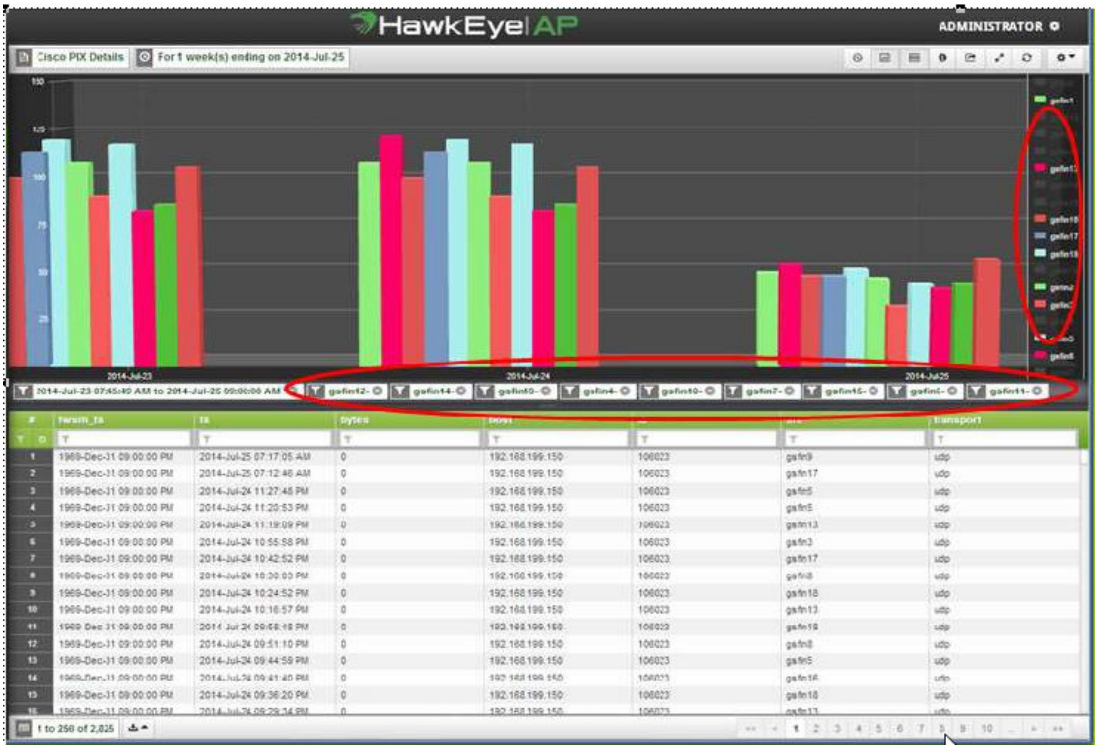
After zooming into one timeframe as shown in the previous section, you can filter the report by an additional timeframe in the report filters area as shown below. NEW SCREENSHOT NEEDED

Figure 2-8: Report Filtering by Additional Timeframes



You can further drill down into the data by removing values and by clicking the text area of the display labels to the right of the chart. Note, when clicked, additional filters are displayed in the filter area of the report.

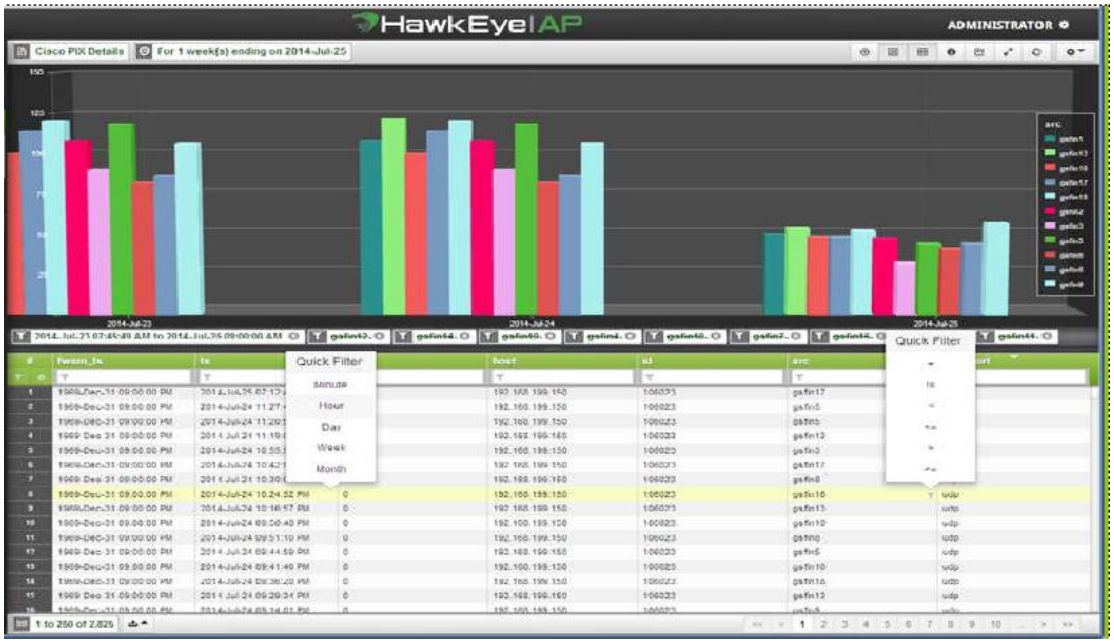
Figure 2-9: Report Drill-down NEW SCREENSHOT NEEDED



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. This is shown in Figure 2-10 below.

Figure 2-10: Quick Filter NEW SCREENSHOT NEEDED



Removing Filters from a Report Display

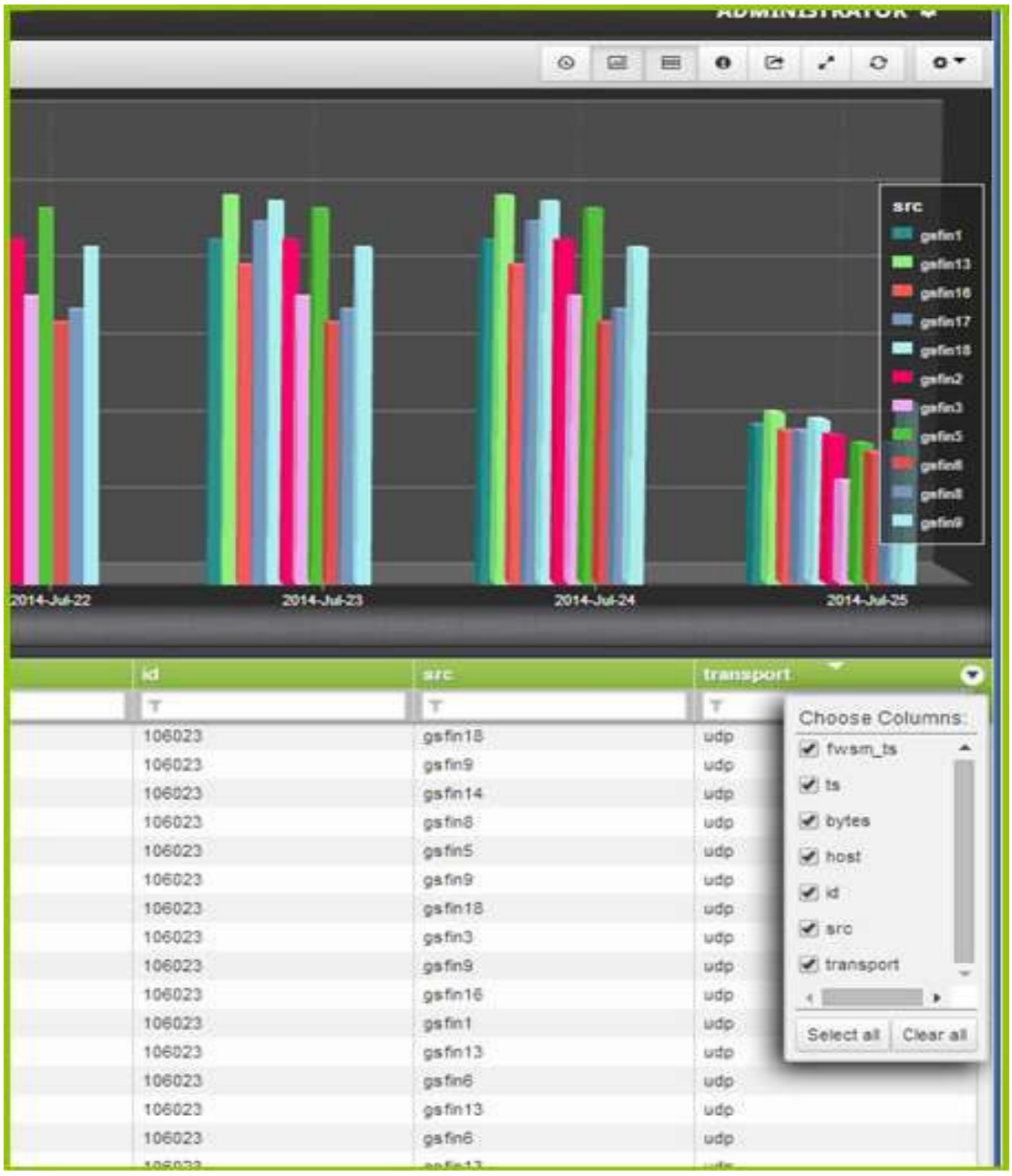
To remove filters from the report display, click the **x** on each desired filter for removal. **NEED BETTER BEFORE AND AFTER SCREENSHOT AND BETTER EXPLANATION OF WHAT GETS REMOVED**

Removing and Choosing Columns for Report Display

To remove columns from a report display, place the mouse over the upper-right corner of the grid to access the triangle icon. Click this icon to display a column menu pop-up. From this pop-up

you can remove columns or add them back in by selecting desired checkbox (es) next to each column.

Figure 2-11: Specifying Columns for Report Display



USING FILTERS TO FIND A REPORT

You can use the following methods in the sections below to retrieve a specific report for viewing.

- Select the "Filter-by-Tags" dropdown and select a report tag (category) under which the report is categorized. Alternatively, you can type part of a name of a tag and all tags with the same string in their name are displayed.

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

  After the category is selected, a list of reports associated with the category (same string that you specified) is displayed under Report Name.

- Click in the Report Name field and type part of a name of a report that you want to find.

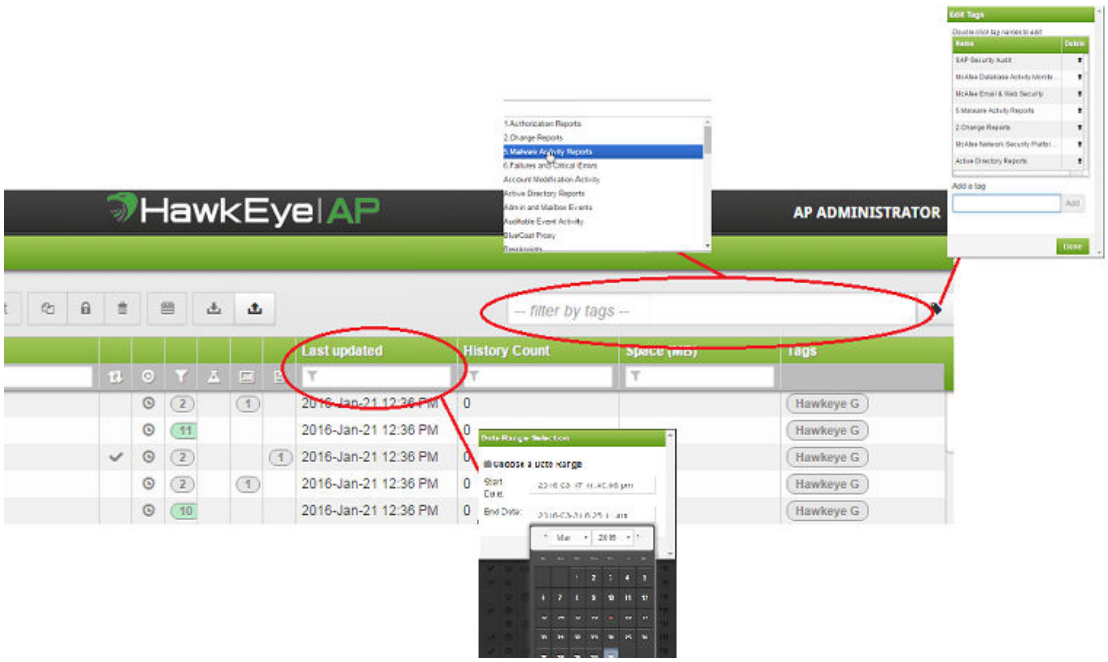
  Note that the Report Name is case-sensitive. The list of reports will be filtered by reports with the same string in their name as what you typed.

- Select a specific date range for the report (if desired) by clicking in the Last Updated field which brings up a Date Range popup. Specify the data range in the popup box using the Date Calculator if Hour, Minute, Second granularity is required.

  The list of reports will be filtered by reports with the same string in their name as what you typed.

Figure 2-12 below shows filter conditions that are used to display a report listing.

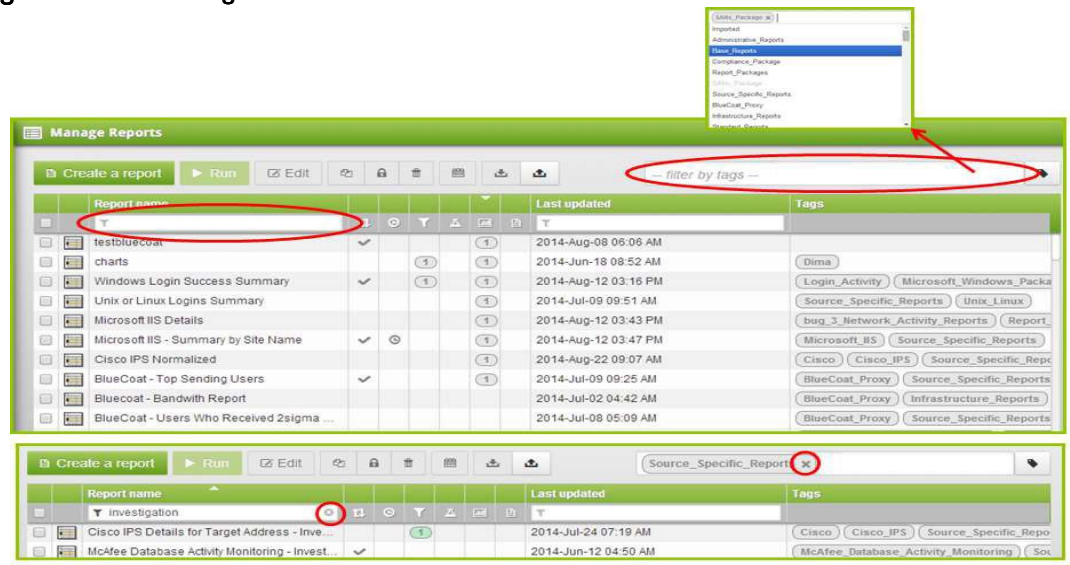
Figure 2-12: Filter Conditions for Report Listing - NEED NEW SCREENSHOT - Include graphics work.



Removing a Report Filter

On a listing of reports, you will see the filters that were used to create the listing. To remove any filter condition, click the small **x** to the right of the filter condition as shown in the lower screen shot in Figure 2-13 below:

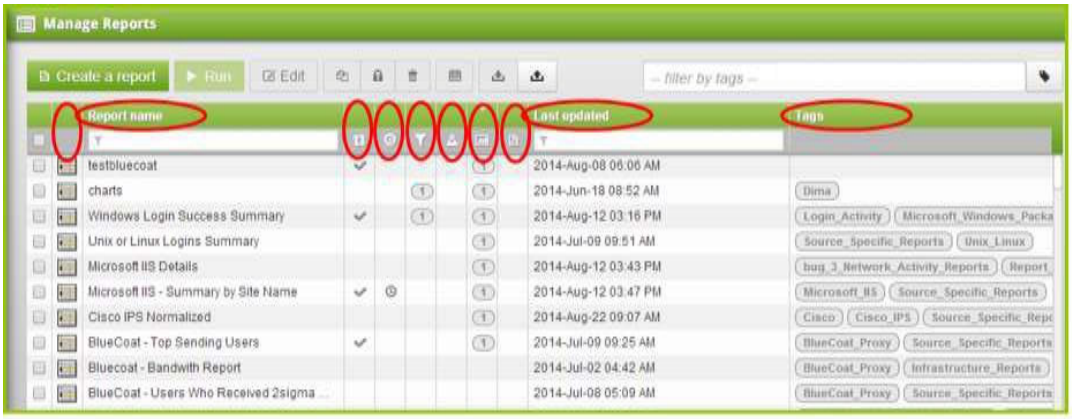
Figure 2-13: Removing a Filter Condition - NEEDS NEW SCREENSHOT AND GRAPHICS UPPDATE



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 2-14: Sorting Report by Attributes - NEEDS NEW SCREENSHOT AND GRAPHICS UPDATE



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

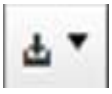
Sort Attribute	Description
Report Type	Either Wizard report or SQL Workbench Reports
Report Name	Name of the report
Summary Reports	Wizard reports that have aggregation are indicated with a checkmark.
Timestamp Reports	Wizard reports that have the time range limit set to a field of type datetime. Hover 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.
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 2-15: Chart Viewing Options

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

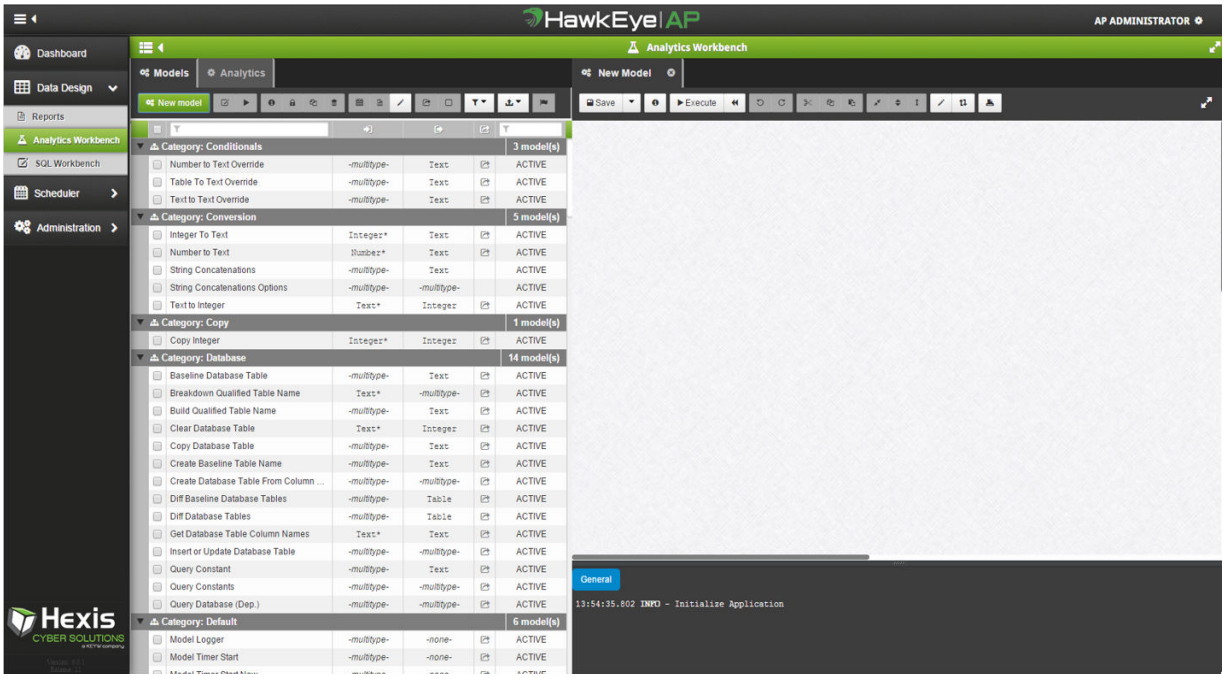
icon	Name	Use to...
	Axis Labels Toggle	Toggle the axis labels on and off.
	Data Labels Toggle	Toggle the data labels on and off.
	3D View Toggle	Toggle the 3D view of the chart.
	Browse Print	Print the report using browser printing to sent the chart to a local printer.
	Export Chart	Export the chart in one of 3 file types. For details, see “Exporting Charts”, on page 168

VIEWING MODELS

To view models:

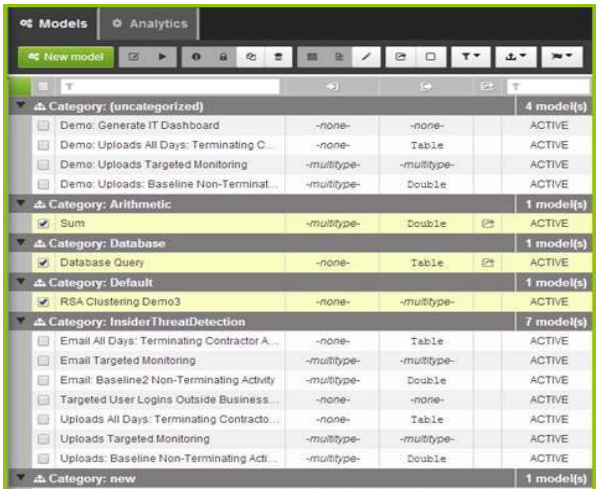
1 Go to the Analyzer dashboard, select Data Design from the dropdown list, and click **Analytics Workbench**, make sure the **Models** tab is selected**,** and click **New Model.** The palette and model canvas are displayed as shown below.

Figure 2-16: Palette and Model Canvas - NEEDS NEW SCREENSHOT



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 2-17: Model Libraries



3 To view a model:

a Select the checkbox to the left of the model name. You can select more than one model at one time.

NOTE: Selecting the checkbox at the top of all the checkboxes selects or deselects all the models.

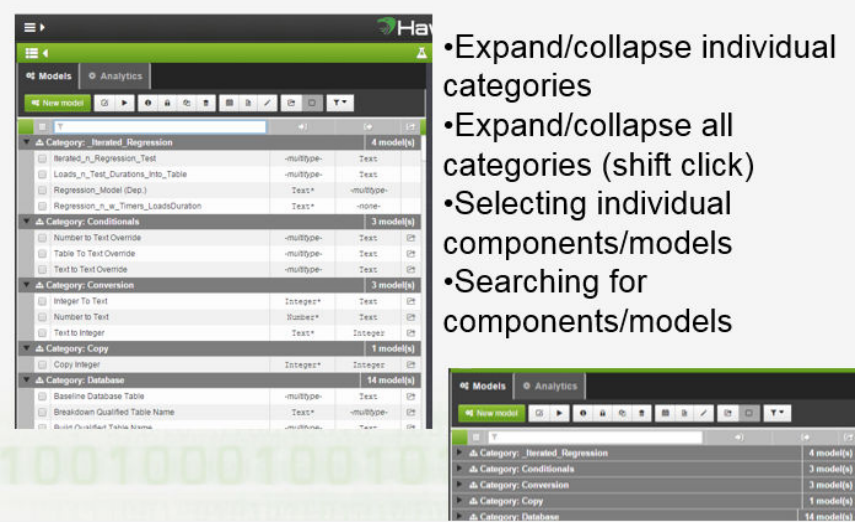
Figure 2-18: Selecting all Models - GET SCREENSHOT - SHOWING ALL MODELS SELECTED

b 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.

c 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.

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

Figure 2-19:Model Viewing - NEEDS NEW SCREENSHOT

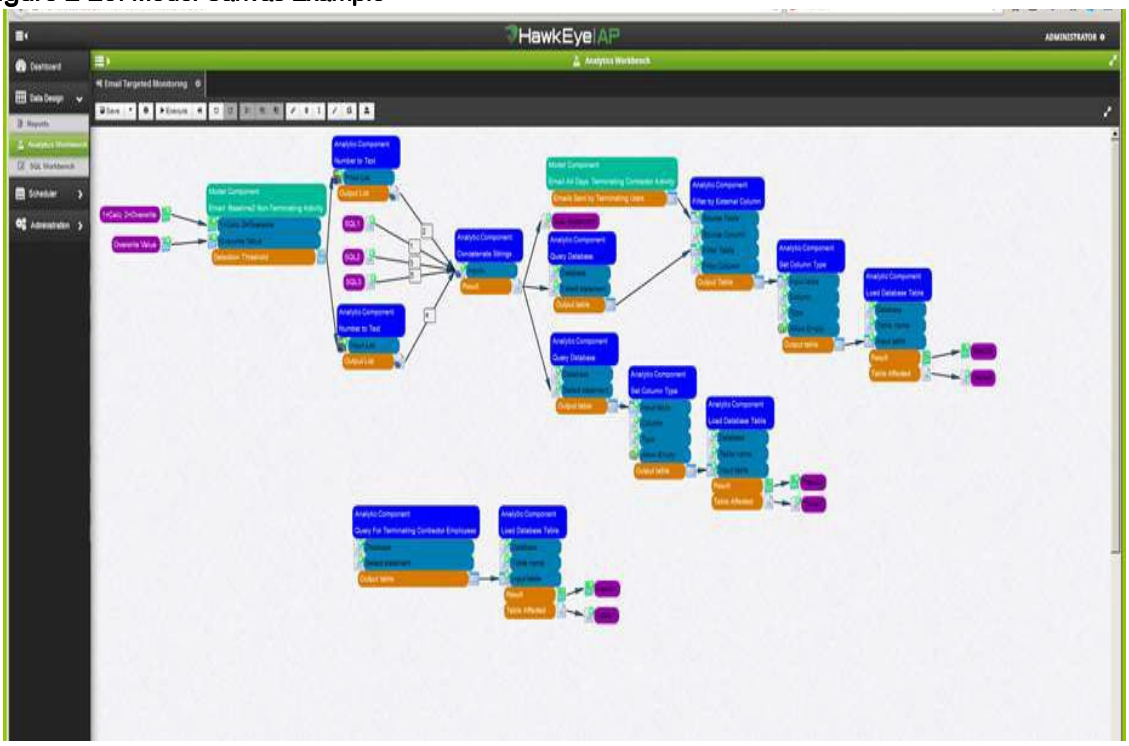


d To make your model selection(s) for viewing, you can:

e place athe model is displayed on the canvas and each selection appears as a tab. You can click the tab to have the model you have accessed from the library displayed on the canvas (see example in Figure 2-20 below).

NEEDS NEW SCREENSHOT

Figure 2-20: Model Canvas Example

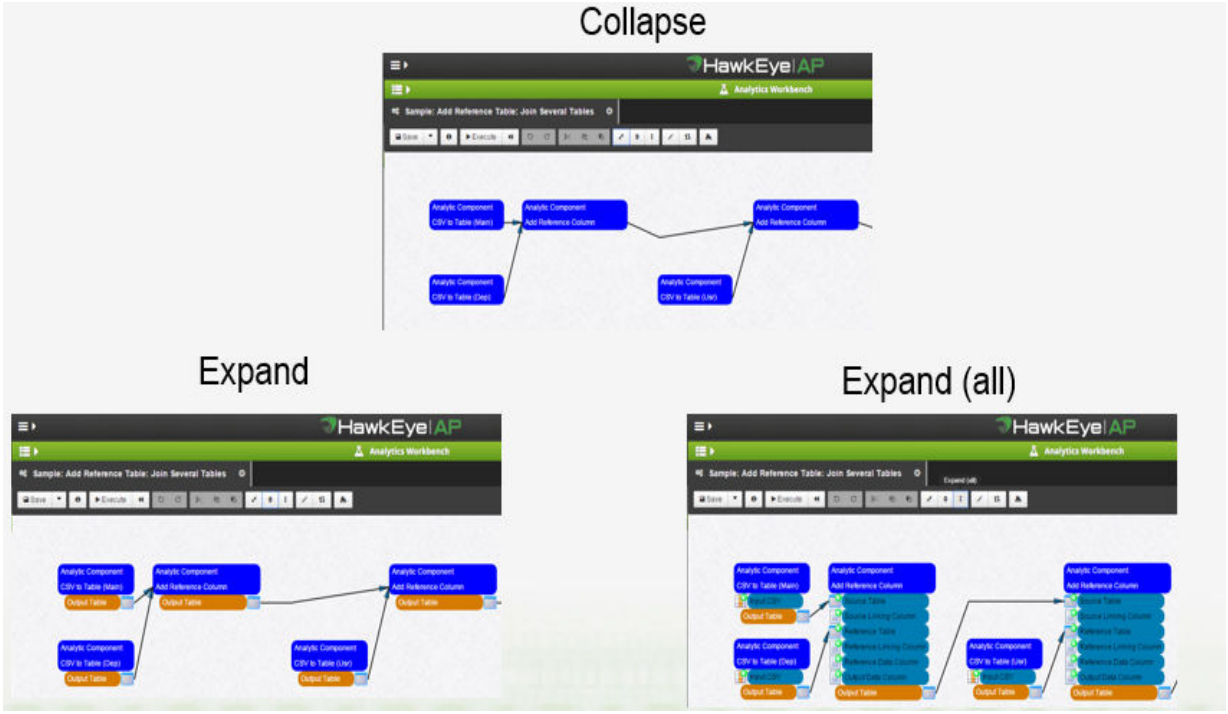


4 To collapse the model or expand (basic) or expand all parts of the model on the canvas, click the corresponding icon on the Model menu.

As shown in Figure 2-21, "Expand (basic) shows all input and output parameters. As shown in "Collapse," you can use the collapse button to collapse all input and output parameters. "Expand (all)" lets you expand all input and output parameters.

NEEDS NEW SCREENSHOTS

Figure 2-21: Collapsing and Expanding Model Components



CHAPTER 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:

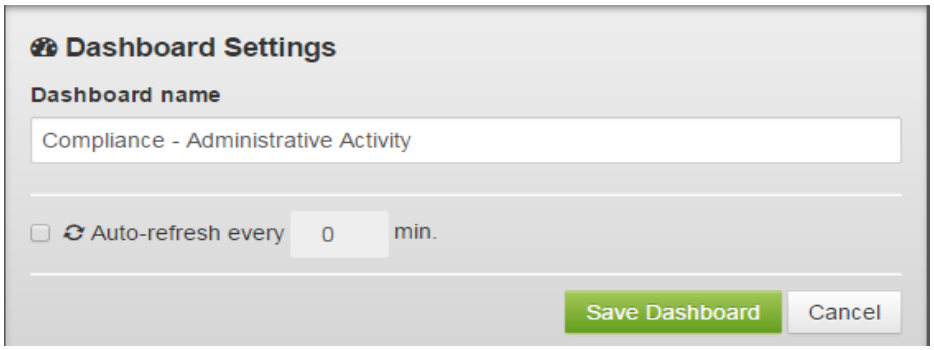
SETTING UP THE INITIAL ANALYZER DASHBOARD

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.
NEED NEW SCREENSHOT

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.

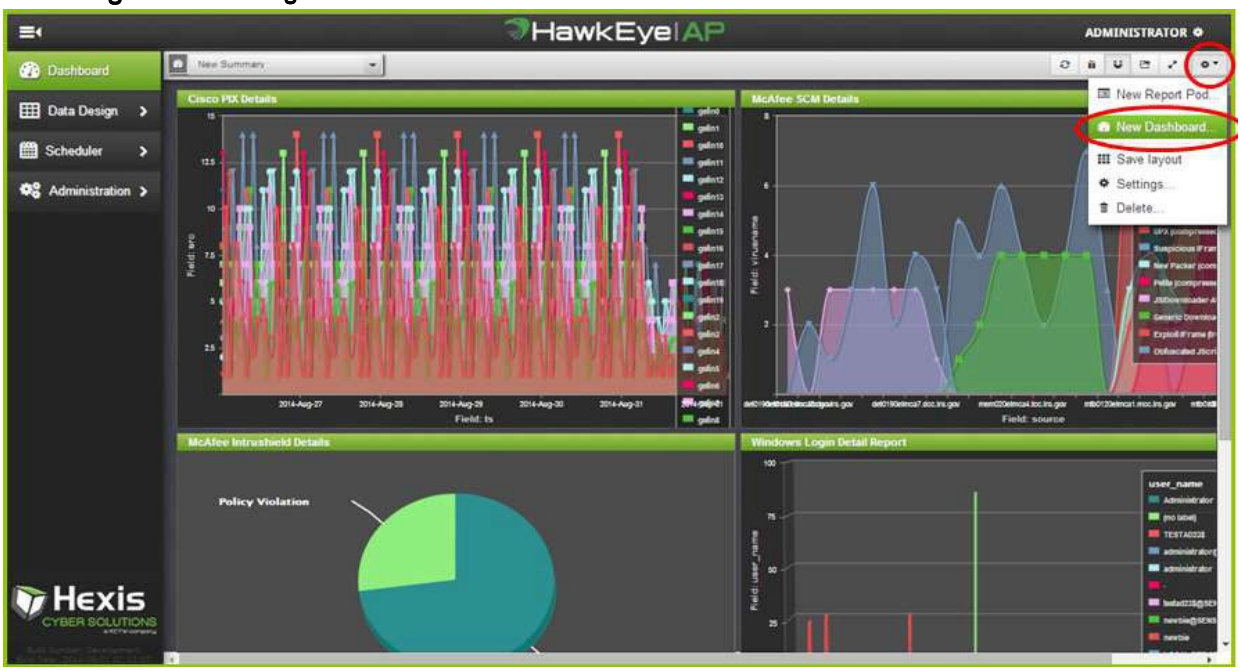
4 To save the dashboard, click **Save Dashboard.**

5 To add reports to the dashboard, see “Adding Reports to a Dashboard”, on page 51.

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 as noted “Setting Up the Initial Analyzer Dashboard”, on page 49.

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

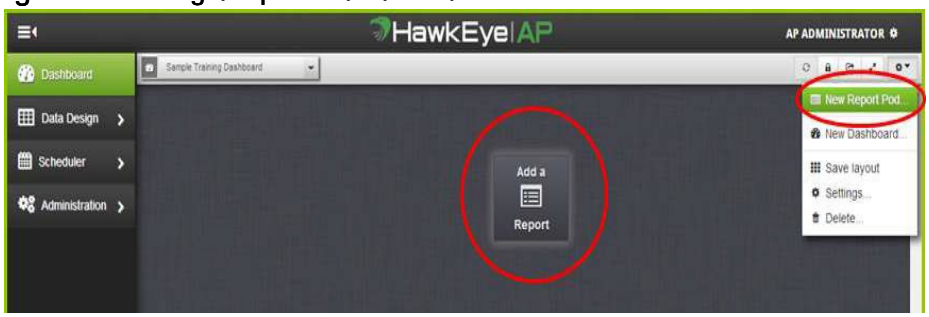
A Dashboard Settings box is displayed as shown in “Dashboard Settings”, on page 49.

To make modifications, see steps 1-5 of “Setting Up the Initial Analyzer Dashboard”, on page 49. 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



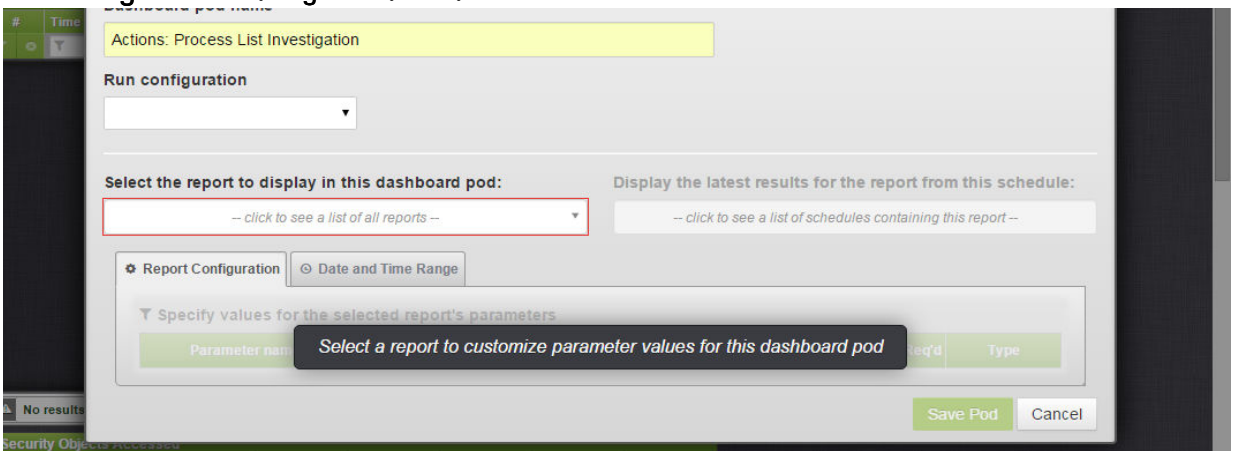
To add reports to the dashboard:

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.

2 If desired, enter an optional name for the dashboard pod. Refer to Figure 3-6 for an example:

Figure 3-6: Naming the Dashboard Pod



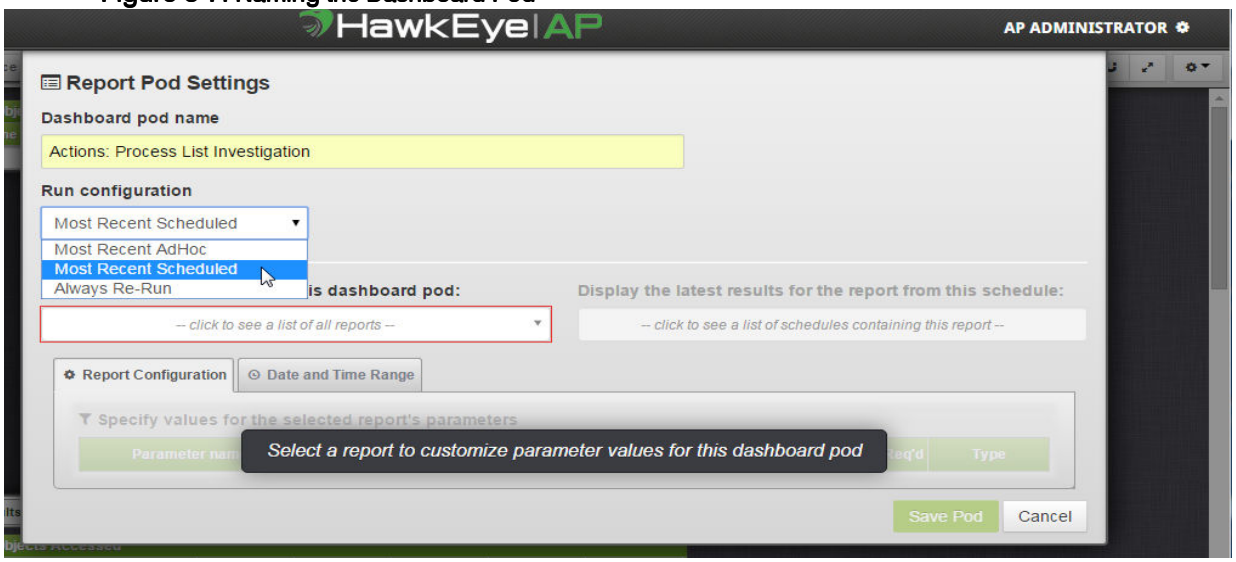
3 To select the run configuration for the dashboard pod report, click the dropdown triangle to the right of the box below and select one of the followng:

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,

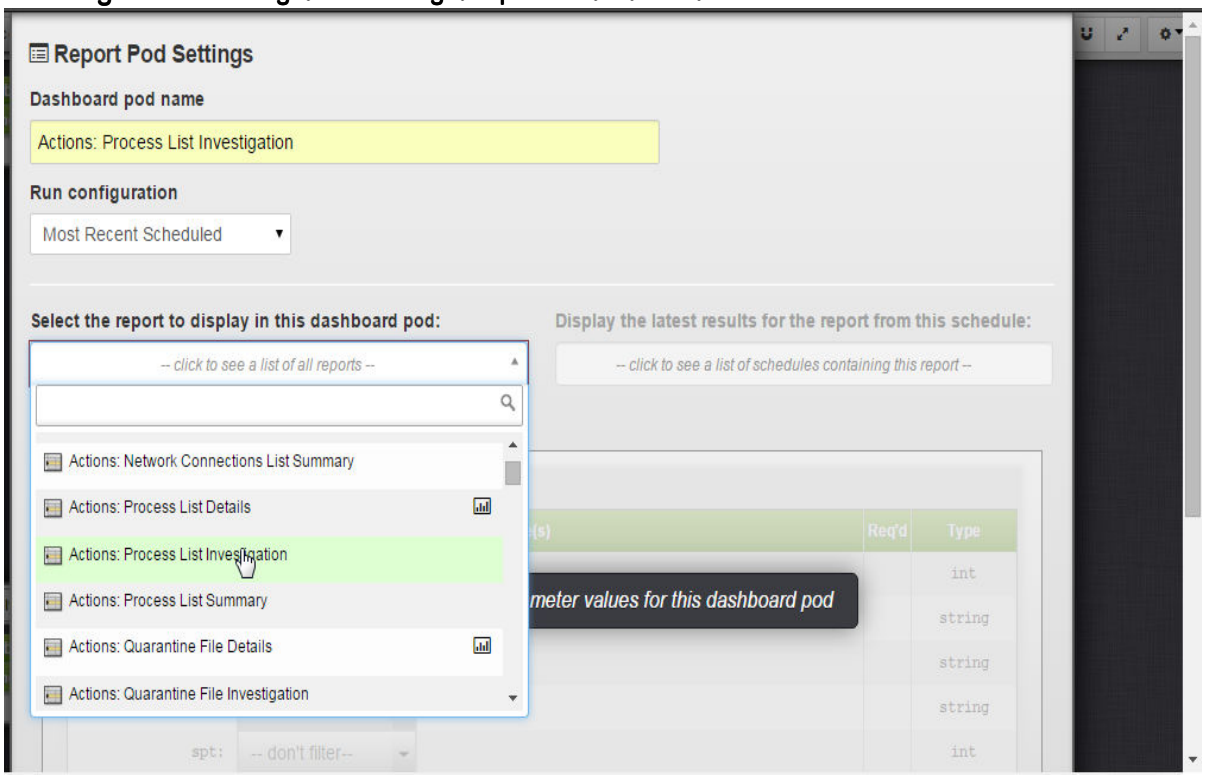
c **Always Re-Run** always re-runs report data to show current results and saves it to history.

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.

