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Audience

The target audience for this document is the investigator. To help detect or prevent fraud, SAS Social Network Analysis Server enables investigators to review and manage alerts that are generated and displayed for each alert series. The social network analysis diagram that is created automatically from the back-end data enables investigators to review associations related to an alert.

Specifically, investigators use SAS Social Network Analysis Server to do the following:

- drill from alerts or entities into details
- review the details of an alert or entity
- perform management and review tasks of the social network analysis diagram, including the following:
  - view, annotate, edit, and rearrange network nodes
  - connect entities with links and add new nodes and links to the social network
  - save modified social network analysis diagrams for later recall and continued management
- respond appropriately to alerts, including possible referral to case management
- create and print custom views from different areas of the interface
- export the alerts list or alert details to enable further review and management of the alerts
Requirements

Here are the requirements for accessing and using SAS Social Network Analysis Server:

- a supported web browser installed
- a user ID and password for logging on to SAS Social Network Analysis Server
- access to one or more alert series as configured by your solution administrator
- proper permissions and rights assigned by your solution administrator to enable you to manage and triage alerts and to access SAS Preferences from the main menu if needed

Purpose of This Document

This document is the user’s guide for SAS Social Network Analysis Server.

Note: Each deployment of SAS Social Network Analysis Server is configured to meet the needs of a specific customer. The information and windows, including the color and layout themes, shown in this document are from demonstration projects that SAS developed to show the functionality of SAS Social Network Analysis Server and are only examples.

All options, such as alert status designations, node colors and meanings, and types of charts, are defined and provided in advance by the report that is authored by a business analyst. Configuration options and custom stored processes are discussed in the companion guide, SAS Social Network Analysis Server: Administration Guide.
What’s New in SAS Social Network Analysis Server 6.2

Overview

SAS Social Network Analysis Server 6.2 contains several new features and enhancements. This What’s New topic discusses new features and enhancements that are specific to the use and operation of the solution, introduced since the first maintenance release of SAS Social Network Analysis 3.1.

SAS Social Network Analysis Server 6.2 has the following changes and enhancements:

- general enhancements
- performance and usability enhancements
- user interface and operational differences

For information about new features and enhancements specific to solution administration, see SAS Social Network Analysis Server: Administration Guide.

For information about changes in database support or enhancements related to installation, configuration, and migration, see SAS Social Network Analysis Server: Installation and Configuration Guide.
General Enhancements

For SAS Social Network Analysis 6.2, these general enhancements were added:

- Solution preferences can be set through the use of SAS Preferences, available from the main menu.

- An administrator-enabled network legend is provided for the social network analysis diagram. The **Icons** tab of the network legend is updated automatically to display new icons that have been added to the social network analysis diagram.

In the first maintenance release for SAS Social Network Analysis Server 6.2, these general enhancements were added:

- The Comment Manager has the ability to upload multiple attachments to topics and comments for alerts and for nodes. In addition, interface design modifications include changing the tab name from **Comment Manager** to **Notes** and replacing the concepts of topics and comments with categories and notes.

- You can specify whether the advanced search criteria are saved with each session or whether new entries are required.

- Double-clicking a node in the social network analysis diagram opens the **Properties** pane and the **Show Details** pane, which display node information.

- Check box filter items are displayed in alphabetical order by default.

- Drag and drop and multiple-column column sorting is available for all tabular data displayed.

- Double-clicking an alert or entity in the Alerts window enables you to drill down into the associated details.

- The new export feature enables users to export alerts and designated columns directly from the Alerts window.

- Deletion of multiple entities from the social network analysis diagram at one time is supported.
Deletion of groups from the social network analysis diagram is supported.

In the second maintenance release for SAS Social Network Analysis Server 6.2, these general enhancements were added:

- Check box filters have an All option to enable selection of all of the filter options without having to select each one individually.

- The export feature has been expanded to include the Alert Details window. Tabular data can be exported to the .xls format.

In the third maintenance release for SAS Social Network Analysis Server 6.2, these general enhancements were made:

- Double-clicking a link in the social network analysis diagram opens the Properties pane and the Show Details pane, which display link information.

- The directional buttons have been removed from the Home button on the SAS Social Network Analysis tab.

- The tables in the Show Details pane in the social network analysis diagram are no longer divided between the left and right side of the pane. The pane splitter has been removed.

- The Jump-to page options are now 25, 50, 100, 250, and 500.

Performance and Usability Enhancements

For SAS Social Network Analysis 6.2, the following performance and usability enhancement were added:

- Performance enhancements have been added for the social network analysis diagram.

- An enhanced message is displayed at logon if you do not have an alert series assigned to you or to a role to which you belong.
Clearer messages are displayed during operation and use of the solution.

Detection of idle time has been improved to provide better session time-out warnings.

Browser support has been expanded.

New languages, including Hebrew, are supported.

In the first maintenance release for SAS Social Network Analysis Server 6.2, these performance and usability enhancements were added:

- The **Back to Alerts** button returns you to the alert that you were viewing as opposed to the first page of alerts in the Alerts window.

- Enhancements to interface navigation include preservation of filters and page recall when moving between the Alerts window and the Alert Details window.

- Enhancements to the time slider include features such as the ability to snap to the nearest date and to hide the time slider from view.

In the second maintenance release for SAS Social Network Analysis Server 6.2, refined functionality makes adjusting column widths for all of the table data easier to perform.

In the third maintenance release for SAS Social Network Analysis Server 6.2, these performance and usability enhancements were added:

- You can add multiple attachments to a note when you are using Internet Explorer.

- You can delete multiple custom views at the same time.

- Several accessibility enhancements have been made. For full details, see [Accessibility Features of SAS Social Network Analysis Server at support.sas.com](https://support.sas.com).
User Interface and Operational Differences

For SAS Social Network Analysis 6.2, the primary and secondary menus of the user interface were updated to enhance usability or to accommodate new features. For a complete discussion of the user interface, see Chapter 2, “SAS Social Network Analysis Server Access and Description,” on page 5.

In the first maintenance release for SAS Social Network Analysis Server 6.2, these user interface and operational differences were added:

- The addition of a Show menu on the SAS Social Network Analysis tab enables you to control the visibility of the legend, the time slider, and the map view.
- Support is provided for decorated node annotations and link labels, including formatted text and the inclusion of image and link support.
- Predictive volume filtering is enhanced with the addition of value counts surfaced with check box filters.

In the second maintenance release for SAS Social Network Analysis Server 6.2, these user interface and operational differences were added:

- The Notes tab in the Alert Details window and on the SAS Social Network Analysis tab replaces the former Comment Manager tab if it is enabled for an alert series.
- After you show the Legend window in the social network analysis diagram, it remains open in the diagram when you navigate between the social network analysis diagram and the Alert Details window or the map view. In addition, the position of the Legend is retained when you navigate between the social network analysis diagram and the Alerts Details window or the map view.
- When you initiate printing from the Alert Details window, all existing notes are shown expanded in the interface.
The print preview feature available from the Alerts window has been optimized. An **Update Preview** button indicates when you should update the print preview.

A simplified implementation of the filters on the **SAS Social Network Analysis** tab enables you to create and clear filter settings that highlight network nodes and links.

By default, when a range filter in the **Filters** pane is associated with a numeric column, if the column has a missing value then the row associated with the value is not displayed.

**Note:** Solution administrators can control what value is displayed for theoretically empty cells. Contact your solution administrator for configuration details related to a specific alert series.

The feature that enables searching within each application window has been renamed **Find** to more clearly indicate that returned results are based on currently loaded information that is filtered to the specified terms. The results are not the product of a data source or database query.

You can save multiple custom views for the Alerts window and manage the views through the solution interface. Custom views are saved by user and alert series.

**Note:** Filter settings saved in a previous version of SAS Social Network Analysis Server are imported to the current version when the filters are loaded for the first time after migration. The filter settings are saved to a view called **Migrated View**, which appears on the **Custom Views** selection menu.

In the social network analysis diagram, the **Collapse Expanded Nodes** button related to hidden nodes has been renamed to **Remove Expanded Nodes** to more clearly indicate the functional operation of the task.

In the third maintenance release for SAS Social Network Analysis Server 6.2, these user interface and operational differences were added:

The custom views feature has been expanded to support custom views for the Alert Details window. The **Custom Views** button has been moved from the **Filters** pane in the Alerts window to the main toolbar.

The following enhancements have been made to the print feature:
- The Print window header has an **All** check box that enables you to select all the items that are available to print without having to select each one individually.

- The alert information in the box in the left corner of the Detail Alerts window is now presented as a two-column table. This table has a corresponding check box in the Print window and can be included in printouts.

- The order of the check boxes in the Print window header matches the order in the Alert Details window. The order is: the table in the left corner of the window, the tabs in the **Related Information** pane, and the tabs in the **Entity Profile** pane.

- A heading appears in the print preview and on the printouts to identify the alert series, and, when the print feature is accessed from the Alert Details window, the selected alert.

- When the print feature is accessed from the social network analysis diagram, the printout includes the legend and the time slider dates.

- When the print feature is accessed from the Alert Details window, the printout can include notes. You can choose to print all notes in all categories, or all notes in a specific category.

  **Note:** The notes in the Print window reflect the expanded or collapsed state of the notes in the Alert Details window.

- When displaying the rows to print in a table, the Print window honors the filter and find selections in the Alerts window, and the find selections in the Alert Details window.

- When displaying a table, the Print window honors the column settings (column order, width, visibility, and sort order) that you specify in the Alerts or Alert Details window.

- Large tables are divided into pages in the Print window, making them easier to print.

  - When you access the Advanced Search window from the toolbar, a **Close** button enables you to close the window without applying the search criteria.
The User Preferences table has two tabs: **General** and **Print**. The **Print** tab has the following settings:

- Page width
- Include row numbers

The **Notes** tab has a **Search** field that enables you to find notes faster.