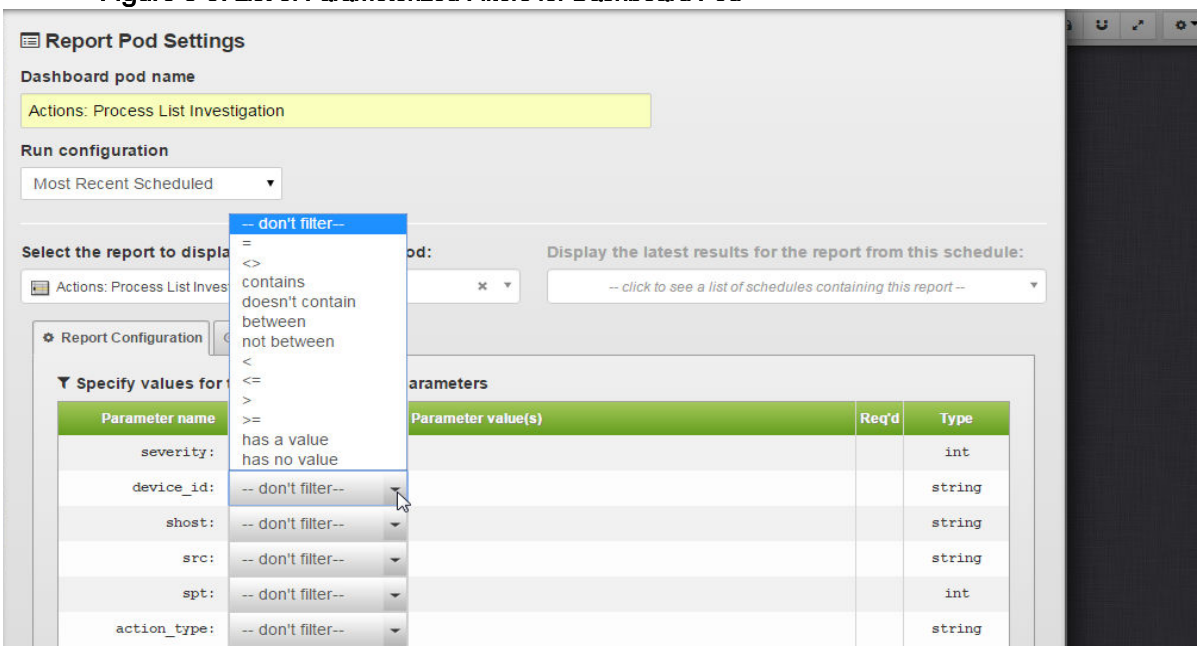
Figure 3-8: Finding and Selecting a Report for a Dashboard



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



6 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.

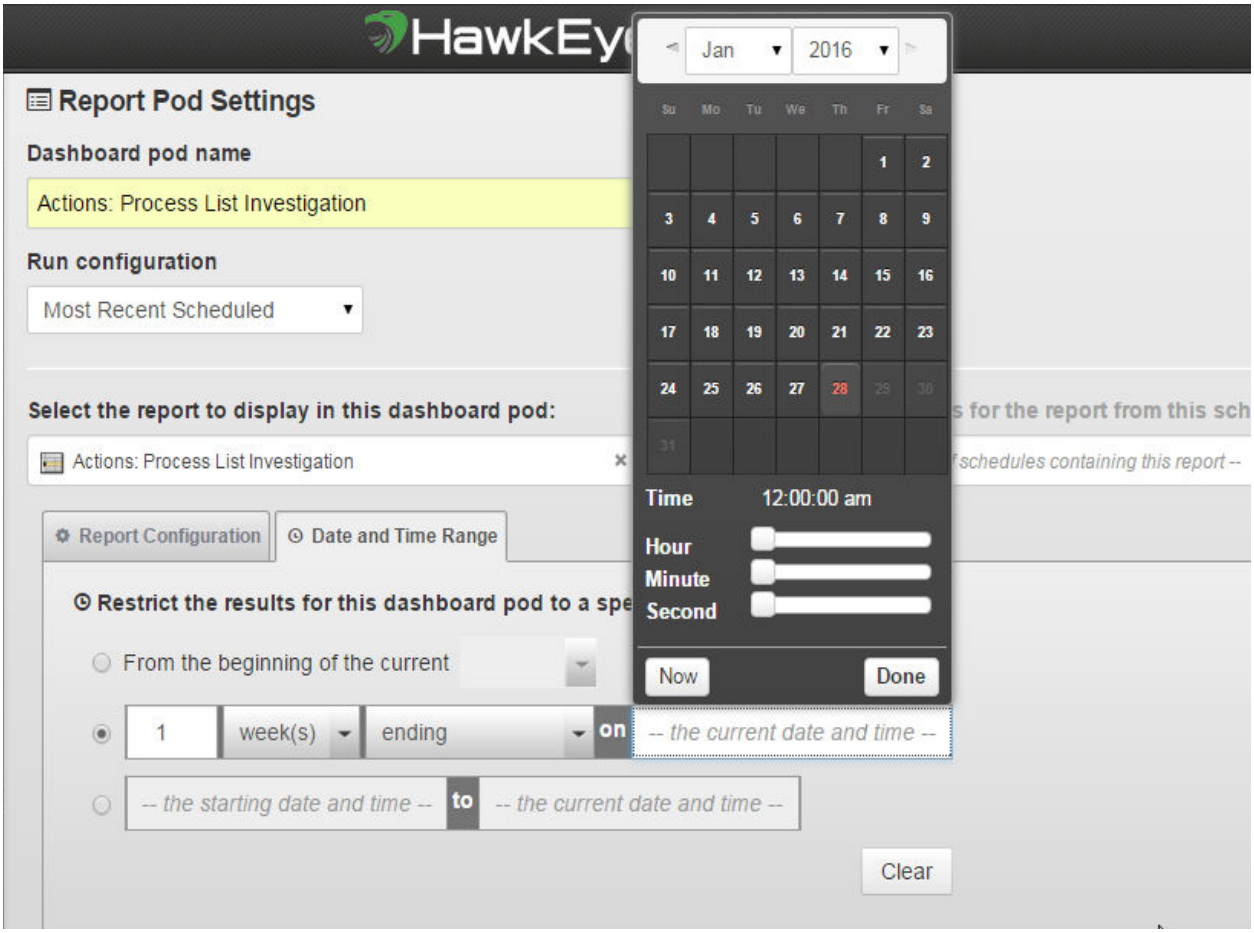
Figure 3-10: Show Charts or Grids for Report on Dashboard Pod

7 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; click **Done** when finished. The

date and time are automatically populated in the Date and Time Range box. NEW SCREENSHOT NEEDED

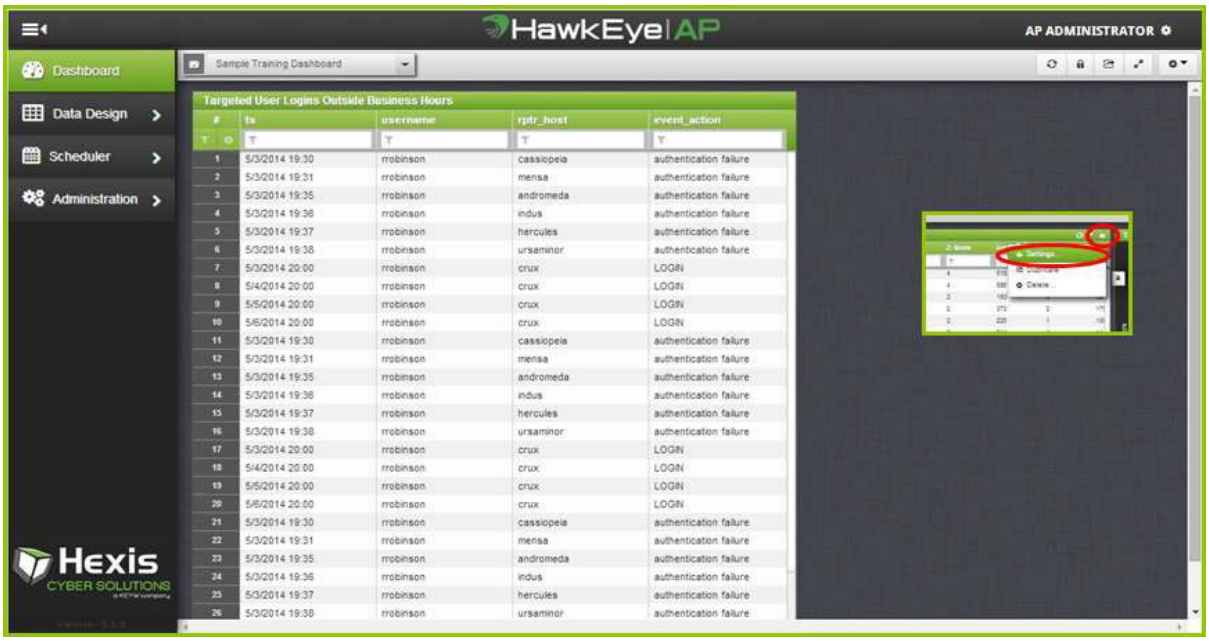
Figure 3-11: Date and Time Range for Dashboard Pod



8 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…**.

9 You can repeat steps 1-7 up to twenty times to add other reports to the dashboard.

Figure 3-13: Dashboard Pod Display

CHAPTER 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.

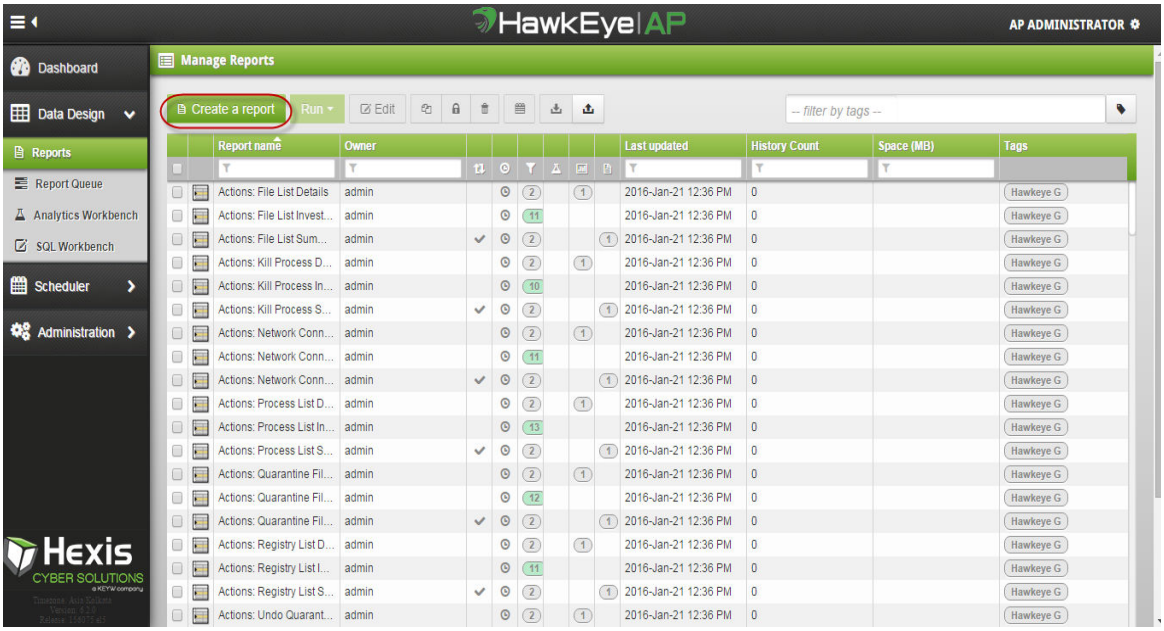
This chapter contains the following topics:

CREATING A REPORT

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.
NEED NEW SCREENSHOT

Figure 4-1: Create a Report Button

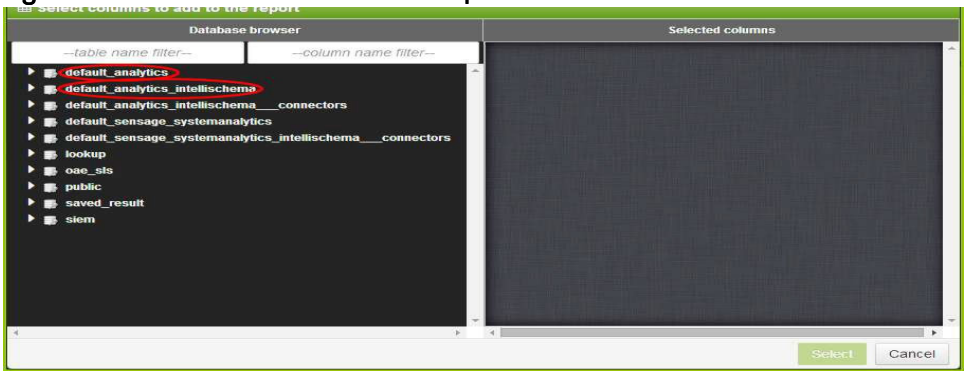


The first screen that is displayed lets you select the schema in which your data resides.

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 docs (“.”) 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

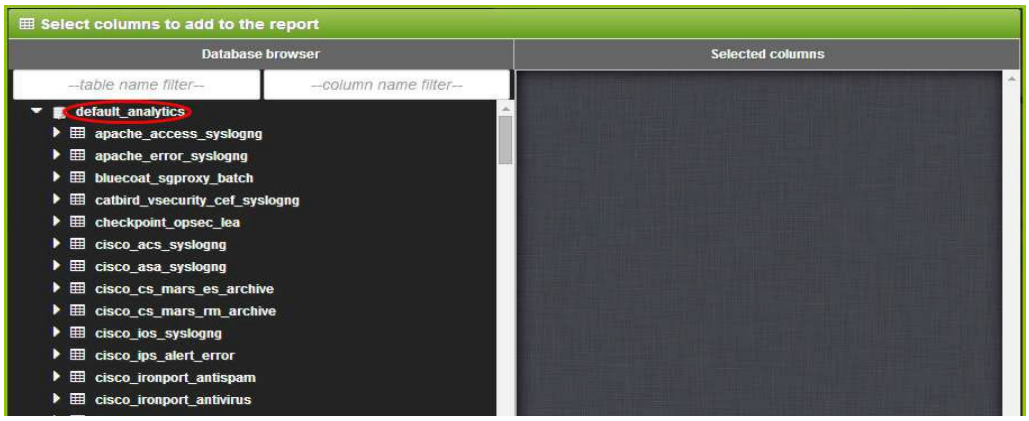
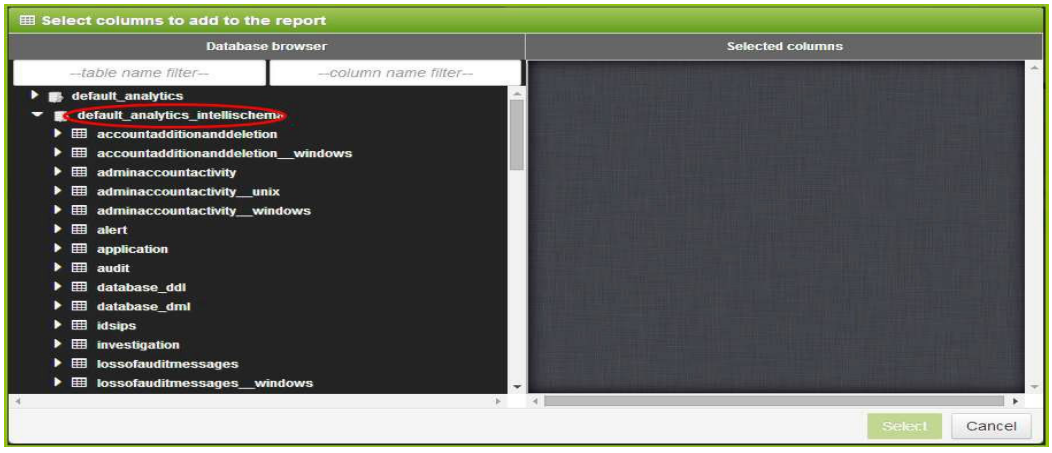


Figure 4-4:default_analytics_intellischema Views

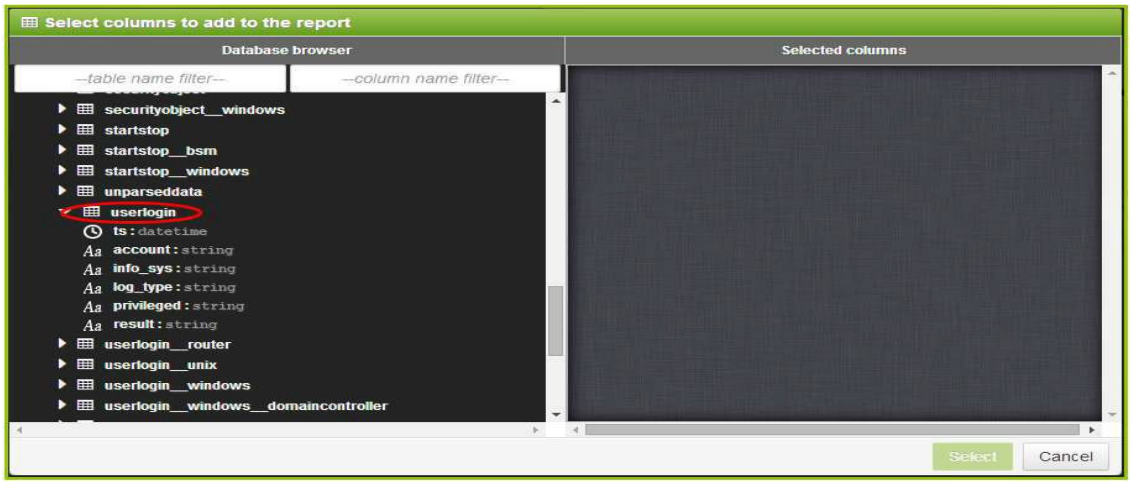


Also the Schema “default_sensage_systemanalytics” contains raw data collected from the SenSage AP installation itself, and the Schema “default_sensage_systemanalytics_intellischema” contains event-based normalized views of that data.

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

3 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



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

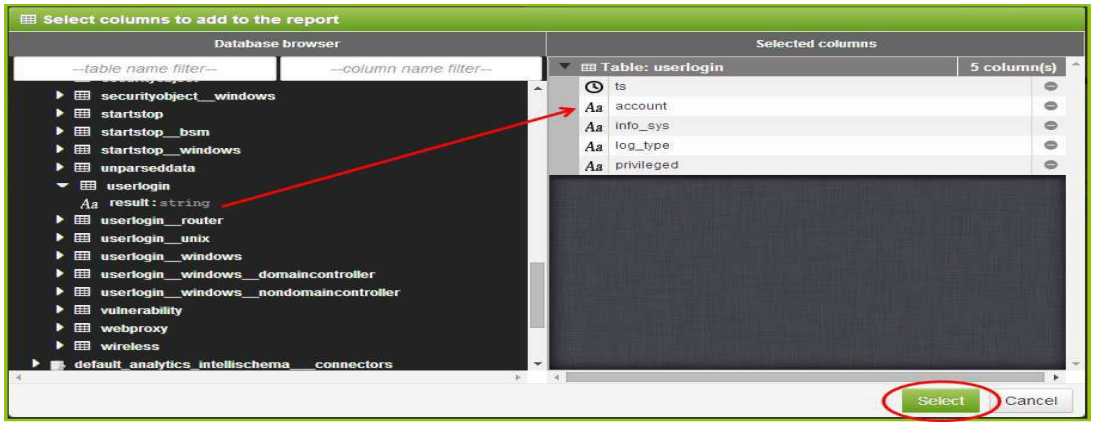
NOTE: Keep in mind few columns will have better performance due to the nature of columnar databases with true column-based storage systems.

5 Click the **Select** button to complete selection of your columns.

6 Click a raw data table or normalized view such as the view "userlogin" above to see the columns in that table.

7 Click each column you want to use in your report. As you click, the columns you select will immediately move to the right pane.

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

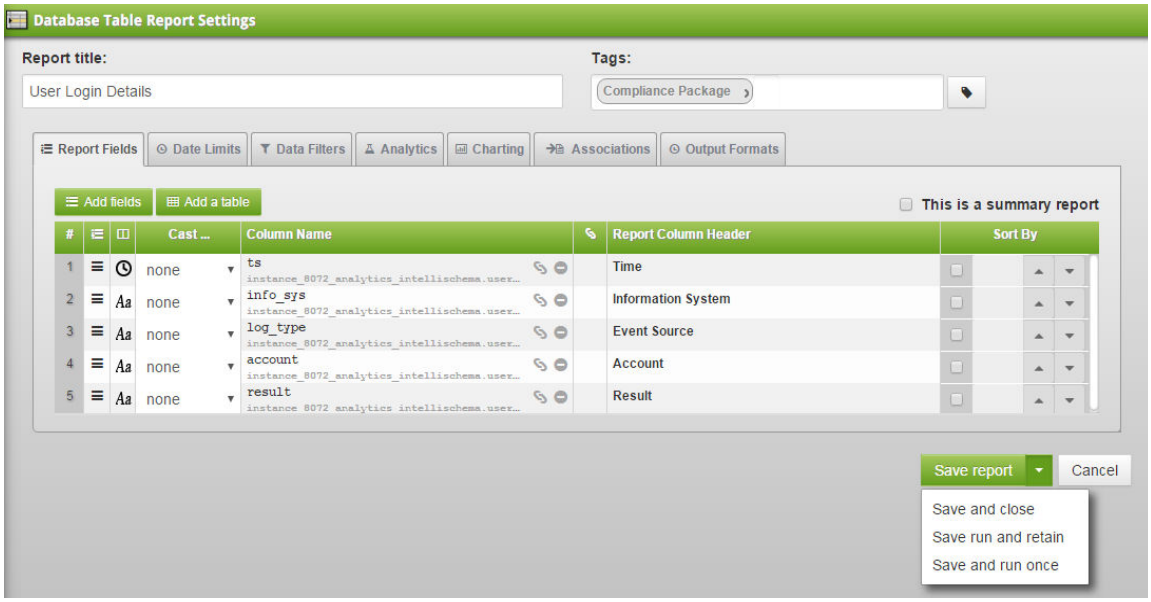


8 Click **Select** when you have completed selecting your columns.

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

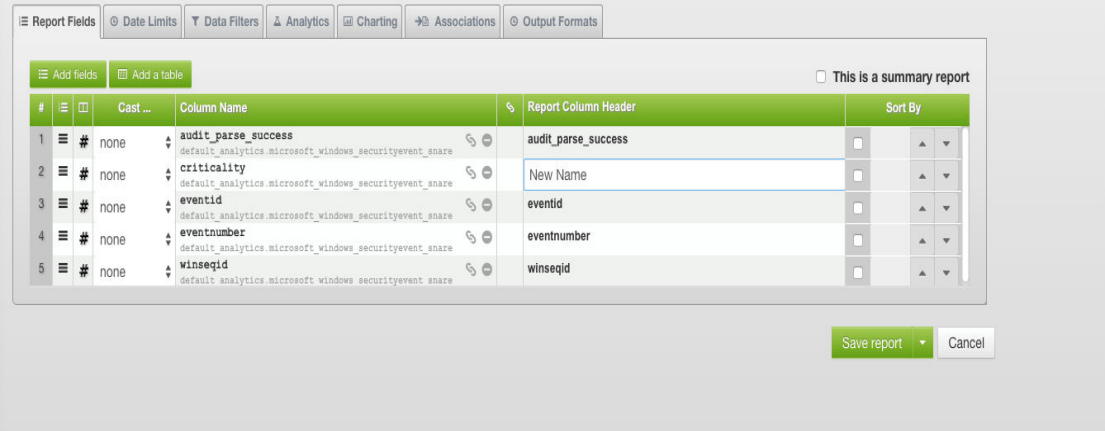
NOTE: In the Report Fields screen, the grid has a row that represents each column in the report. The datatype is represented by the second column in the grid and may be string, number, or datetime. Also note that as you set up your report fields, you can save your report with one of the following Save 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



9 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



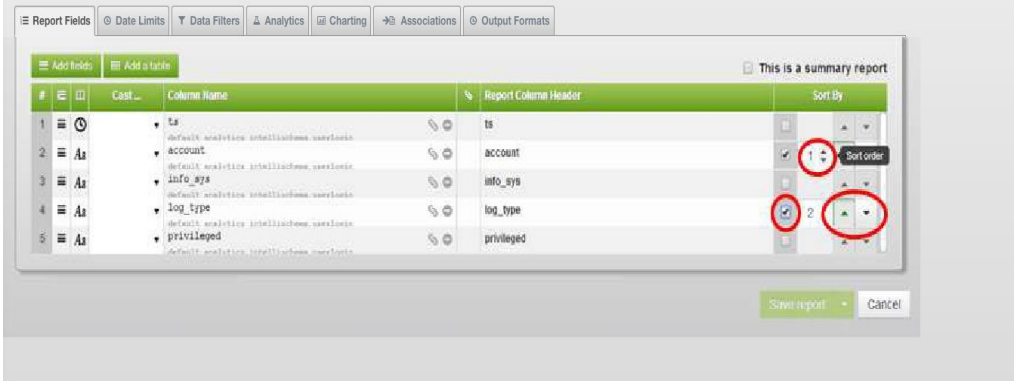
10 If desired, change the sort order of the report. All the options for sorting are on the right of the grid under the "Sort By" heading.

a Click the checkbox of the row(s) representing the column(s) you want to sort by.

b 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

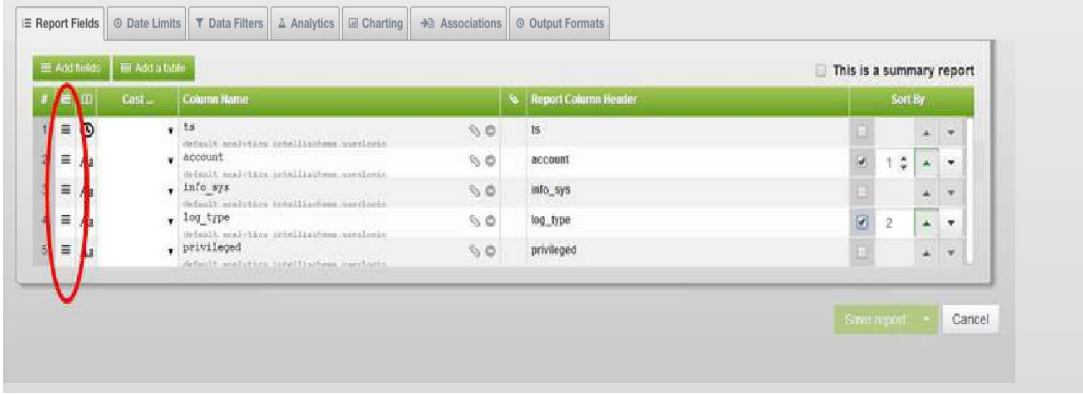
increase or decrease the sort order of that field.By default sorting is in ascending order. To change it to descending order, click the arrows to the far right.

Figure 4-8: Sorting by Column



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



12 If you want to:

- Join multiple tables in the report, see “Joining Multiple Tables in the Report”, on page 68.
- Create the report as a report summary, see “Specifying a Summary Report”, on page 71.
- 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 74.
- Create the report with runtime parameters, see “Setting Report Retention for Report History”, on page 74.
- Specify a retention period for the report’s history, see “Setting Report Retention for Report History”, on page 74. 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 78.
- Integrate Data Models for the report, “Integrating Data Models with the Report”, on page 81.
- 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 83.

13 Run the report to make sure your configuration is accurate. See the next section, Running a Report.

NOTE: If accurate and you want to add a chart for the report, see Chapter 5: Creating and Modifying Charts for a Report.

14 Make any changes by modifying the report and re-running. See “Modifying a Report”, on page 66.

RUNNING A REPORT

To run a report:

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

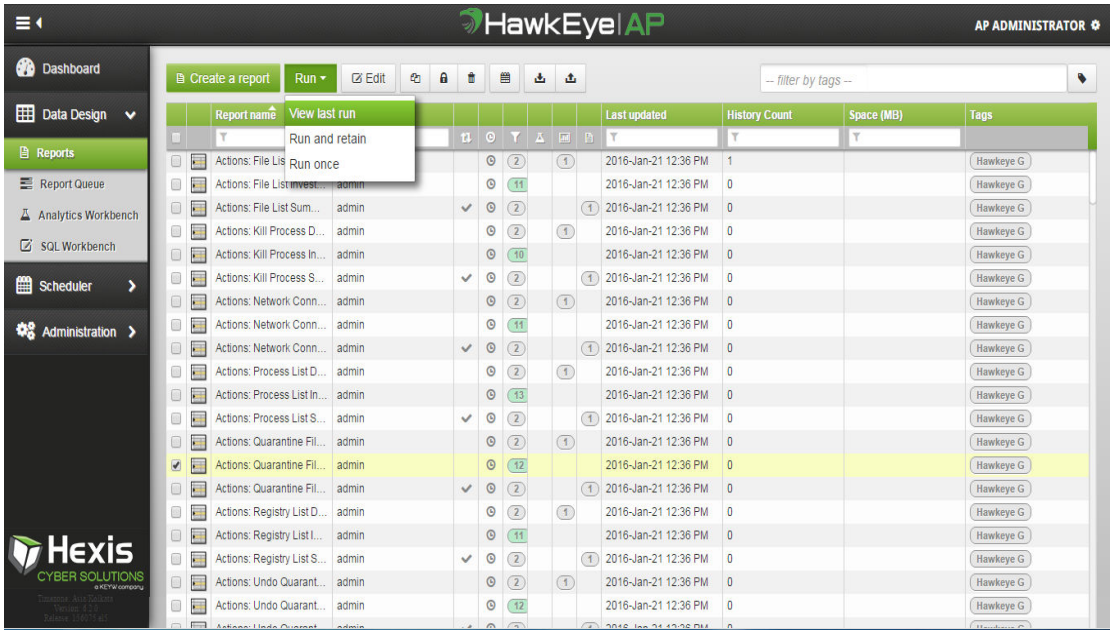
The Manage Report screen with the current listing of reports is displayed.

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.
NEED NEW SCREENSHOT

Figure 4-10: Selecting Report to Run



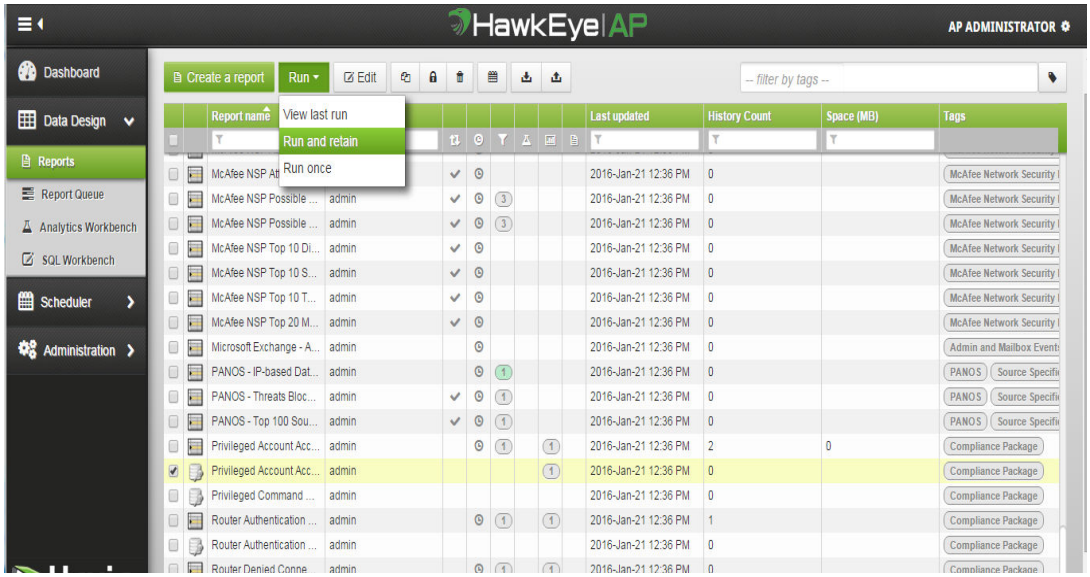
3 If selecting a report to run instead of viewing a last run of a report, choose one of the desired **Run** options described below:

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.

NEED NEW SCREENSHOT

Figure 4-11: Selecting Run Option

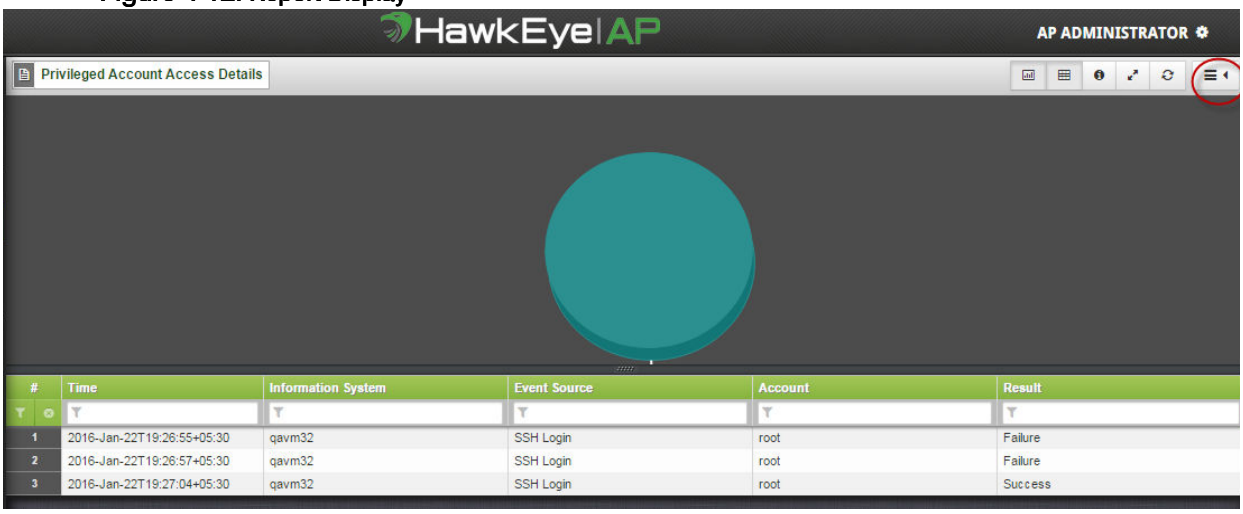


a To run the report and retain a copy of the report for historical purposes, select **Run and Retain**. The report's run history is retained up to a specified retention period that is set for the report (see "Setting Report Retention for Report History", on page 74).

b 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 as shown in Figure 4-12. NEED NEW SCREENSHOT

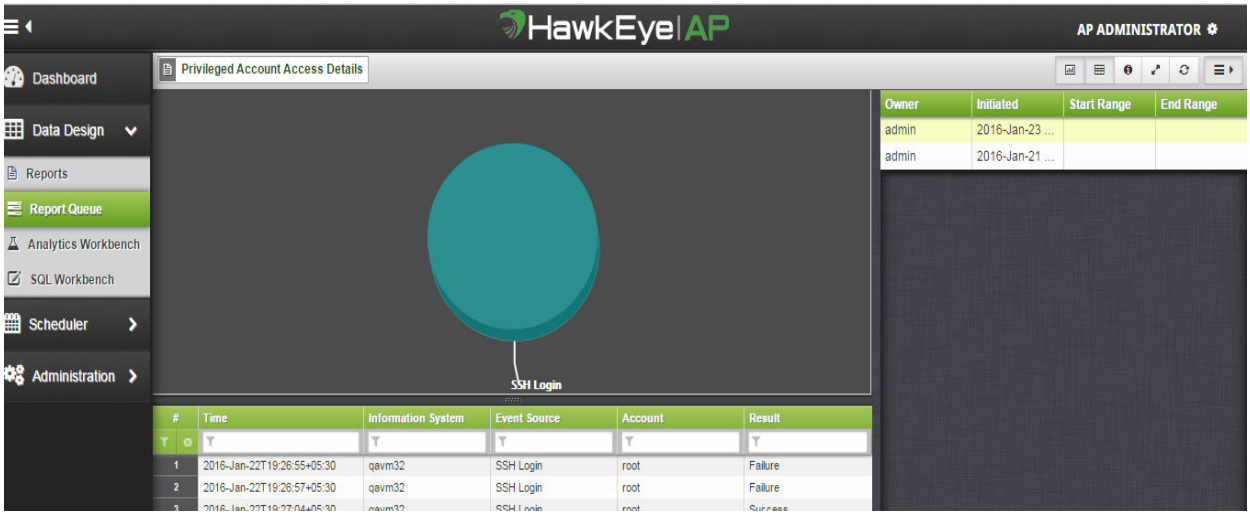
Figure 4-12: Report Display



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. NEED NEW SCREENSHOT

Figure 4-13: Report Display with History



TIP: 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.

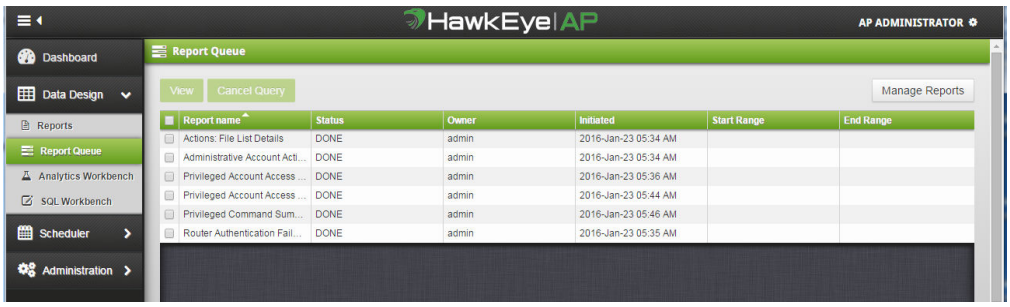
VIEWING REPORT RUN STATUS

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. NEW NEW SCREENSHOT

Figure 4-14: Report Queue



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

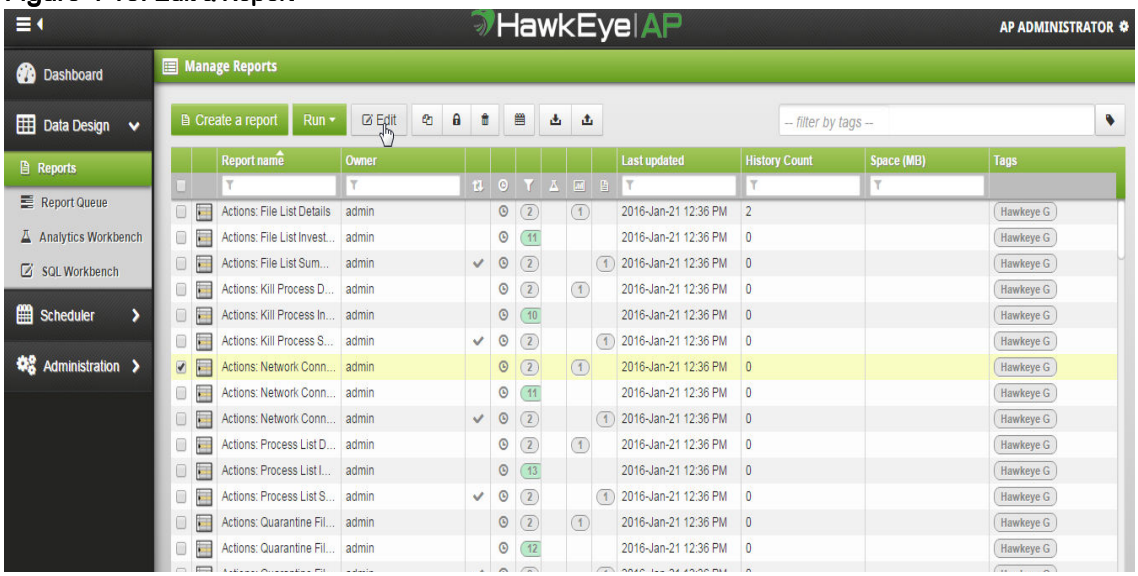
To modify a report, perform the following tasks:

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.

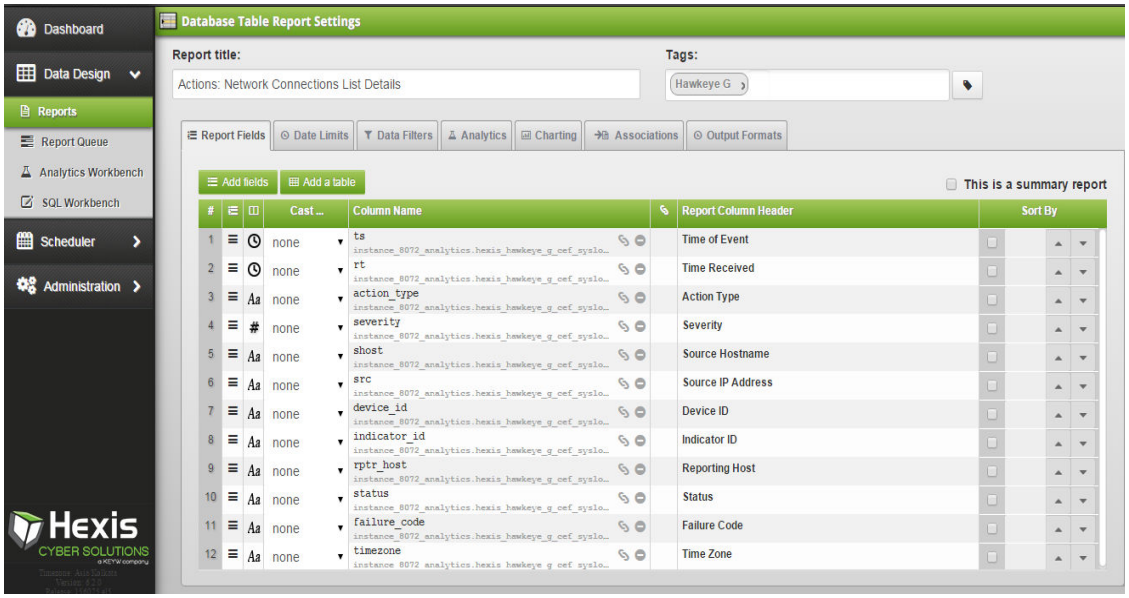
2 Scroll or find the desired report, check the report that you want to modify, and click **Edit**. NEED NEW SCREENSHOT

Figure 4-15: Edit a Report



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

Figure 4-16: Report for Editing - NEED NEW SCREENSHOT



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

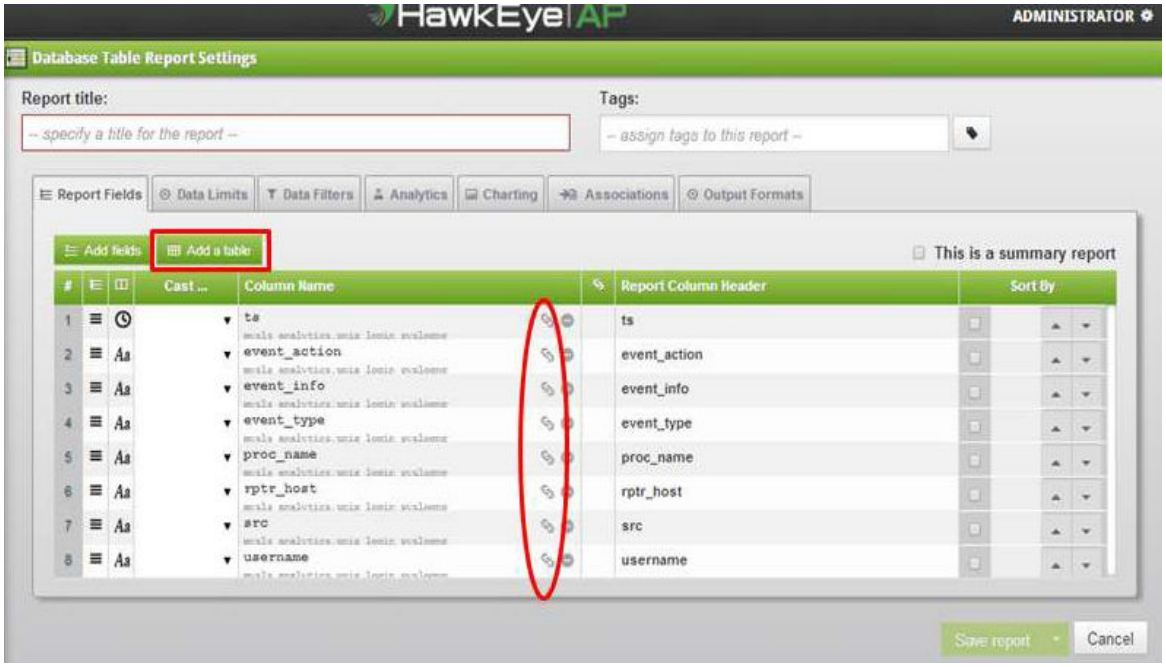
You can have an existing table in your report joined by one or more specified tables from your data source.To add tables to your report:

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.