The **Notes** tab provides the ability to expand or collapse all the notes in the tab or all the notes in a specific category.

By default a **Notes** tab does not appear in the **Show Details** pane unless your system administrator specifically enables the notes capability for nodes.
For information about the accessibility of this product, see Accessibility Features of SAS Social Network Analysis Server at support.sas.com.
Introduction

Solution Overview

SAS Social Network Analysis Server is a flexible solution that is used to help detect fraud and identify predictive behavior that might lead to fraudulent activities.

Administrators are responsible for creating projects and setting up alert routing based on specifications provided, generally using a solution such as SAS Financial Crimes Monitor. Investigators access SAS Social Network Analysis Server to manage, triage, and determine the disposition of alerts that have been routed to them.

Social Network Analysis Terms and Concepts

Efficient use of SAS Social Network Analysis Server relies on knowledge of the terms and concepts associated with alert generation and management.
The process of alert creation depends on the evolution of an entity. An entity can be defined as any object (for example, a person, a facility, a claim) or action (for example, a medical procedure, a bank deposit) for which a fraud detection script can be written and executed. SAS Social Network Analysis Server monitors entities and generates an alert if a trigger condition is detected.

After a trigger condition is detected, the item is displayed if (a) there are no instructions in the system to suppress the alert and (b) there are no other flags to cause the alert not to be displayed. This item is considered an alerted entity.

An alerted entity might or might not be an entity upon which a disposition action needs to occur. For example, if a physician prescribes an uncommon medication for a condition that this type of medication is not generally used for, an alert might be generated. This initial alert might be triggered by meeting the criteria of a scripted fraud scenario, but it would not be considered an actionable entity alert, because there are many sanctioned off-label uses for medications that are not areas for concern.

As the system continues to receive data, it aggregates alerted entities. If a series of alerted entities reaches a predefined alert trigger-level, the system might get additional information about the alerted entity (for example, sixteen instances of orders for off-label use of uncommon medications prescribed by a single physician in a two-day period) and escalate the alerted entity to an actionable entity alert. In this example, the actionable entity (that is, the entity upon which an investigation would occur) is the physician.

In a typical configuration, the actionable entity alert is displayed in the Alerts window. The alerted entities are displayed, generally in a Related Alerts tab in the Alert Details window, to provide context for the actionable entity alert. The following diagram shows the relationship and evolution of alerts and entities.
It is worth noting that not all alerted entities are escalated to actionable entity alerts, and not all actionable entity alerts have related entity alerts.

**Supported Investigation Methods**

Fraud investigations can be conducted from the bottom up or from the top down. In the bottom-up approach, a single entity (such as a claim or an account) is alerted. A social network analysis diagram, composed of nodes, surrounds the entity and is usually one or two links deep. Investigators explore the social network by expanding the linked nodes.

In the top-down approach, no individual entity is necessarily alerted. Instead, the network, being the highest-level entity, is alerted because the associations among multiple entities of various types (such as claims, claimants, and providers) collectively are suspicious. Networks are treated as single entities and are analyzed and displayed in their entirety.
SAS Social Network Analysis Server
Access and Description

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Functionality Overview

This section provides information about accessing SAS Social Network Analysis Server and describes its functionality as it applies to the typical investigator’s role of managing and triaging alerts and of interacting with the social network analysis diagram.

Even though SAS Social Network Analysis Server is configurable, some of the user interface features are common for most deployments. This section describes the components of the interface. Detailed information for performing tasks can be found in Chapter 3, “Interface Customization and Alert Management and Disposition,” on page 89 and Chapter 4, “Social Network Analysis,” on page 139.

In general, an investigator uses SAS Social Network Analysis Server to view alerts and to determine the disposition of an alert as either requiring no action or requiring further investigation. The investigator can access the social network analysis diagram to learn more about the entity relationships and to add nodes, links, and annotations to refine the diagram. The following actions are routinely performed for investigating alerts:

- Sign in.
- Access or select an alert series to investigate.
- (Optional) Modify user or SAS preferences to be consistent with how you use SAS Social Network Analysis Server.
- Search and filter alerts to identify the alerts of interest.
- Create one or more custom views to enable efficient investigation.
- Investigate each alert by performing the following actions:
  - Review the alert details.
  - Review transactions that are related to the alert.
  - Review charts and graphs that provide information about the entity under investigation.
  - If the Notes tab is enabled for the alert series, review and add notes to an alert.
Review the social network analysis diagram that shows the alerted entity and related entities and links.

- Rearrange nodes and links to organize the view in a desired layout.
- Add or remove nodes and links as needed. You can add annotations to selected nodes.

**Note:** Some modifications to the social network analysis diagram, including the layout, can be saved if your administrator has configured the solution to enable this feature. For information, see “Overview of Diagram Features” on page 38.

- Determine the disposition of the alert as requiring no additional investigation, or indicate that further investigation is required, such as opening a case.

During alert investigation, you can configure a custom view for the Alerts window or Alert Details window to organize information in a way that best suits your work flow. You can print the alerts list or alert details. In addition, you can configure the social network analysis diagram and print a customized snapshot of the diagram. You can also export the alerts and details in a spreadsheet format.

---

**Accessing SAS Social Network Analysis Server**

SAS Social Network Analysis Server is a web application. Contact your SAS administrator for the web address and specifications for the browser (including version, operating mode, and so on) to use.

Investigators are granted access based on the user privileges that are controlled through user authorization. Sign-in selections are fully configurable, based on user requirements.

The following display shows an example Sign In window for SAS Social Network Analysis Server.
Sign In windows are customized according to a specific business domain. Investigators might be prompted on sign in to access a specific alert series.

**Note:** Your browser locale must be consistent with the locale configured for the solution by your administrator. If the solution interface is displayed in a language other than expected, contact your solution administrator.

To sign in to SAS Social Network Analysis Server, at the Sign In window:

1. Provide a user ID.
2. Provide a password.
3. Click **Sign In**.

One of the following occurs.

- If your administrator has not associated your user ID with at least one alert series or if there have been no alert series configured for the solution, an appropriate message is displayed and you must exit the solution.
Figure 2.2  View of Alert Series Window without Population

Click **Log Off** to exit the solution. Contact your solution administrator for assistance. You will be unable to sign in to SAS Social Network Analysis Server until you have been granted access to at least one alert series.

- If your user ID is associated with more than one alert series, then you are prompted to select a specific alert series. The following display shows a sample prompt.
Click **Open** to continue to the alert series.

**Note:** Because each deployment is unique, your sign-in sequence for a specific alert series might include an Advanced Search window that enables you to specify criteria for an alert listing. If you are prompted, execute an advanced search to continue.

- If your User ID is associated with a single alert series, then the Alerts window of SAS Social Network Analysis Server is displayed, showing any alerts or entities in the current alert series that have been routed to you for investigation.

When you have successfully completed the sign-in sequence, the Alerts window is displayed. This window is customized for each deployment. In many instances, it displays the alerts that you are authorized to view within the specific domain. In other deployments, it might contain a list of entities for which alerts have been generated. In addition, the window might display a populated **Filters** pane.

The following display shows a sample Alerts window displaying two alerts.
Figure 2.4  Alerts Window with Alerts Displayed

The following display shows a sample Alerts window displaying entities for which alerts have been generated.

Figure 2.5  Alerts Window with Entities Displayed
Note: Your solution administrator might have configured your solution to open to a specific alert. In that case, you will be routed to the Alert Details window instead of the Alerts window. If your user preference is set to display the **SAS Social Network Analysis** tab as the default view from an alert, then the **SAS Social Network Analysis** tab is displayed instead.

Note: If you arrive at the Alert Details window or the **SAS Social Network Analysis** tab as a result of administrative configuration for direct access, you are not able to apply a disposition method to the alert. You must locate the alert in the Alerts window, and then you can apply a disposition method from one or more windows of the solution, depending on its configuration.

### Session Time-Out

Session time-out is an administrator-configurable option in SAS Social Network Analysis Server. The administrator can also enable a warning to appear before the actual session time-out.

*Figure 2.6  Example of a Session Time-Out Warning*

During an active user session, the solution keeps track of all user activities that involve mouse clicks, mouse wheel activity, and key presses on the keyboard and then resets the countdown each time one of these activities occurs. If user activity does not occur for the length of time specified by your administrator, then a session time-out warning is displayed if it has been configured. Clicking **Continue** extends the session. If the session is not extended, then the session ends.
Toolbars, Windows, and Panes

SAS Social Network Analysis Server is used by investigators to manage and review alerts. The interface is divided into regions that are consistent with the method in which typical tasks are performed.

Main Toolbars

The main toolbars are at the top of the window, within and beneath the banner area. The toolbars are always visible, but might change to present only those options that can be performed in a specific view.

Figure 2.7  View of Typical Toolbars

A standard set of buttons, representing functions, is included with a base deployment, but the toolbars for your instance can differ from the one pictured in Figure 2.7 on page 13, depending on the features implemented. For example, if an advanced search is not
implemented for the alert series, then the **Advanced Search** button is grayed out and inaccessible.