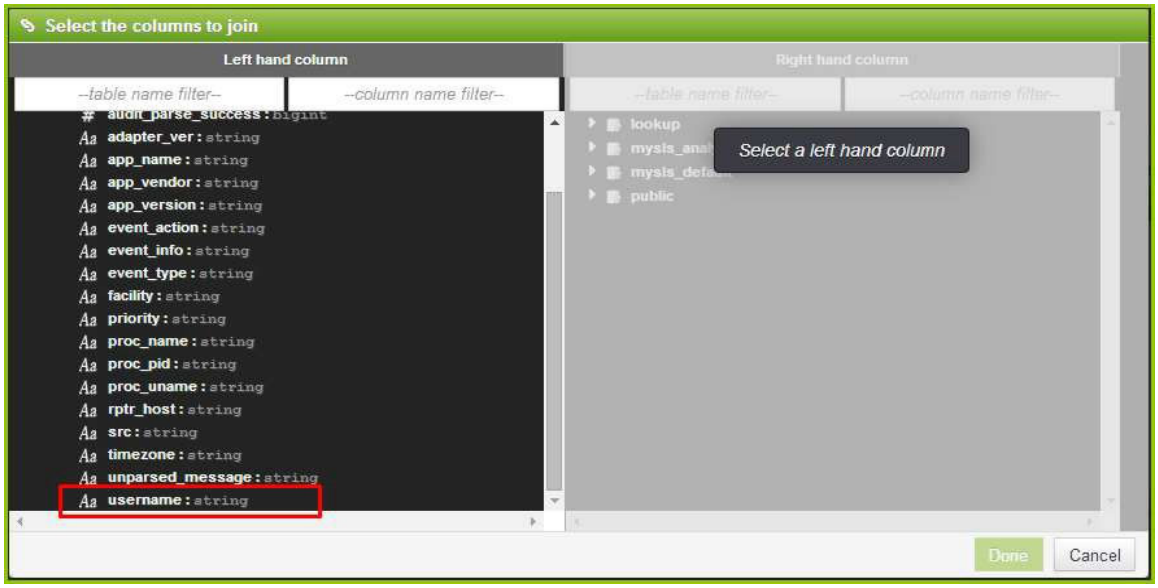
b If you do know which field you want to use to join the tables and you have selected that table (so that it is showing in the field list), click the 'link' icon to the right of the field name. This will save a step in the next dialog box. Go to Step 3.

Figure 4-17: Selecting Table/Field to Join NEED NEW SCREENSHOT



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

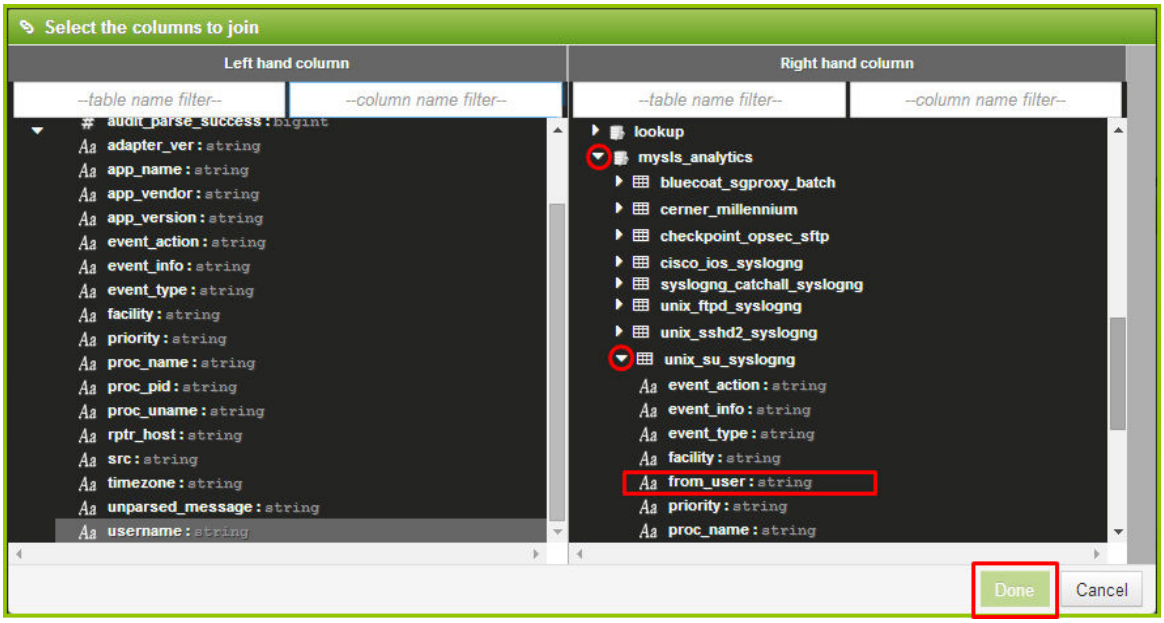


3 After the column(s) is selected, choose the second column you want to use. Click the arrow next to a schema to expand the list of tables in that schema. Then click the arrow next to the table to expand the list of columns in that table. To quickly find specific tables or columns, type part of the name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

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

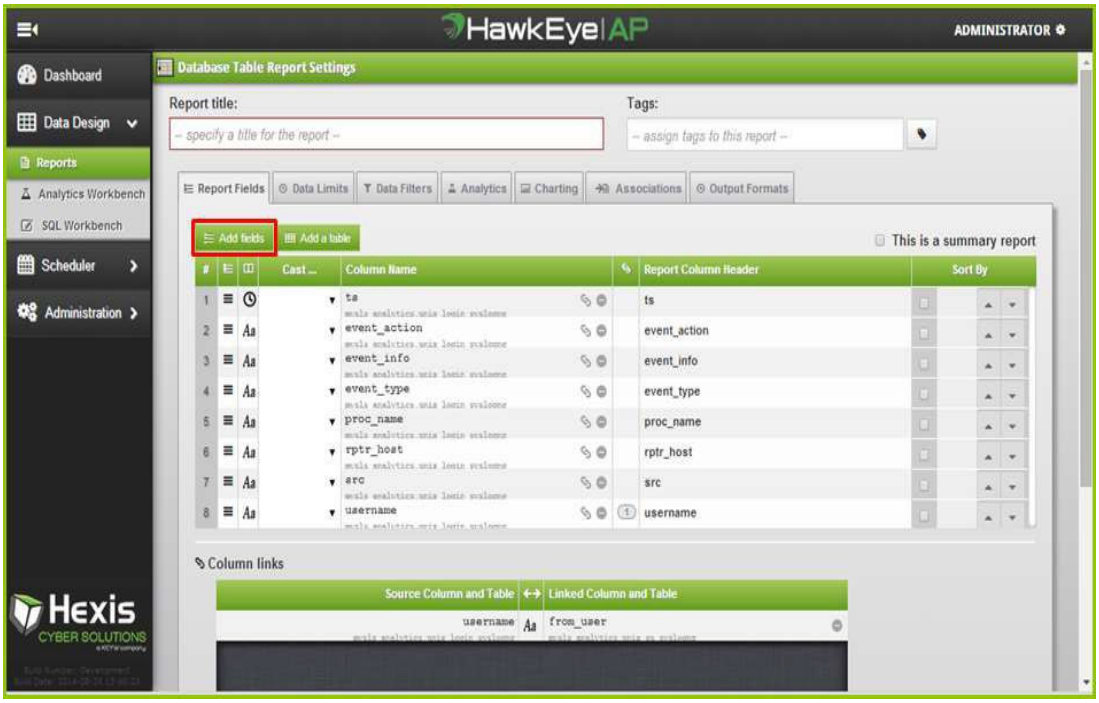
Figure 4-19: Second Column(s) for Join



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."

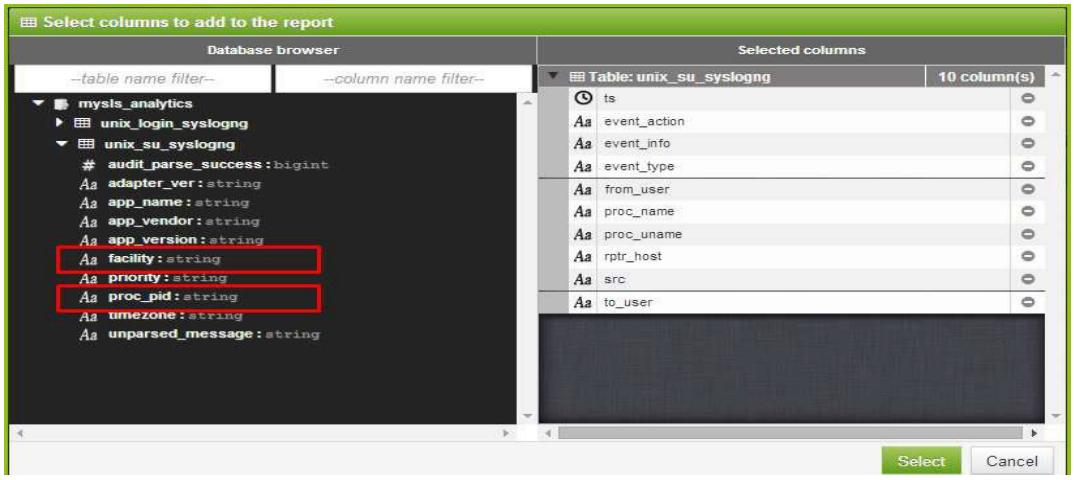
Figure 4-20: Add Fields from Second Table for Display - NEEDS NEW SCREENSHOT



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.

5 When finished selecting your fields, click **Select**.

Figure 4-21: Select Columns to Add to Report

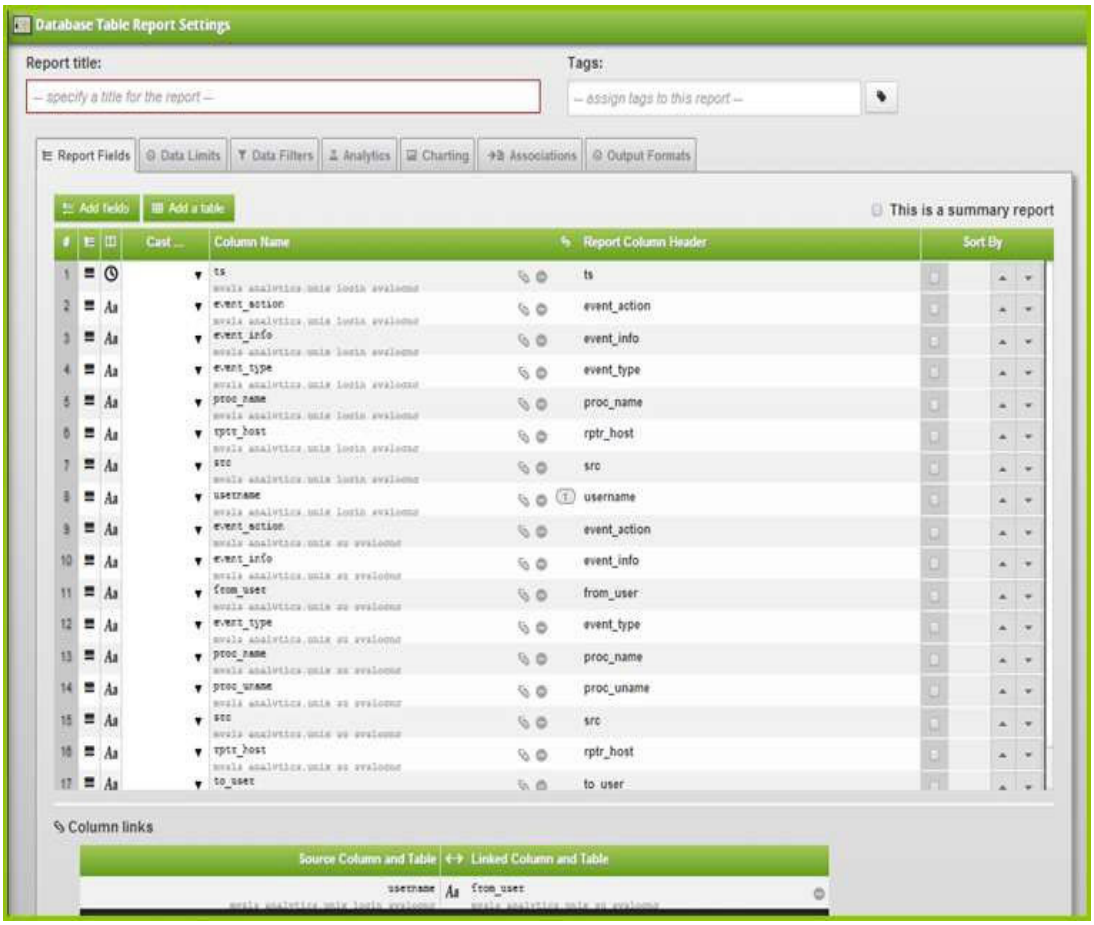


After you have selected your additional fields, all fields are displayed in one grid as shown in Figure 4-22. The small gray text under each field shows the name of the table. To avoid

confusion, you can rename the headers in fields that may have an identical name in both tables.

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).

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.

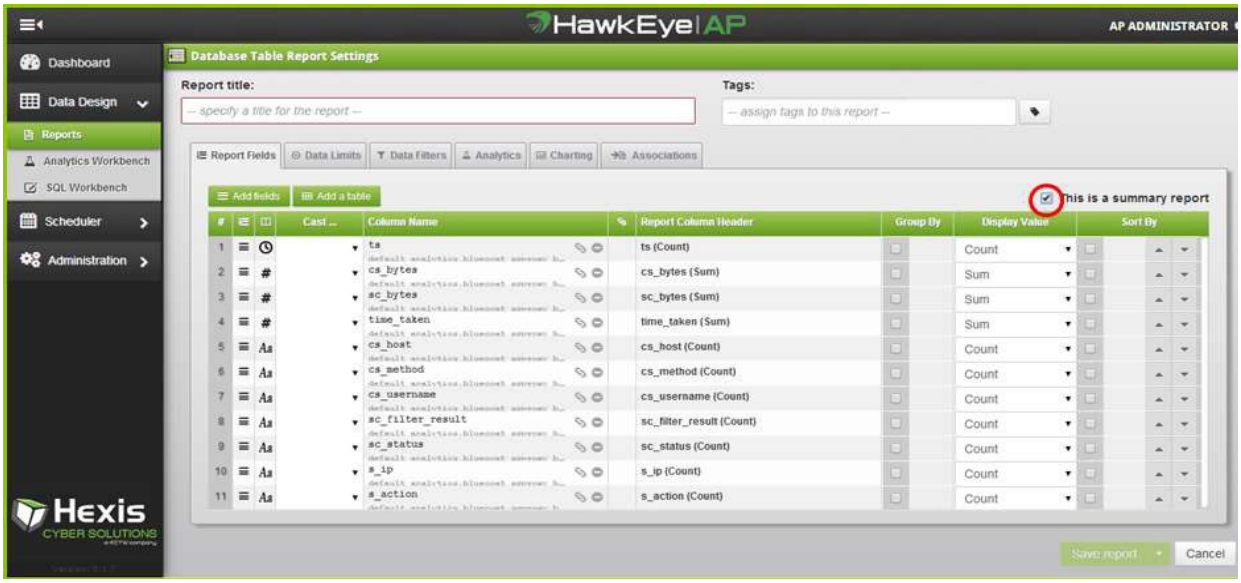
To specify the report as a summary report:

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

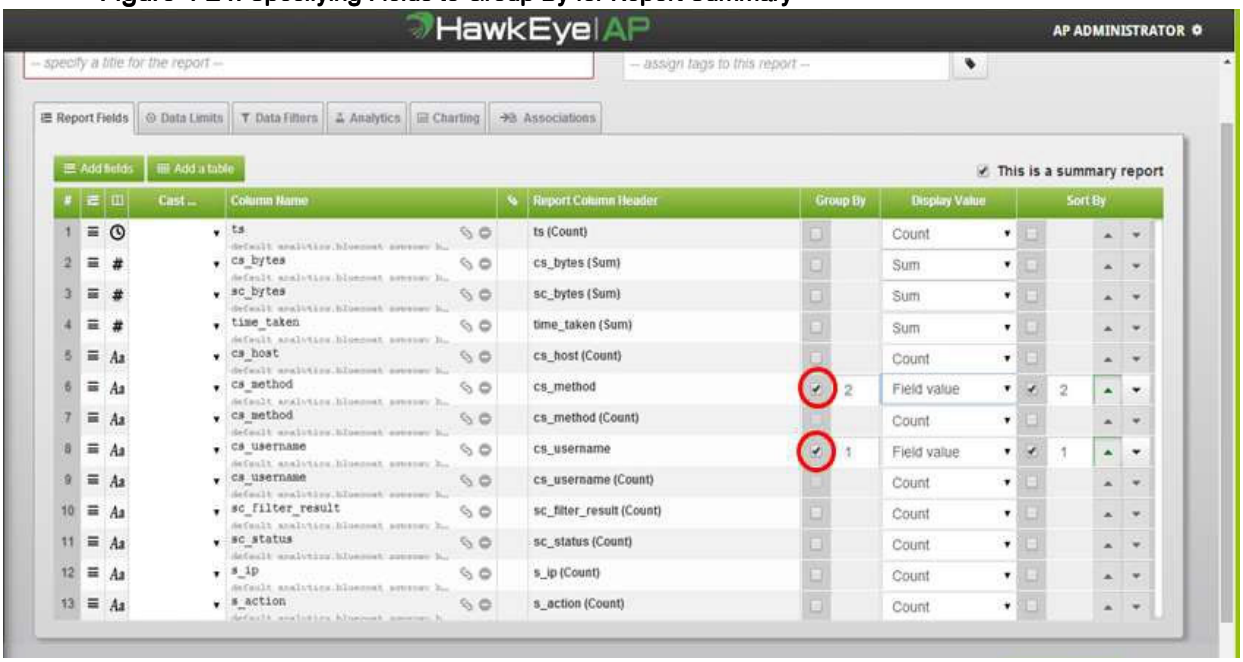
Figure 4-23: Specifying Summary Report - NEED NEW SCREENSHOT



2 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.

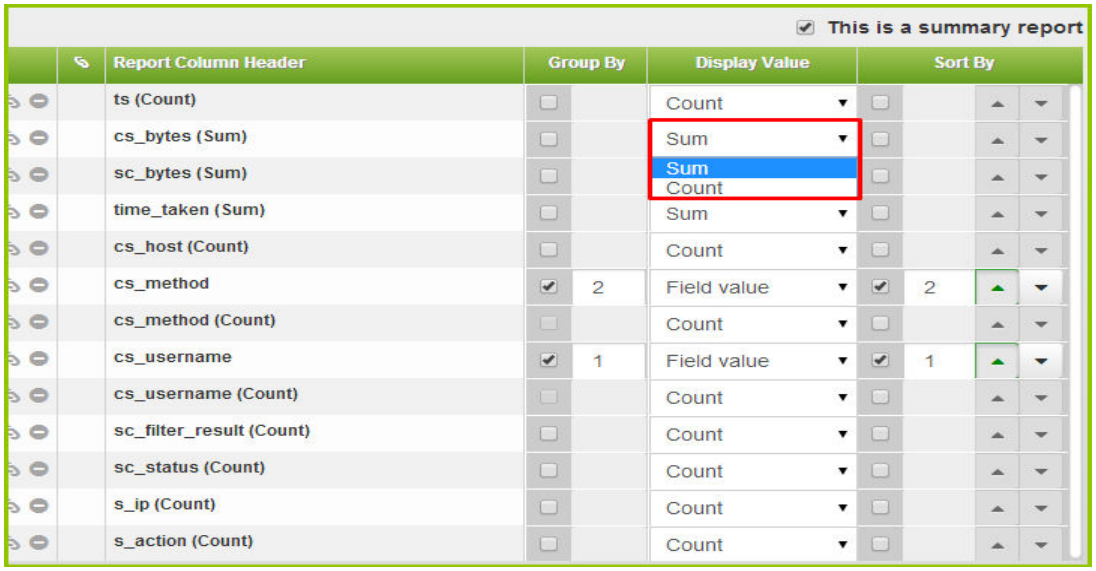
Each time you check the Group By box that row will be duplicated and the value in the Display Value column of the original row will change to "Field Value". These are the only columns which will show actual data from the source table. The remaining columns show the aggregate function (summary information)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

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



3 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.

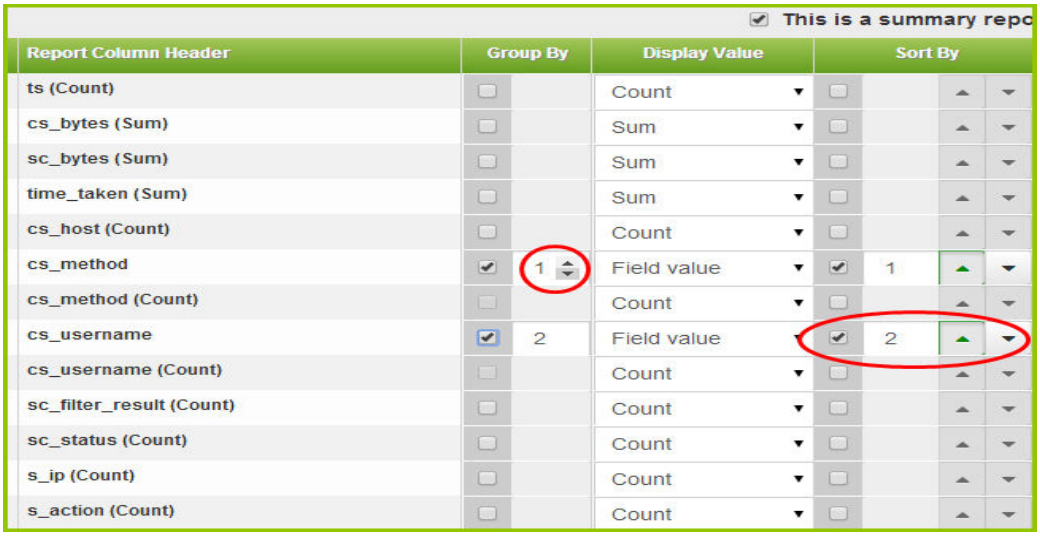
Figure 4-25: Specifying Aggregate Function for Summary Report



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



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).

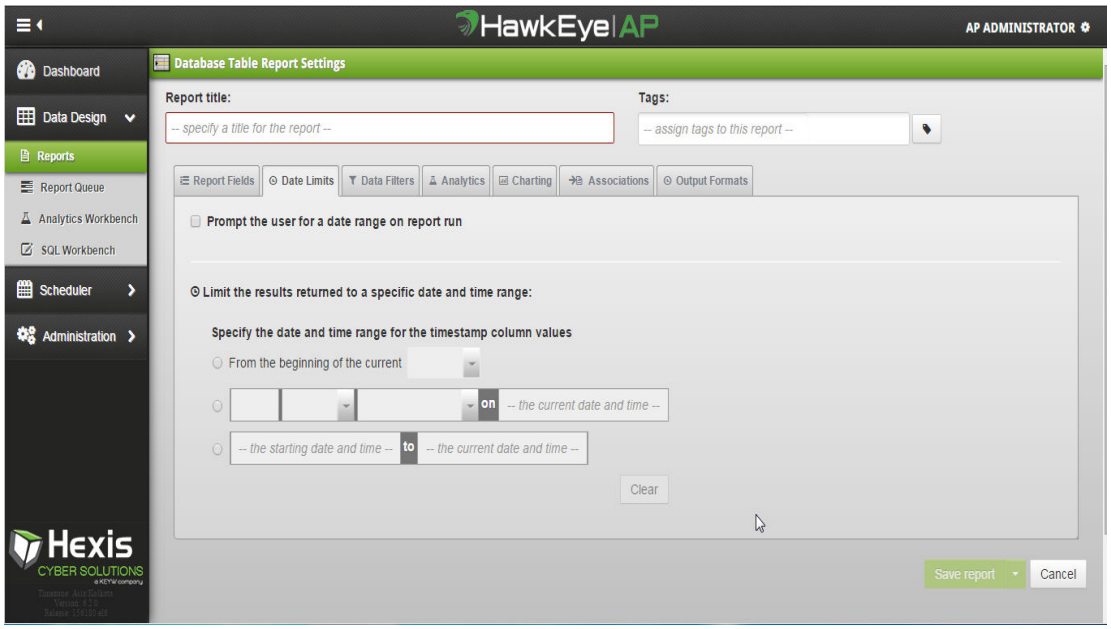
PROVIDING A DATE LIMIT PROMPT IN THE REPORT

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 NEED NEW SCREENSHOT



2 Check the first box on the screen to specify that the system prompt the person running a report too 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

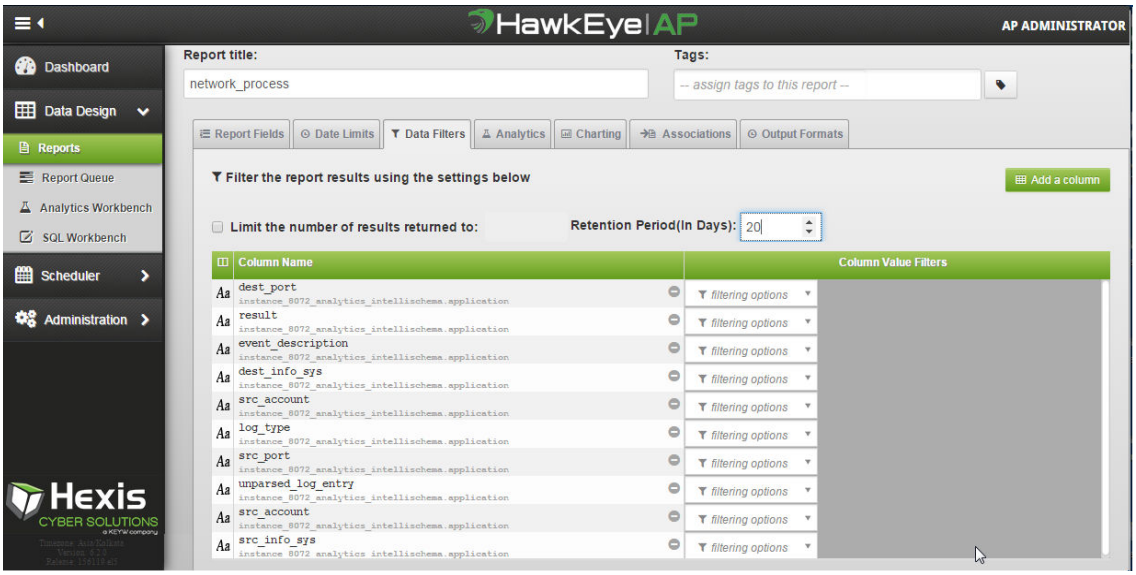
When you create a report, it is set up by default to record history up to a retention period of seven days.

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 - NEED NEW SCREENSHOT



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

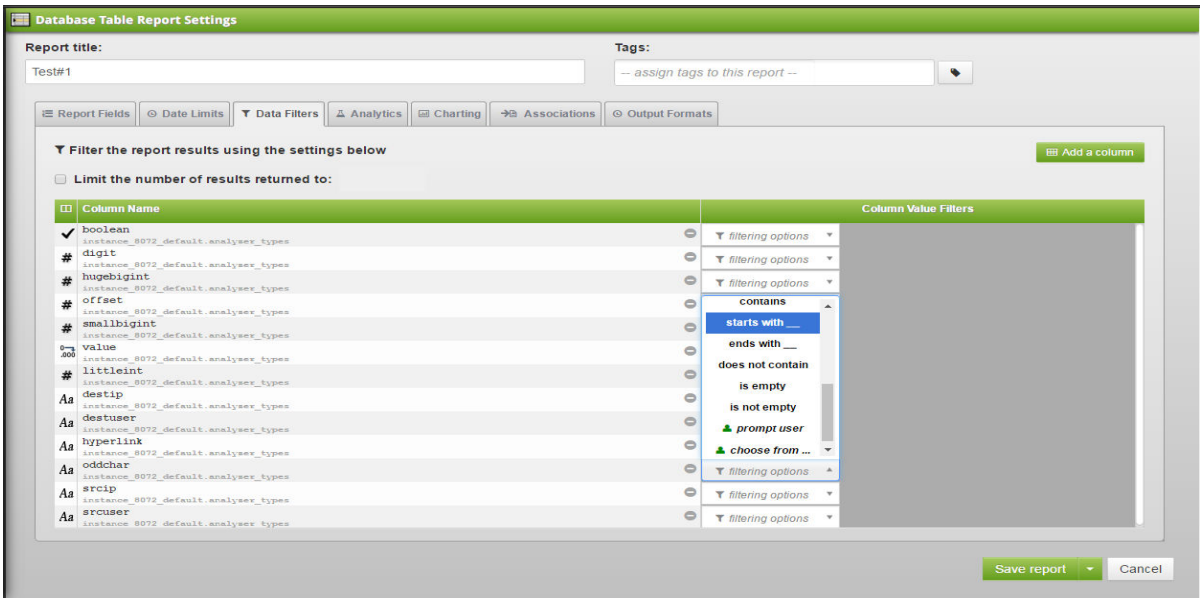
You can specify an interactive report in which the Analyzer will filter data based on what parameters the user specifies when running the report.

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 78.

To provide an interactive parameter-based runtime report:

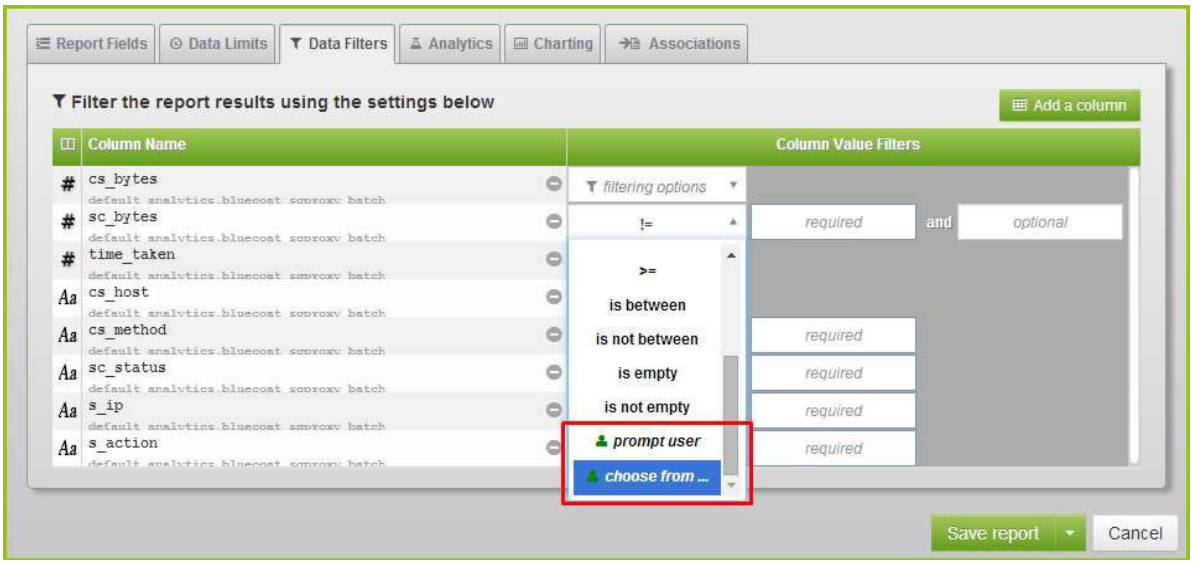
1 Click the Date Filters tab in the Report Wizard to specify available parameters for the report column.

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



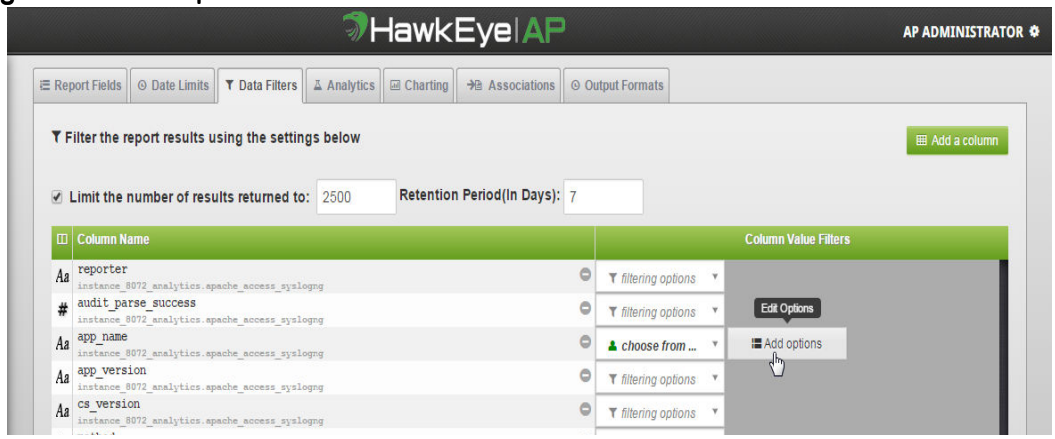
a For fields with filter type "prompt user" you have the option of requiring that the user enter a value or letting the user run with no filter:

- *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.

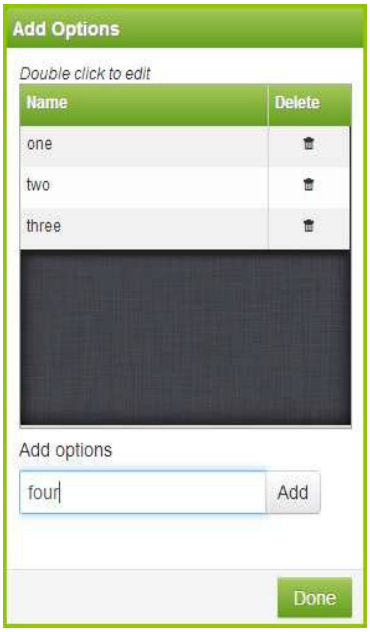
NOTE: If the report has already been defined and you are editing the filters, you will see an **Edit Options** button instead.

Figure 4-31: Add Options Button - NEED NEW SCREENSHOT



a 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



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).

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.

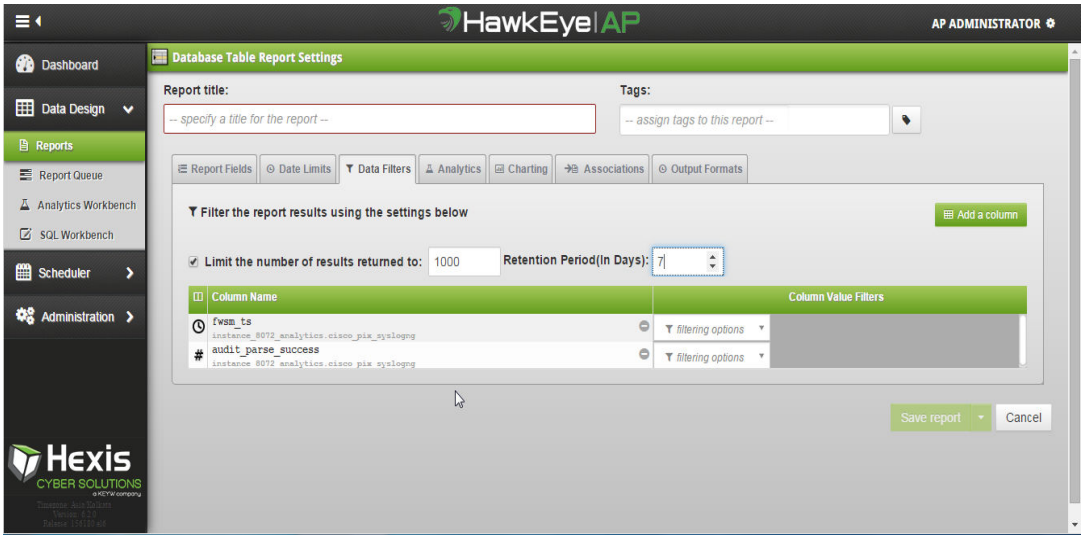
2 If desired, provide entries for the following options:

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.

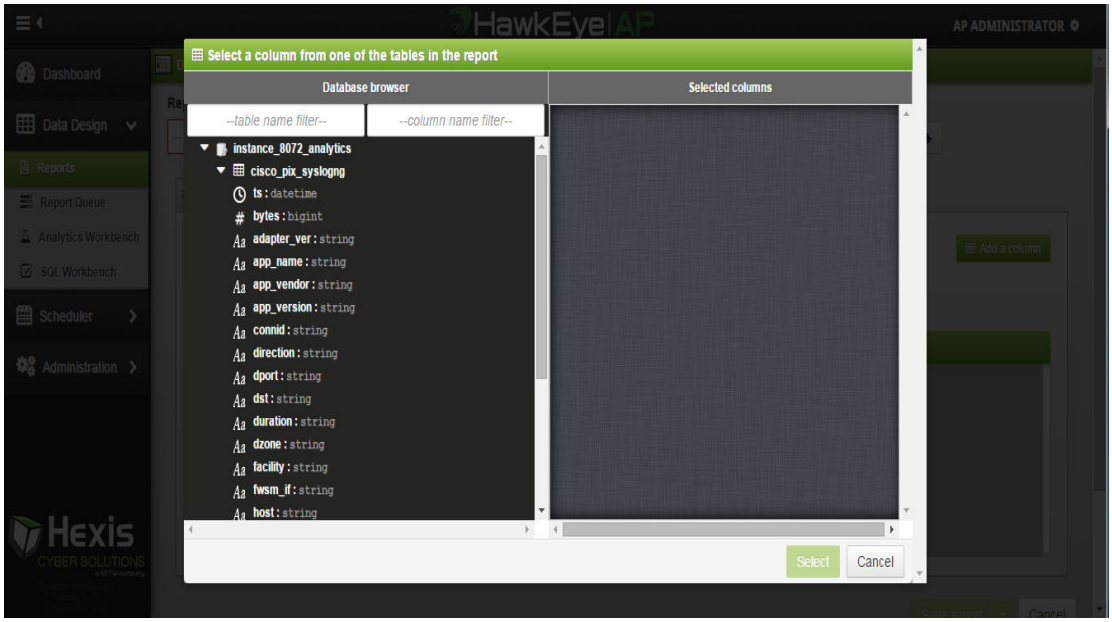
Figure 4-33: Limiting Number of Results



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.

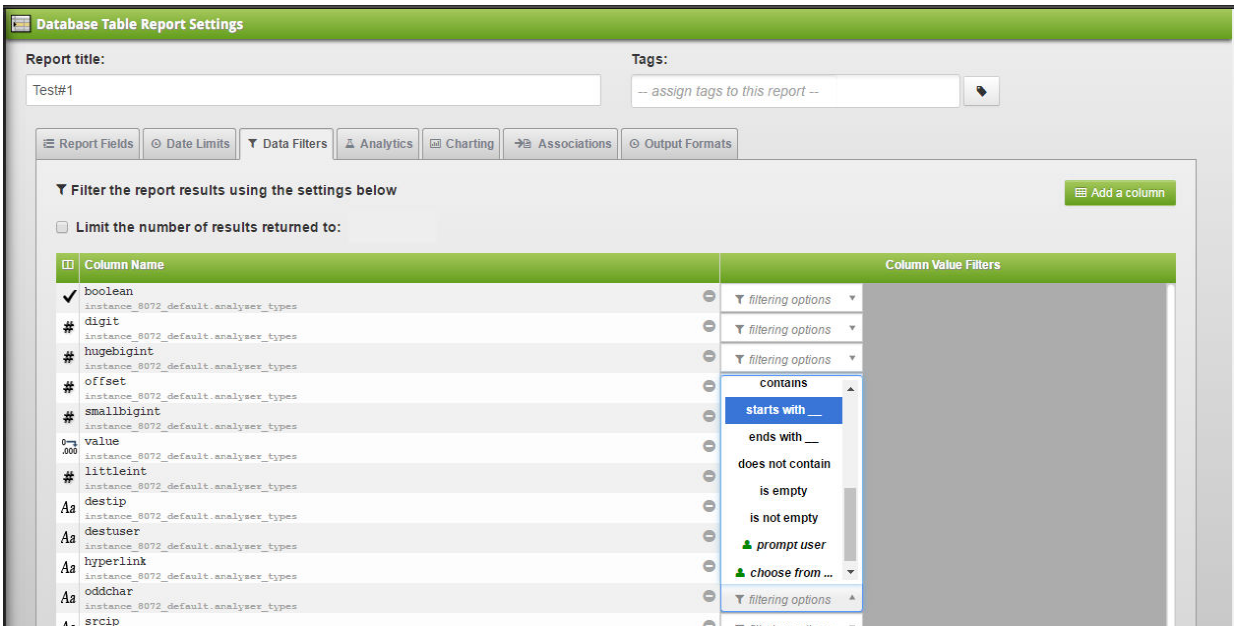
A dialog box similar to the initial field selector dialog box (when you first defined the report) is displayed listing additional fields from the same source table.

Figure 4-34: Filtering Report with Undisplayed Fields



4 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.

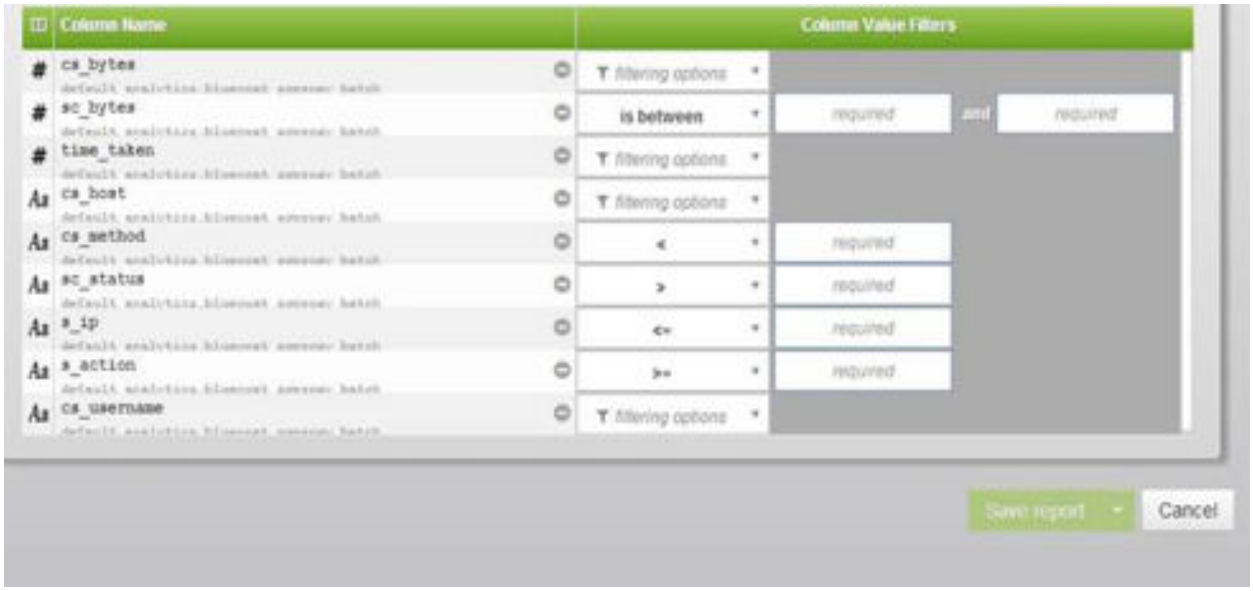
Figure 4-35: Filtering Type Options



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 75.