### Table 2.1 Main Toolbars Button and Menu Items

<table>
<thead>
<tr>
<th>Toolbar Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Alert Series](image) | Alert Series menu | Enables you to select a new alert series from the drop-down menu if you are granted access to more than one alert series.  
  **Note:** Place your mouse pointer over the **Alert Series** menu to view a tooltip that displays the name of the current alert series. In addition, when you click the menu to expose the choices, the name of the alert series that you are currently viewing is displayed in bold. |
| ![Help](image) | Help menu        | Provides access to help resources and information about this version of SAS Social Network Analysis Server.                                                                                                   |
| ![More](image)  | More menu        | Provides access to user and SAS preferences, external applications (if configured by your administrator), and the log off function.  
  The **User Preferences** option enables you to specify and save a set of preferences for this alert series. See “User Preferences” on page 92.  
  The **SAS Preferences** option enables you to access SAS Preferences to configure date and time options for all alert series to which you have access. See “SAS Preferences” on page 96.  
  If external applications are configured by your administrator, external applications are listed. Clicking the name of an external application opens that application in a new browser window or a new browser tab. |
| ![Back to Alerts](image) | Back to Alerts button | Enables you to return to the Alerts window from any other window within the solution.  
  **Note:** When you return to the Alerts window of a multi-page listing, the alerts displayed represent the last view before navigating away from the listing. If you apply a disposition to an alert from a page other than the alert listing, then you are returned to the first page of the alerts instead. The filters and search term, if either have been applied at the Alerts window, are preserved. |
<table>
<thead>
<tr>
<th>Toolbar Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Image]() | Disposition menu | Enables you to apply a disposition method to selected alerts. Functional for users (when appropriate alerts are selected) who are granted permission to determine the disposition of alerts.  

**Note:** The selections for the **Disposition** menu are completely customizable and are configured by the solution administrator at your site. Different disposition methods might be available at different windows. If the **Disposition** menu has not been configured by your administrator or if an eligible alert or entity is not selected, then the **Disposition** button is not enabled.  

**Note:** The **Disposition** menu is not enabled at the Alert Details window or the **SAS Social Network Analysis** tab when the window is surfaced as a result of following a direct link that is provided by the administrator.  

See “Disposition Menu” on page 16. |
| ![Image]() | Custom Views menu | Enables you to apply an existing custom view to the Alerts window or the Alert Details window. You can also create a new view or delete saved views. For information, see “Creating and Managing Custom Views” on page 98. |
| ![Image]() | Refresh button | At the Alerts window, enables you to reload the solution and restore many default session settings. |
| ![Image]() | Print button | Displays the Print window to enable you to print selected items or the social network analysis diagram. See “Printing Alerts, Details, or the Social Network Analysis Diagram” on page 71. |
| ![Image]() | Export button | Enables you to export or save a spreadsheet version of the tabular data within an alert listing or within the **Related Information** pane of the Alert Details window. See “Exporting Alerts and Alert Details” on page 82.  

**Note:** A compatible application must be installed on the computer that is used to open the exported file. |
| ![Image]() | Advanced Search button | Launches a custom Advanced Search window, when the feature is configured by your administrator, to enable you to locate alerts with the criteria indicated. See “Searching for Alerts with Advanced Search” on page 112. |
Find field

A window-specific field that enables you to search tabular data and designated text related to network nodes. At the SAS Social Network Analysis tab, entities matching the search criteria are highlighted in the diagram and are indicated in the tabular data.

**Note:** You must press the Enter key after entering search text to invoke the search activity.

See “Window-Specific Text Search” on page 115.

## Disposition Menu

The **Disposition** menu, if configured for your alert series, is displayed on the toolbar. The **Disposition** menu contains the list of valid disposition methods that can be implemented in the current view. Depending on how your deployment is configured, the selection items displayed at the **Disposition** menu might differ in different sections of the interface. For example, the Alerts window view might display different options than the Alert Details window view.

If you are not authorized to determine the disposition of alerts, the **Disposition** menu is not enabled in any view of your alert series.

**Note:** The check box of at least one alert must be selected to enable selection of the **Disposition** menu items.

### Table 2.2  Disposition Menu States

<table>
<thead>
<tr>
<th>Both menu items are valid for the selected item in the current view.</th>
<th>Only one item, <strong>Initiate Investigation</strong>, is valid for the selected item in the current view.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Initiate Investigation" /> Close Alert</td>
<td><img src="image" alt="Initiate Investigation" /> Close Alert</td>
</tr>
</tbody>
</table>
Disposition is not configured, disposition is not valid in the current view, or no item is selected.

**Note:** The Disposition menu is not enabled at the Alert Details window or the SAS Social Network Analysis tab when the window is surfaced as a result of following a direct link that is provided by the administrator.

Administrators might configure the deployment to disallow a certain disposition type if more than one item is selected. In that instance, you have to select the check box of a single row item from the list to be able to select that disposition type.

*Figure 2.8  View of an Alert Disposition Window Launched from the Disposition Menu*
Alerts Window

Alerts Pane

By default, the Alerts window (sometimes referred to as the Alerts Report window) is displayed when the solution is accessed. When this window is not displayed, it can be opened by clicking the Back To Alerts button on the toolbar.

Note: When the alert listing displays multiple pages of alerts, clicking the Back To Alerts button returns you to the page of alerts from which you came or to the first page of alerts if you applied a disposition option to the current alert.

In a typical deployment, the Alerts window contains a collapsible Filters pane and an Alerts pane composed of columns and rows.

The rows displayed at the Alerts window (assuming that the display is not filtered) are contingent upon the setup and configuration performed by your administrator as well as permissions associated with the credentials of the user that is logged on. Generally speaking, each row represents an item (entity or alert) that requires additional review and subsequent action.

Note: Depending on how the solution administrator configured the deployment, rows of information containing missing values associated with a range filter might not be displayed. Contact your solution administrator for details about the information that you can expect to see displayed at the Alerts window.
When the alerts listing has multiple pages, you can control the alerts that are displayed as follows:

- Use the **Jump-to page** numbers at the bottom of the display (available if needed) to advance to a new page.

- Use the **Number of alerts to display per page** selector at the bottom of the page to display more or fewer alerts in the current view.

The specific columns that are displayed, with the exception of the first column (Row Selector), are dependent upon the system configuration and setup. The check box associated with each alert or entity in the Row Selector column enables you to select
multiple items upon which to perform a disposition. Selecting the check box in the header area selects all of the rows in view on the current page.

**Note:** If you select items on the current page and then jump to a new page, the selected items are deselected. In addition, if you change the value reflecting the number of alerts to display per page or adjust range filters, then the selected items are deselected.

**TIP** The result count at the bottom of the alert listing conveys the number of rows. The information is updated during filter and page manipulation. Pay attention to the information to help manage and understand the displayed data.

Many aspects of the **Alerts** pane of the Alerts window are configurable.

The content displayed in the Alerts window varies according to the following:

- alert series
- user credentials

The Alerts window might be filtered for the investigator and arranged in ascending order based on the first column. However, this is a configurable option, and it might not be the case for each deployment.

To view details about an alert or entity, double-click the alert or entity row to access the Alert Details window. For more information, see “Alert Details Window” on page 30.

You can modify the window layout so that the columns you want to work with are easier to access. You can also sort and filter the list so that only the alerts that you are interested in are displayed. To increase efficiency, you can create a custom view to save your settings so that you do not have to recreate them manually. For information, see “Creating and Managing Custom Views” on page 98.

To modify the view:

- Sort alerts based on a specific column by clicking the column heading.

  The alerts reorder in ascending or descending order based on the column each time the column heading is clicked. The ascending or descending arrow at the end of the column heading indicates the sort order.
In the following example, Item 1 shows a default sort order, Item 2 shows the same column sorted in ascending order, and Item 3 shows the column with a descending sort order applied.

**Figure 2.10  Example of Various Sort Orders Applied**

<table>
<thead>
<tr>
<th></th>
<th>1 Term of Loan</th>
<th>2 Term of Loan</th>
<th>3 Term of Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>10</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>15</td>
<td>30</td>
<td></td>
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<td>15</td>
<td>20</td>
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<td>10</td>
<td>30</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>30</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** If a column contains date and time information, the sort is applied to date-based time. This means that each unique date is sorted and then each time interval presented is sorted based on the date. So, for example, 3:00 p.m. on January 1 is presented before 2:00 p.m. on January 2.

- Perform a multi-column sort based on more than one column by pressing the Ctrl key and clicking a column heading for each column that you want to include in the multi-column sort display.

Each column included shows the sort order (ascending or descending arrow indicators) and the position in the sort in the header area.
Change the column width by dragging the vertical divider either left or right to increase or decrease the width of the column.

Change the column order by dragging a column heading from the current position and dropping it into the desired position.

**Note:** You can also use the Shift key along with a mouse click to select several columns to drag and drop into a new location.

The value displayed in the pop-up navigator indicates the number of columns that are selected for the relocation. Each column heading name is displayed, along with an arrow to indicate the current sort order, where appropriate.

Indicate which columns to hide or display by clicking the Column Selector icon and choosing the desired column names. A cleared check box indicates that the column will not be displayed in this view.
Note: The preceding changes (hiding and reordering columns and changing their widths, and sorting the rows), are valid for the current view in the current session with the current alert series. This means that when you log off and then log back on to the current alert series or select another alerts series and then return to this one, the displayed columns reflect the default settings and not your custom settings. Similarly, if you use the Refresh button to clear the filters and restore the default column attributes, then your customized selections are not retained. To increase efficiency, you can create a custom view to save your settings so that you do not have to recreate them manually. For information, see “Creating and Managing Custom Views” on page 98.

A set of rules determines the time-to-live for each actionable entity alert presented. Here is a summary of these rules:

- All alerts remain displayed until an action is taken.
- When a user session ends and then resumes, the alerts to which a disposition has been applied remain visible, showing the current status, until and unless the final disposition (for example, Close) is applied.

  Note: The final disposition status is configurable and is deployment specific.

- If a second user logs on to an alert series after the first user has applied a disposition to alerts, the second user sees the alerts and their current status, excluding any alerts that the first user set to the final disposition state. The final disposition status is configurable and is deployment specific.

- After a final disposition has been applied to an alert, generally it cannot be recalled to the Alerts window through the interface.

Alerts Window Filters Pane

If the Filters pane is available in your deployment but is not populated, then it is collapsed by default. The Filters pane, collapsed or expanded, is displayed to the left of
the **Alerts** pane. The **Filters** pane content is unique to each deployed instance and might or might not contain active filters.

*Figure 2.13  View of Filters Pane in the Alerts Window*

In the preceding display of the Alerts window, **Filters pane** shows the typical default status of the filters within the pane, and **Filters pane** shows the same pane with the filter options expanded. Select an item or specify a filter term in the **Filters** pane to reduce the number of items that appear in the **Alerts** pane. In the following display, for
example, only the alerts that have a Status of Alert value of either Pending or On Hold are shown.

**Figure 2.14  Filtered Alerts Pane Example**

The Filters pane is expanded by clicking the Expand Pane button (⇓) at the top of the pane and is collapsed by clicking the Collapse Pane button (⇣) at the top of the pane.

The filter criteria are configurable and are controlled by subject matter experts in the business domain of interest. You can apply more than one filter criteria to the alerts screen to produce a cumulative result.

You can use the Custom Views menu to create and manage custom views that include filter criteria. See “Creating and Managing Custom Views” on page 98.

**Alerts Window Filter Types and Functions**

The types of filters that can be configured by your administrator are check boxes, range filters, date pickers, and text filters. Each is described in the following paragraphs.

**Check boxes.** Check boxes are generally configured to enable you to filter by data that represents discrete information or a single entity that can be easily identified. For example, they might be used in a deployment solution where a column represents the status of an alert, and the values are Closed, OnHold, Open, and Pending.
The value in parenthesis following the check box option indicates the total number of entries that match the option. This value is not reflective of that which is displayed. This means that if you filter the view and there are no displayed entries with a Status of Alert value of Pending, the value in parenthesis still reflects the total number of entries that match this option. In this example, there are 4 entries that have a Status of Alert value equal to Pending.

Selection of items by enabling a check box is cumulative. That means that those items selected, and only those items selected, are displayed in the Alerts window when a match is found. Choosing the All option selects all of the choices in the check box filter.

By default, the items displayed in a list of check box items, following the All option, are presented in alphabetical order.

Range filter. Your administrator might configure a range filter to enable you to filter numerical data to refine the current view.

The range filter contains a minimum and a maximum slider and a control arrow at each end of the range. By default, at the Alerts window, the sliders are positioned at the minimum and maximum positions of the range, and the associated numbers reflect the minimum and maximum data values. Each arrow controls the direction of the minimum slider.

Note: Depending on the direction of travel, if the sliders are positioned on top of one another, then both sliders might move together.
The range sliders do not adjust automatically to reflect minimum or maximum values of filtered entries displayed. This means that if you filter the display using a check box option, for example, and the displayed entries adjust to show only those rows consistent with the check box entries, the range sliders continue to show the maximum and minimum values currently indicated. To further filter the displayed items, you must adjust the range sliders if additional filtering is needed.

For numerical data, the range filter displays values as either decimals or as integers based on the result of the calculation of the maximum range value minus the minimum range value. If this calculated difference is greater than or equal to 10, then the range values displayed are integers. If this calculated difference is less than 10, then the range values displayed are decimals. For example, in a case where the minimum range value is 5 and the maximum range value is 15, then the calculated difference is 10. Therefore, the range values displayed in the range filter are integers. In a case where the minimum range value is -2.5 and the maximum is 2.5, then the calculated difference between the minimum range value and the maximum range value is 5. Therefore, in this instance, the range values are displayed as decimals.

Note: In instances where the data in a column associated with a range contains different values, then the minimum value of the range is always less than the lowest value of the data, and the maximum value of the range is always greater than the highest value of the data. However, if a column for which a range filter is configured is populated with identical values, then the range filter is disabled because there is no actual range upon which to filter.

As you move the minimum and maximum sliders, the data that populates the Alerts window is adjusted to contain only the items that are included in the defined range.
Note: If you are on a page other than Page 1, when you adjust the filter, Page 1 is redisplayed.

*Date picker.* A date picker is a specific type of range filter that is configured to apply to calendar- and time-specific information. In general, and as a best practice, the date picker is configured by your administrator to apply to calendar-specific information only. Here is a display showing a variety of calendar- and time-related column entries.

**Figure 2.17 Calendar- and Time-Related Columns**

In the preceding display, Column 1 includes a date plus a time (datetime column), Column 2 is a time-specific column that is not generally associated with a date picker, and Columns 3 and 4 show examples of the standard type of calendar data for which the date picker is well suited.

Note: To learn about updating your SAS Preferences options related to long date, short date, and other interface formats, see “SAS Preferences” on page 96.

Here is an example of a range filter configured for a date-populated column.
**Figure 2.18** Example of a Date Picker

![Date Long Format]

**Text filter.** Your administrator might configure text filters for specific columns of data. A text filter enables you to enter text to cause rows of information to be retained where the text matches the data.

**Figure 2.19** Alerts Window Filter Pane Text Filter Example

![Phone #]

Enter text into the text field and click or press the Enter key to initiate the filter operation.

**TIP** This feature is a filter feature and not a search feature. Therefore, functionality such as regular expressions or wildcards are not supported. If you enter a filter criteria and do not obtain the expected results, check your text entry to make sure that it does not include unwanted spaces or other characters.
Note: To clear the text entry, you must either click the Clear button (✓) that appears whenever text is entered into the field, or you must clear the field and press or the Enter key. The Alerts pane repopulates based on the cleared filter.

**Alert Details Window**

**Overview**

The Alert Details window is specific to the row double-clicked (generally an alert or an entity) at the Alerts window or to the direct link configured by your administrator. This Alert Details window is configurable and might be displayed much differently in your interface. The standard Alert Details window is divided into three sections. Each section has one or more tabbed panes available for access.

*Figure 2.20  View of Typical Panes Available at the Alert Details Window*

The panes shown in the preceding figure, each completely configurable, are described in the following table.
## Table 2.3  Alert Details Window Panes

<table>
<thead>
<tr>
<th>Item</th>
<th>Pane</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Details tab</td>
<td>Can contain a table with detailed information about the actionable entity alert or about the selected alerted entity that is generally viewable in the Related Information pane. The content of the Details tab is configurable and might contain links to other information. For additional information about the Details tab, see “Details Tab” on page 31.</td>
</tr>
<tr>
<td>2</td>
<td>Entity Profile pane</td>
<td>Typically, shows graphs and graphics related to an alerted entity or an actionable entity and might contain additional tabs to help explain the information collected about the entity. If enabled for your deployment, a Notes tab is displayed in this region. In general, information that can be considered profile information can be found in this area. For additional information about the Entity Profile pane, see “Entity Profile Pane” on page 32.</td>
</tr>
<tr>
<td>3</td>
<td>Related Information pane</td>
<td>Generally contains a Related Alerts tab. Other tabs, customized for your deployment, might also be found in this area. In general, information related to the specific alerted entity might be highlighted in this area. For additional information about the Related Information pane, see “Related Information Pane” on page 34.</td>
</tr>
</tbody>
</table>

Each pane area is separated from the others by a vertical (↑) or by a horizontal (....) resize handle. Drag the handle left or right or upward or downward to resize the desired pane.

### Details Tab

The Details tab is a standard feature, but its content is customizable. For example, depending on how SAS Social Network Analysis Server is configured, the table on the Details tab can display targeted information about the actionable alert or the selected alert or entity, or it can be blank. If it is populated, it might include hyperlinks to websites, documents, maps, and so on. An example appears in the following display.
Information displayed on the Details tab is read-only. That is, it cannot be changed through the tab and is updated based on data within the system.

**Entity Profile Pane**

The Entity Profile pane of the Alert Details window is configurable and is based on customer requirements. Typically, this pane contains graphs and graphics that relate to the actionable entity selected from the Alerts window. In addition, if configured for your deployment, a Notes tab is displayed in this pane. The quantity and types of the graphs, as well as their content, vary according to the selected alert. Investigators cannot add or delete tabs in this area.

In addition, tabs in the Entity Profile pane have the following features:

- Placing the mouse pointer over the bars and lines of a graph reveals the underlying data points and categories of association.
- When more than one item is displayed on a pane, move the vertical resize (⋮) handle to expand or contract each graph.
- When multiple items are present and the total width of the items exceeds the horizontal space allocated for display, additional controls are presented to enable navigation between and selection of the items. Here is an example showing scroll controls (1 and 2) and a list control (3).
To scroll through the selection of tabs, click the scroll controls and then select the tab name desired.

To jump directly to a tab, click the list control to display a list of available tabs and then select a tab name from the list.

The entire **Entity Profile** pane can be opened in a floating window by selecting the **Open Window** button at the top right of the **Entity Profile** pane. The following display shows the location of the **Open Window** button and shows an example of the floating window that opens.

*Figure 2.22  Floating Window Entity Profile Display*

Selecting the **Previous** and **Next** buttons in the floating window steps through any other tabbed content displayed in the **Entity Profile** area.

**TIP** Tabular information includes a row count at the bottom of the listing. The count conveys the number of rows. Pay attention to the information to help understand the volume of the displayed data.

**Note:** The graphs and charts displayed in the floating window retain their interactivity. Likewise, tabular data tools, such as those for hiding columns and sorting information,
are available. The Notes tab, if enabled for the alert series, is interactive but is Read-Only. That is, you can sort and search for notes, but you cannot add new notes.

**Related Information Pane**

The tabs on the Related Information pane at the bottom of the Alert Details window show information that is related to the selected alert or entity. That is, the items that are listed are usually the discrete alerted entities that make up the alerted actionable entity displayed at the Alerts window. Each row represents an individual scenario that triggered the alert in question.