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.

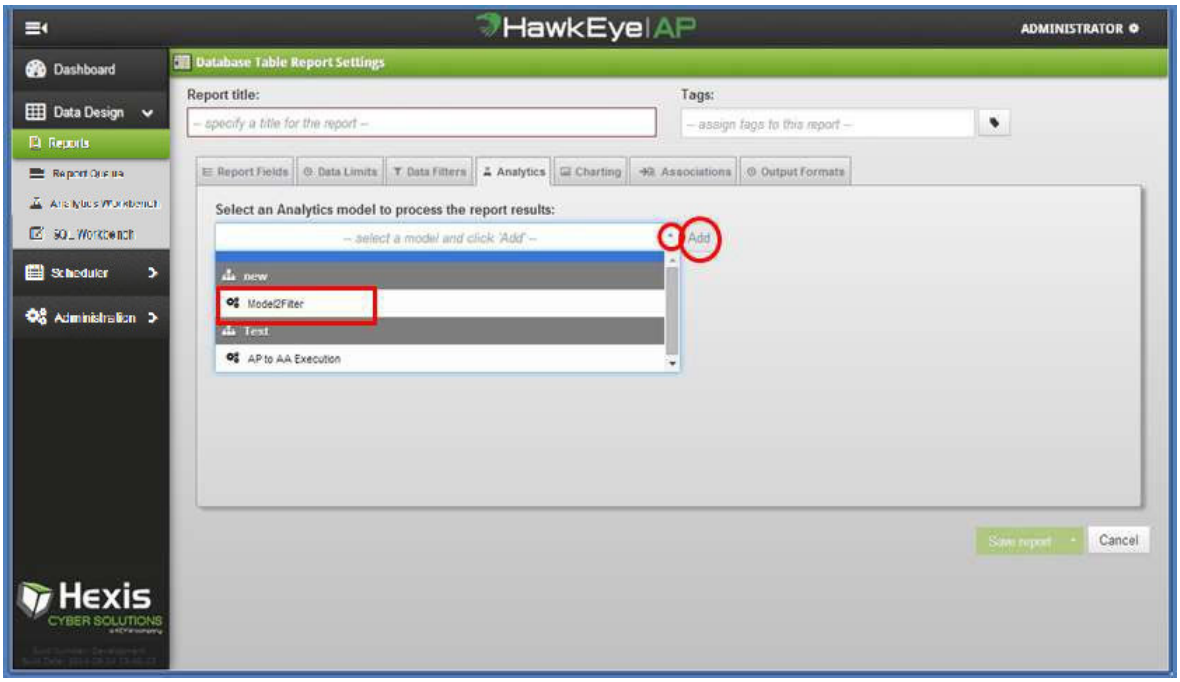
In a data model the report data can be combined with any other data including data outside of databases. For instance you may have a report with the geo locations of IP addresses – a model could run through the location results and run a script to look at the historic temperature of each location at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

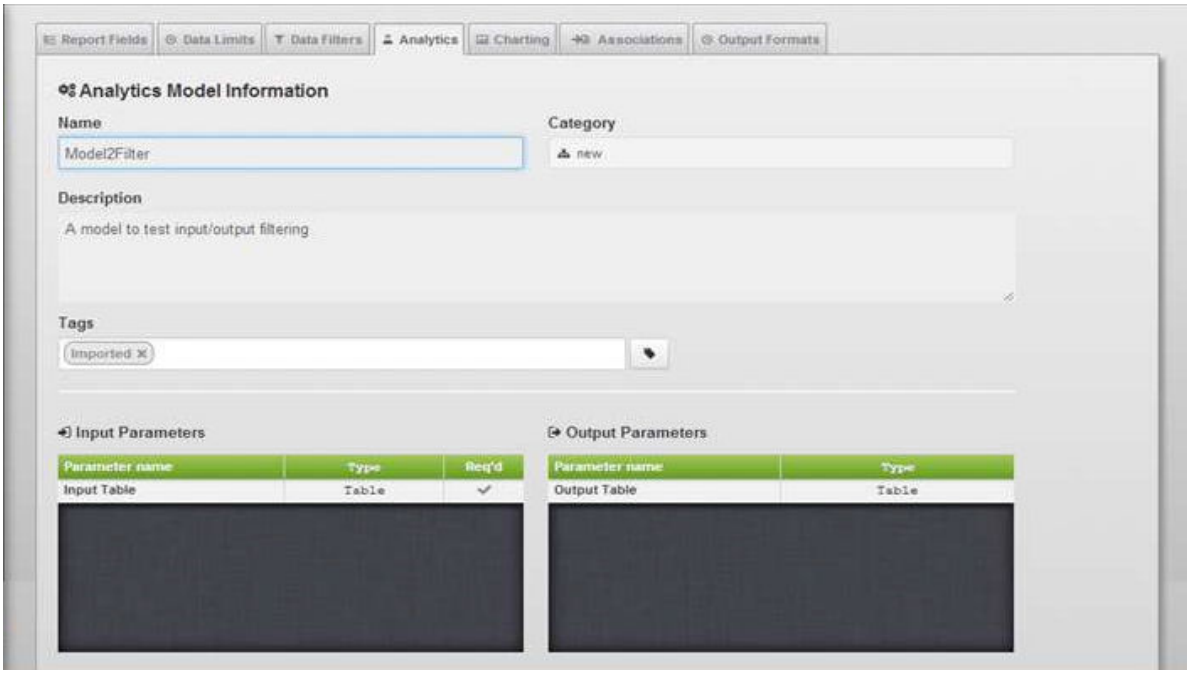
Figure 4-37: Specifying a Data Model for Report Integration NEED NEW SCREENSHOT



2 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



3 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).

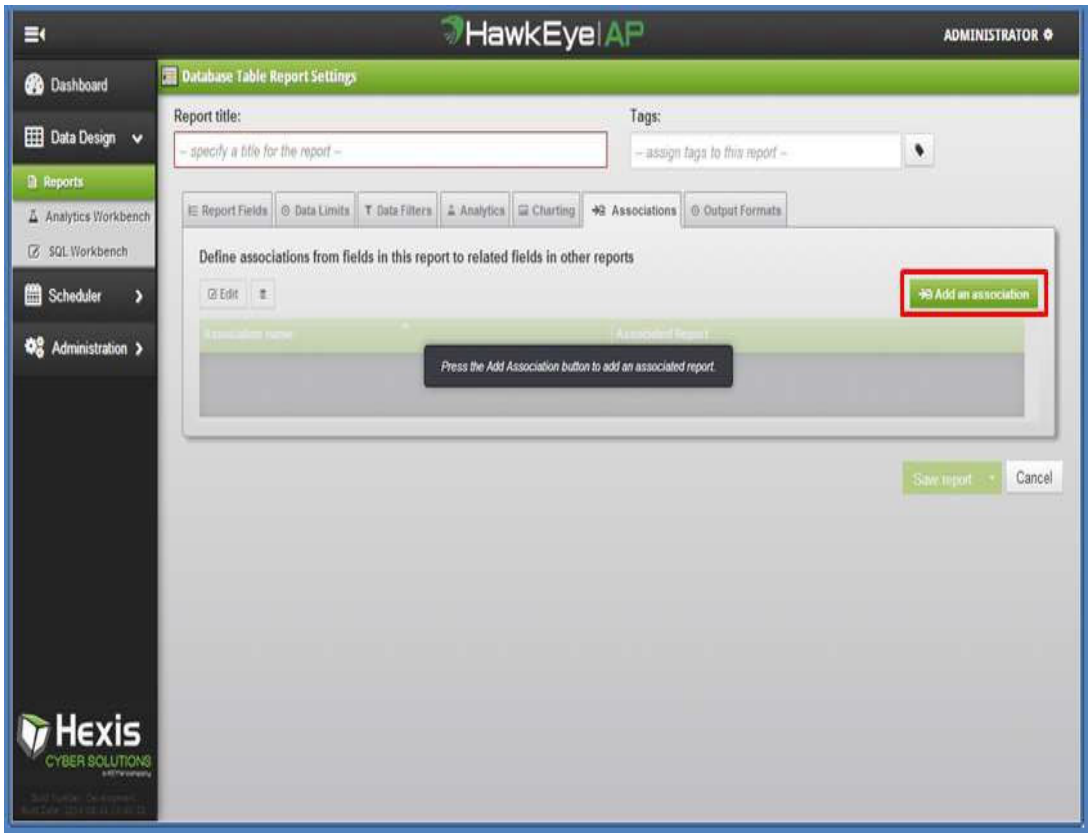
ASSOCIATING THE REPORT WITH A RELATED REPORT FOR DRILL-DOWN

Associated reports are two reports that are related by one 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 - NEED NEW SCREENSHOT

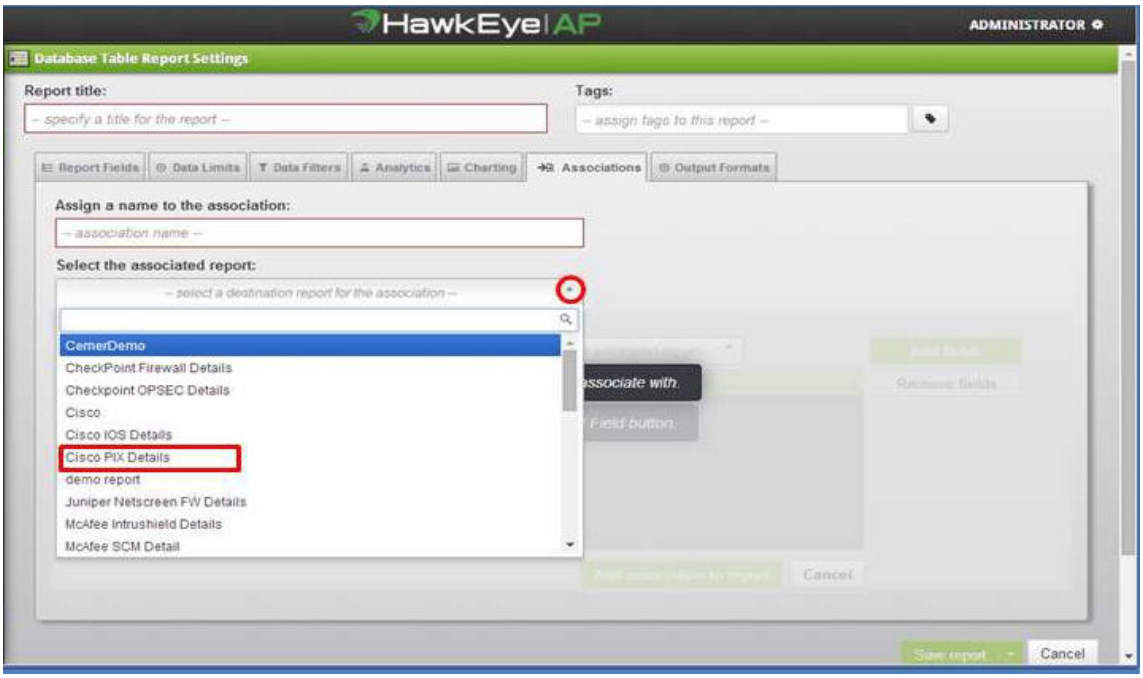


2 Click the dropdown arrow under the label "Select the associated report".

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.

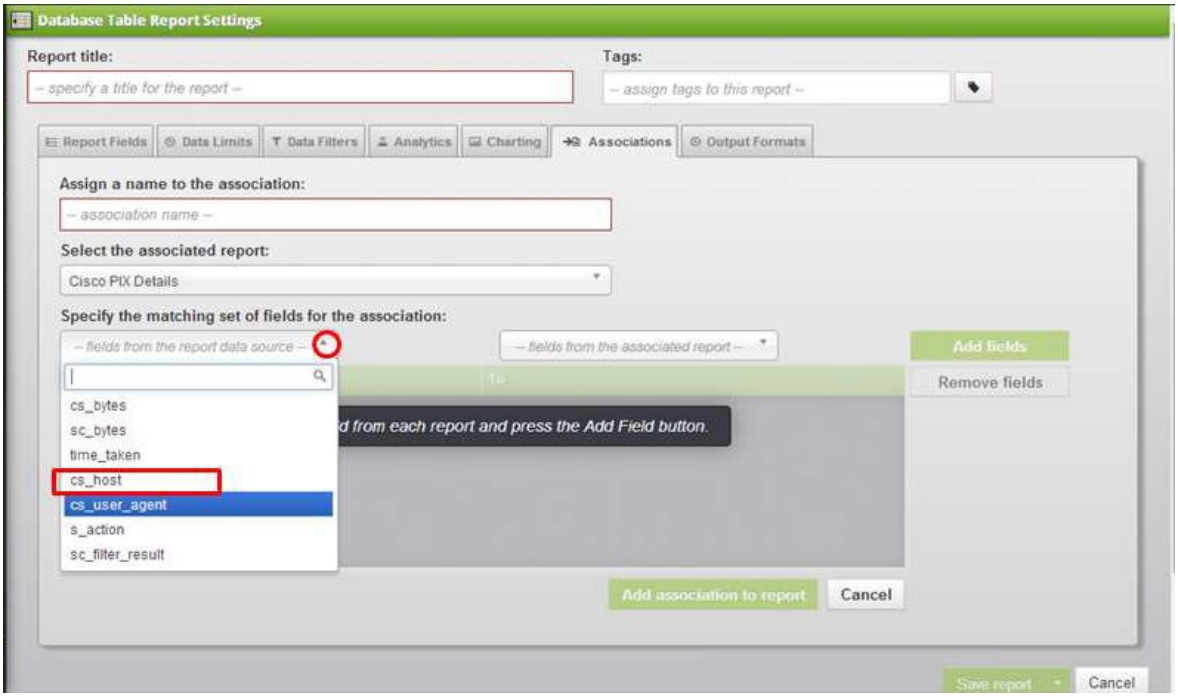
3 Select the specific report that you want to associate with the current report.

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.

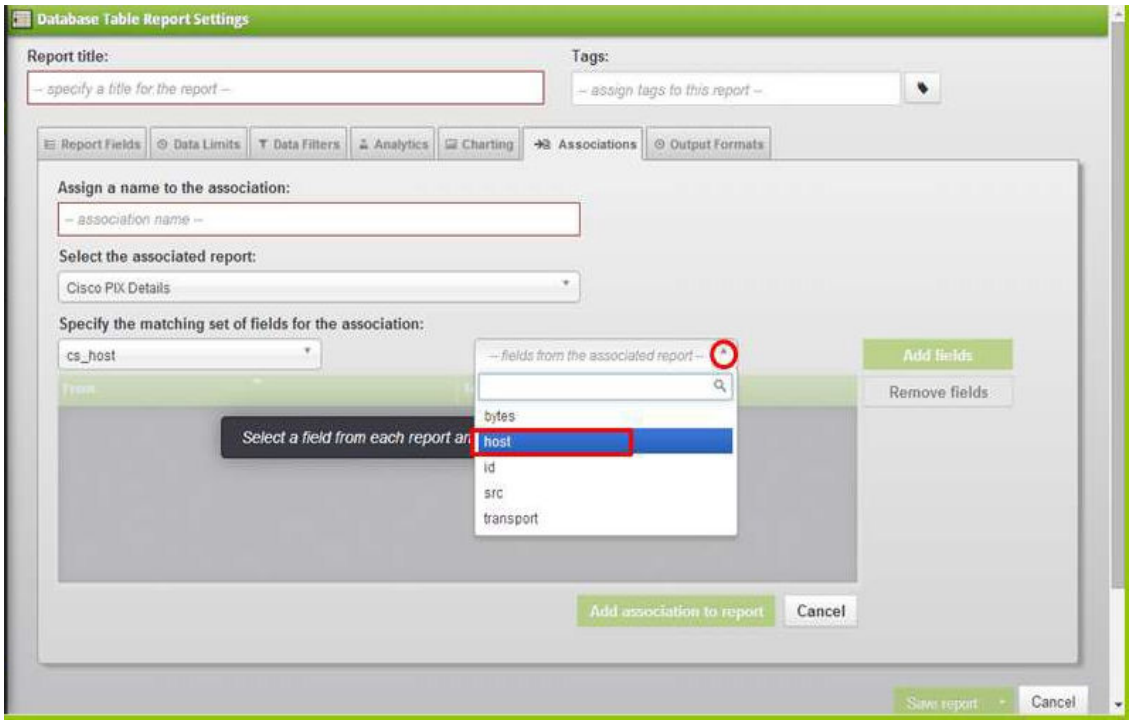
Figure 4-41: Specify Related Field in the Source Report



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.

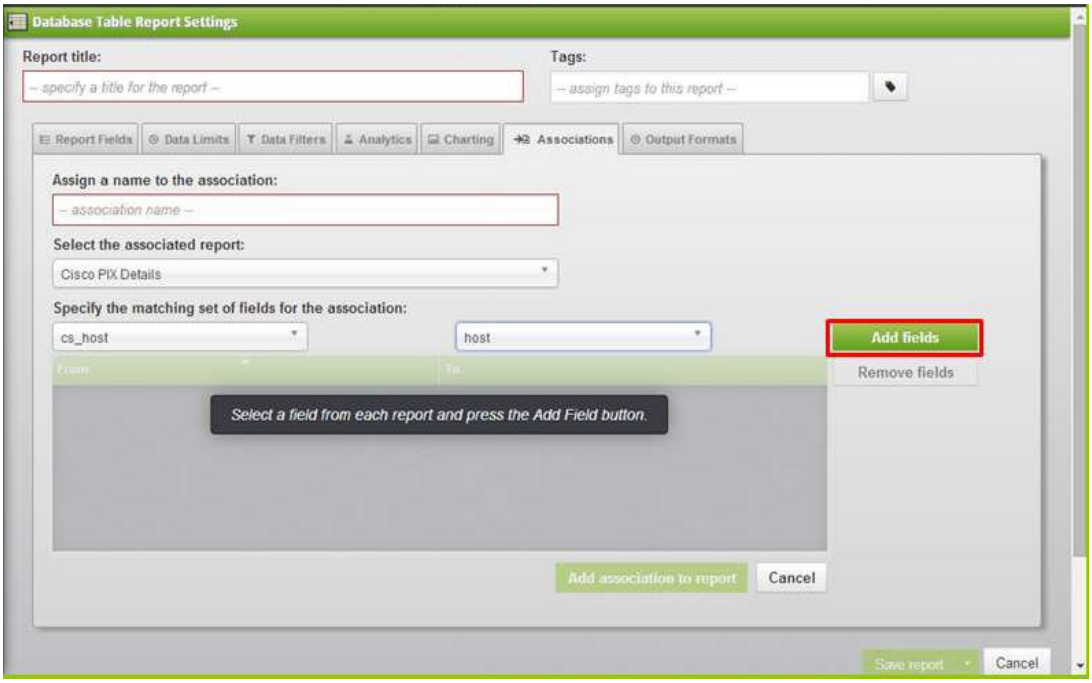
Figure 4-42: Specify Related Field in the Source Report



6 Click the **Add Fields** button.

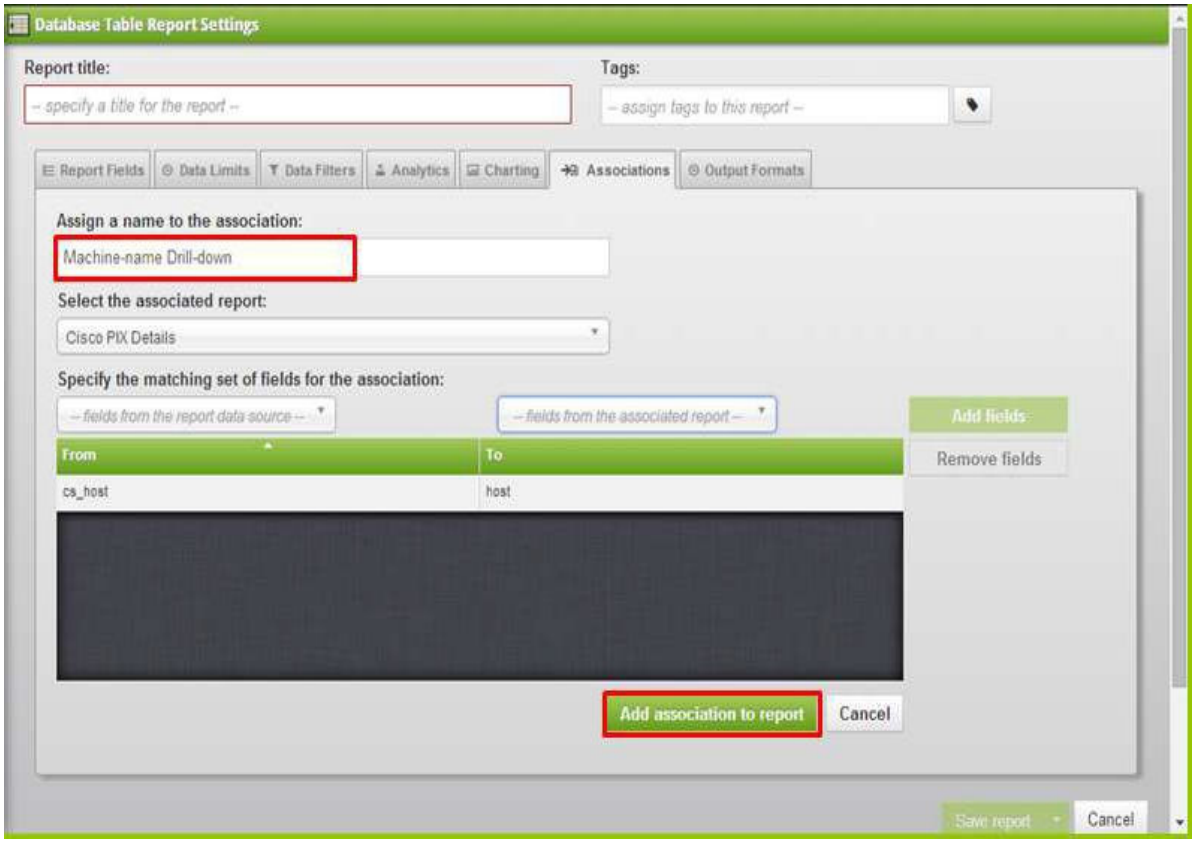
You may repeat Steps 5-6 to add additional relations between the reports.

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



7 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):

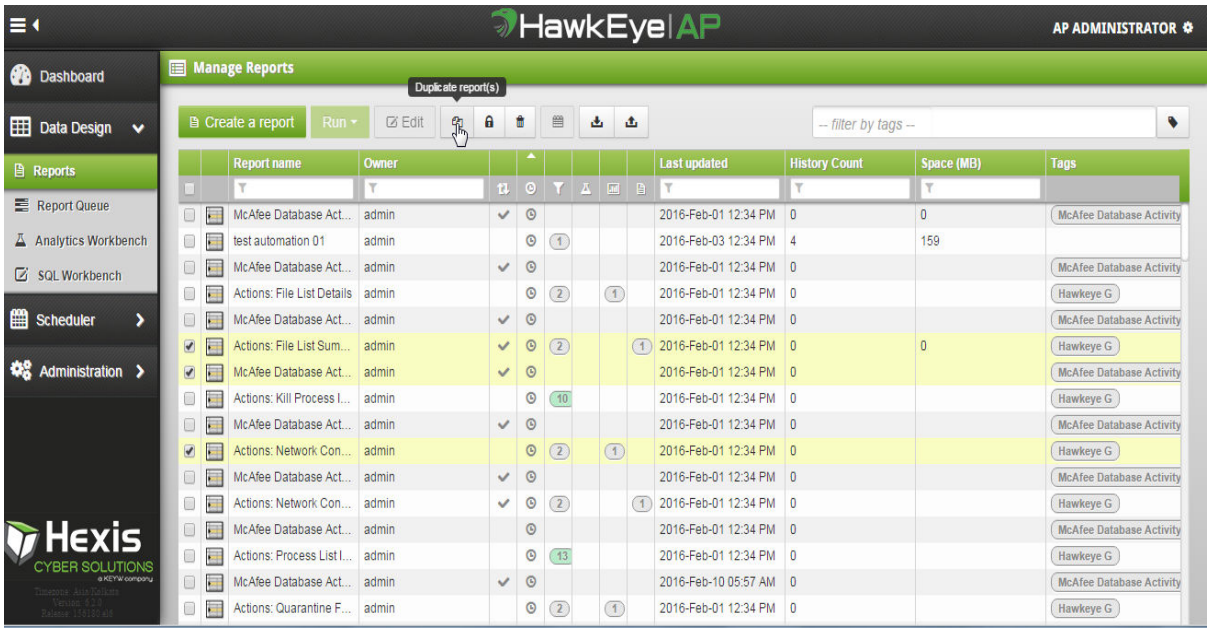
1 Go to the Analyzer dashboard, select Data Design from the dropdown list, click **Reports**.

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

2 Check the reports that you want to duplicate.

3 Click the **Duplicate button** on the top menu.

Figure 4-45: Duplicating Reports - NEED NEW SCREENSHOT



The report is now duplicated and appears after the original report in the Report Listing. It is identifed 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.

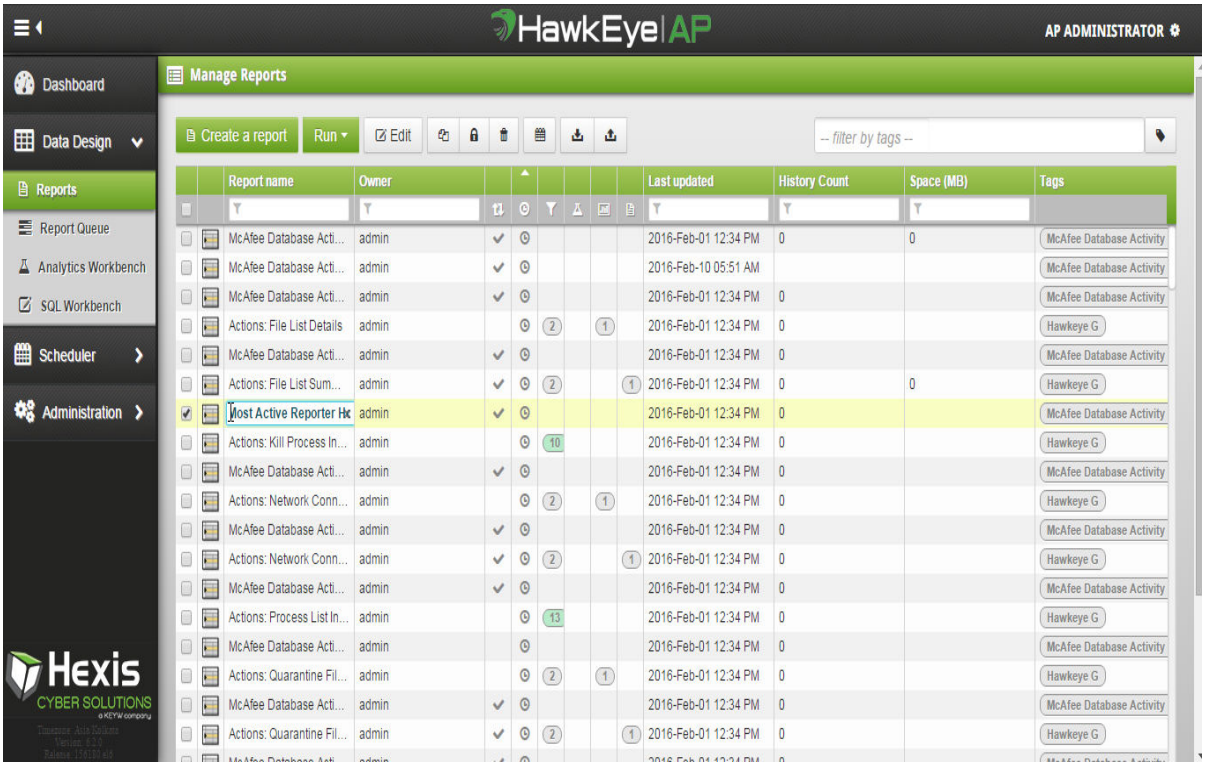
1 Rename the report from the report listing:

a 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.

b 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



2 Rename the report from the report listing:

a 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.

b Scroll or use filters to find the report you want to rename. For details on finding reports, see Chapter 2: Viewing Reports.

c Check the report that you want to rename and click the **Edit** button.

d On the report's screen, retype the name in the Report Title box.

e 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:

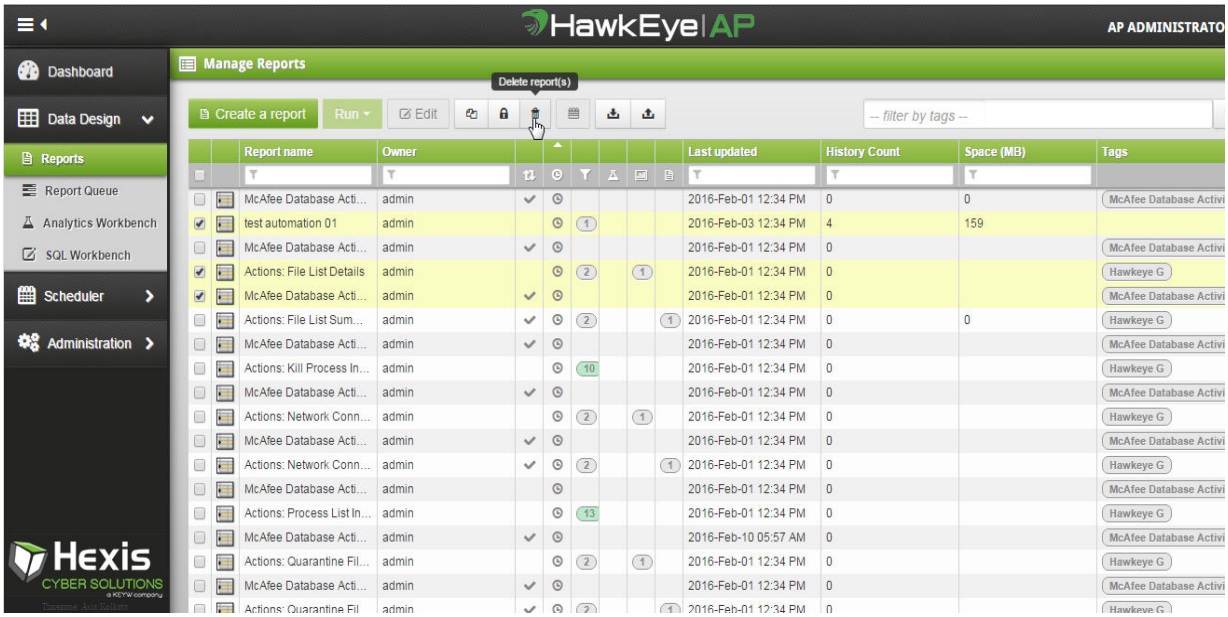
1 Go to the Analyzer dashboard, select Data Design from the dropdown list, click **Reports**.

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

2 Check the reports that you want to delete.

3 Click the **Delete button** on the top menu.

Figure 4-47: Deleting Reports - NEED NEW SCREENSHOT



CHAPTER 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

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**.

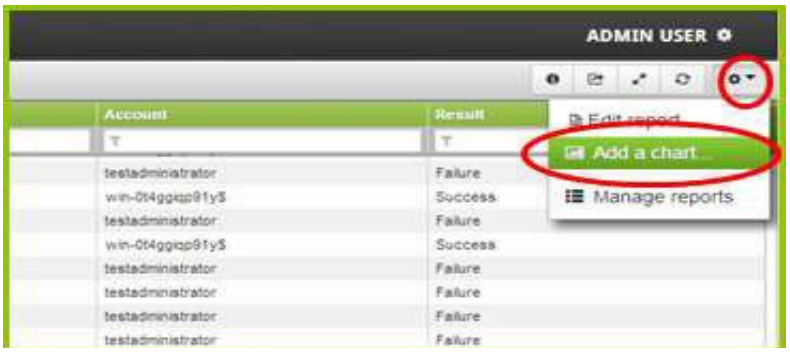
   The Manage Report screen with the current listing of reports is displayed.

   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



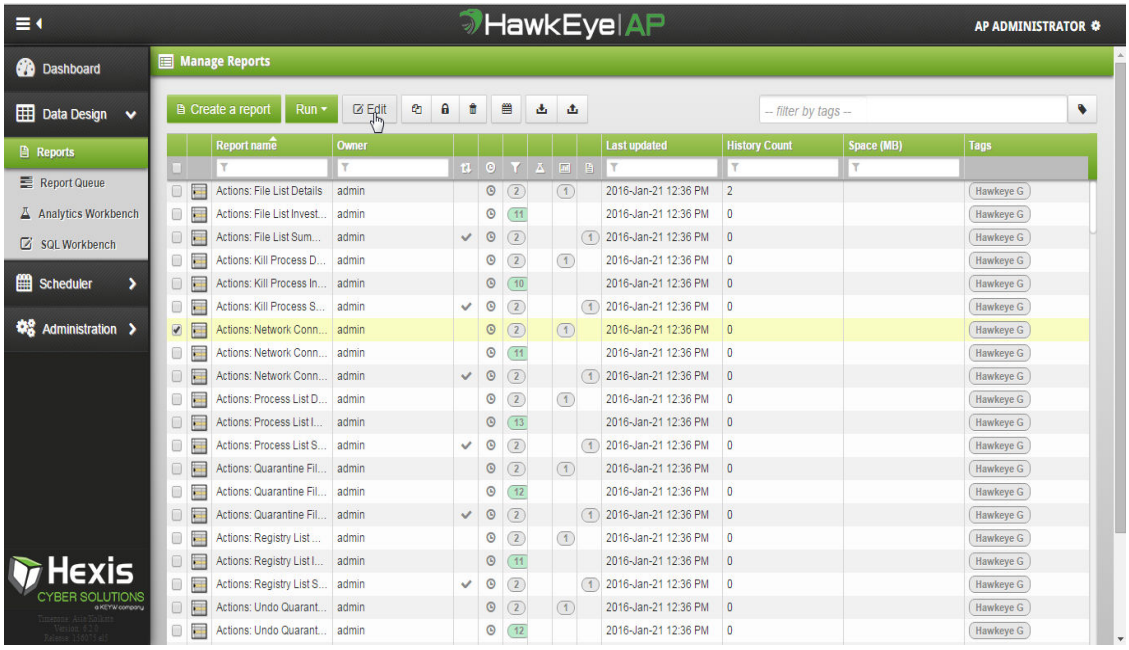
2 Add the chart from Edit Report definition screen:

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.

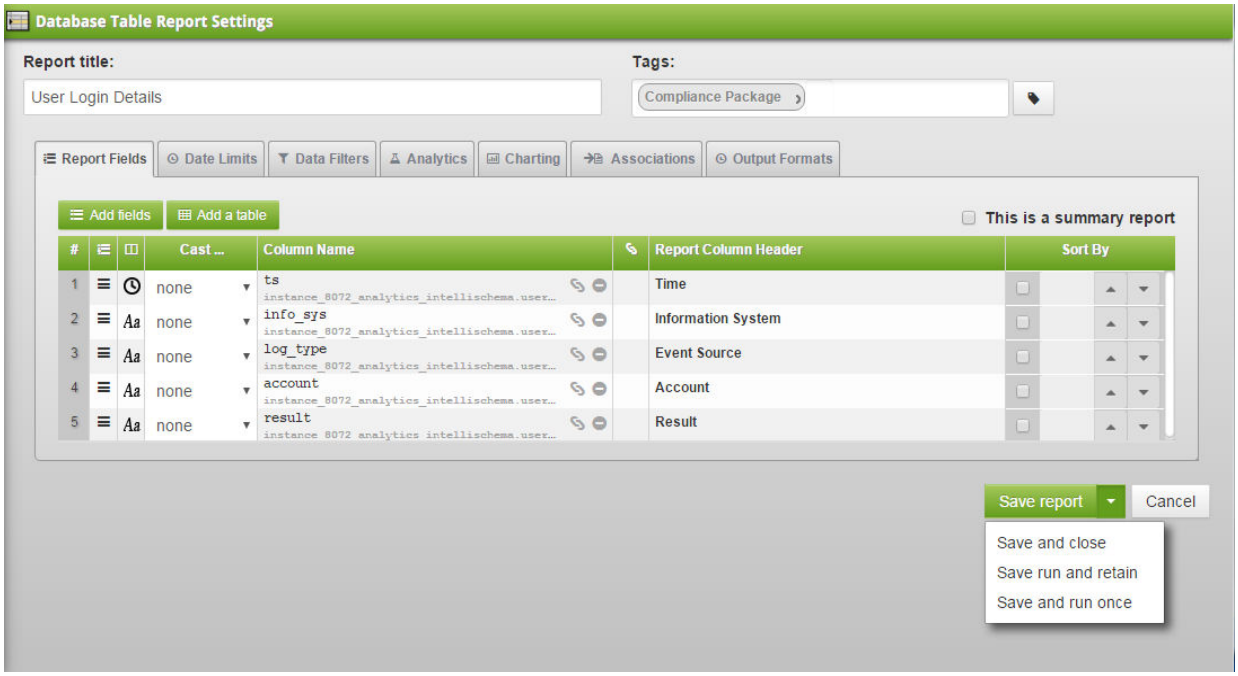
b Scroll or find the desired report, check mark the report that requires the chart, and click **Edit**.

Figure 5-2: Select Report for the Chart.



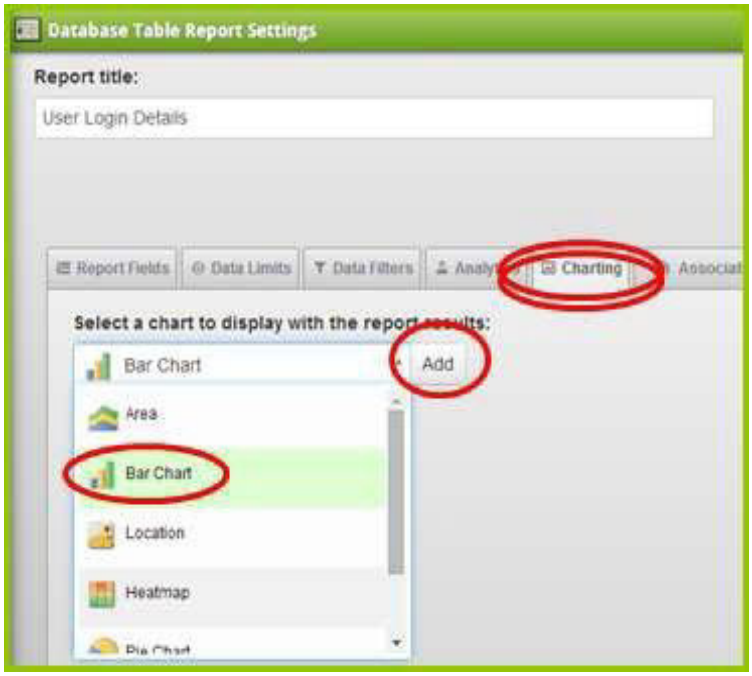
The Database Table Report Settings screen to define the report is displayed.

Figure 5-3: Database Table Report Settings Screen



3 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 95
- “Creating or Modifying a Bar Chart”, on page 99
- “Creating or Modifying a Pie Chartt”, on page 102
- “Creating or Modifying a Heat Map”, on page 105
- “Creating or Modifying a Custom Chart - NEED INFO and SCREENSHOTS”, on page 106
- “Creating or Modifying a Trending Chart”, on page 106

After you have created and saved a chart, you can modify it. See Editing a Chart below.

EDITING A CHART - THIS NEEDS VERIFICATION AND SCREENSHOTS

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.

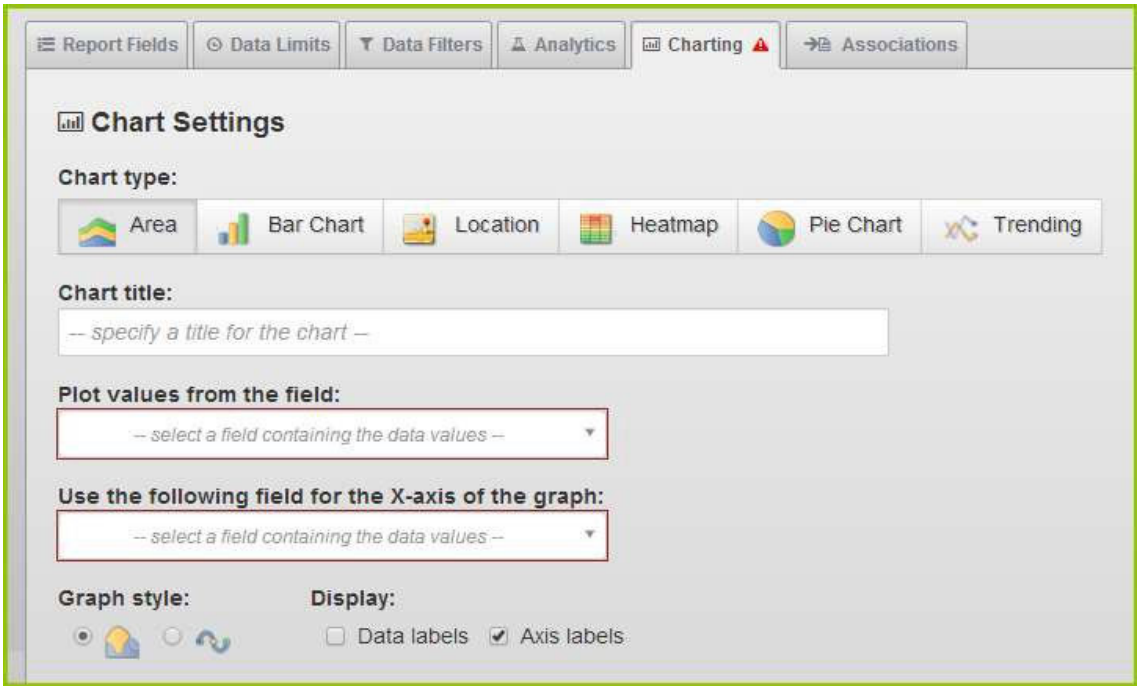
b Scroll or find the desired report, check the report, and click **Edit**. Go to Step 3.

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:

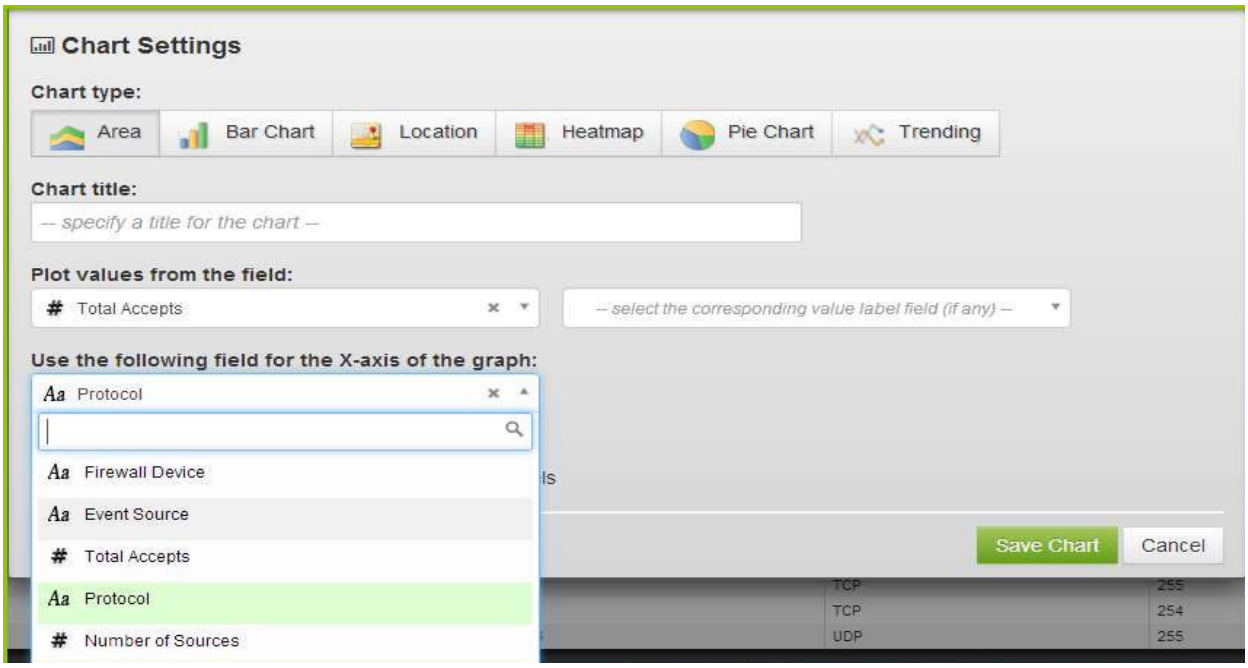
1 Access the area chart settings screen (for instructions see “Creating a Chart”, on page 91 or “Editing a Chart - THIS NEEDS VERIFICATION and SCREENSHOTS”, on page 94.

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 "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

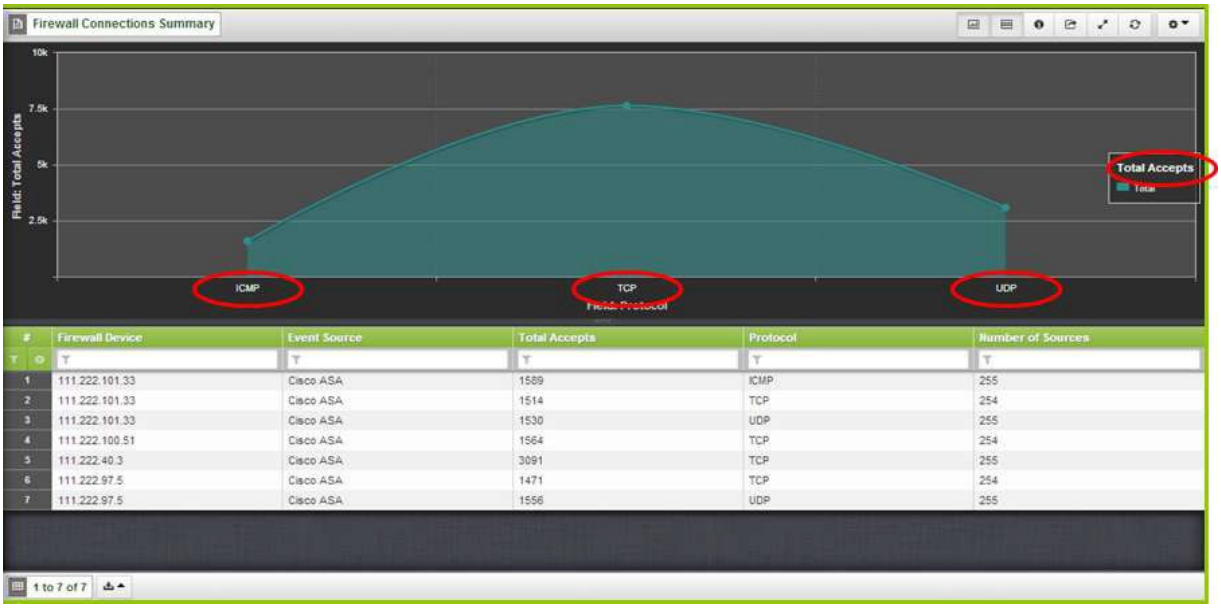


4 Specify the datatype for the X-axis (the horizontal dimension of the chart) under the dropdown box labelled "Use the following field for the X-axis of the graph:" shown in Figure 5-6. The values in this field will be listed as labels in the chart itself. You can use fields of either string or number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

5 Click **Save**. DOES CLICKING SAVE DISPLAY THE CHART?

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.

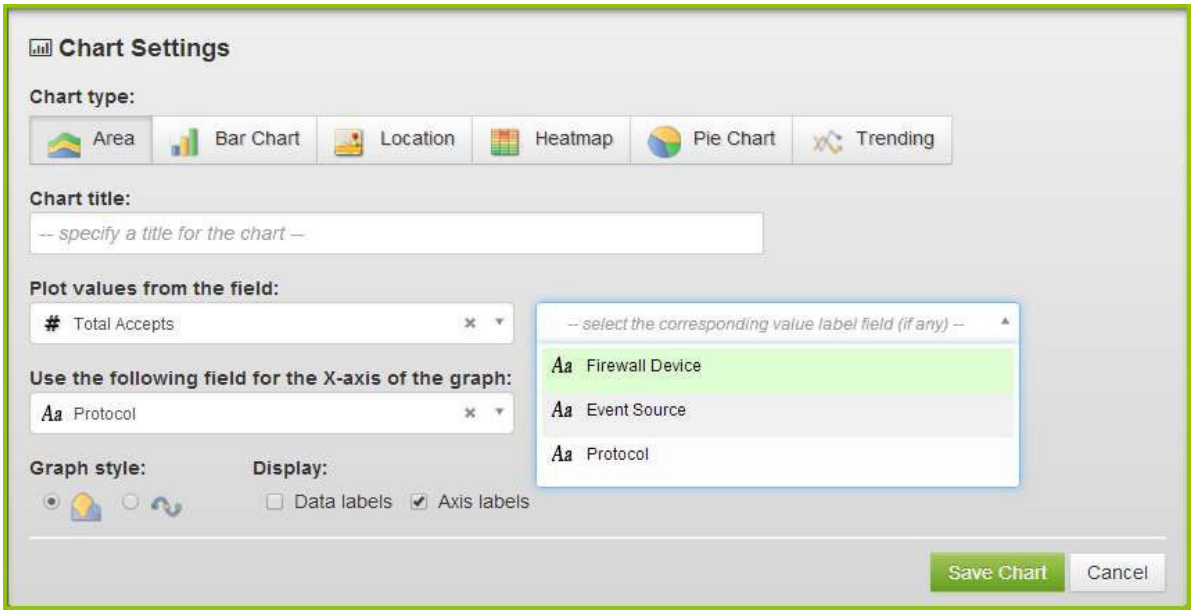
Figure 5-7: Area Chart Configuration



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?

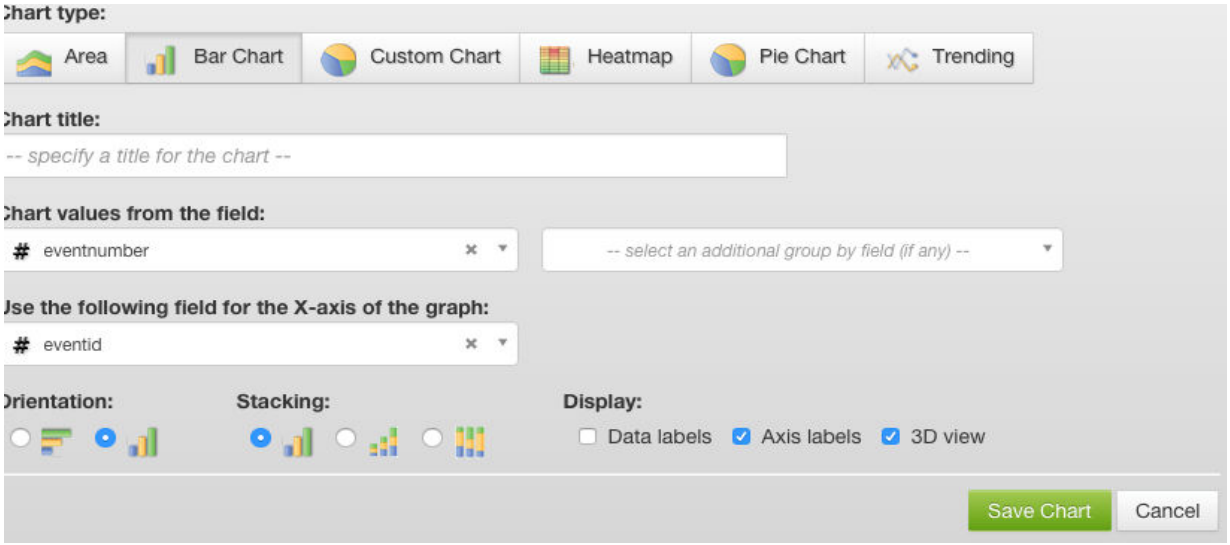
At this point multiple “areas” are displayed on the chart as shown in Figure 5-9. Note the new listing of labels in the Key box on the right.

Figure 5-9: Labels in the Areas Chart

#	Firewall Device	Event Source	Total Accepts	Protocol	Number of Sources
1	111.222.101.33	Cisco ASA	1589	ICMP	255
2	111.222.101.33	Cisco ASA	1514	TCP	254
3	111.222.101.33	Cisco ASA	1530	UDP	255
4	111.222.100.51	Cisco ASA	1564	TCP	254
5	111.222.40.3	Cisco ASA	3091	TCP	255
6	111.222.97.5	Cisco ASA	1471	TCP	254
7	111.222.97.5	Cisco ASA	1556	UDP	255

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

Figure 5-10: Area Chart Settings Screen



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. WHERE IS THE GRAPH SYTLE?????

The “Display:” box allows you to show or hide the labels on each axis. DO YOU MEAN CHECKING THE DATA LABELS BOX?

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:

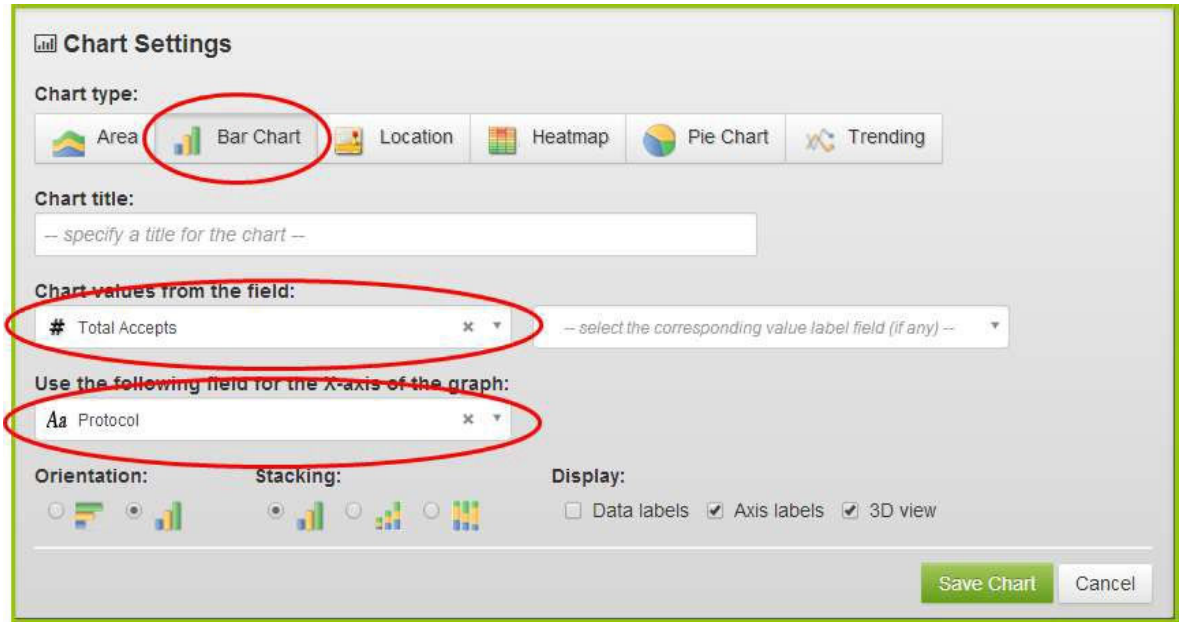
1 Access the area chart settings screen (for instructions see “Creating a Chart”, on page 91 or “Editing a Chart - THIS NEEDS VERIFICATION and SCREENSHOTS”, on page 94.

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?

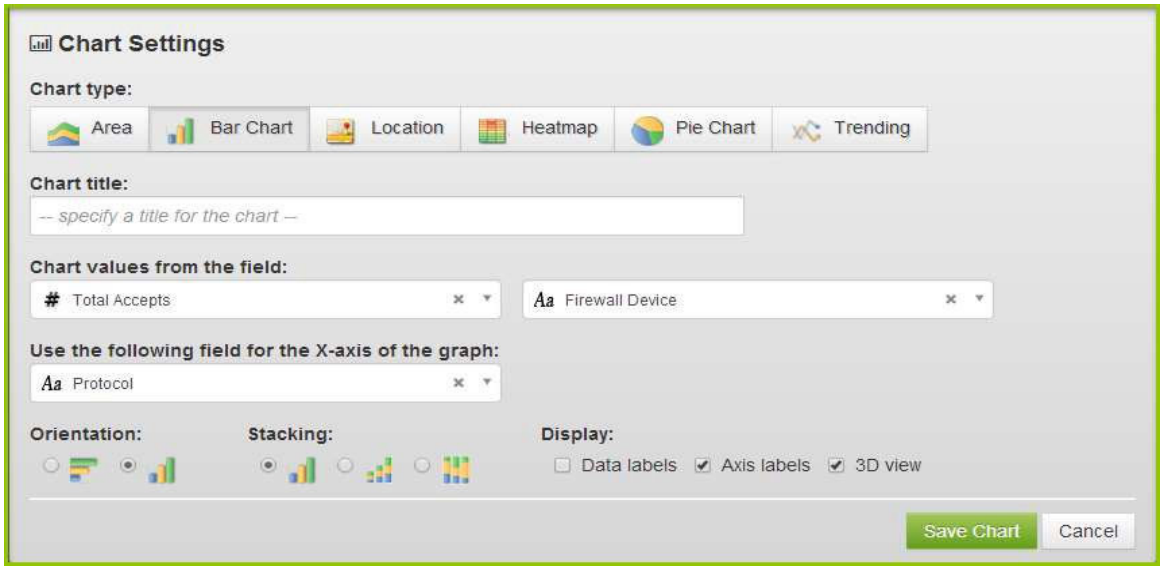
Figure 5-12 shows the results of the configuration implemented so far. Note the name of the Y-axis field shows in the "Total Accepts" box on the right and values from the field "Protocol" show as labels for each value across the bottom of the report.

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.

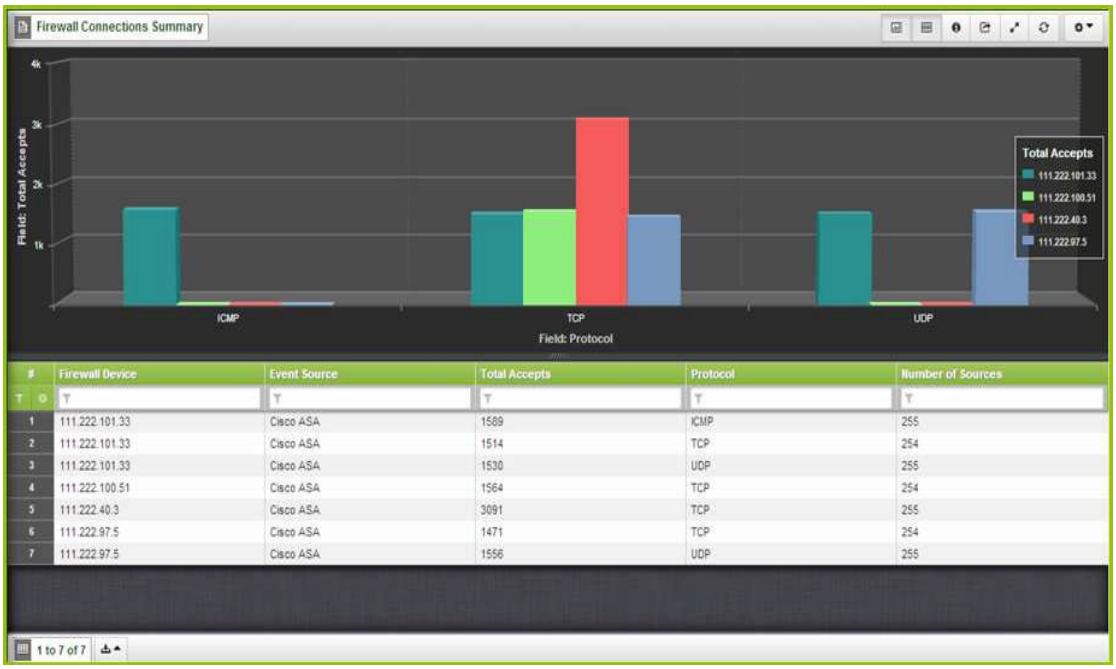
Figure 5-13: Display "Firewall Device" in "Y" Axis Field of Bar Chart



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

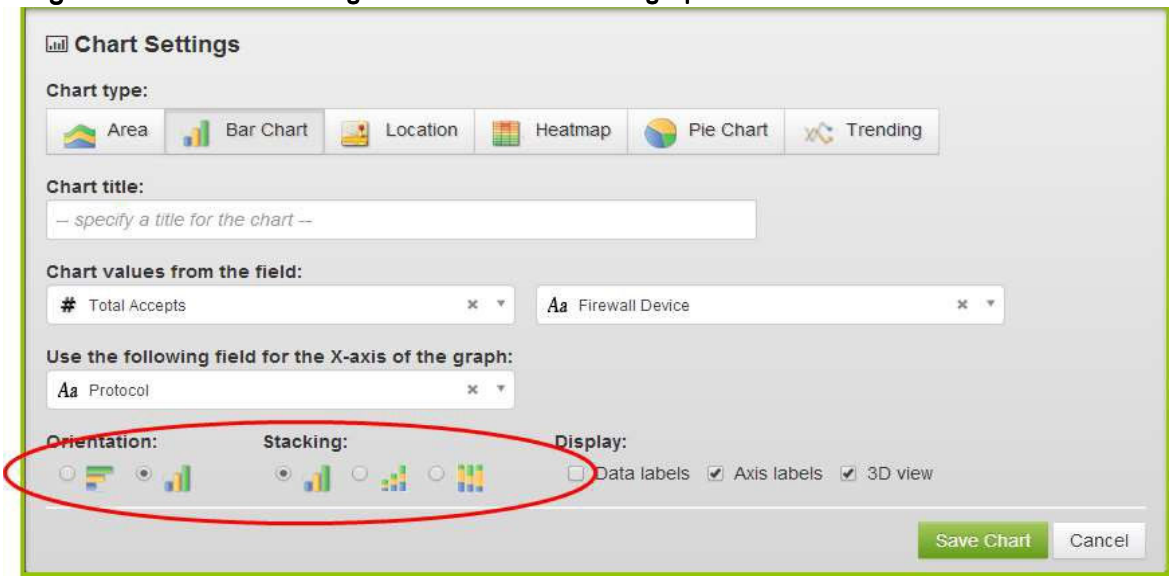
Figure 5-14 shows the results of the configuration implemented so far, sub-totaled by Firewall Device.

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



8 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 options 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.

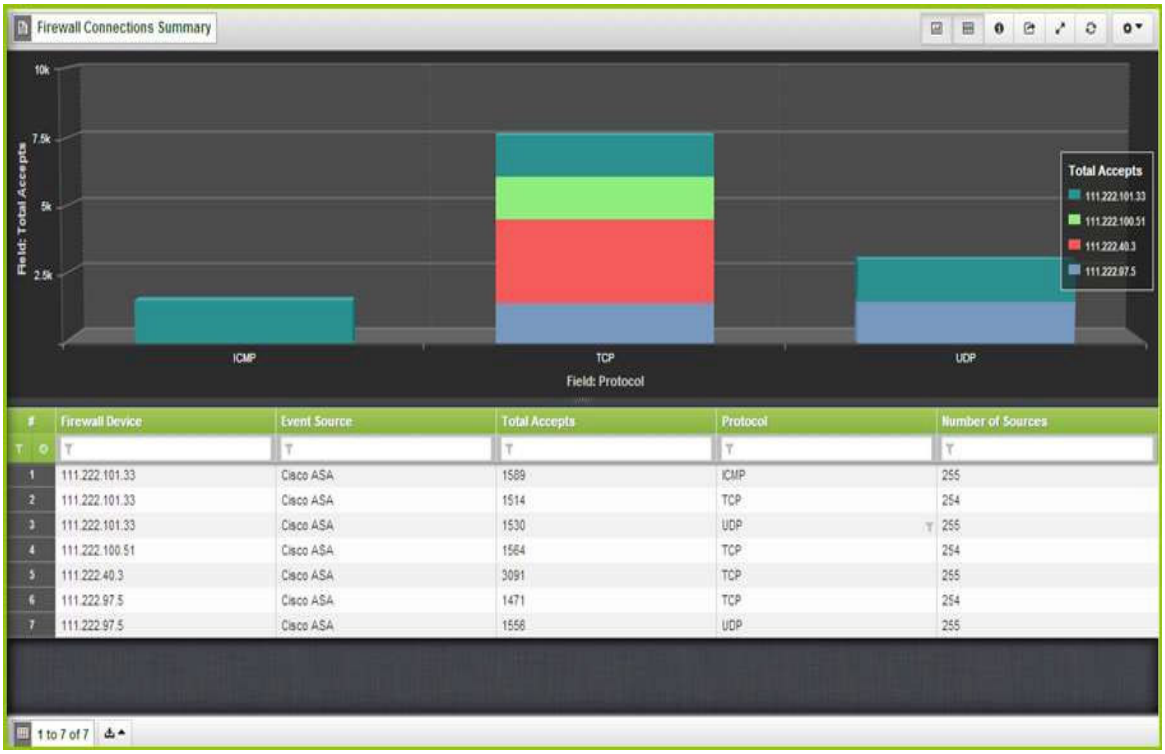
  NOTE: This option is only effect when "--select the corresponding value label field (if any)--" in Step 7 above is set.

- 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



#	Firewall Device	Event Source	Total Accepts	Protocol	Number of Sources
1	111.222.101.33	Cisco ASA	1589	ICMP	255
2	111.222.101.33	Cisco ASA	1514	TCP	254
3	111.222.101.33	Cisco ASA	1530	UDP	255
4	111.222.100.51	Cisco ASA	1564	TCP	254
5	111.222.40.3	Cisco ASA	3091	TCP	255
6	111.222.97.5	Cisco ASA	1471	TCP	254
7	111.222.97.5	Cisco ASA	1556	UDP	255

CREATING OR MODIFYING A PIE CHARTT

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.

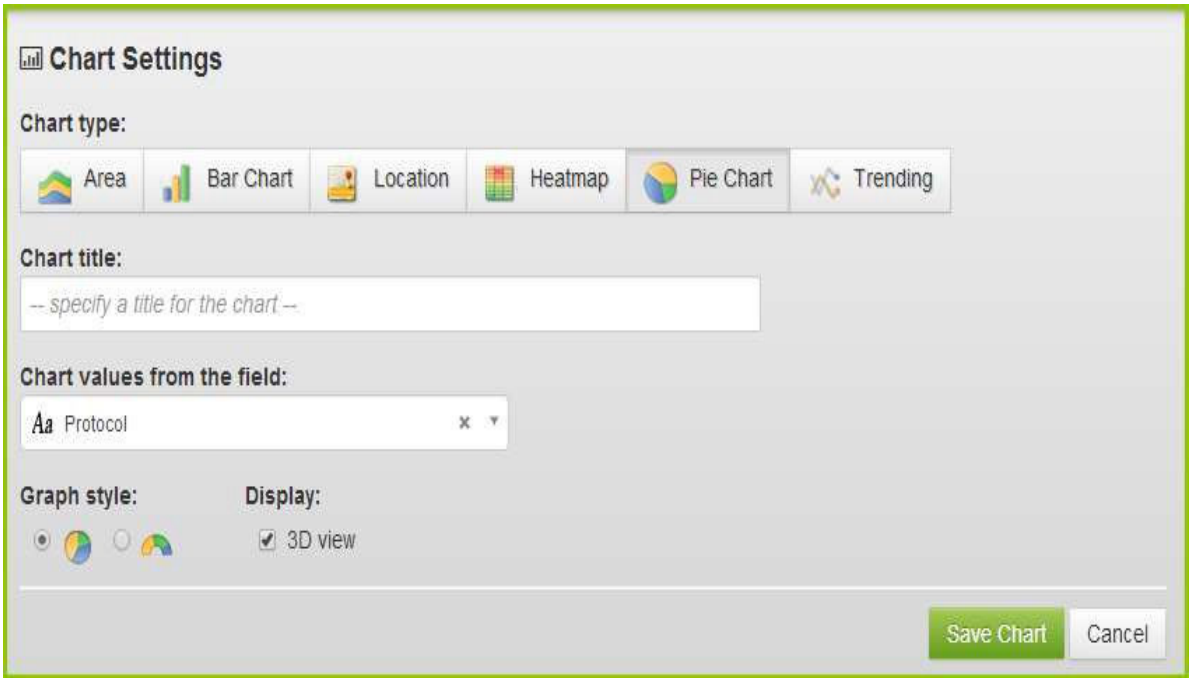
2 If desired, enter (in this optional field) a title for the chart for descriptive purposes only.

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

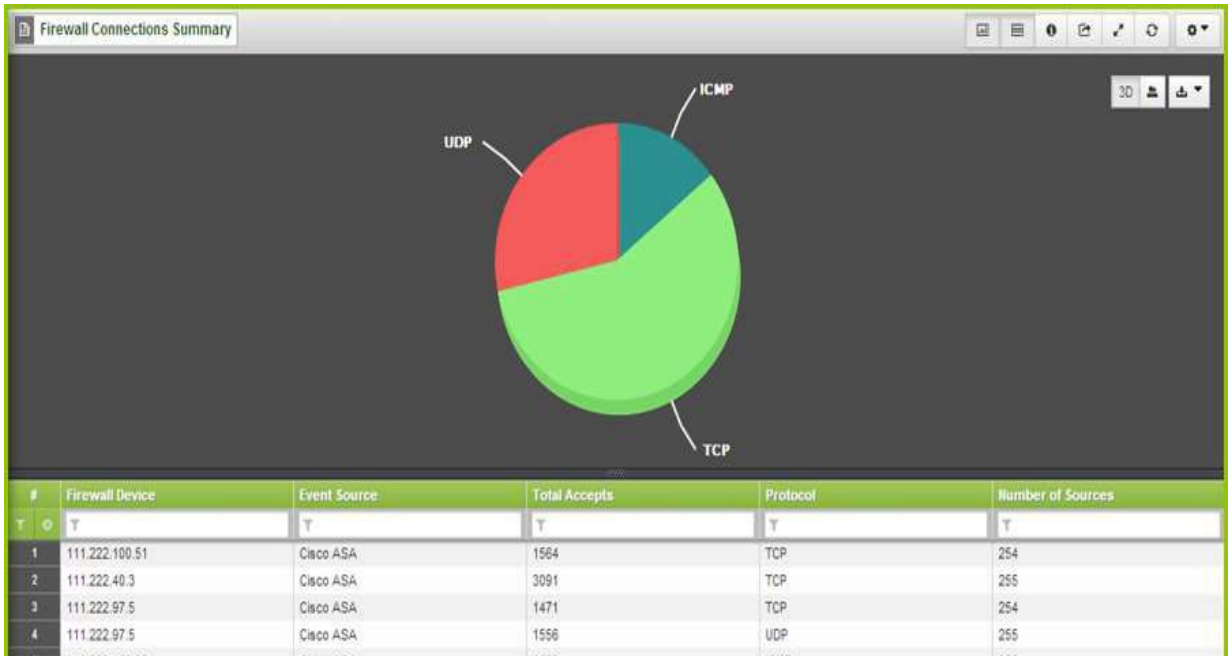


a Click **Save** to apply your own setting. DOES CLICKING SAVE DISPLAY THE CHART?

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.

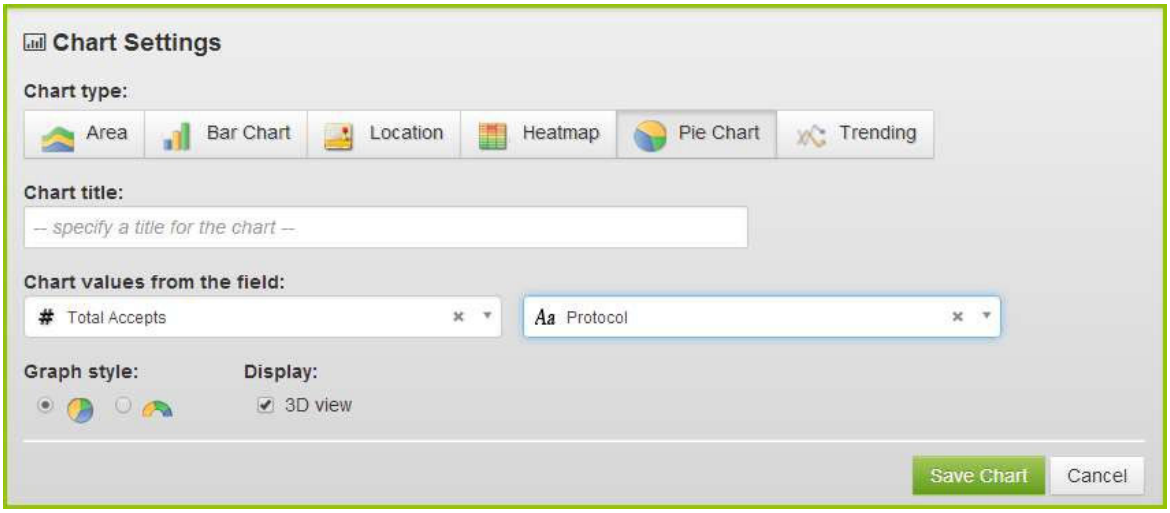
Figure 5-18: Pie Chart Configuration



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.

a 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.

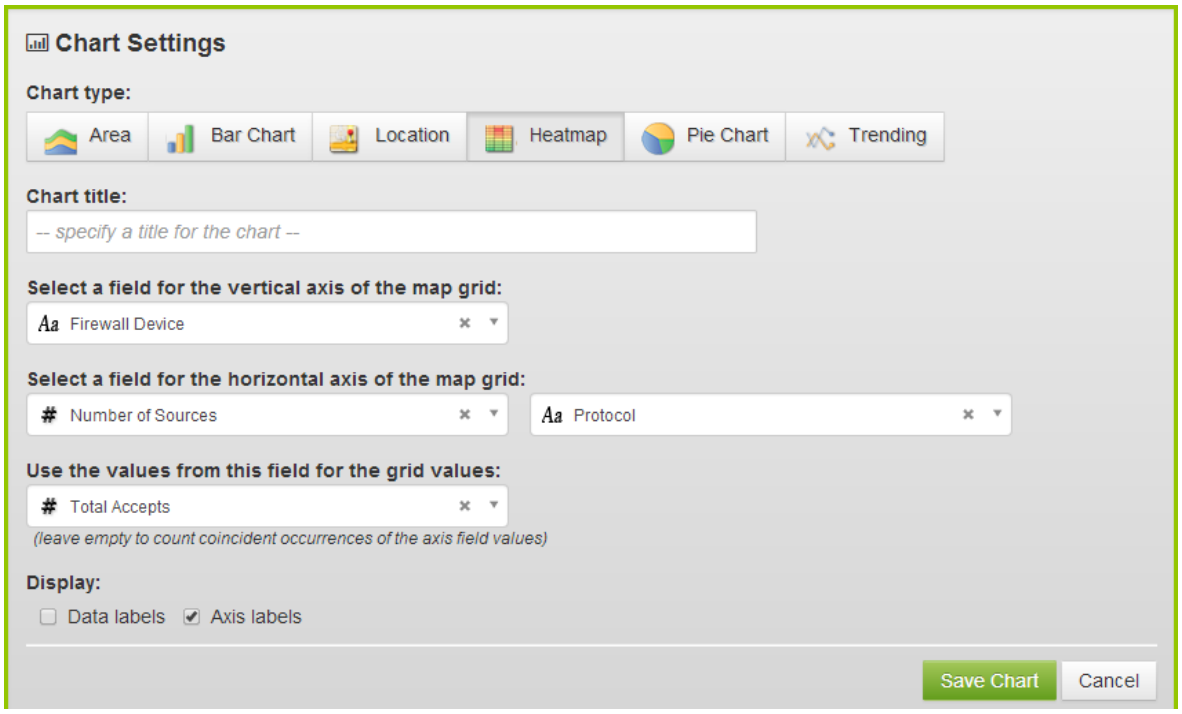
3 Specify the value for the Y-axis (the vertical dimension) under the dropdown box labelled "Select a field for the vertical axis of the map grid:". In Figure 5-20 "Firewall Device" is selected as the value for the Y-axis.

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 tFigure 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



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.

a 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

#	Firewall Device	Event Source	Total Accepts	Protocol	Number of Sources
1	111.222.100.51	Cisco ASA	1564	TCP	254
2	111.222.40.3	Cisco ASA	3091	TCP	255
3	111.222.97.5	Cisco ASA	1471	TCP	254
4	111.222.97.5	Cisco ASA	1556	UDP	255
5	111.222.101.33	Cisco ASA	1589	ICMP	255
6	111.222.101.33	Cisco ASA	1514	TCP	254
7	111.222.101.33	Cisco ASA	1530	UDP	255

CREATING OR MODIFYING A CUSTOM CHART - NEED INFO AND SCREENSHOTS

CREATING OR MODIFYING A TRENDING 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 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.

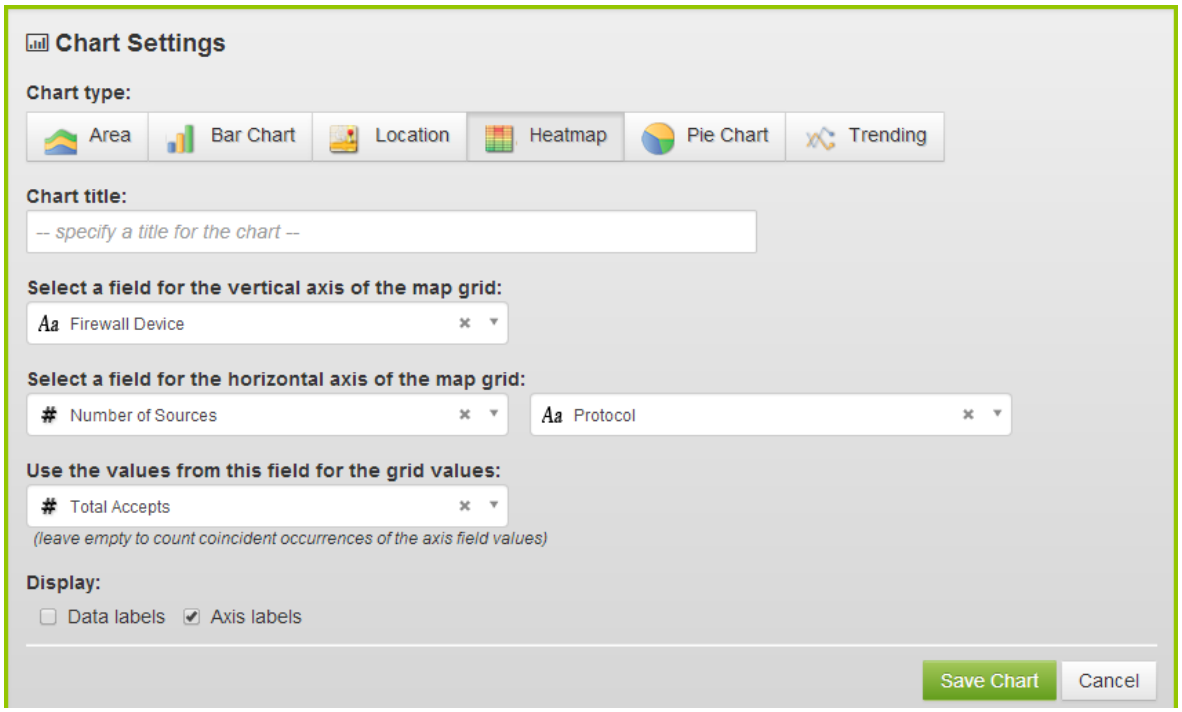
3 Specify the value for the Y-axis (the vertical dimension) under the dropdown box labelled "Select a field for the vertical axis of the map grid:". In Figure 5-20 "Firewall Device" is selected as the value for the Y-axis.

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 tFigure 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



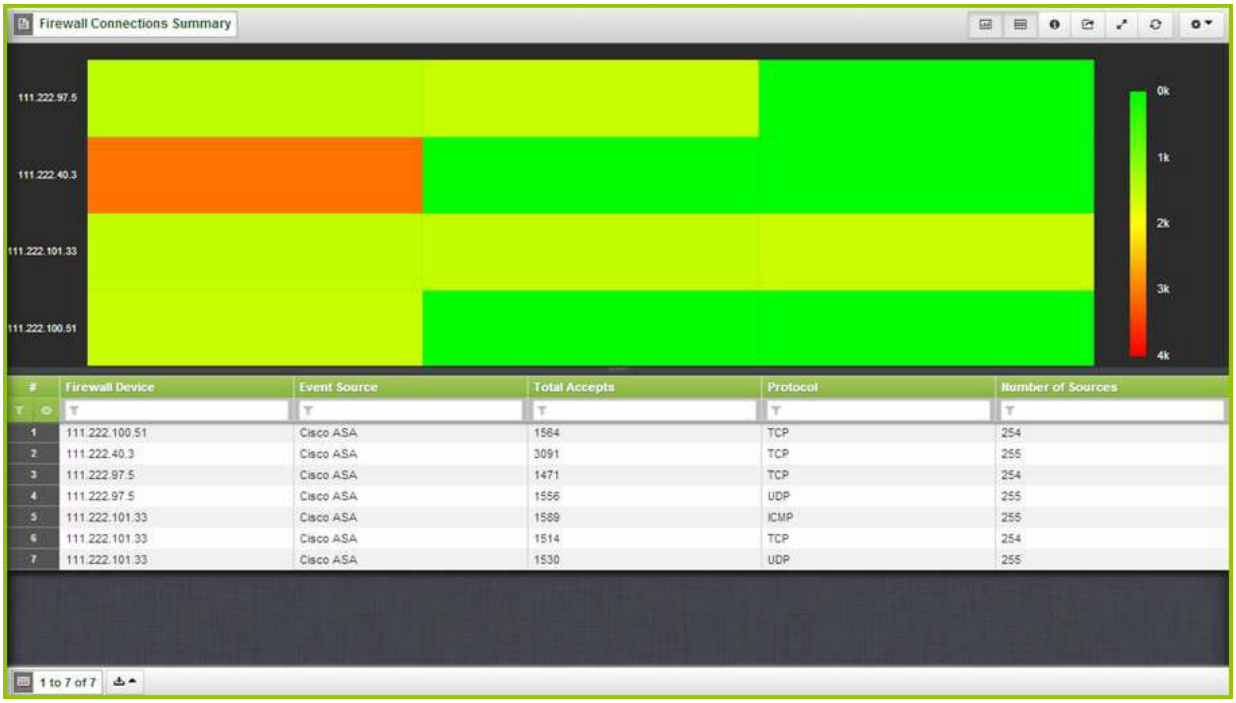
Note the following additional viewing options at the bottom of the chart settings screen:

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

a 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 5-23: Heat Map Configuration Results



#	Firewall Device	Event Source	Total Accepts	Protocol	Number of Sources
1	111.222.100.51	Cisco ASA	1564	TCP	254
2	111.222.40.3	Cisco ASA	3091	TCP	255
3	111.222.97.5	Cisco ASA	1471	TCP	254
4	111.222.97.5	Cisco ASA	1556	UDP	255
5	111.222.101.33	Cisco ASA	1589	ICMP	255
6	111.222.101.33	Cisco ASA	1514	TCP	254
7	111.222.101.33	Cisco ASA	1530	UDP	255

CHAPTER 6

Using Analytics Workbench for Advanced Data Modeling

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 81.

This chapter contains these sections:

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.

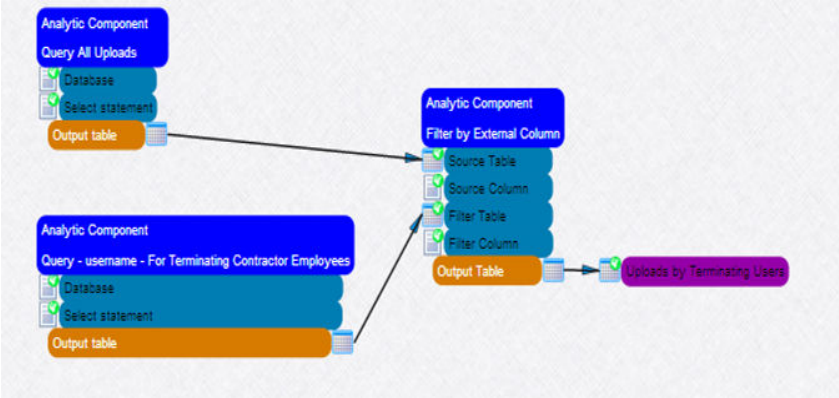
In Analyzer, models may be created, saved, reused, or even scheduled to execute periodically. A primary goal of SenSage AP’s modeling capability is to avoid the need for exporting data from the Event Data Warehouse (EDW) and manipulating data by scripts or with third-party tools such as Microsoft Excel.

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.