Most deployments include a tab that is named Related Alerts. Other tabs, customized for your deployment, might also be found in this area. These tabs vary according to the business domain of interest. Related alerts are triggered based on the business rule and predictive models that are run at the various sub-entity levels.

The Related Information pane has the following navigational features:

- When multiple items are present and the total width of the items exceeds the horizontal space allocated for display, additional controls are presented to enable navigation between and selection of the items. Here is an example showing scroll controls (1 and 2) and a list control (3).

  1  
  2  
  3

- To scroll through the selection of tabs, click the scroll controls and then select the tab name desired.

- To jump directly to a tab, click the list control to display a list of available tabs and then select a tab name from the list.

- When multiple alerts are listed, you can control the alerts that are displayed as follows:
  - Use the Jump-to page numbers at the bottom of the display (available if needed) to advance to a new page.
  - Use the Number of alerts to display per page selector at the bottom of the page to display more or fewer alerts in the current view.
**TIP** Tabular information includes a row count at the bottom of the listing. The count conveys the number of rows. Pay attention to the information to help understand the volume of the displayed data.

You can modify tabs in the **Related Information** pane to make the columns that you want to work with easier to access. You can also sort the information in the columns to group rows with similar data.

The tabs in the **Related Information** pane can be modified in the following ways:

- You can sort items in a tab based on a specific column by clicking the column heading.

  The information reorders in ascending or descending order based on the column each time the column heading is clicked. The ascending or descending arrow at the end of the column heading indicates the sort order.

  In the following example, Item 1 shows a default sort order, Item 2 shows the same column sorted in ascending order, and Item 3 shows the column with a descending sort order applied.

  **Note:** If a column contains date and time information, the sort is applied to date-based time. This means that each unique date is sorted and then each time interval presented is sorted based on the date. So, for example, 3:00 p.m. on January 1 is presented before 2:00 p.m. on January 2.
You can perform a multisort based on more than one column by pressing the Ctrl key and clicking a column heading for each column that you want to include in the multisort display.

Each column included shows the sort order (ascending or descending arrow indicators) and the position in the sort in the header area.

You can change the column width by dragging the vertical divider either left or right to increase or decrease the width of the column.
You can indicate which columns to hide or display by clicking the Column Selector icon \( \text{+} \) and choosing the desired column names. A cleared check box indicates that the column will not be displayed in this view.

You can change the column order by dragging a column heading from the current position and dropping it into the desired position.

**Note:** You can also use the Shift key along with a mouse click to select several columns to drag and drop into a new location.

![Example of Multi-column Move](image)

The value displayed in the pop-up navigator indicates the number of columns that are selected for the relocation. Each column heading name is displayed, along with an arrow to indicate the current sort order, where appropriate.

The above changes (hiding and reordering columns and changing their widths, and sorting the rows), are valid for the current view in the current session with the current alert series. This means that when you log off and then log back on to the current alert series or select another alerts series and then return to this one, the displayed columns reflect the default settings and not your custom settings. In addition, using the **Refresh** button when the Alerts window is open restores the default column attributes for the Alert Details window.
To increase efficiency, you can create a custom view to save your settings so that you do not have to recreate them manually. For information, see “Creating and Managing Custom Views” on page 98.

Social Network Analysis Diagram

Overview of Diagram Features

The social network analysis diagram enables you to view and manage the relationships associated with the currently selected alert. It is a graphical representation of the items that make up the social network and their relationships to one another.

By default, the social network analysis diagram is accessible by selecting the SAS Social Network Analysis tab in the Alert Details window.

Note: Although the SAS Social Network Analysis tab is a standard tab found in the Alert Details window, it can be hidden by administrators during setup and configuration of the deployment.

A social network analysis diagram is created and displayed for each alert based on a stored process. If your solution administrator enables the Save button, you can save certain changes that you make to the diagram. The modified social network analysis diagram is saved to the database. The social network analysis diagram that is created by the stored process is not changed.

Note: The application does not save changes to the social network analysis diagram per user. Rather, the social network analysis diagram that is saved to the database is shared by all users. Any changes that you save to the diagram are visible to other users who have access to the diagram. Conversely, any changes they save to the social network analysis diagram are visible to you.

By default, the first time the SAS Social Network Analysis tab is accessed for a particular alert or entity, the social network analysis diagram created by the stored process is displayed. After changes are saved to the social network analysis diagram, whenever a user accesses the SAS Social Network Analysis tab, the diagram that is stored in the database is displayed.

Using the Open options in the Social Network Analysis window, you can view either the social network analysis diagram that is created by the stored process (Open > From
Stored Process) or the social network analysis diagram that is stored in the database (Open > Last Saved to Database).

The SAS Social Network Analysis tab is divided into several seamless regions with functionality to enable you to perform all necessary tasks.

*Figure 2.26  Example of a Social Network Analysis Diagram*
Table 2.4  SAS Social Network Analysis Tab Sections

<table>
<thead>
<tr>
<th>Item</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filters (network highlighting) pane</td>
<td>If configured for your deployment, the Filters pane of the social network analysis diagram enables you to adjust individual filters to highlight the nodes and links that meet the indicated filter criteria. The Filters pane is collapsed by default and can be expanded by clicking the Expand Pane button (.management) at the top of the pane. An expanded pane is collapsed by clicking the Collapse Pane button (.management) at the top of the pane. For additional information, see “Social Network Filters Pane: Network Highlighting” on page 41.</td>
</tr>
<tr>
<td>2</td>
<td>Social network analysis toolbar</td>
<td>The social network analysis toolbar is configurable for each deployment instance. Your instance might not appear the same as the one in the preceding figure or allow execution of all features described in this document. In general, the toolbar enables you to refine the diagram (by adding nodes and links or editing existing nodes and links) and to manipulate the view for optimized presentation. For additional information, see “Social Network Analysis Diagram Toolbar” on page 52.</td>
</tr>
<tr>
<td>3</td>
<td>Nodes, links, and relationships</td>
<td>Nodes, links, and relationships are viewable in the social network analysis diagram. The social network analysis diagram represents the relationship of the entities in the currently selected alert. The look and many of the characteristics of this diagram can be controlled or modified using the toolbar. The icons that represent the diagram are customizable and might not resemble the diagrams displayed in this guide. For additional information, see “Nodes, Links, and Relationships” on page 55.</td>
</tr>
<tr>
<td>Item</td>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 4    | **Properties**  | pane  

The **Properties** pane is displayed to the right of the social network analysis diagram. It is collapsed by default and can be expanded by clicking the **Expand Pane** button (.expand) at the top of the pane. It is collapsed by clicking the **Collapse Pane** button (collapse) at the top of the pane.

When the **Properties** pane is expanded, it displays information about a selected node, link, or group. If more than one item is selected, a message to that effect is displayed and properties for the selection cannot be displayed.

**Note:** The type of information displayed and the type of information that can be added or edited is contingent upon the type of item selected (node, link, or group) as well as the current view (standard view or map view).

It is through the **Properties** pane that node annotations and link labels can be added or edited. The **Properties** pane also enables you to expand the **Show Details** pane at the bottom of the window to display details about a selected node or link.

For additional information, see “**Properties Pane**” on page 63.

| 5    | **Time Slider** |  

If your solution is configured for this functionality, the social network analysis diagram view can be controlled by using the time slider handle, the jump-to functionality, and the **Active nodes only** option found at the bottom of the diagram.

**Note:** For detailed information about the use and advantages of displaying all nodes or only active nodes in the social network analysis diagram, see “**Time Slider**” on page 65.

| 6    | **Show Details** | pane  

The **Show Details** pane, not shown in **Figure 2.26 on page 39**, can be displayed beneath the time slider when a node or link is selected. This area is configured by the administrator and is completely customizable. The **Show Details** pane can display tables and graphs specific to the selected node or link.

For additional information, see “**Show Details Pane**” on page 69.

**Social Network Filters Pane: Network Highlighting**

If the functionality is configured for your deployment, you can use the **Filters** pane at the **SAS Social Network Analysis** tab to manage individual filters in order to view...
highlighted nodes and paths identified by the filter criteria. With the network highlighting feature, administrators can design and implement network graphing functionality that highlights a trend or behavior over a period of time. This makes identifying specific incidents or entities easier and enables users to see highlighted nodes and links and to view paths between nodes based on associative behaviors.

Note: Since the previous release of the solution, the Filters pane at the SAS Social Network Analysis tab has been refined so that you can create and clear filter conditions. Filter conditions cannot be saved or retrieved at the SAS Social Network Analysis tab.

Note: When a node that matches the highlighting criteria is located inside a group, the group becomes highlighted to indicate that a match has been found inside the group.

Here are several examples displaying different aspects of network highlighting.

In Figure 2.27, the Filters pane is expanded to display the configured filter criteria for the social network analysis diagram. After the filters are populated or manipulated, the nodes and links of the diagram are highlighted to show which items meet the indicated criteria.

**Figure 2.27**  SAS Social Network Analysis Tab with Expanded Filters Pane
In Figure 2.28, the range slider for the Overall Score filter has been adjusted to reflect a range of 0–53. As a result, the social network analysis diagram displays the appropriate nodes and links as highlighted to indicate that they meet the criteria.

**Figure 2.28** SAS Social Network Analysis Tab with Filtered Overall Score Criteria Highlighted in Diagram
In Figure 2.29, the range slider for the Overall Rank filter has been adjusted to reflect a range of 0–453. As a result, the social network analysis diagram displays the appropriate nodes and links as highlighted to indicate that they meet the criteria.

**Figure 2.29** SAS Social Network Analysis Tab with Filtered Overall Rank Criteria Highlighted in Diagram

In Figure 2.30, the range slider for the Overall Rank filter has been adjusted to reflect a range of 0–355, and the time slider handle indicates an end date of February 10, 1977. As a result, the social network analysis diagram displays the appropriate nodes and links as highlighted to indicate that they meet the criteria. The nodes that are inactive
during this time period, shown as dimmed nodes, are also highlighted if they meet the criteria.