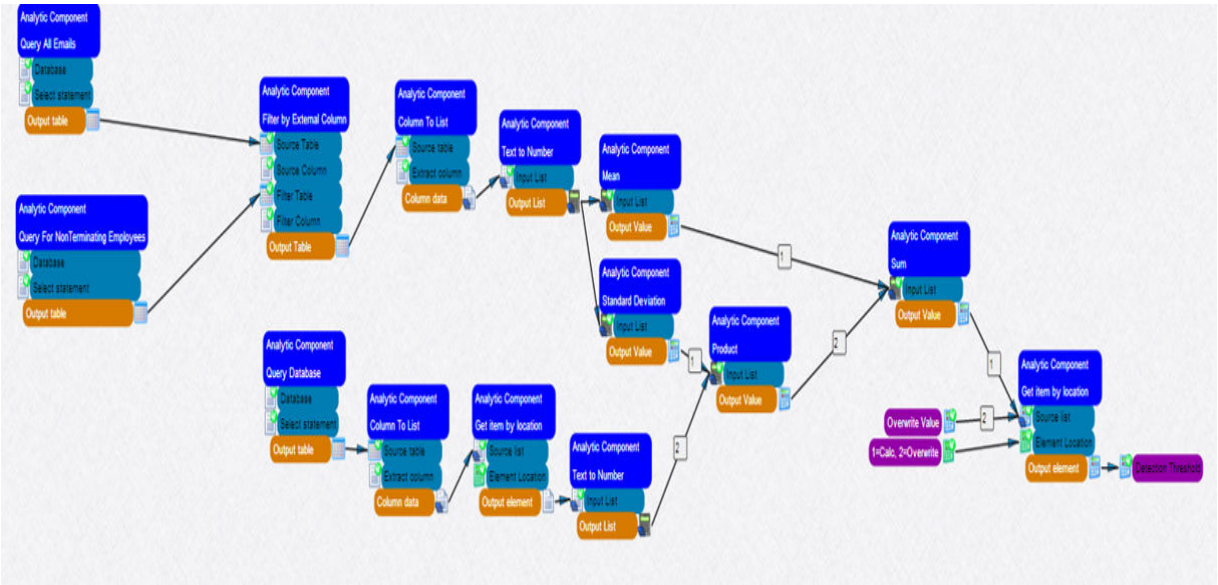
Models created in the Analytics workbench can be simple as shown in Figure 6-1 with a few components as an input to another component.

Figure 6-1: Example of a Simple Model



The Analytics workbench is also capable of creating arbitrarily complex model 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.

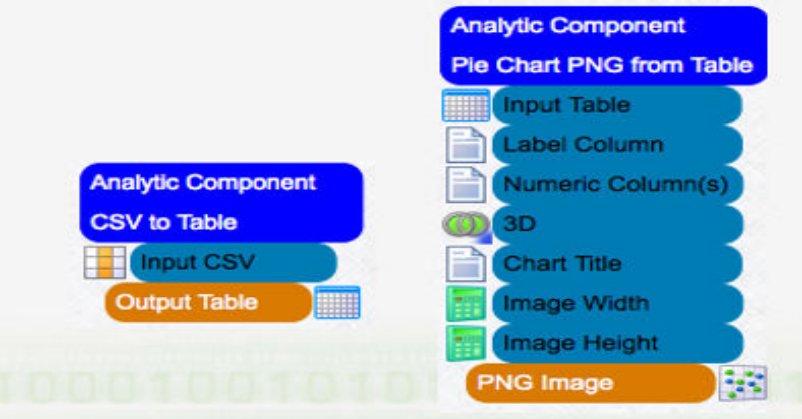
Figure 6-2: Example of a Complex Model



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

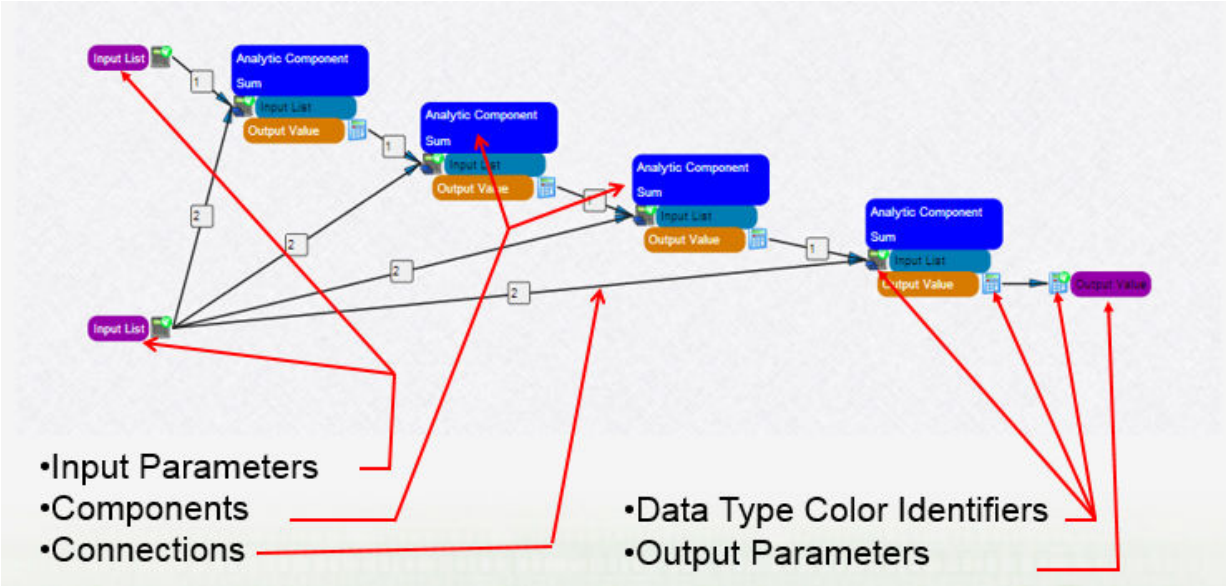


Parts of a Model Component

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 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:

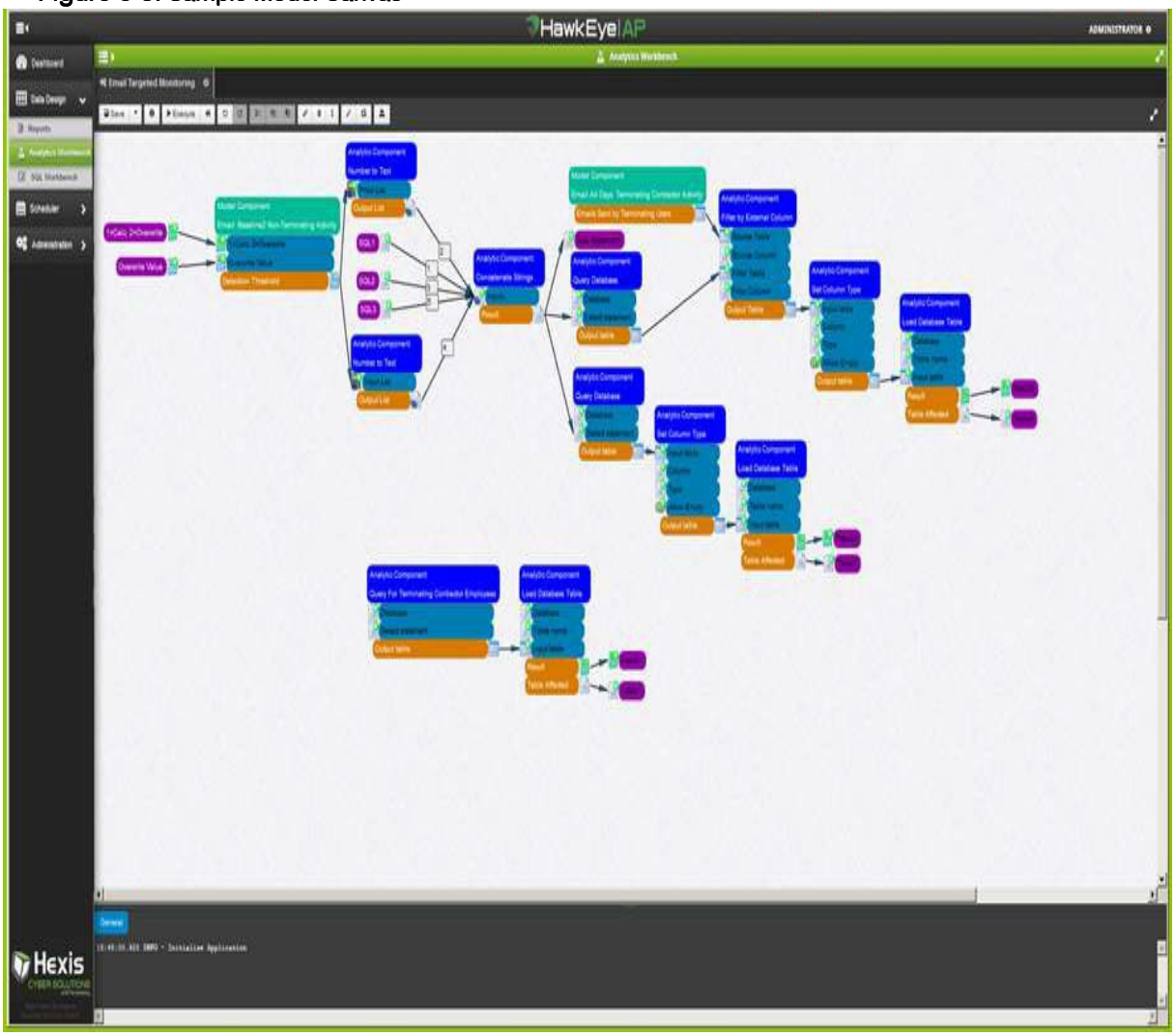
1 Access the Analytics Model Information screen. See step a or b depending on whether you are creating a model or editing one.

   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 menus is collapsed, so only the canvas is displayed without the libraries palette.

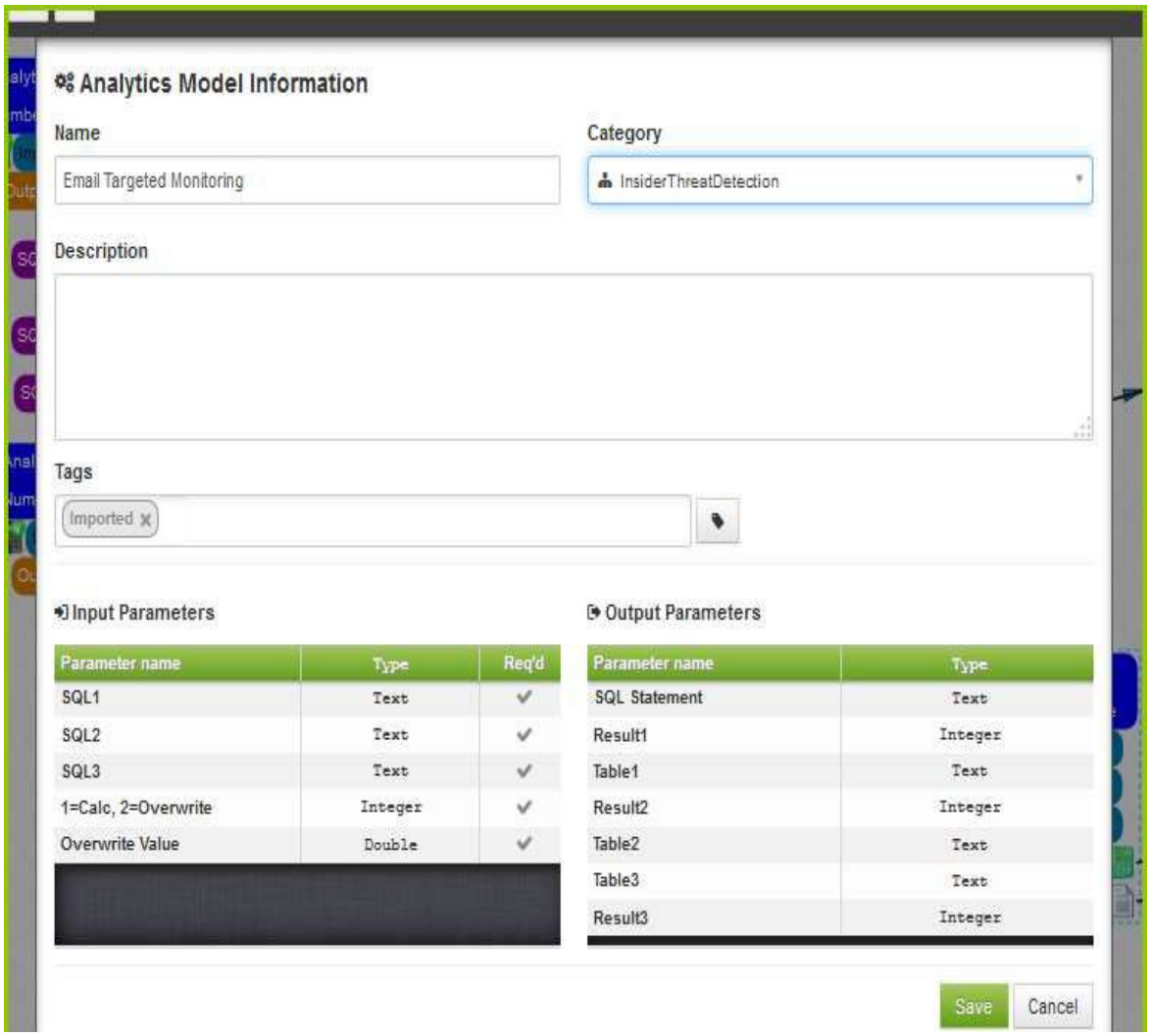
Figure 6-5: Sample Model Canvas



2 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



3 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 indentify 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

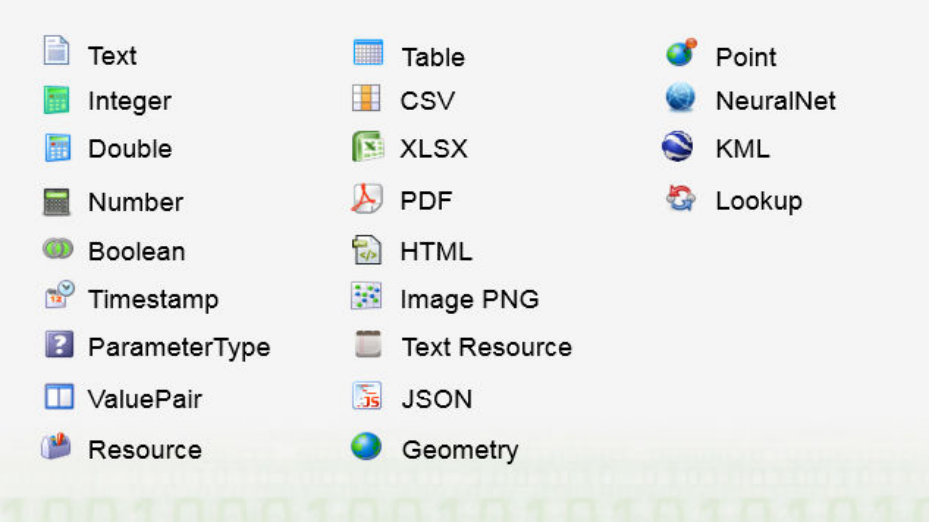
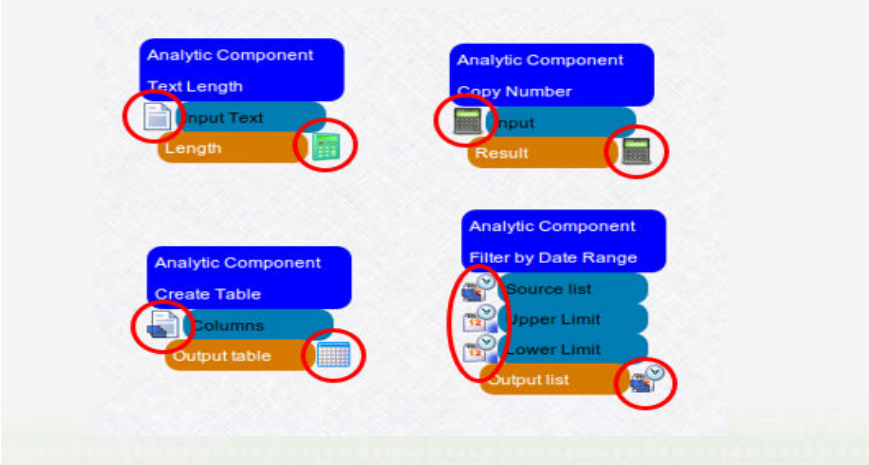


Figure 6-8 below displays the icons for the following datatypes: the green calculator icon represents an integer, the grey calculator icon represents a number, the text icon represents a text, the calendar icon represents a timestamp.

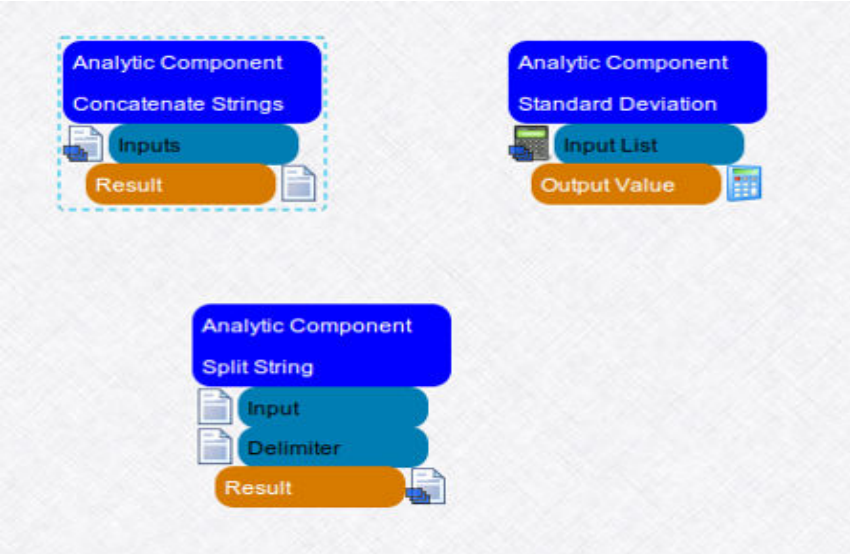
Figure 6-8: Example of Icon Types in a Component



3 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**. NEED TO CHECK WHEN SAVE IS CLICKED.

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. DON'T SEE THIS ON THE SLIDE.

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 we 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

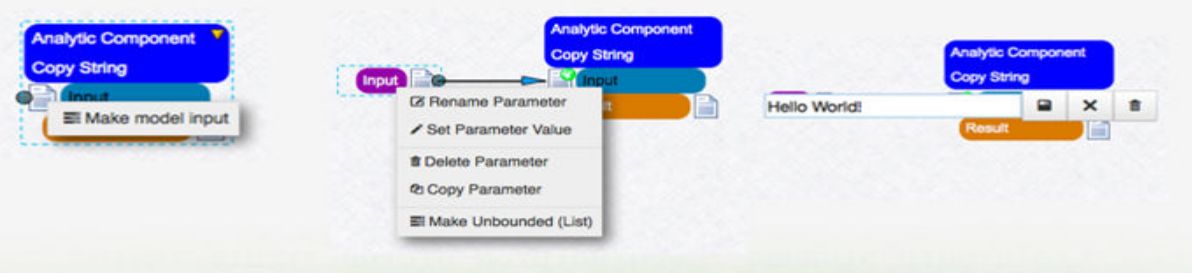
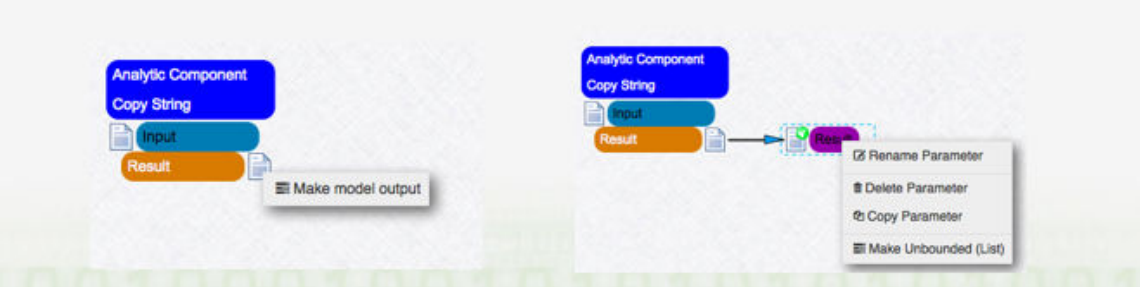


Figure 6-11: Setting Model Output Parameter



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. CHECK THIS

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.

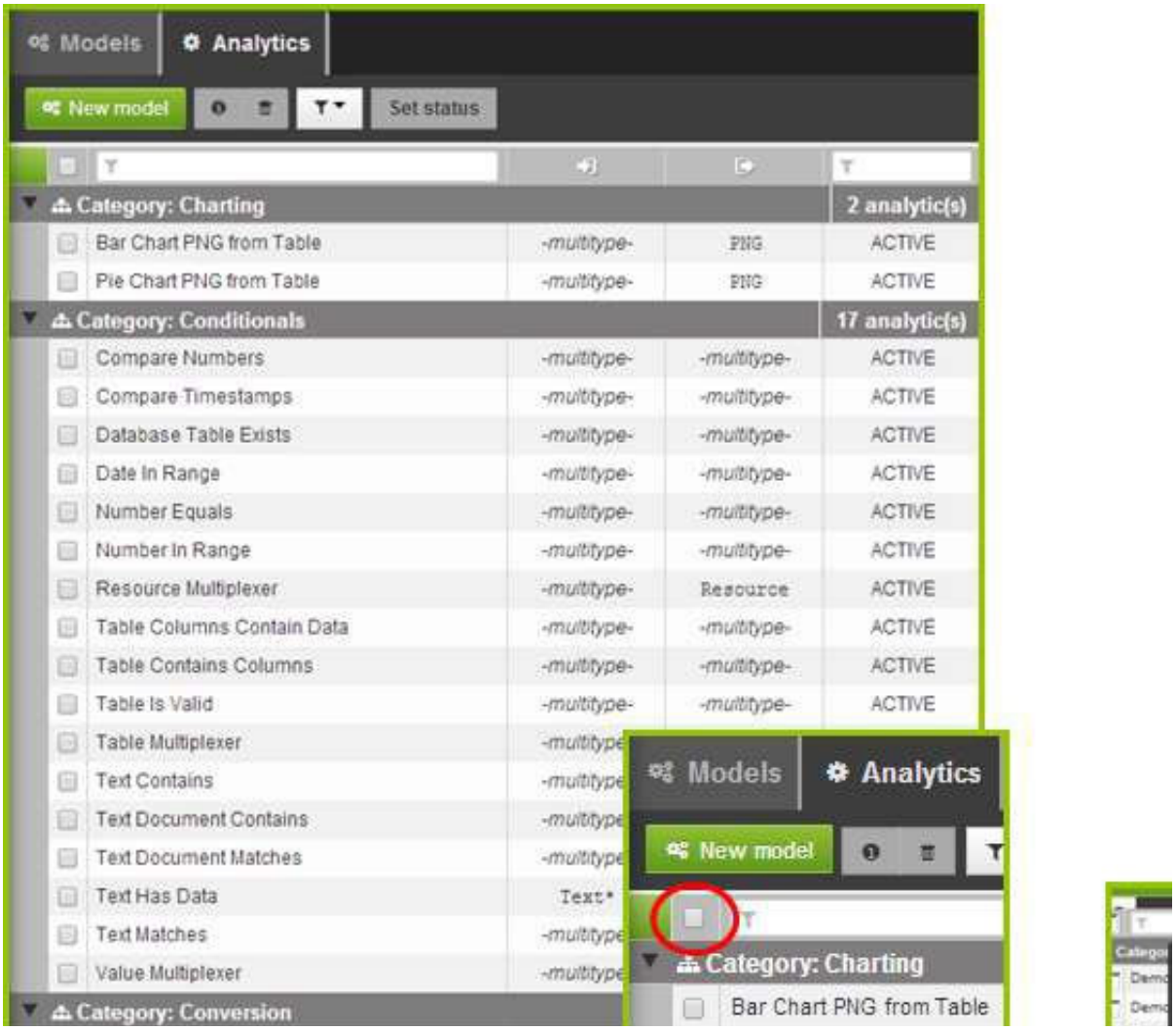
ADDING AND MODIFYING MODEL COMPONENTS TO A NEW OR EXISTING MODEL

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:

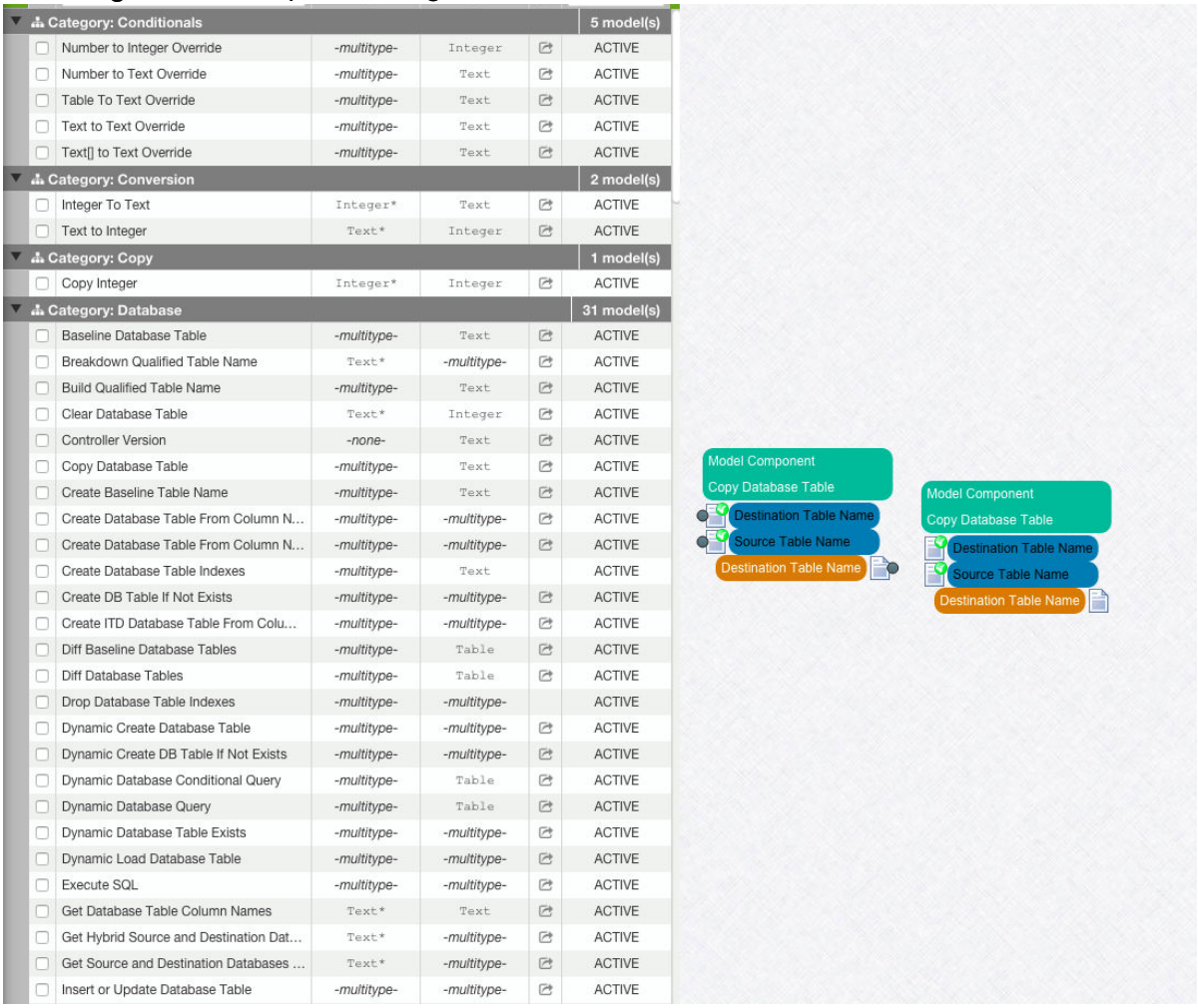
a To select a component, check the box to the left of the component name. To de-select, click the box again.

b To select all components, check the box at the top of all the checkboxes. To de-select, click the box again.

c 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.

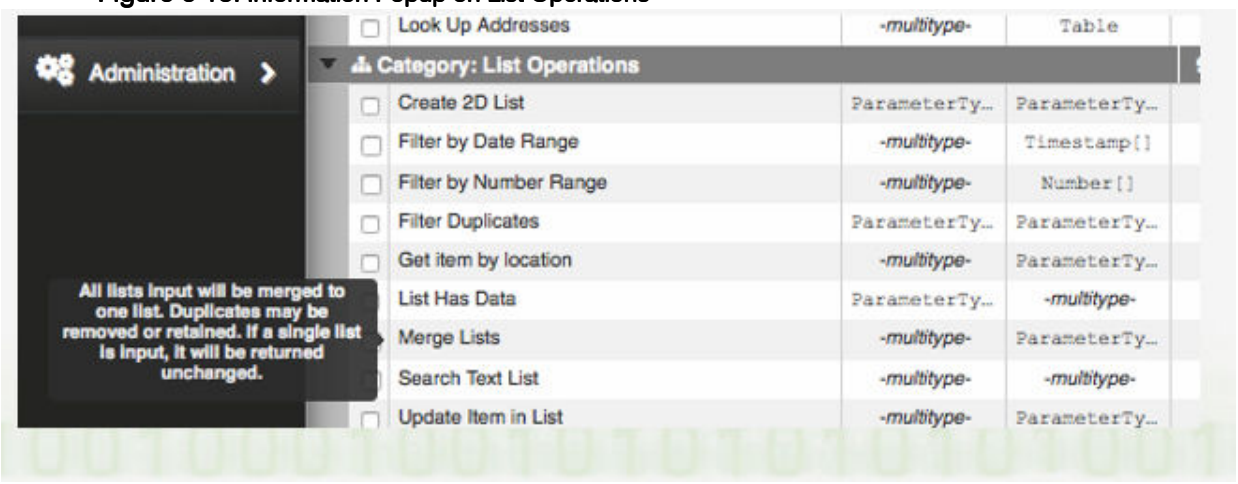
d To open and close each category of components, the triangle to the left of the category name. If you hold down the shift key and click, all the categories will be expanded or collapsed at once.

Figure 6-14: Component Listing with Model Canvas



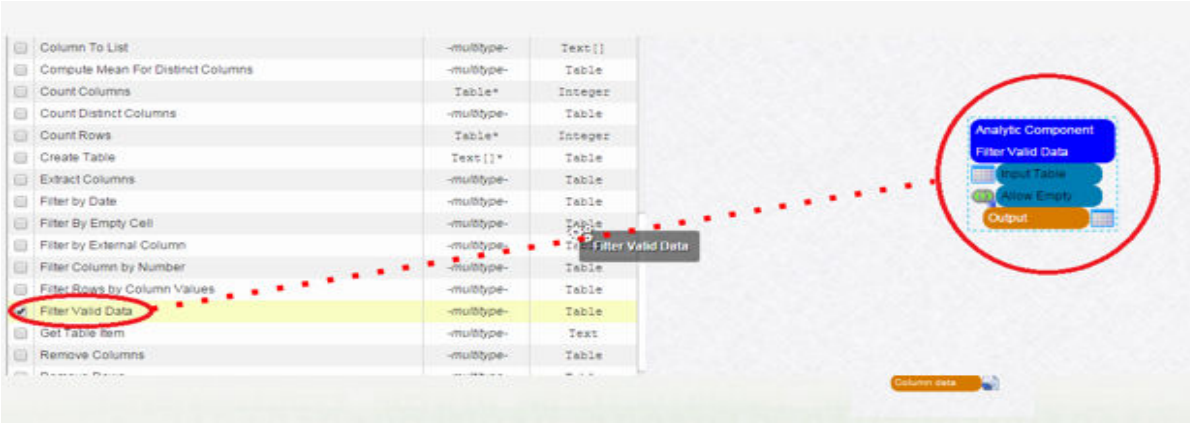
NOTE: When scrolling over components in categories, additional information will pop up.

Figure 6-15: Information Popup on List Operations



3 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 127.

4 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). NEED TO USE THIS HANDS-ON TO VERIFY HOW IT WORKS

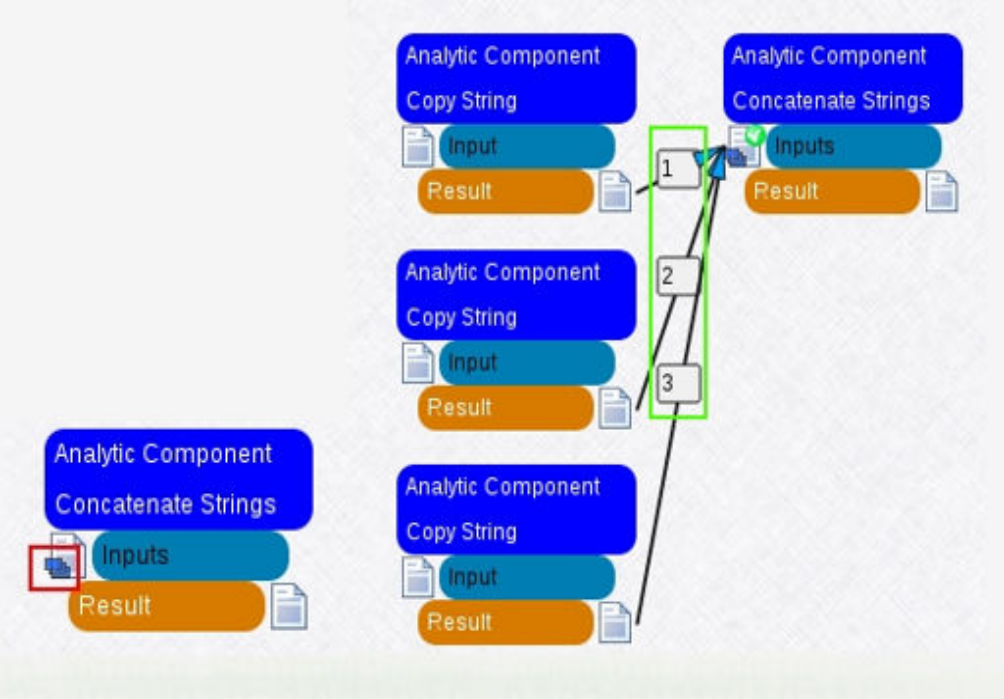
  There are no limits to the number of connections you can define to a target component.

  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:

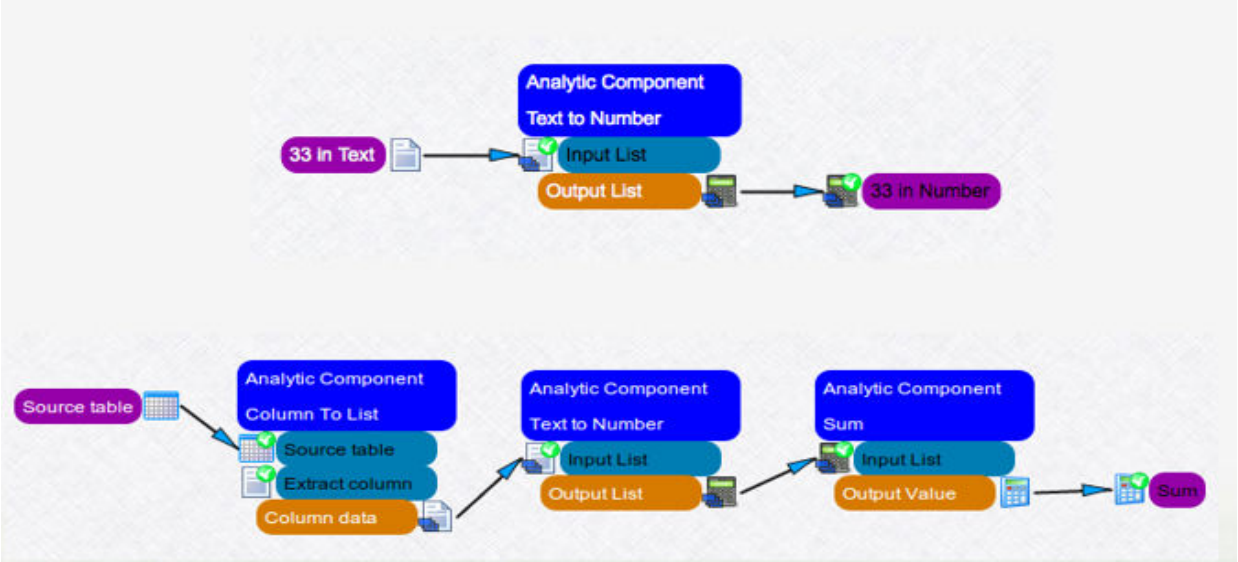
Create Excel	Integer to Double	Table to HTML
CSV to Table	Number to Text	Text to Boolean
Double to Integer	PDF to Text	Text to Number
Data Type Identifiers	Standardize Date Text	Text to Timestamp
Integer to Boolean	Table to CSV	

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.

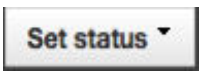
Because sum component accepts only number values, this is the reason why the Text to Number component is used to convert the text values to numbers.

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 componentl
	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.

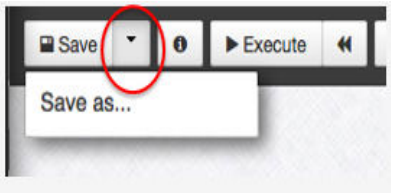
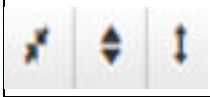
Figure 6-20: Bar to Filter Components Listt

The following table describes the use of each filter icon when the Analytics tab is selected. CHECK IF THIS IS MODEL or COMPONENT

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 mor 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:  If the model has never been previously saved, a Save As dialog box will be displayed. See Figure???? on page 110.	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: • 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.
	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.

icon	Name	Use to...
	Print the model to a local printer	Prints the model to a local printer.

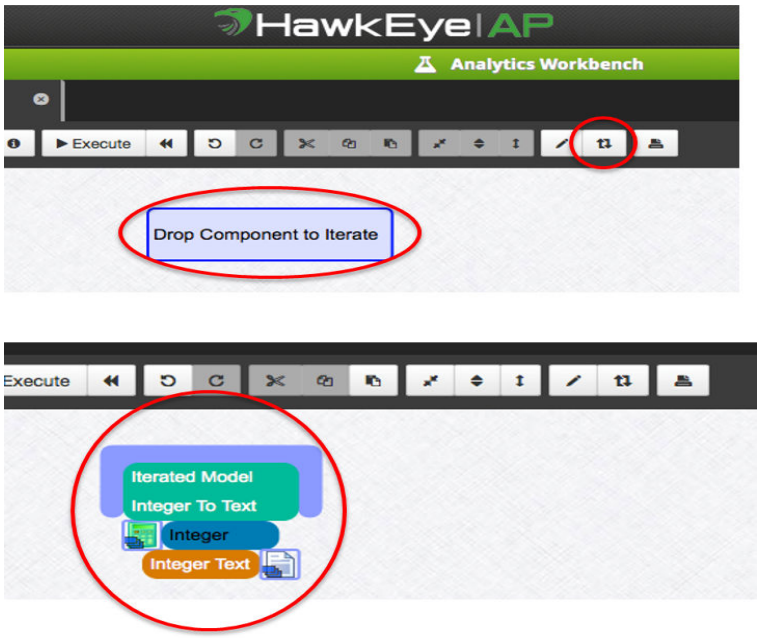
Adding an Iterator to a Parameter

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

1 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.

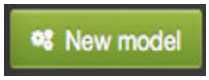
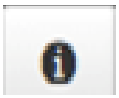
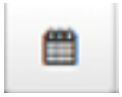
Figure 6-21: Drop Component to Iterate

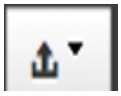
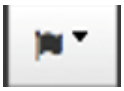


2 Drag and drop model for iterating. If there are multiple input parameters, the iterator will ask which parameter it should iterator upon.

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
	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

icon	Name	Use to...
	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 onlyj) 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

icon	Name	Use to...
	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.

DOES THIS RULE ALSO APPLY TO COMPONENTS?

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

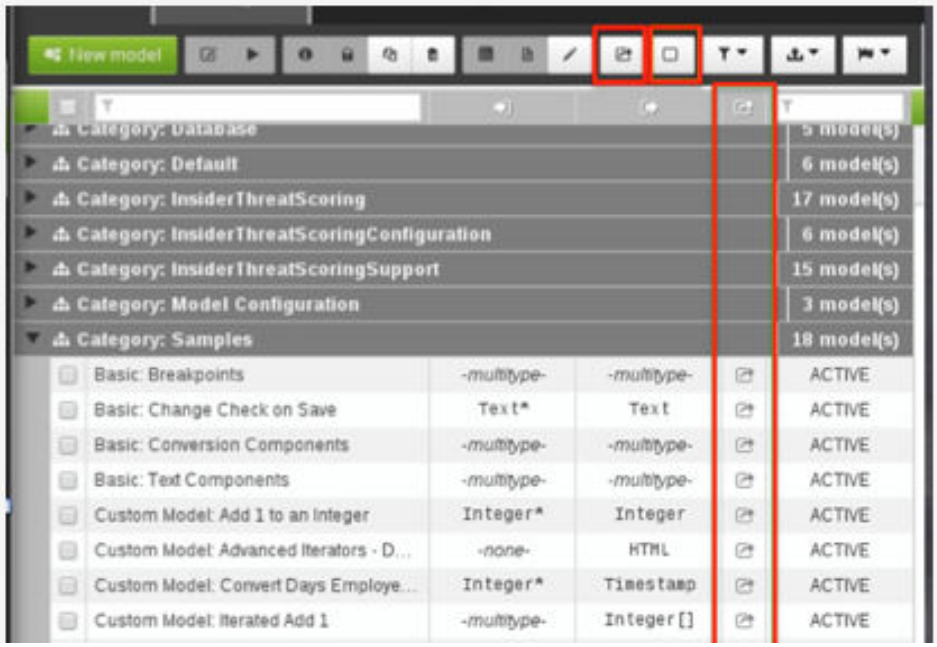
Using the Shared Button Option

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.

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

Figure 6-23: Model Listing with Sharing Status



CREATING A REPORT WITH THE SELECTED MODEL

NEED VERIFICATION AND SCREEN SHOTS - THIS IS NOT IN TRAINING

CREATING A SCHEDULE WITH THE SELECTED MODEL

NEED VERIFICATION AND SCREEN SHOTS - THIS IS NOT IN TRAINING

CHAPTER 7

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.

IMPORTANT: 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

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

- Create a query manually. (For details, see the procedure below.)
- Load a saved query to modify (see page 135).

To create a query manually and run it:

1 From **Data Design**, navigate to **SQL Workbench**.

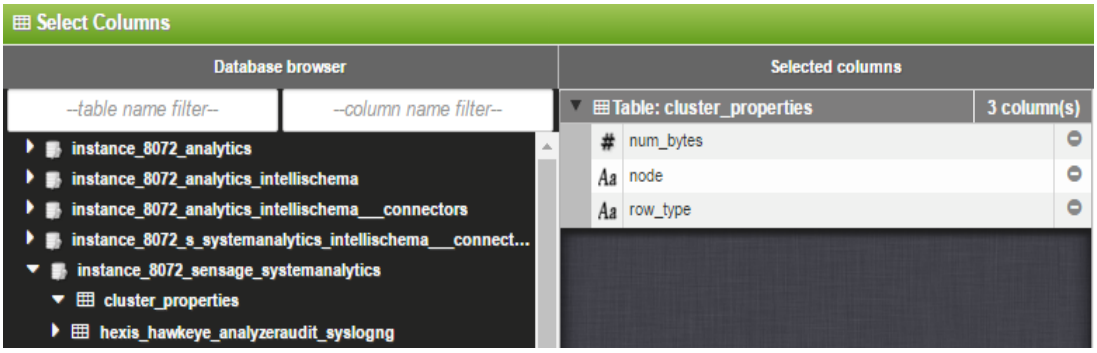
The SQL Workbench is displayed as shown in Figure 7-1.

Figure 7-1: SQL Workbench:

2 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:



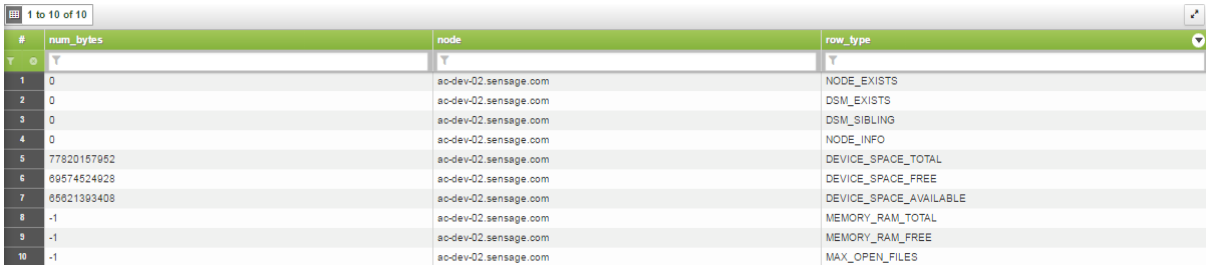
3 From the left pane, select the table and columns and click **Select**. The tables you want are included in the query.

4 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.

5 To run the query, click **Run Query**. The query data is displayed below the workbench as shown in Figure 7-3. THIS DOES NOT SHOW THE QUERY DATA. IT SHOWS ACTUAL QUERIES. SHOULD SHOW RUN QUERY

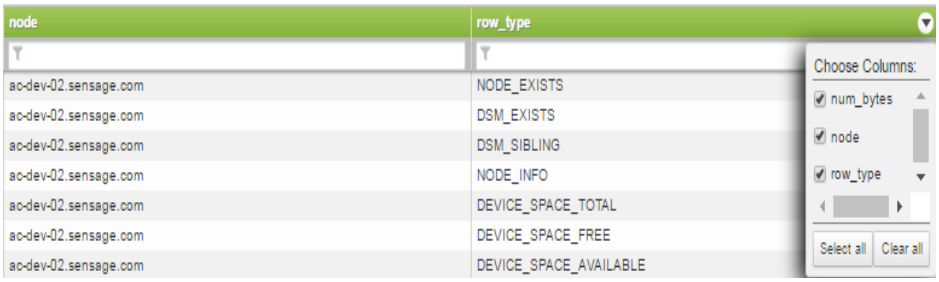
Figure 7-3: Run Query from SQL Workbench:



#	num_bytes	node	row_type
1	0	ac-dev-02.sensage.com	NODE_EXISTS
2	0	ac-dev-02.sensage.com	DSM_EXISTS
3	0	ac-dev-02.sensage.com	DSM_SIBLING
4	0	ac-dev-02.sensage.com	NODE_INFO
5	77820157952	ac-dev-02.sensage.com	DEVICE_SPACE_TOTAL
6	69574524928	ac-dev-02.sensage.com	DEVICE_SPACE_FREE
7	65621393408	ac-dev-02.sensage.com	DEVICE_SPACE_AVAILABLE
8	-1	ac-dev-02.sensage.com	MEMORY_RAM_TOTAL
9	-1	ac-dev-02.sensage.com	MEMORY_RAM_FREE
10	-1	ac-dev-02.sensage.com	MAX_OPEN_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:



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:

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

2 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 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 57. and See “Creating and Modifying Charts for a Report” on page 91.

CHAPTER 8

Managing Report and Analytics Schedules

The Scheduler feature is accessed through the Scheduler Menu on the Analyzer Dashboard. Through the Scheduler, uses 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:

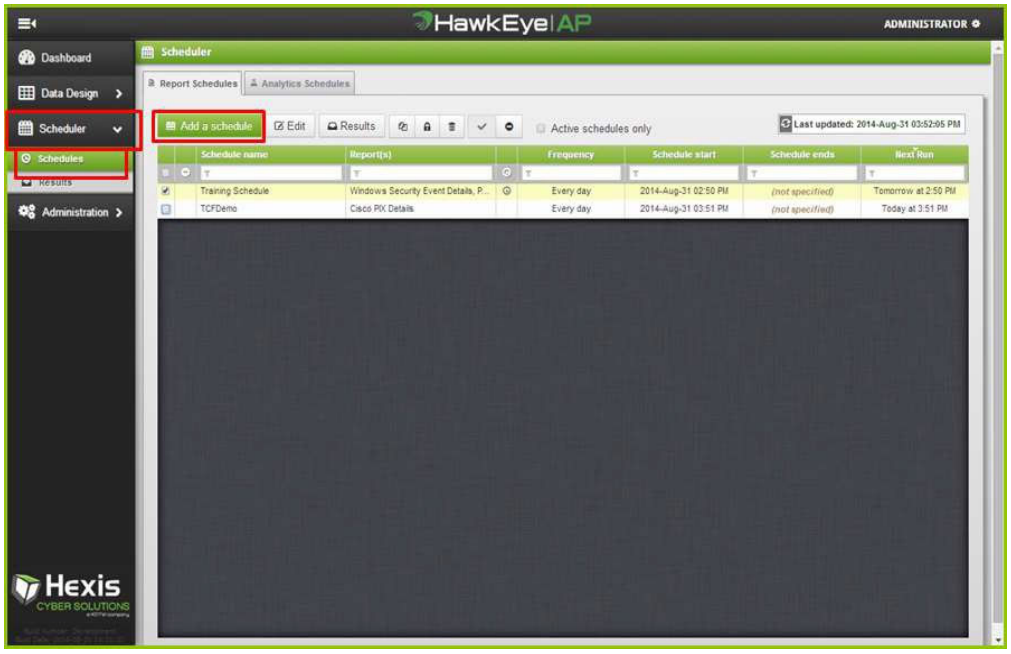
SCHEDULER OVERVIEW

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. NEED SCREENSHOT WITH JUST REPORT SCHEDULES SELECTED AND SCHEDULES LISTED.

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



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.

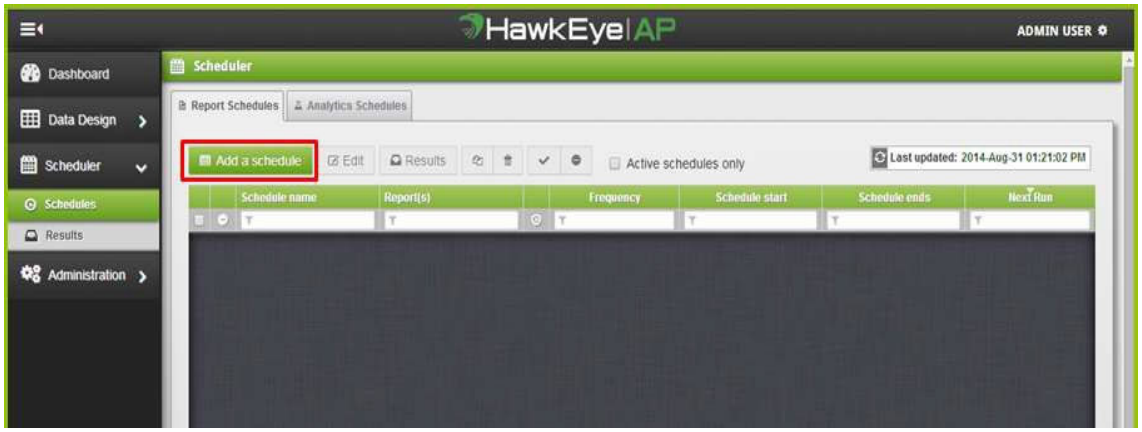
CREATING A REPORT SCHEDULE

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.

DON'T SEE DISTRIBUTION TAB

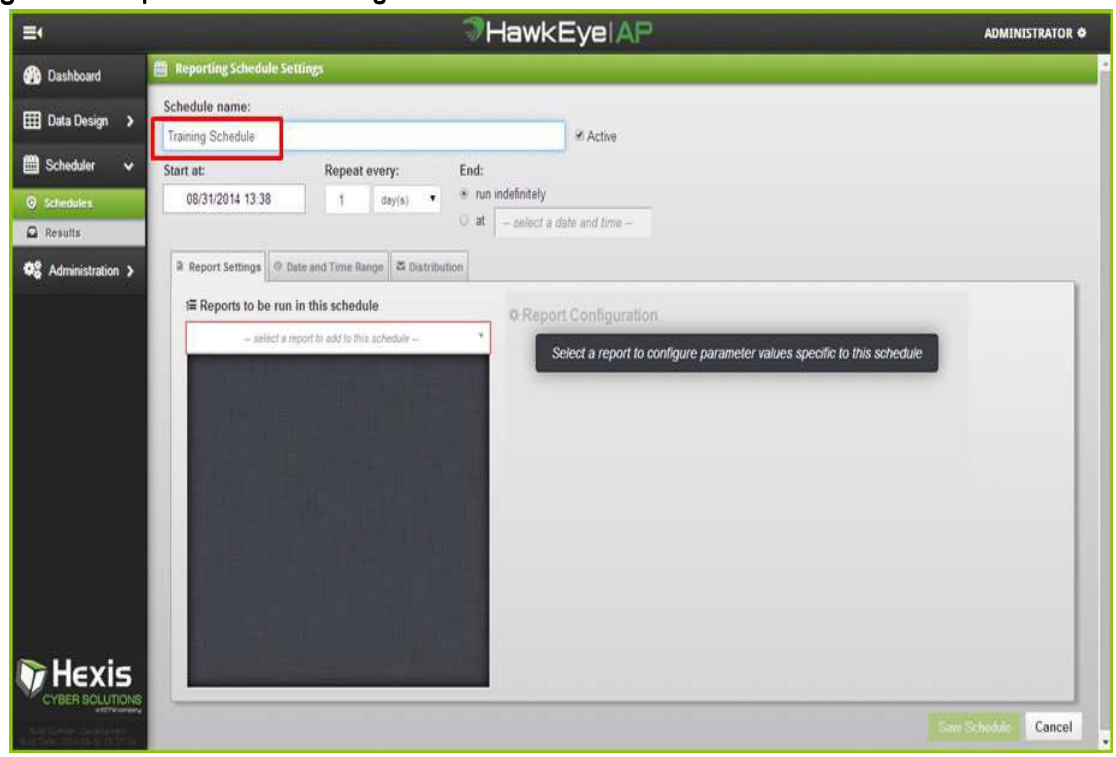
Figure 8-2: Adding a Schedule



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

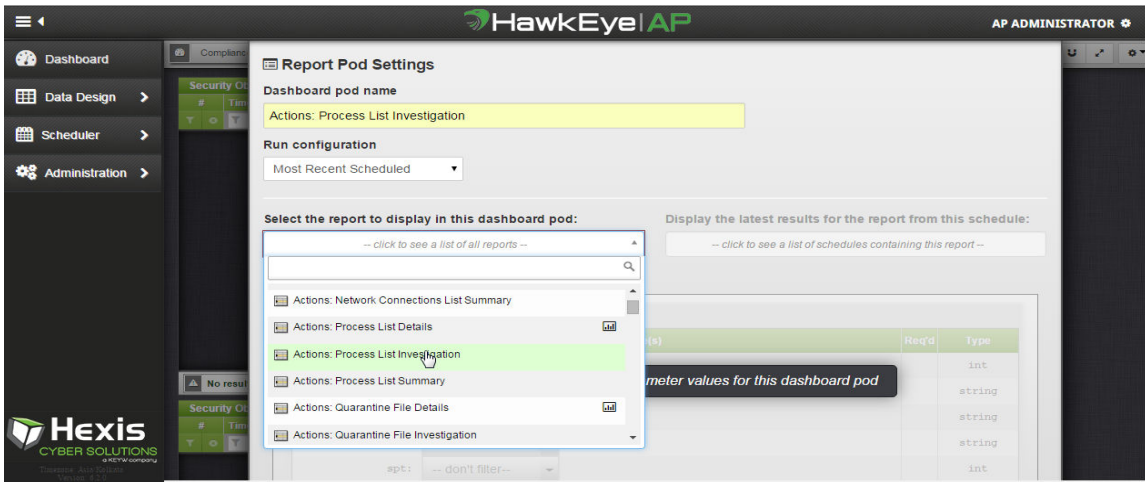


3 Click the triangle in the box labeled, "Select a Report to add to this schedule" to display the dropdown list of reports that you have permission to access.

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

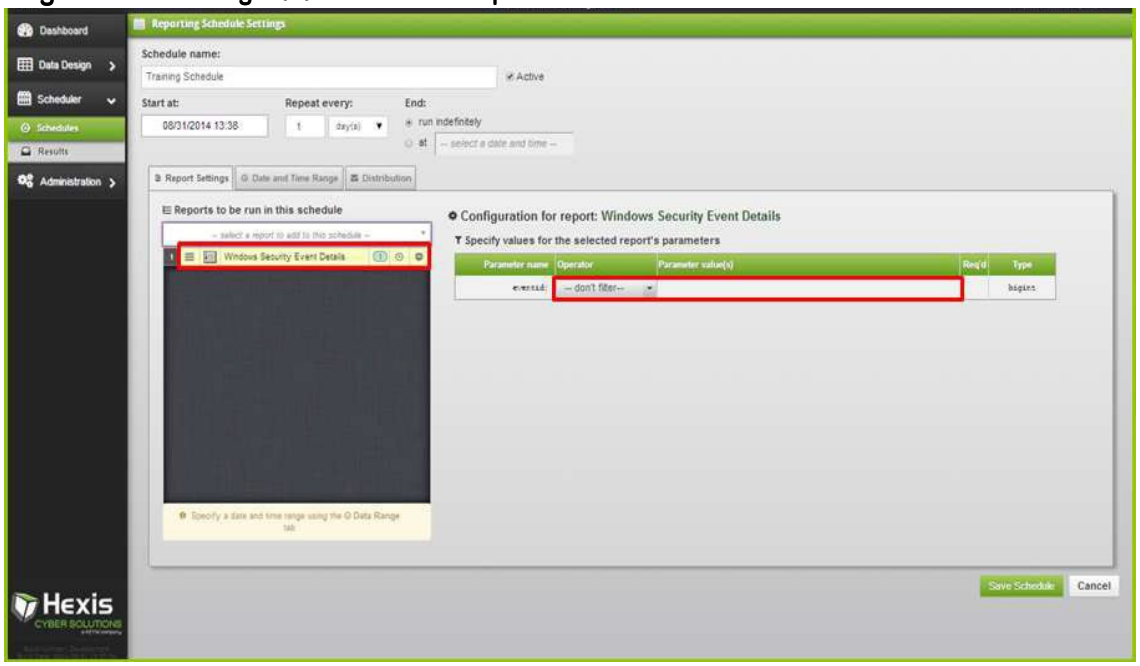


If the report was defined with parameters, they will appear to the right of the report dropdown list.

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.

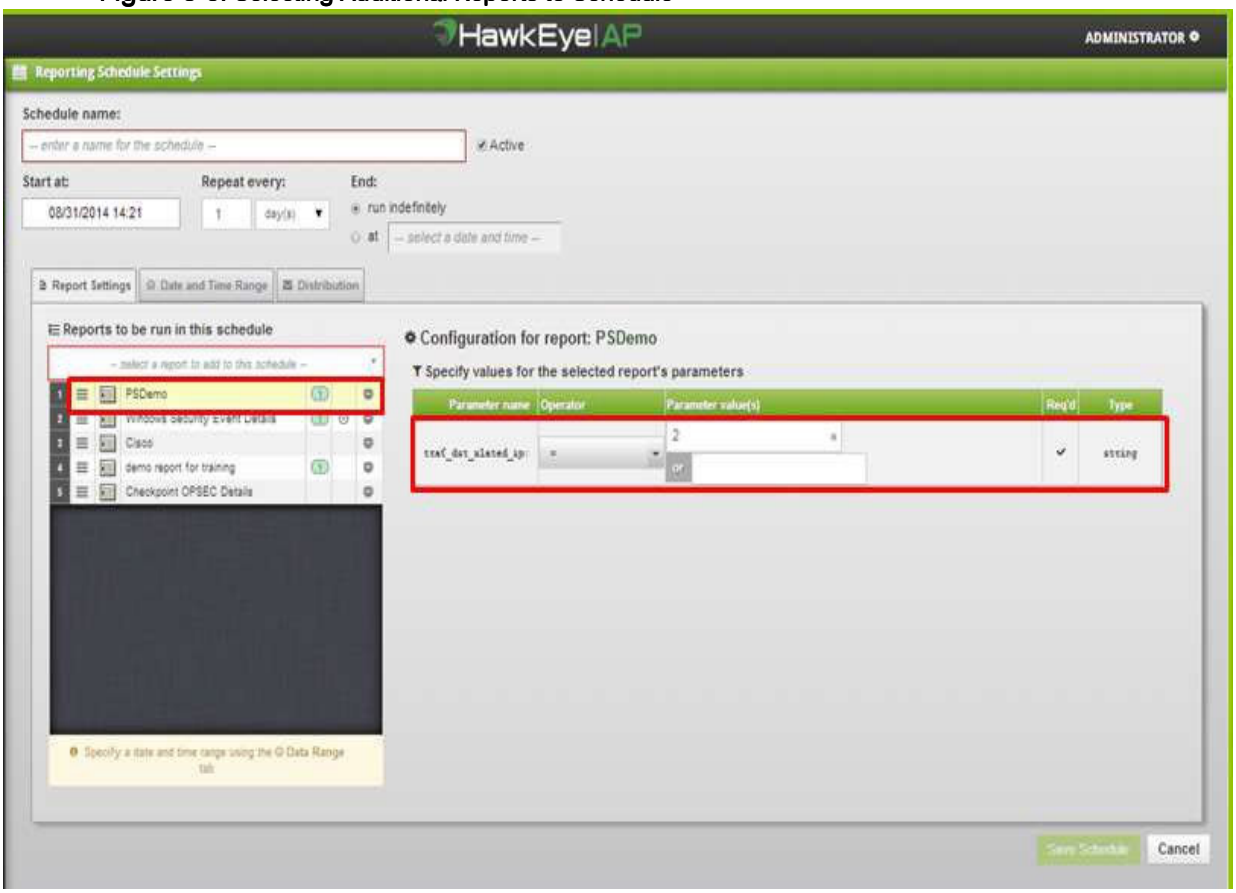
Figure 8-5: Selecting Parameters for the Reportt



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.

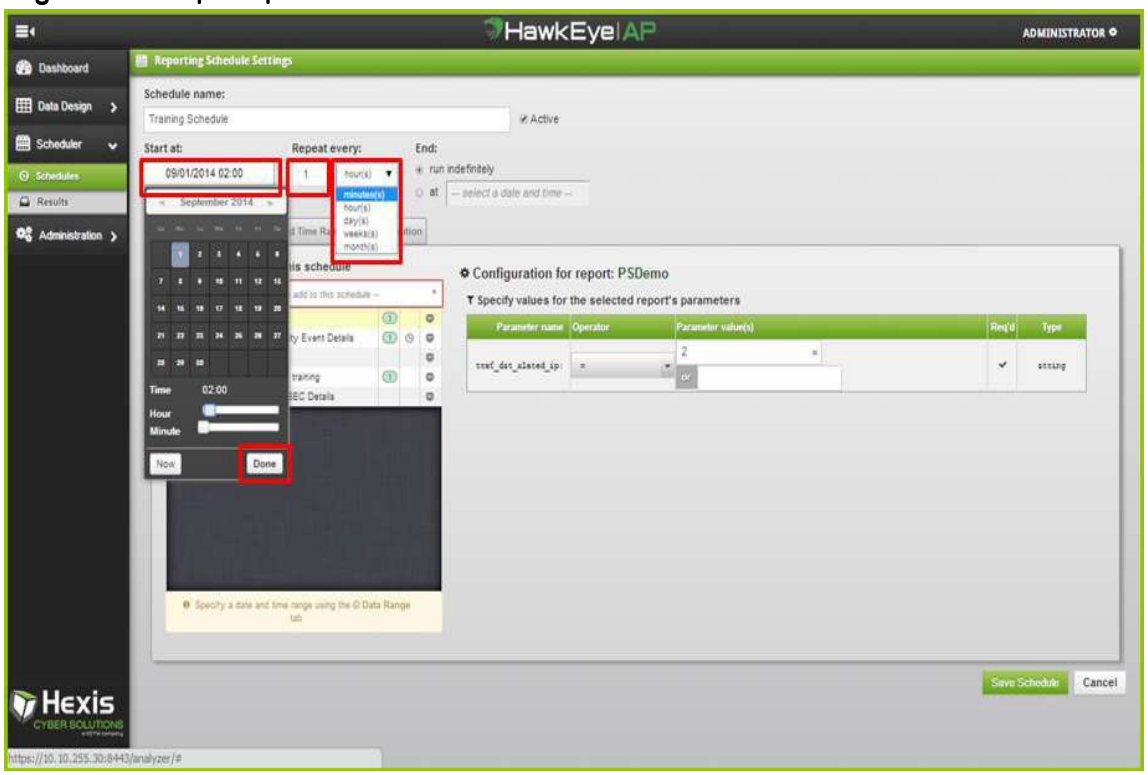
6 Select any additional reports (no limit) you want to schedule. When you click the name of each selected report, the parameter configuration options for that report is displayed.

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 (MISSING INFO & SCREENSHOTS_

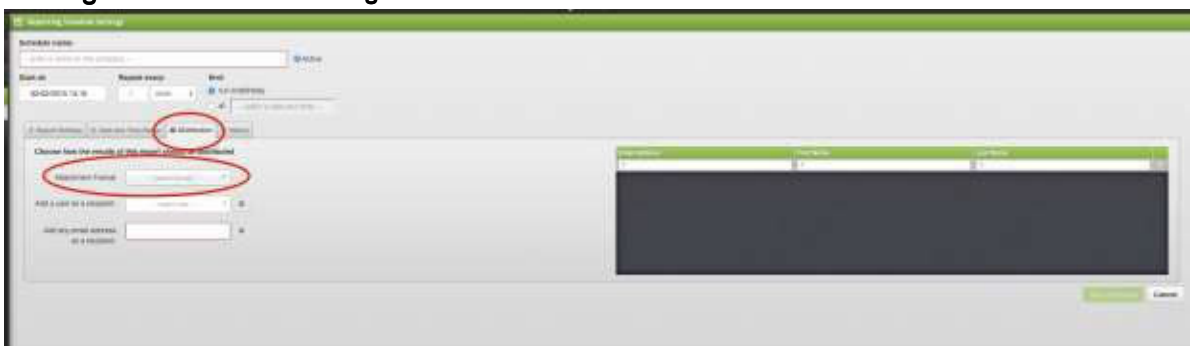
NEED TO PROVIDE

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:

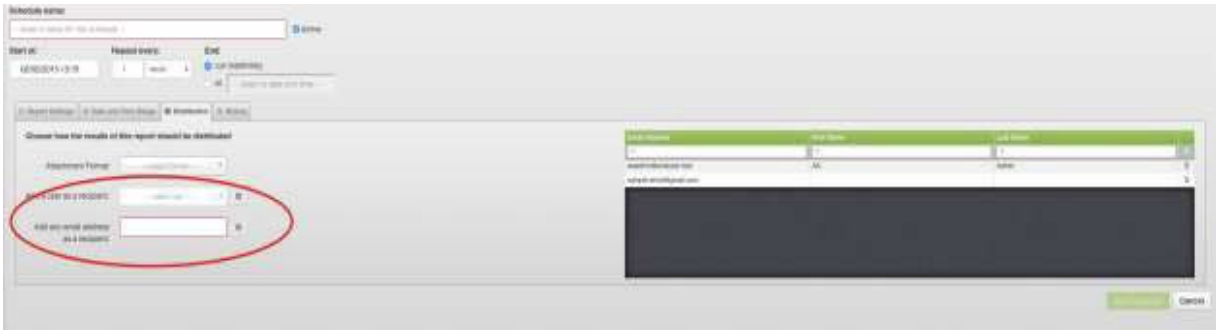
1 Navigate to the "Distribution" tab in the Schedule Settings screen. Select an attachment format (PDF, CSV, or Hyperlink).

Figure 8-8: Schedule Settings Screen



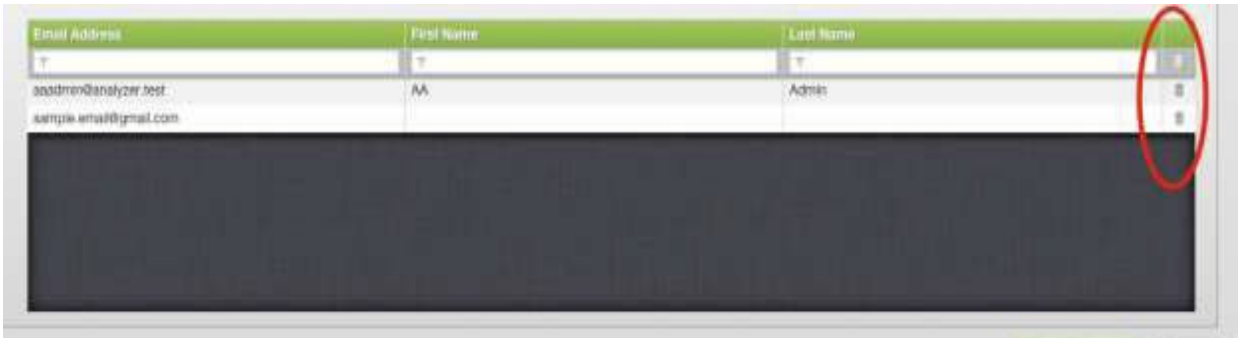
2 Add a user using one of two options: Select a system user from the dropdown menu provided, and click the "+" button or type in a valid email address, and the "+" button.

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.

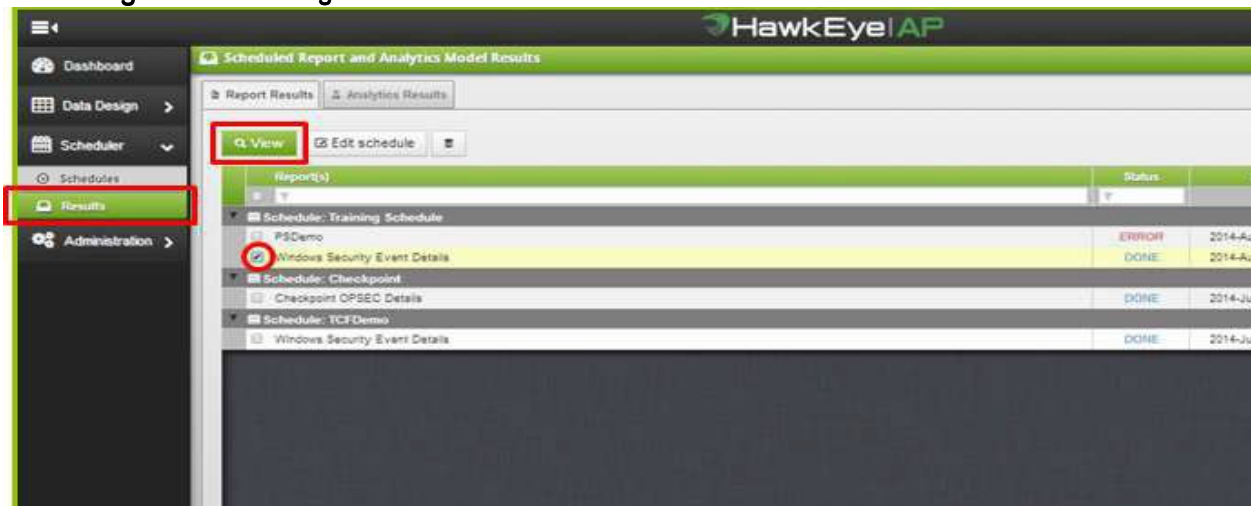
VIEWING SCHEDULER RESULTS

The Report Scheduler option provides a screen for you to view report results from the scheduled report run. This options 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



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

#	ts	wints	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 ANALYTICS RESULTS

THIS WAS NOT DESCRIBED

CHAPTER 9

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.

IMPORTANT: 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

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.

SHOULD WE EXPLICITLY STATE WHAT IS INVOLVED IN "NATIVE SETUP" WE CAN XREF THIS INFORMATION FROM THE ADMIN GUIDE.

IMPORTANT: For details on roles and types of permissions associated with each in the SenSage AP system, see "SenSage AP Permission Requirements", on page 177.

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, the see the *SenSage AP Administration Guide.*

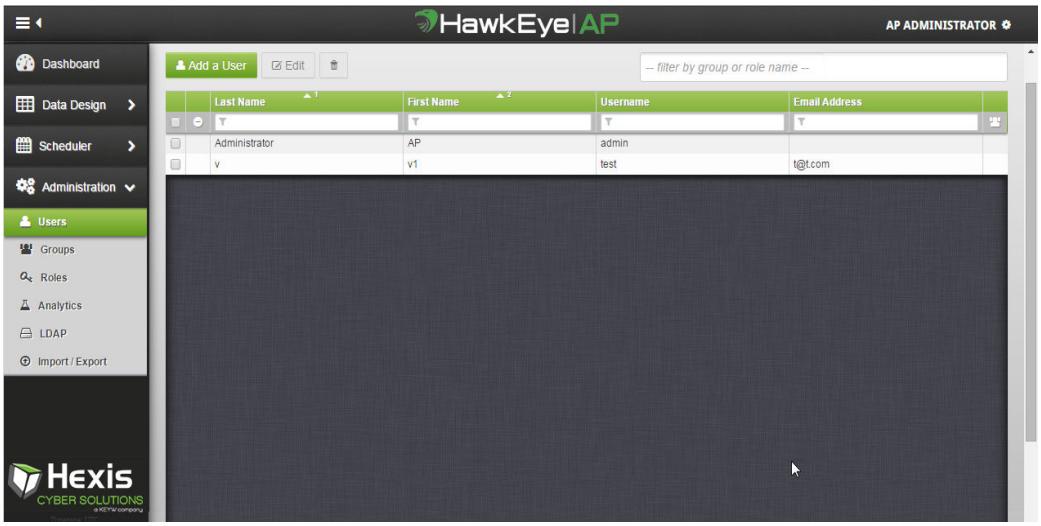
Adding a SenSage AP User in a Single/Multiple-AD Server Environment

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

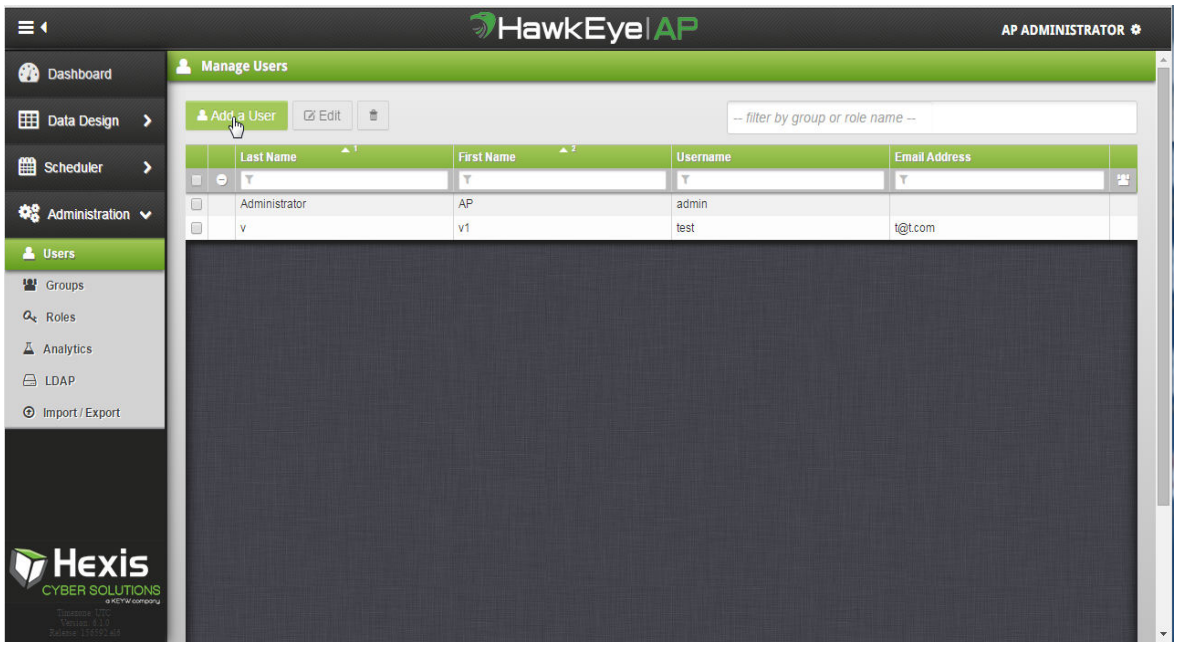
1 Go to Analyzer, select **Administration --> Users** from the dropdown submenu. The Manage Users screen is displayed as shown in Figure 9-1.

Figure 9-1: Manage Users Screen



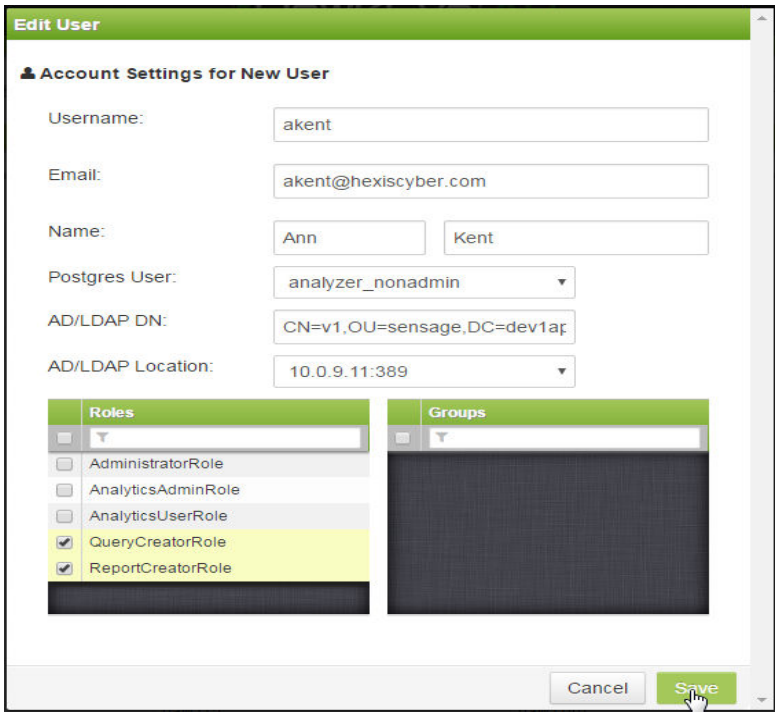
2 To add a user, click the **Add a User** button as shown in Figure 9-2 below:

Figure 9-2: Add a User Button



The pop-up window for adding a user is displayed as shown in Figure 9-3.

Figure 9-3: Account Settings for Adding a New User



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 noy corresponding SAM account is found in Active Directory. For details on SAM, see the *SenSage AP Administration Guide*