**Figure 2.30** SAS Social Network Analysis Tab with Date-Adjusted Filtered Overall Rank Criteria Highlighted in Diagram

In **Figure 2.31**, the range slider for the Overall Rank filter has been adjusted to reflect a range of 0–355, and the map view has been enabled. As a result, the social network analysis diagram displays the appropriate nodes and links as highlighted, superimposed on the map, to indicate that they meet the criteria. Only nodes that have a valid longitude and latitude value are displayed on the map. Those nodes that cannot be
displayed because of non-existent longitude and latitude values are listed in the See Nodes window.

**Figure 2.31**  SAS Social Network Analysis Tab with Map View and Filtered Overall Rank Criteria Highlighted in Diagram

The filters available in the Filters pane of the SAS Social Network Analysis tab are customized for your deployment. If an administrator has not defined network highlighting filters, then the Filters pane does not display filters.

The following rules apply to filter use and operation at the SAS Social Network Analysis tab.

- Filter preferences cannot be saved.
- The filter settings are viable only for the current user in the current session.
- Filter preferences are valid only for the current alert series.
- After filters are applied at the SAS Social Network Analysis tab, they remain in effect until the Alerts window is retrieved, new filter options are selected, or the user exits the application.
When the **Clear** button is applied, the filters are returned to the default state, as configured and defined by the solution administrator.

**SAS Social Network Analysis Tab Filters Pane: Filter Types and Functions**

The types of filters that can be configured by your administrator are check boxes, range filters, date pickers, and text filters. Each is described in the following paragraphs.

*Check boxes.* Check boxes are generally configured to enable you to filter by data that represents discrete information or a single entity that can be easily identified. For example, they might be used in a deployment solution where vector links might indicate patient activity such as admitted, discharged, or transferred.

Each check box option is followed by a value in parenthesis. The value represents the total number of records that are reflective of the check box option. If filters are used to refine the displayed information, the value for the check box option does not change to represent displayed data only.

*Figure 2.32 Social Network Analysis Diagram Network Highlighting Check Box Example*
Selection of items by enabling a check box is cumulative. That means that only those items that are selected are highlighted in the social network analysis diagram each time a match is found.

By default, the items displayed in a list of check box items, following the All option, are presented in alphabetical order.

*Range filter.* Your administrator might configure a range filter to enable you to filter numerical data to refine the current view.

The range filter contains a minimum and a maximum slider and a control arrow at each end of the range. By default, at the SAS Social Network Analysis tab for network highlighting, both of the sliders are positioned at the minimum position of the range, and the associated numbers reflect the minimum data values. Each arrow controls the direction of the minimum slider.

**Note:** Depending on the direction of travel, if the sliders are positioned on top of one another, then both sliders might move together.

*Figure 2.33  Social Network Filter Pane Range Filter Example*

For numerical data, the range filter displays values as either decimals or as integers based on the result of the calculation of the maximum range value minus the minimum range value. If this calculated difference is greater than or equal to 10, then the range values displayed are integers. If this calculated difference is less than 10, then the range values displayed are decimals. For example, in a case where the minimum range value is 5 and the maximum range value is 15, then the calculated difference is 10. Therefore, the range values displayed in the range filter are integers. In a case where the minimum range value is -2.5 and the maximum is 2.5, then the calculated difference between the minimum range value and the maximum range value is 5. Therefore, in this instance, the range values are displayed as decimals.
Note: In instances where the data associated with a range contains different values, then the minimum value of the range is always less than the lowest value of the data, and the maximum value of the range is always greater than the highest value of the data. However, if a column for which a range filter is configured is populated with identical values, then the range filter is disabled because there is no actual range upon which to filter.

As you move the minimum and maximum sliders, diagram entities are highlighted to reflect that a match has been identified.

*Figure 2.34  Social Network Analysis Diagram Network Highlighting Range Example*

*Date picker.* A date picker is a specific type of range filter that is configured to apply to calendar- and time-specific information. In general, and as a best practice, the date picker is configured by your administrator to apply to calendar-specific information only. Here is a display showing a variety of calendar- and time-related formats.
In the preceding display, Entry 1 includes a date plus a time (datetime data), Entry 2 is a time-specific entry that is not generally associated with a date picker, and Entries 3 and 4 show examples of the standard type of calendar data for which the date picker is well suited.

**Note:** To learn about updating your SAS Preferences options related to long date, short date, and other interface formats, see “SAS Preferences” on page 96.

Here is an example of a range filter configured for date-populated entries.
**Figure 2.36  Date Picker Shown at the SAS Social Network Analysis Diagram**

*TIP* To clear a date from a To or From date field, click the **Clear** button (🗑️) that appears whenever a date is entered into the field.

*Text filter.* Your administrator might configure text filters for specific columns of data. A text filter enables you to enter text to cause rows of information to be retained where the text matches the data.

**Figure 2.37  SAS Social Network Analysis Tab Filter Pane Text Filters Example**

Enter text into the text field and click 🔄 or press the Enter key to initiate the filter operation.
**TIP** This feature is a filter feature and not a search feature. Therefore, functionality such as regular expressions or wildcards are not supported. If you enter a filter criteria and do not obtain the expected results, check your text entry to make sure that it does not include unwanted spaces or other characters.

**Note:** To clear the text entry, you must either click the **Clear** button (☐) that appears whenever text is entered into the field, or you must clear the field and press ☐ or the Enter key. The social network analysis diagram displays highlighted entities matching the filter criteria.

**Social Network Analysis Diagram Toolbar**

The social network analysis diagram contains a button toolbar at the top of the diagram.

*Figure 2.38  Example Social Network Analysis Diagram Toolbar*

The toolbar is standard, and the operation associated with a button can be performed only when it is an allowable operation. For example, the **Add Node** button is always present. However, if you click the **Add Node** button before selecting a node that will be the source node for the addition, a message indicating that this is not allowed is displayed. In other instances, a button might be dimmed if the associated feature is not implemented or a task cannot be performed in this view.

This guide provides additional information, as appropriate, in sections where a toolbar button can be used to execute an operation. Here is a high-level description of each toolbar button.
Table 2.5  Social Network Analysis Diagram Toolbar Buttons

<table>
<thead>
<tr>
<th>Button</th>
<th>Name</th>
<th>Use and Description</th>
</tr>
</thead>
</table>
|        | Save Network       | Saves the current social network analysis diagram to the database.  
**Note:** Some customizations might not be saved with the network diagram. In addition, lone nodes are not saved with the network diagram, and network diagrams containing only lone nodes cannot be saved at all.  
**Note:** Administrators can configure the solution so that the Save button is never enabled at the network diagram.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|        | Open               | Displays selections to open the original social network analysis diagram that is created by the stored process, or the social network analysis diagram from the database.  
**Note:** Lone nodes (that is, nodes without at least one link) within a network are not saved. When customized social network analysis diagrams are saved with lone nodes displayed, they are retrieved without the lone nodes being shown. Although administrators can create a social network analysis diagram with lone nodes that can be retrieved through the Open from Stored Process option, the lone nodes are not retained when you use the Save option.                                                                                                                                                                                                                                                                                                                                                   |
|        | Run Layout         | Displays selections to enable you to choose a layout to impose on the current social network analysis diagram.  
**Note:** The current layout is displayed as a bold name in the Run Layout selection menu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
<p>| <img src="image" alt="Add Node" /> | Add Node           | After an existing node is selected, enables you to add a new node.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |</p>
<table>
<thead>
<tr>
<th>Button</th>
<th>Name</th>
<th>Use and Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![ ]</td>
<td>Add Link</td>
<td>After two entities (that is, any valid combination of nodes and groups) are selected, enables you to add a new link.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Edit Entity</td>
<td>After an entity is selected, enables you to update the current entity information and specifications.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Note:</td>
<td>A link created by the solution as a result of grouping nodes cannot be edited.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Delete Entity</td>
<td>After an eligible entity or group is selected, enables you to delete the selection from the network view.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Note:</td>
<td>You can delete groups and entities from a network, but the network must contain at least one node and one link. In most cases, the minimal network will consist of two nodes connected by one link. However, a special network with only one node and one link can be created by the administrator through a stored process by linking a node to itself. It is not possible to create such a network through the user interface. You cannot select a link created by the solution attached to a group. Therefore, you must delete the group directly (and the link is deleted by association).</td>
</tr>
<tr>
<td>![ ]</td>
<td>Group Nodes</td>
<td>After eligible nodes are selected, enables you to fold the selected nodes into an individual node that represents the group. In effect, the link created is created by the solution and cannot be edited or deleted.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Regroup Nodes</td>
<td>Enables you to regroup a collection of nodes.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Remove Expanded Nodes</td>
<td>Enables you to remove revealed nodes after they have been expanded.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Note:</td>
<td>If hidden nodes are revealed and customized, you must save the diagram while the nodes are expanded in order to retain the customizations. Otherwise, your customizations will not be saved. Investigative notes are retained with collapsed, saved nodes.</td>
</tr>
<tr>
<td>![ ]</td>
<td>Home</td>
<td>Enables you to re-center the social network analysis diagram. See “Controlling the Location and Zoom of the Diagram or Nodes” on page 156.</td>
</tr>
</tbody>
</table>
### Node, Links, and Relationships

A social network analysis diagram consists of a series of nodes connected by links, where the nodes are entities represented by icons, and the link represents a relationship between entities, including the start and end time of entity involvement. The node icon might represent a single entity (person), a transaction (purchase), or any other relevant item.