IMPORTANT: 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>>';
```

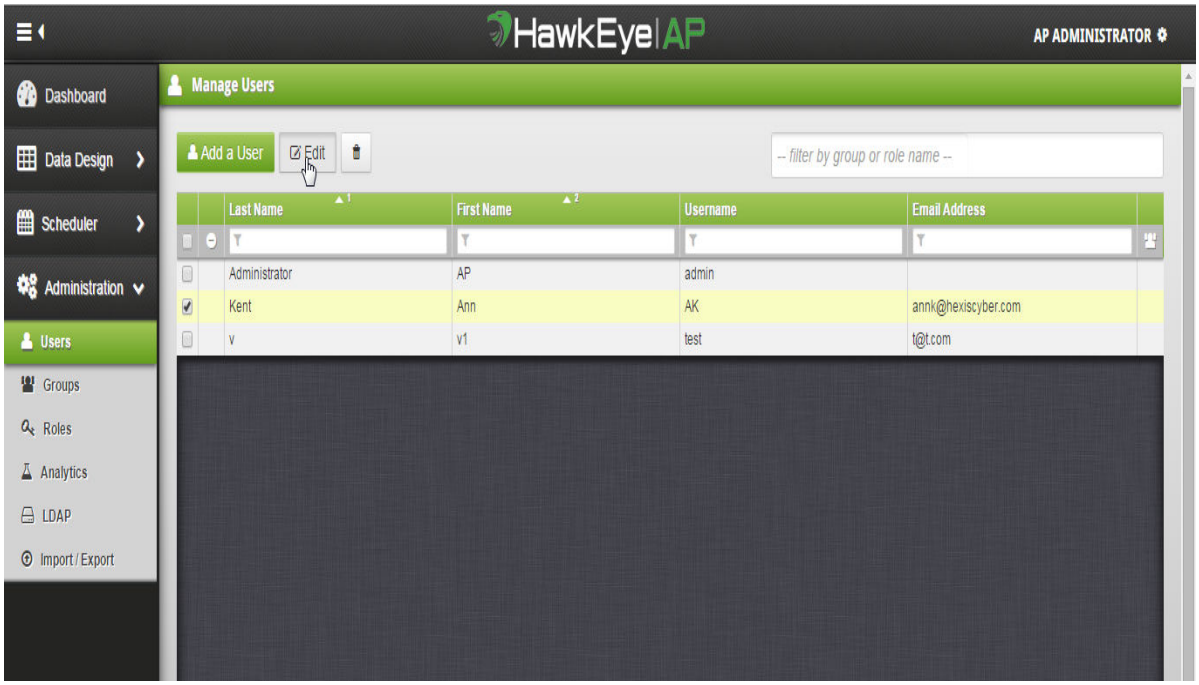
MODIFYING A SENSAGE AP USER

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



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 9-3.

3 In the popup window, make any necessary modifications.

4 Click **Save** to save the changes.

DELETING A SENSAGE AP USER

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.

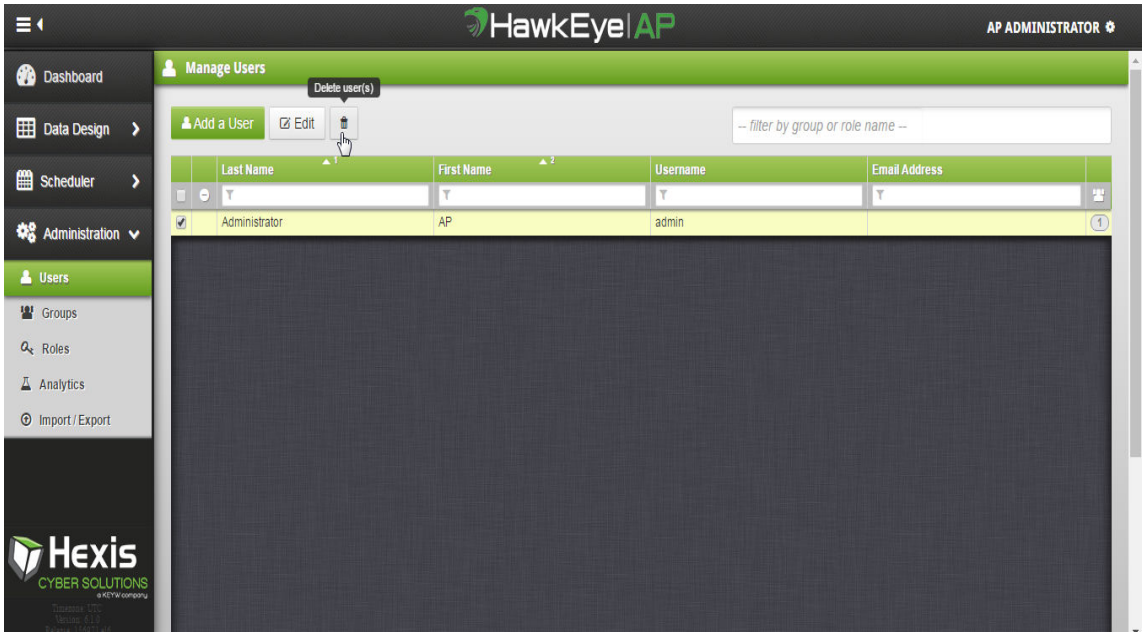
To delete a SenSage AP user:

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



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.

DO WE WANT TO SAY SOMETHING ABOUT NATIVE

ADDING/MODIFYING GROUPS IN A SINGLE/MULTIPLE-AD SERVER ENVIRONMENT

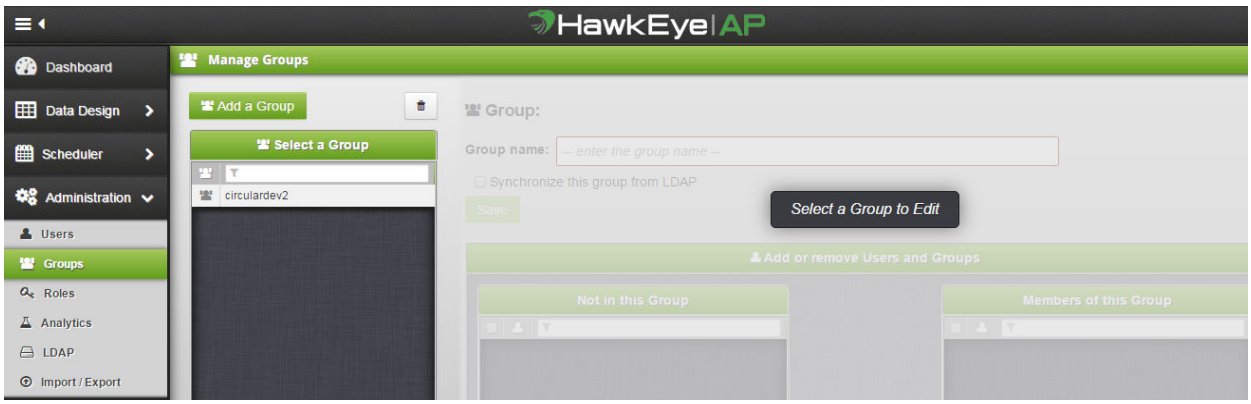
This section describes how to add or modify groups. In a single/multiple-AD server environment, this applies to those users who belong to a specific group DN (Distinguished Name) of an AD server. Refer to the applicable section below, depending on whether you are adding or modifying a group in a single-AD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

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:

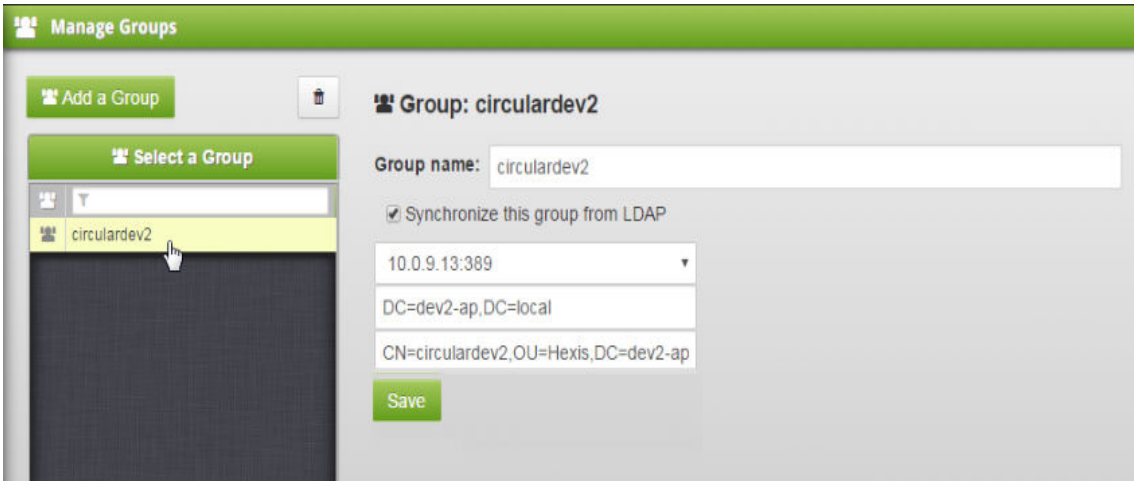
1 Go to the Analyzer, select **Administration --> Groups** from the dropdown submenu. The Manage Groups screen is displayed as shown in Figure 9-6. See step 2 or 3 depending on whether you are adding or modifying a group.

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:

a Select the AD server (displayed by IP address) from the dropdown list.

b Specify the organization's DN.

c 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

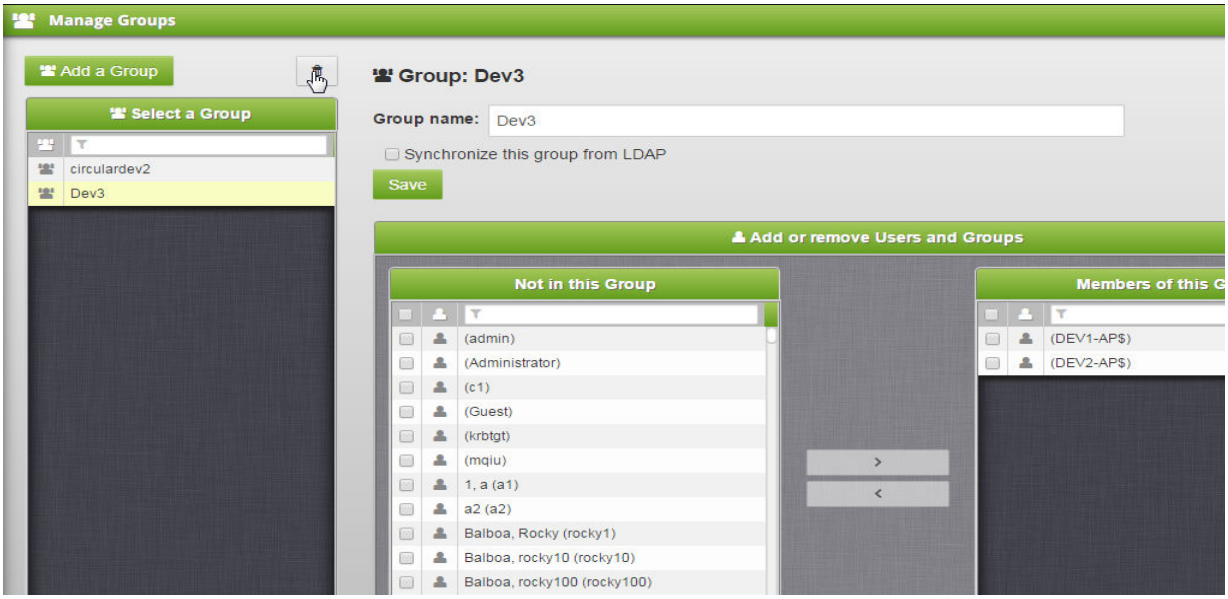
NOTE: When performing a group deletion, the group is deleted only in the Analyzer, not in Active Directory. Once the group is deleted from Analyzer, it is no longer possible to synchronize the group from Active Directory.

To delete a SenSage AP group:

1 Go to the Analyzer, select **Administration --> Groups** from the dropdown submenu and click **Groups** from the dropdown submenu.

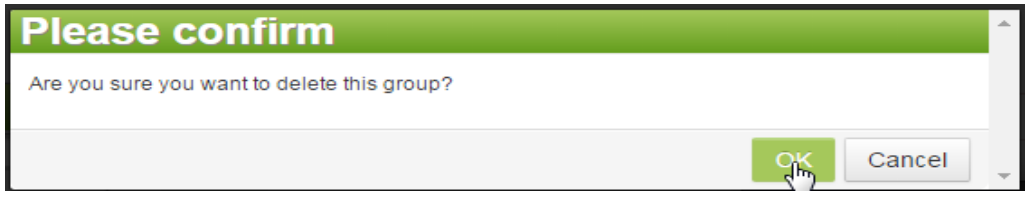
2 Select the group for deletion in the **Select a Group** dropdown and click the trash icon as shown in Figure 9-9 below. Note that if the group has existing members you will not be able to delete it and will get an error message.

Figure 9-9: Deleting a Group



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

Figure 9-10: Deleting Group Confirmation



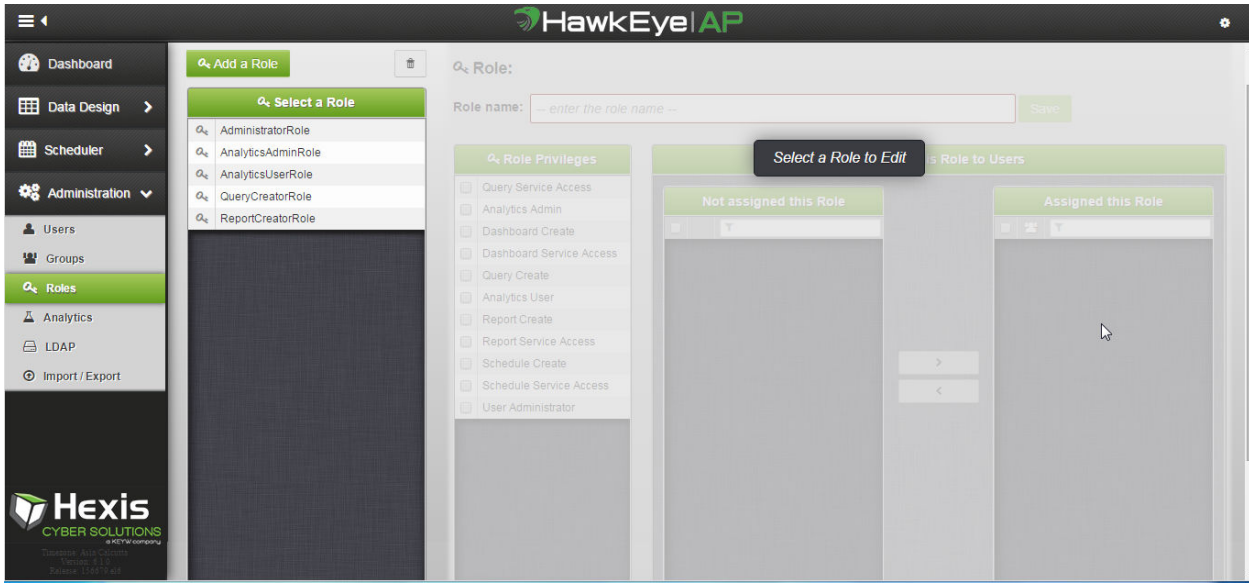
ADDING AND MODIFYING ROLES

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:

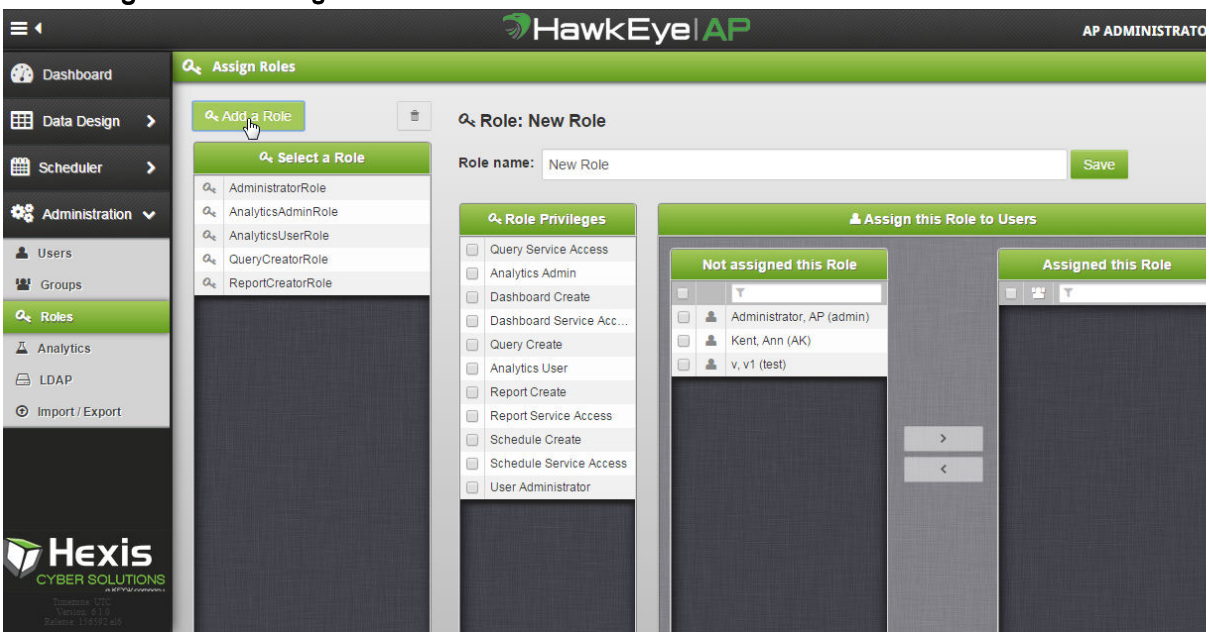
1 Go to the Analyzer, select **Administration --> Roles** from the dropdown submenu. The Assign Roles screen is displayed as shown in Figure 9-11. See step 2 or 3 depending on whether you are adding or modifying a group.

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.

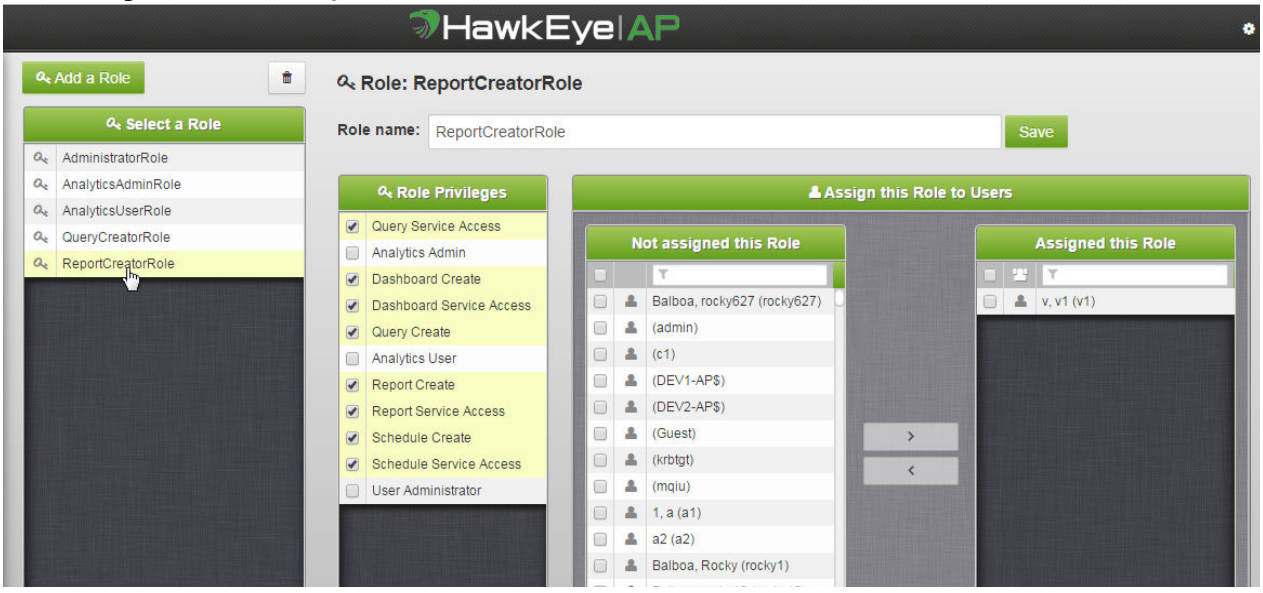
Figure 9-12: Adding a Role



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

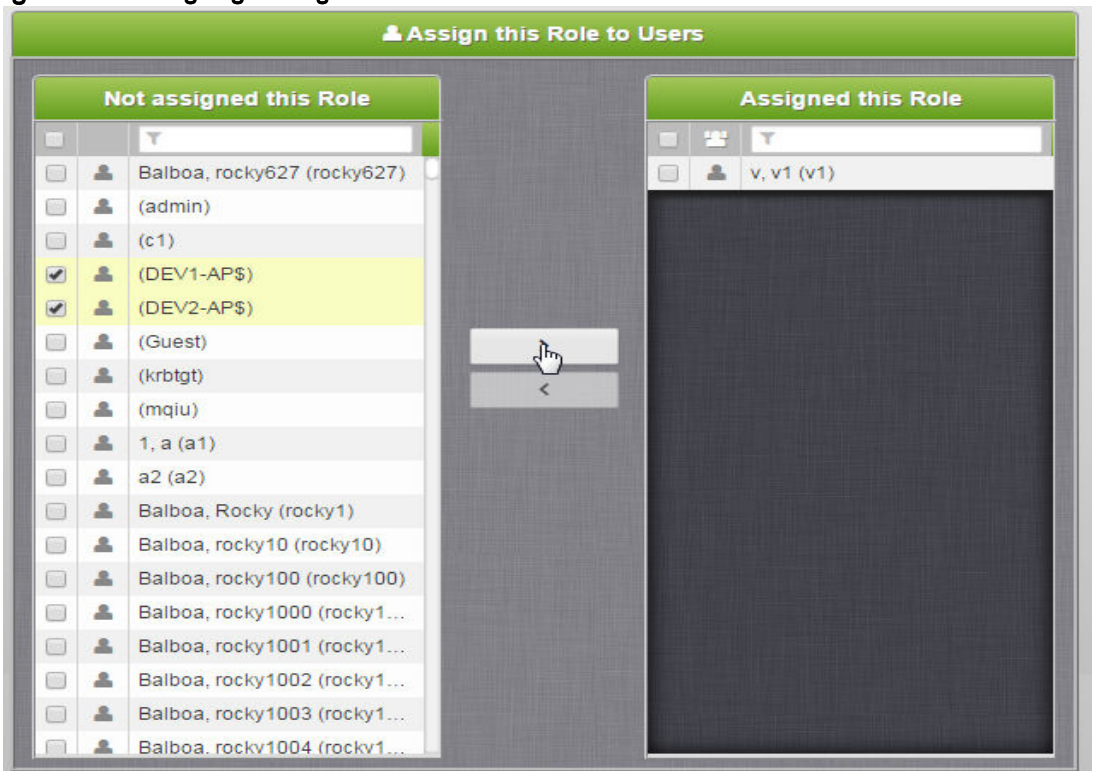


NOTE: Information for this role is displayed, including the **Role Privileges** and **Assign this Role to Users and Groups** area of the screen. Go to Step 5.

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.

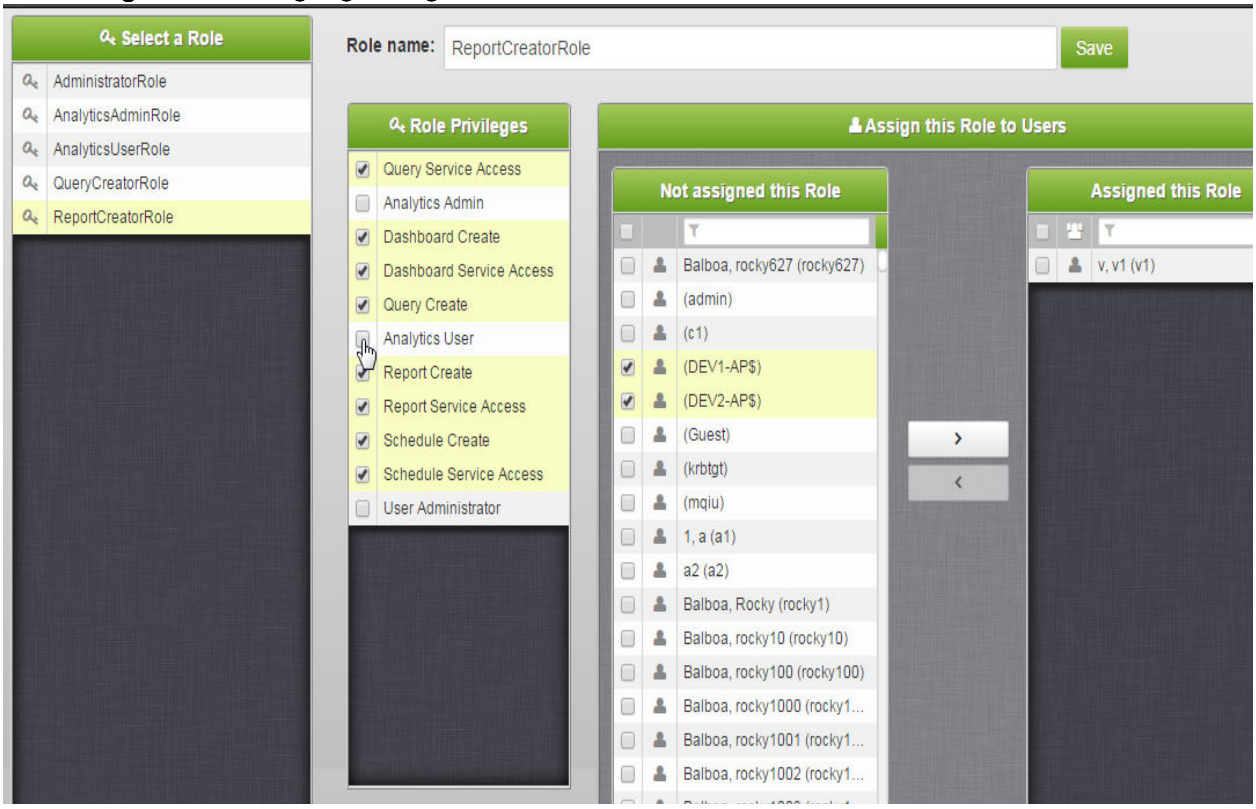
Figure 9-14: Assigning Privileges to a Role



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/modifed role.

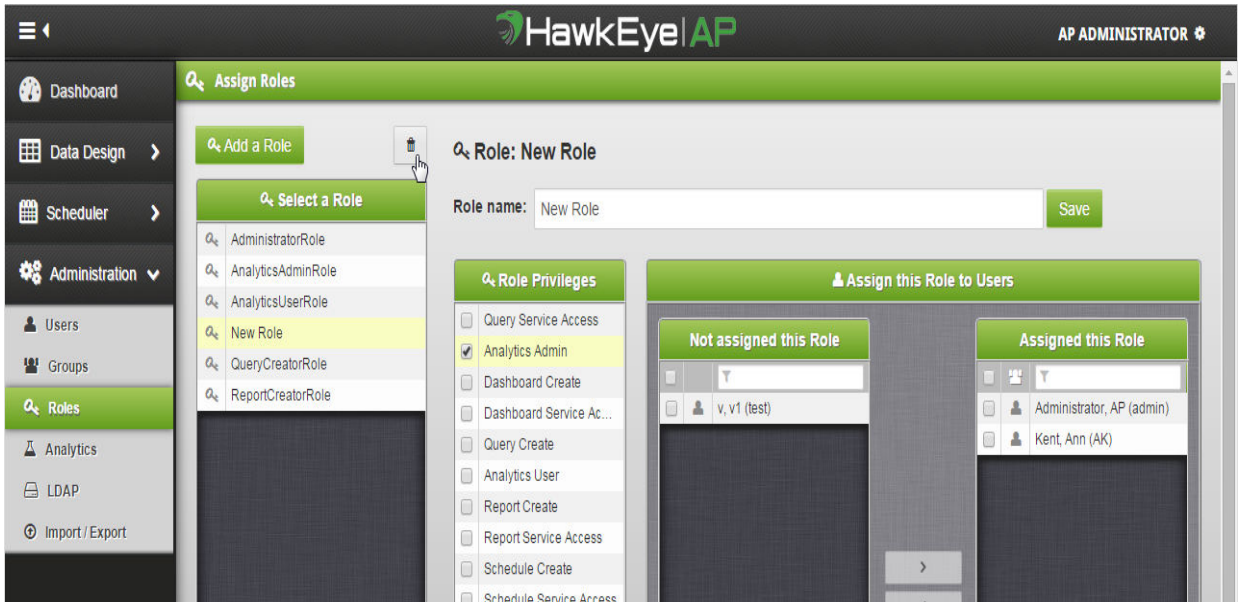
DELETING ROLES

To delete a SenSage AP role:

1 Go to the Analyzer and select **Administration --> Roles** from the dropdown submenu.

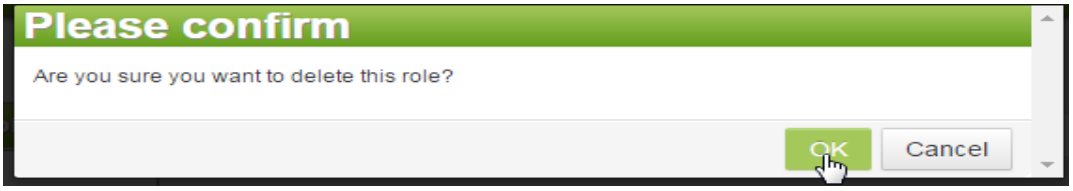
2 Select the group for deletion in the Select a Group dropdown and click the trash icon as shown in Figure 9-9 below. Note that if the group has existing members, you will not be able to delete it and will get an error message.

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.

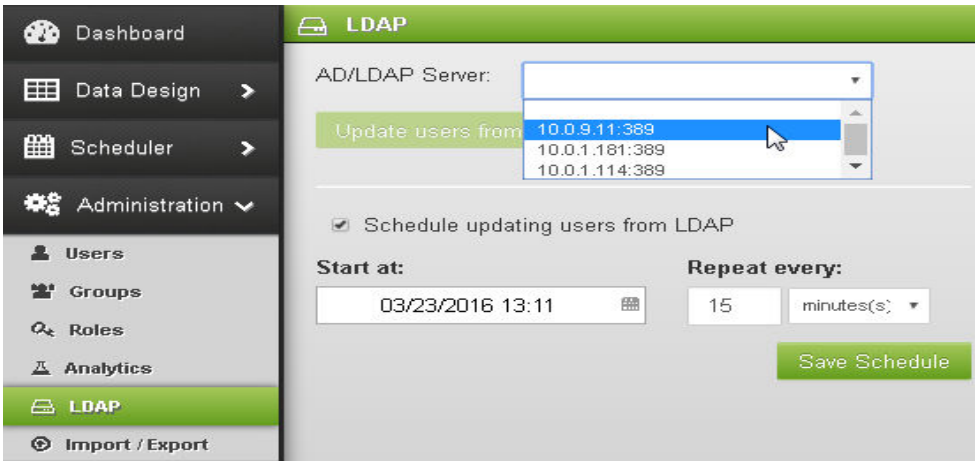
To update users from LDAP:

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

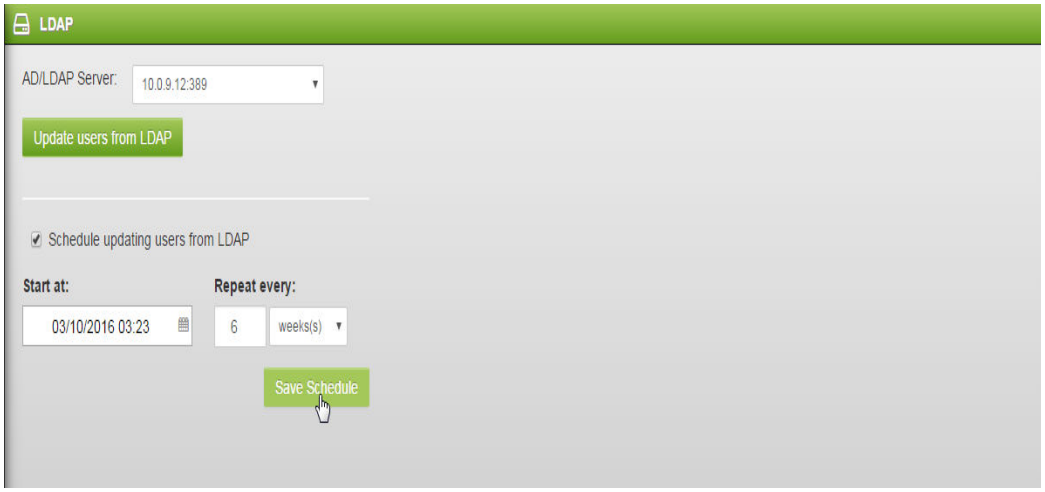


b Click **Update users from LDAP** for immediate update.

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**.

CHAPTER 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

  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

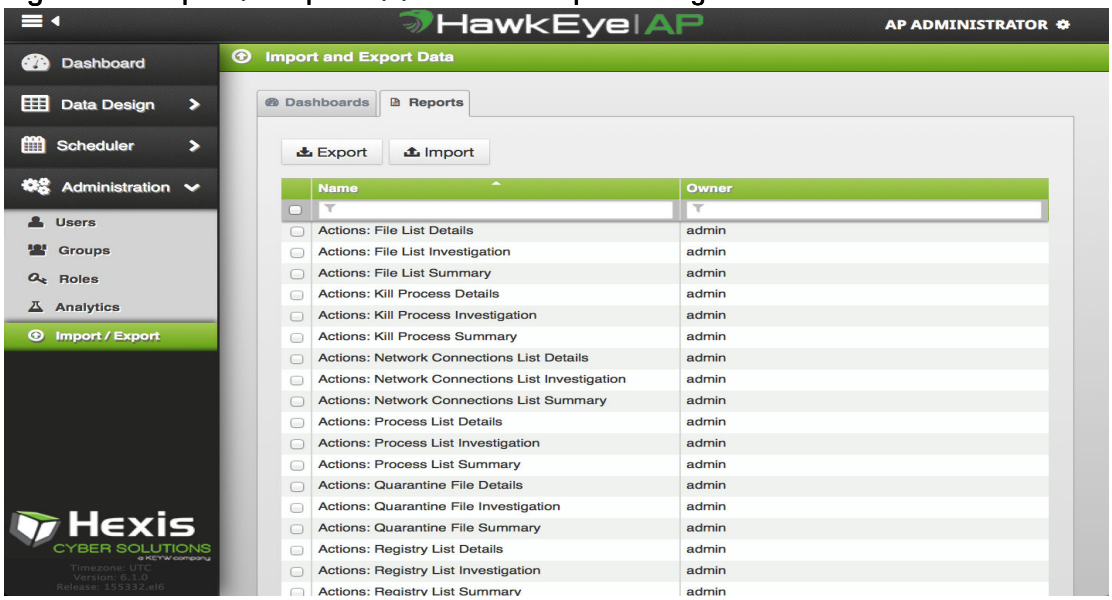
IMPORTING/EXPORTING REPORTS

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

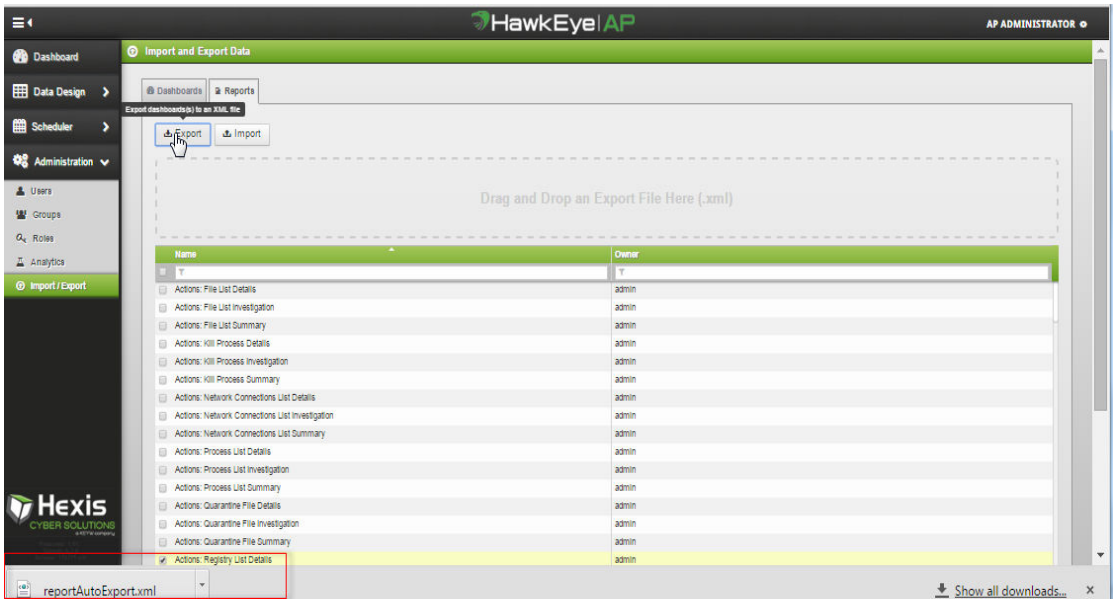


2 Click the reports that you want to import or export.

3 Click the Export or Import button to export or import the reports you selected.

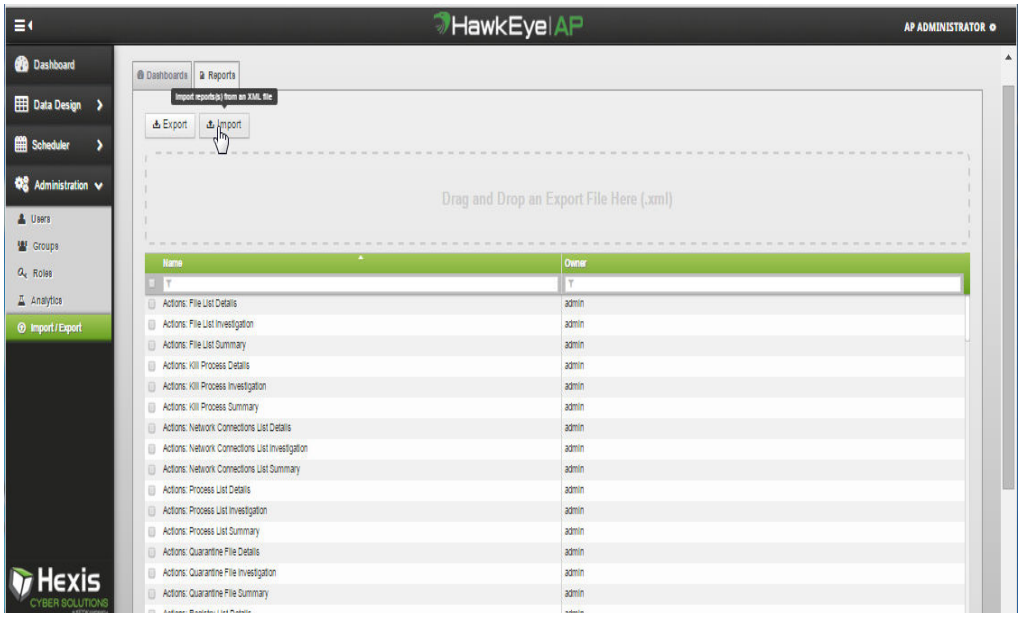
a If you exporting a report, on the lower left-hand side of the screen, you will see the export file labeled **reportAutoExport.xml**, which is now stored in your download folder. Click the button to view the file.

Figure 10-2: Exporting a Report



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



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.

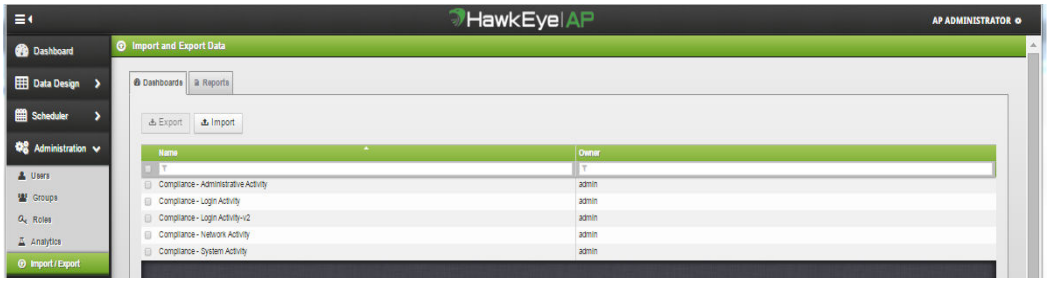
IMPORTING/EXPORTING DASHBOARDS

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- RESHOOT THIS

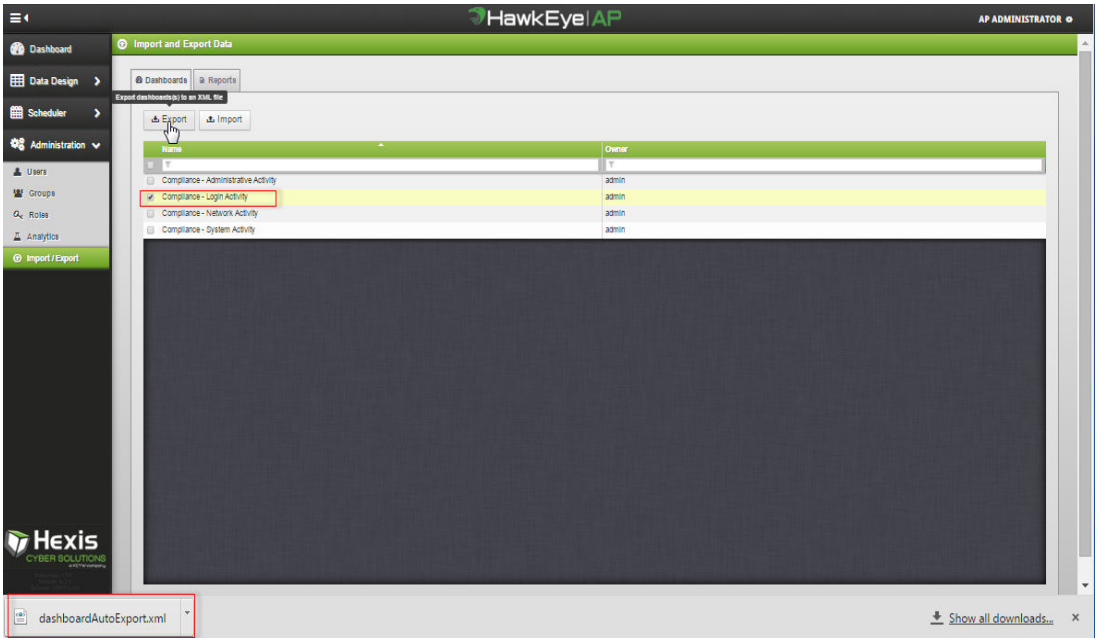


2 Check the dashboards that you want to import or export.

3 Click the Export or Import button to export or import the dashboards you selected.

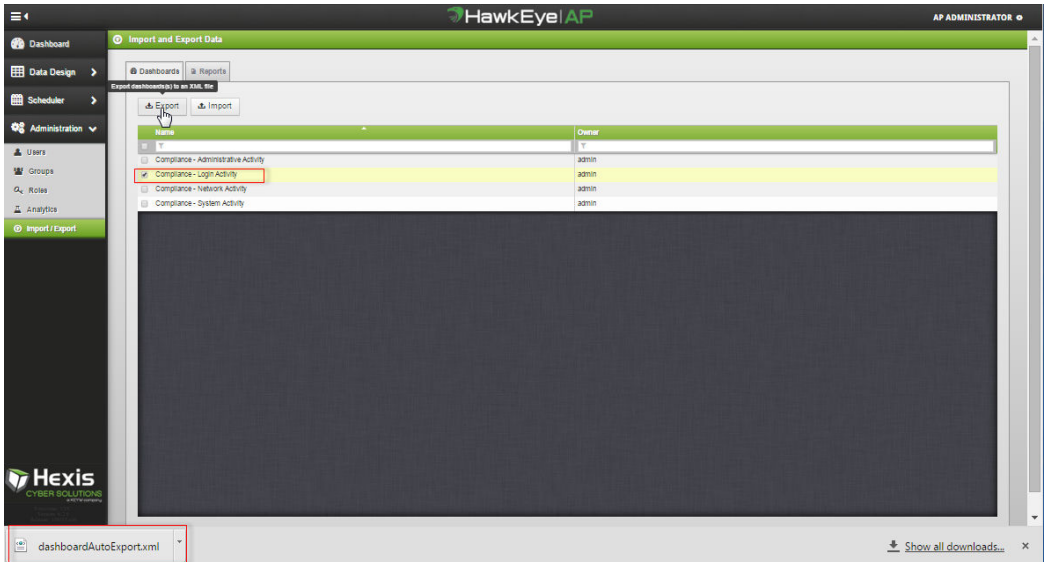
a If you exporting a report, on the lower left-hand side of the screen, you will see the export file labeled **dashboardAutoExport.xml**, which is now stored in your download folder. Click the button to view the file.

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 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

WHAT HAPPENS WHEN YOU MAKE A SELECTION AND WHERE DOES THE EXPORT FILE APPEAR ?

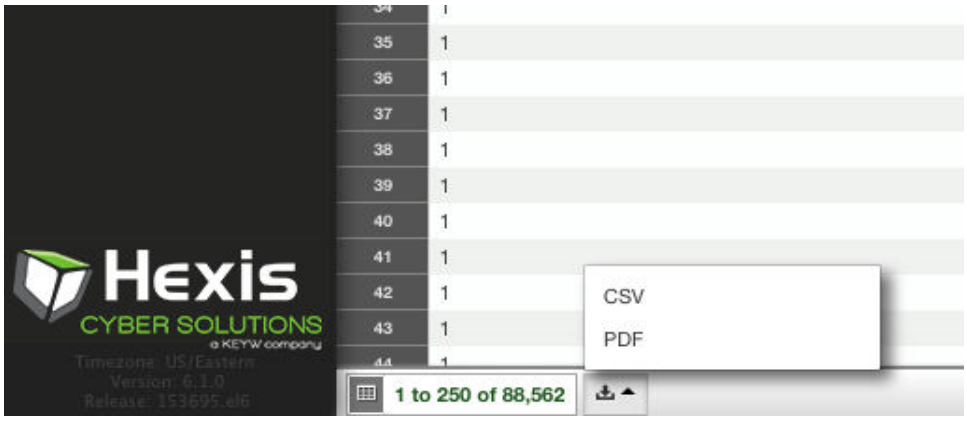
DOWNLOADING A GRID IN A CHART

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



WHAT HAPPENS WHEN YOU MAKE A SELECTION AND WHERE DOES THE DOWNLOAD APPEAR?

IMPORTING/EXPORTING MODELS

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

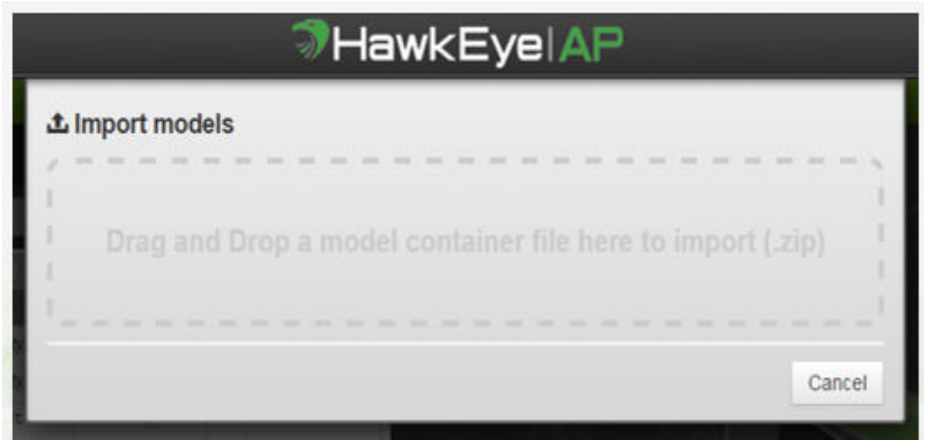
- Only an "Admin User" can import models.
- Import model files must already reside on the desktop.
- The imported model file will include the "imported" tags.

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 31.)

2 On the Model Menu bar (when the Model Tab is selected), select the import/export menu icon":

The import/export popup is displayed to paste the model container for import or export. Figure ???? shows an import pop-up.NEED TO GET EXPORT SCREENSHOT AND NEED TO SEE HOW IMPORT AND EXPORT WORK. STILL NOT CLEAR FROM THE TRAINING SLIDE.



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.

IMPORTANT: Do not alter the .ZIP file as it may result in inability to use the model file.

CHAPTER 11

Administering Data Models

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

- Adding a Data Model Category
- Deleting a Data Model Category
- Displaying Model Execution Metrics

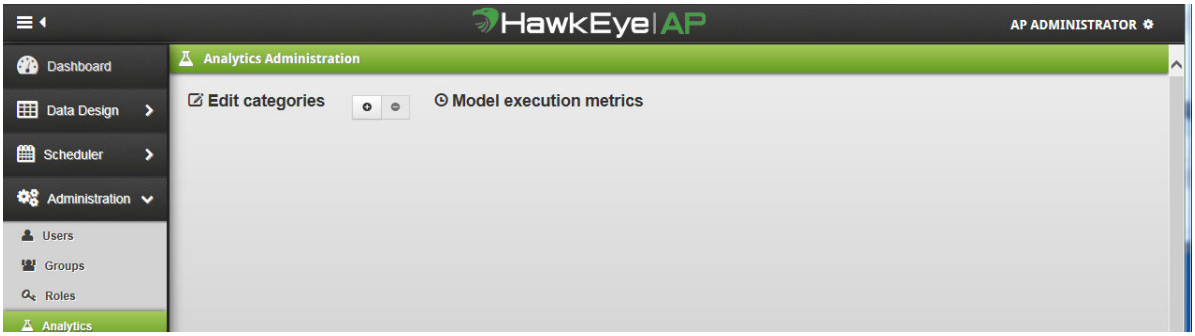
Adding/Deleting a Data Model Category

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 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



2 NEED TO SEE THE REST OF THIS

Displaying Model Execution Metrics

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 175

"5.x.x Procedure to Limit a User's Access to a Namespace(s) ", on page 176

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_a nalytics**.

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: Permisson Requirements for AP Features

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions 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	
	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	

Table 1: Permisson Requirements for AP Features

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions on that Service	Uses Equivalent Feature and Action
	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				
	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			Dashborad 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	

Table 1: Permisson Requirements for AP Features

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions on that Service	Uses Equivalent Feature and Action
	Create	Schedule Service Access, ScheduleCreate		Schedule Create same as Report - Run
	Set Security	Schedule Service Access	Owner	
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		
	Delete	User Administrator		
	Create	User Administrator		
TAGS (Note there are no Permissions with Tag feature.)				
	View			

Table 1: Permisson Requirements for AP Features

Feature	Action Supported in Feature	Role Privilege (service that is accessible)	Access Permissions on that Service	Uses Equivalent Feature and Action
	Edit			
	Delete			
	Create			

APPENDIX A

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 - NEED INFO and SCREENSHOTS”, on page 106.

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:

IMPORTANT: 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:

   a `<body>` section of the custom HTML page

   b supporting Java script and css files

   c 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 - NEED INFO and SCREENSHOTS”, on page 106.