The social network analysis diagram displays the interconnected details of a specific alert. The diagram shows the relationship between a specific entity and other related

<table>
<thead>
<tr>
<th>Button</th>
<th>Name</th>
<th>Use and Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Zoom In" /></td>
<td>Zoom In</td>
<td>Enables you to zoom in on the social network analysis diagram. See “Controlling the Location and Zoom of the Diagram or Nodes” on page 156.</td>
</tr>
<tr>
<td><img src="image" alt="Zoom Out" /></td>
<td>Zoom Out</td>
<td>Enables you to zoom out of the social network analysis diagram. See “Controlling the Location and Zoom of the Diagram or Nodes” on page 156.</td>
</tr>
<tr>
<td><img src="image" alt="Show" /></td>
<td>Show</td>
<td>Enables you to show (or hide) the following features:</td>
</tr>
<tr>
<td><img src="image" alt="Map" /></td>
<td>Map</td>
<td>- Enables you to show (or hide) a map in the background and superimposes all eligible nodes onto the map. See “Controlling a Map View” on page 152 for details about the map view and node eligibility.</td>
</tr>
<tr>
<td><img src="image" alt="Legend" /></td>
<td>Legend</td>
<td>- Enables you to show (or hide) a legend for node icons and colors. If the solution administrator has not configured the legend, then the Legend window is displayed, but the Colors tab does not contain legend information for the social network analysis diagram. See “Reviewing the Node Icon and Color Legend” on page 143 for details about the color and icon legend features.</td>
</tr>
<tr>
<td><img src="image" alt="Time Slider" /></td>
<td>Time Slider</td>
<td>- Enables you to show (or hide) the time slider at the base of the solution. The time slider can be shown or hidden even if it is disabled. See “Time Slider” on page 65 for details about the time slider features.</td>
</tr>
</tbody>
</table>

**Note:** If the administrator has not configured an item for your deployment, then you will be unable to toggle the option.
entities. The entity icons are specific to your deployment and might contain representations for items such as patients, doctors, claims, and provider.

Social network analysis diagrams are created based on the data that is available during the alert generation process. Investigators do not need to perform any tasks to create and display the social network analysis diagram.

The following figure shows a sample social network analysis diagram.

Figure 2.39  Sample Social Network Analysis Diagram

An ID uniquely identifies each node and link in a social network analysis diagram. An ID is assigned to each node and link, but the IDs of entities that you add can be changed through the Graph Entities Wizard in the interface before the entity is saved. In contrast, a label is a non-required entry that can contain descriptive text about a particular node or a specific link and does not have to be a unique entry. The initial text in a label might be controlled by subject matter experts in the business domain of interest. Investigators can add, delete, and edit label text through the interface.
Annotations are attached to nodes. Investigators can use the annotation feature to add additional information to selected nodes.

Links do not support the annotation feature.

Here is an example showing a selected node displaying the associated label (1) and the annotation (2).

**Figure 2.40  Node Label and Node Annotation**

![Node Label and Node Annotation](image)

**Note:** When the mouse pointer is positioned over the node, the annotation is displayed in a tooltip, as shown in the following example.

![My Annotation](image)

Here is an example showing a selected link (1) displaying the associated label (2).
**Figure 2.41  Link Label**

![Link Label Diagram](image)

**Note:** When the mouse pointer is positioned over the link, the label is displayed in a tooltip, as shown in the following example.

**My Annotation**

**Note:** Labels, annotations, and IDs can also be managed through the Graph Entities Wizard.

Regular text and Markdown syntax are supported for node annotations and link labels. See “Annotating or Viewing the Annotation of a Node” on page 173 and see “Labeling or Viewing the Label of a Link” on page 176.

New nodes and links can be added to the diagram by using the add node feature. Selecting an existing node and then choosing the **Add Node** button from the toolbar brings up the Graph Entities Wizard. The Graph Entities Wizard contains two tabs, **Add Node** and **Add Link**, and is displayed with Read-Only fields dimmed and inaccessible.
Using the **Add Node** and **Add Link** tabs of the Graph Entities Wizard, you can add nodes and links and you can customize the appearance of the added nodes and links to monitor relationships that might not be indicated in your current data source.
### Table 2.6  Node Properties

<table>
<thead>
<tr>
<th>Node Property</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Id</strong></td>
<td>A series of characters used to distinguish the node. Assigned by default, but can be changed for nodes that you add through the interface before you save the new node. <strong>Note:</strong> By default, each node ID assigned is unique per node. If you change or create a node ID for an added node, you are encouraged to ensure that it is not a duplicate ID. <strong>Note:</strong> Restrict the length of the <strong>Id</strong> to a maximum of 36 characters. If the <strong>Id</strong> length is greater than 36 characters, then you will be unable to associate an investigative note with the node using the <strong>Notes</strong> tab. For details about using the <strong>Notes</strong> tab with nodes, see “Adding a Note to a Node” on page 131.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Label</strong></td>
<td>Descriptive text for the node. The label text is the text that is searched when a search is conducted at the <strong>SAS Social Network Analysis</strong> tab. <strong>Note:</strong> Node labels can contain standard text. Markdown syntax is not valid for node labels.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Annotation</strong></td>
<td>A comment or details for the node that surfaces as a tooltip when a user places the mouse pointer over the node. Annotations can be modified at the <strong>Annotation</strong> field of the <strong>Properties</strong> pane of the social network analysis diagram. <strong>Note:</strong> Node annotations can contain standard text and Markdown syntax. For valid entries, see Table 4.1 on page 173.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Border Size</strong></td>
<td>Width of the border surrounding the node.</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Latitude</strong></td>
<td>If the node is to be displayed in the Map view, then a latitude value is required.</td>
<td>No (Conditional)</td>
</tr>
<tr>
<td><strong>Longitude</strong></td>
<td>If the node is to be displayed in the Map view, then a longitude value is required.</td>
<td>No (Conditional)</td>
</tr>
</tbody>
</table>
## Node Property

<table>
<thead>
<tr>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change Dates</strong></td>
<td>No (Conditional)</td>
</tr>
</tbody>
</table>

The **Change Dates** controls enable you to specify the parameters of the node that you are adding to the social network analysis diagram.

- **Date.** Enabled after a second instance of the node is added. This field is needed only if (a) you are specifying properties for an additional instance of a single node, and (b) one or more node properties change at a specific date, indicated by this change date.
  - Conditionally required.

- **Color.** The default is selected if a background color is not chosen.
  - Required.

- **Border Color.** Color surrounding the node. The default is selected if a border color is not chosen.
  - Required.

- **Icon.** A graphical representation of the node entity.
  - Required.

For information about adding change dates, see “Adding Change Dates to Nodes” on page 181.
<table>
<thead>
<tr>
<th>Link Property</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>A series of characters used to distinguish the link. Assigned by default, but can be changed for links that you add through the interface. <strong>Note:</strong> By default, each link ID assigned is unique per link. If you change or create a link ID for an added link, you are encouraged to ensure that it is not a duplicate ID.</td>
<td>Yes</td>
</tr>
<tr>
<td>To Node</td>
<td>Destination of the link. Automatically assigned based on initial selections. This cannot be changed.</td>
<td>Yes</td>
</tr>
<tr>
<td>From Node</td>
<td>Origin of the link. Automatically assigned based on initial selections. This cannot be changed.</td>
<td>Yes</td>
</tr>
<tr>
<td>Label</td>
<td>A comment or details that surfaces as a tooltip when a user places the mouse pointer over the link. <strong>Note:</strong> Link labels can contain standard text and Markdown syntax. For valid entries, see Table 4.1 on page 173.</td>
<td>No</td>
</tr>
<tr>
<td>Thickness</td>
<td>Width of the link. <strong>Note:</strong> Line widths are relative widths and are not associated with a unit of measure. This means that the width of the lines scale as the zoom-in and zoom-out feature is used, but a line width with a higher value will always appear thicker than a line width with a lower value.</td>
<td>Yes</td>
</tr>
<tr>
<td>Type</td>
<td>Links can be defined as either a standard link or a vector link. Standard links connect two nodes, while vector links point from one node to another node.</td>
<td>Yes</td>
</tr>
<tr>
<td>Start Date</td>
<td>Date upon which the link became active. If there is no start date, then select the <strong>No Start Date</strong> check box.</td>
<td>Yes</td>
</tr>
<tr>
<td>End Date</td>
<td>Date upon which the link grew inactive. If there is no end date, then select the <strong>No End Date</strong> check box.</td>
<td>Yes</td>
</tr>
<tr>
<td>Color</td>
<td>Color of the link.</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Properties Pane

The Properties pane is displayed to the right of the social network analysis diagram. It is collapsed by default and can be expanded by double-clicking a node, a link, or a group. It can also be expanded by clicking the Expand Pane button (↵) at the top of the pane. It is collapsed by clicking the Collapse Pane button (↵) at the top of the pane.

When the pane is expanded, it is populated by the properties associated with a selected node, group, or link.

Figure 2.43  Example of a Populated Properties Pane for a Selected Node
Here is an explanation of the regions of the Properties pane.

**Table 2.8 Properties Pane Area Description**

<table>
<thead>
<tr>
<th>Area</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Show Details button</td>
<td>Available when a node or link is selected, the <strong>Show Details</strong> button expands a <strong>Show Details</strong> pane at the bottom of the window. The <strong>Show Details</strong> pane is configured by the administrator and is customizable.</td>
</tr>
</tbody>
</table>
| 2    | Node Annotation or Link Label | Node annotations can be viewed, edited, and added from the text area. Link labels can be viewed, edited, and added from the text area.  

**Note:** This field accepts standard text and Markdown syntax. For valid entries, see **Table 4.1 on page 173**.  

**Note:** In the map view, new annotations cannot be added and existing annotations cannot be edited for nodes. |
The ‘Name:Value’ properties displayed for nodes and links originating from the stored process are pulled from the database (as configured by your administrator) and cannot be modified through the SAS Social Network Analysis Server interface. For nodes and links that are added to the social network analysis diagram, there are no ‘Name:Value’ properties displayed.

When a group is selected, nodes contained within the group are displayed in this area. You can select a node within the list and add or modify an annotation. You cannot add an annotation to the group.

**Time Slider**

The time slider that might be displayed at the base of the social network analysis diagram provides a time line that includes a time slider handle to enable you to view the evolution of the network over time or a snapshot of the network at a specific point in time. It also contains a scope controller to display either all entities or active entities only (the scope of the view) at a specific instance on the time line. The time line also contains a jump-to feature to enable you to move rapidly between node change dates and link start and end dates on the time line.

*Figure 2.45  Annotated Time Slider*
### Table 2.9  Time Slider Feature Description

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jump-to feature</td>
<td>The jump-to feature enables you to jump right (right arrow) or to jump left (left arrow) to move along the time line at intervals consistent with link start and end dates and with node change dates, as indicated by the tick marks on the time line.</td>
</tr>
<tr>
<td>Tick marks</td>
<td>Tick marks on the time line represent the start or end date of an entity appearance or an activity. Clicking the time line on an area not associated with a tick mark causes the time slider handle to snap to the nearest tick mark. The date of the entity activity is displayed above a selected tick mark. When you place your mouse pointer above a tick mark, the tick mark characteristics change to indicate that it is beneath the mouse pointer. Clicking the tick mark causes the time slider handle to snap to that position.</td>
</tr>
<tr>
<td>Time line</td>
<td>The time line represents a period of time, with the initial and end dates of the relationship shown as the start and end dates on the time line.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> When the time slider handle is moved to the right, as it approaches the end of the time line, the last date on the time line is replaced by the position date of the time slider handle.</td>
</tr>
<tr>
<td>Handle</td>
<td>The time slider handle can be moved to the left and right on the time line to allow visualization of the network as it develops over time. The time slider handle snaps to the closest tick mark, and the date above the position is the date of the start or end of an entity appearance or an activity (that is, an associated tick mark).</td>
</tr>
</tbody>
</table>
Scope controller

The scope controller enables you to view only nodes that are active at a selected date or all nodes that have been active up to and including the selected date.

An active node (at a selected date) is defined as a node that is attached to any link that has a start date before the selected date and an end date after the selected date.

As the time slider handle is moved left or right on the timeline, the entities are displayed or dimmed based on the start and end date of the entity. The display is affected by the selection of the **Active nodes only** option. This option is used to control the scope of the display.

- **Active nodes only** not selected. This is the default setting. Provides functionality to enable viewing the entry of relationships as time progresses. In this mode a node is displayed if any associated link has a start time before the selected date. This allows the full graph to be displayed when the time slider handle is moved all the way to the right.

- **Active nodes only** selected. Provides functionality to enable viewing the beginning and end of relationships. In this mode, a node is displayed if it has at least one link starting before and ending after the selected date. If no links associated with the node start before and end after the selected date, the node is dimmed. As the time slider handle moves to the right on the timeline, relationships appear (start time) and dim (end time). The graph might not be fully displayed when the time slider handle is all the way to the right because some relationships (shown as links) could have ended.

**Note:** By default, the graph is displayed with **Active nodes only** not selected.

The time slider features enable you to visualize when nodes within the network became active or inactive. As the time slider handle moves from left to right or from right to left along the timeline, nodes can change their transparency to indicate that they became active or inactive (depending on whether **Active nodes only** is enabled) at the selected time. Nodes can also change color (or other visual properties) at time intervals. Changes to properties, such as color and transparency, are defined in a top-level report that is authored by the subject matter expert in the business domain. The investigator can also click anywhere along the timeline, causing the time slider handle to snap to the nearest tick mark and show the social network analysis diagram at the time.
indicated at that location. The jump-to feature enables an investigator to click an arrow (left or right) to jump from one date to another date.

**Note:** If the network does not contain at least two valid dates, or if the administrator has not configured the time slider to appear, then the time slider is not enabled.

The following figure shows a sample social network analysis diagram with the time slider handle set at the July 21, 2001 tick mark. Several nodes are active in the network at that time.

*Figure 2.46  Time Slider Example*
Using the mouse or keyboard keys, you can interact with the time slider to perform several tasks, as described in the following table.

Table 2.10  Interacting with the Time Slider

<table>
<thead>
<tr>
<th>Task</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>View a tick mark date</td>
<td>Place the mouse pointer over a tick mark. The date associated with the tick mark is displayed above the time line at the tick mark position.</td>
</tr>
</tbody>
</table>
| Advance the time slider handle one tick mark at a time. | - Click the left or right Jump-to arrow, depending on the direction of desired travel  
- Drag the time slider handle from one tick mark to the next tick mark.  
- Click the destination tick mark or an area close to the destination tick mark.  
- Click on the time slider handle to give it focus and then use the keyboard arrow keys to move the time slider handle in the direction of the arrow keys, one tick mark at a time.  
- Click on the time slider handle to give it focus and then use the keyboard Page Up and Page Down keys to move the time slider handle left or right, one tick mark at a time. |
| Jump to the first or last tick mark.      | - Click the first or the last tick mark.  
  The date on the time line represents the date of the entity activity.  
- Click on the time slider handle to give it focus and then use the keyboard Home and End keys to move the time slider handle to the beginning or the end of the time line.  
  The date on the time line represents the date of the entity activity. |

The Time Slider option of the Show menu enables you to show or hide the time slider in the current view even if it is disabled.

Show Details Pane

When a node or link is selected, clicking the Show Details button of the Properties pane expands the Show Details pane at the bottom of the social network analysis diagram. The pane content is completely configurable by your solution administrator.
The pane can be resized by dragging the resize bar beneath the time and scope controller upward or downward.

Figure 2.47  Example of the Show Details Pane

Table 2.11  Item Description Related to Show Details Pane

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Show Details</strong> button</td>
<td>This button is available when the selected entity is a node or link. Clicking the <strong>Show Details</strong> button exposes the <strong>Show Details</strong> pane beneath the time and scope controller.</td>
</tr>
<tr>
<td>2</td>
<td>Resize handle</td>
<td>The resize handle is available when the <strong>Show Details</strong> pane is displayed. Drag the resize handle upward to expand the area beneath the time and scope controller, or drag the resize handle downward to expand the area above the time and scope controller.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Close</strong> button</td>
<td>The <strong>Close</strong> button enables you to close the pane without using the resize handle.</td>
</tr>
<tr>
<td>Item</td>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>Show Details pane</td>
<td>The information in this area is related to the selected SAS Social Network Analysis entity and is completely configurable by your solution administrator. If the selected entity is a node and your system administrator has configured the notes feature, a Notes tab appears in the pane. See “Adding Notes and Attachments” on page 123.</td>
</tr>
</tbody>
</table>

**Printing Alerts, Details, or the Social Network Analysis Diagram**

**Overview**

Using the print feature in SAS Social Network Analysis Server, you can print the following items:

- the table in the Alerts pane in the Alerts window
- the detail information, or any of the tabs in the Entity Profile pane or Related Information pane on the Details tab in the Alert Details window
- the social network analysis diagram on the SAS Social Network Analysis tab of the Alert Details window

When you initiate the print feature from the Alerts window or Alert Details window, a Print window appears. In that window, you can choose the items that you want to print. You can then update the Print window to display a preview of the printout, or click Print to generate a printout without seeing a preview.

When you initiate the print feature from the SAS Social Network Analysis tab, the network diagram appears on a separate browser tab, called Print View, and a print window that is native to the browser appears.
Print Window for Alerts and Alert Details

About the Print Window
The following figure shows a sample Print window that appears when you initiate printing from the Alerts window.

Figure 2.48 Sample Print Window Launched from the Alerts Window

The following figure shows a sample Print window that appears when you initiate printing from the Alert Details window.
The Print window is divided into two sections, a header and a print preview. The header provides a set of check boxes that represent the items in the Alerts window or Alert Details window that you can print. The print preview shows how the selected items will look in the printout.

**Note:** Depending on the browser that you use to view the application, there might be minor variations between the preview and the actual printout.
In general, the way you format the items in the Alerts window or Alert Details window determines the way they appear in the print preview. You cannot modify many settings in the Print window. For example, you cannot modify the following column settings in the Print window:

- column order
- column sorting
- column visibility

If your Entity Profile pane has been configured to include a Notes tab, you can specify whether to print all of the notes or only notes in a specific category. You can also specify whether notes are printed in ascending or descending order by date. For other options, the Print window uses the settings that you select on the Notes tab.

For information about setting up a window before printing it, see “Preparing to Print” on page 78.

**About the Print Header**

When you initiate printing from the Alerts window, the Print window header includes a check box for the table in the Alerts pane. This check box must be selected to display the alerts and print them.

Depending on how the Alert Details window is configured, the Print window header includes, from left to right and top to bottom:

- a check box for the information in the Details table in the upper left portion of the window
- a check box for each of the tabs in the Entity Profile pane
- a check box for each of the tabs in the Related Information pane

By default, the Details check box is selected, and the Details table appears in the print preview.

You can select the check boxes for the items that you want to print. To see the results in the print preview before printing, click **Update Preview**. Click **Print** to print the selected items.
Note: If you select and clear items in the header without performing an update, and then click Print, what you see in the printout might not be what you expect.

If the Alerts window or Alert Details window includes more than one printable item, an **All** check box appears in the Print window header. Selecting this check box selects all the check boxes in the header. Clearing this check box clears all the check boxes in the header.

Note: If the Alerts window or Alert Details window has only one printable item, the **All** check box is not displayed.

**About the Print Preview**

The print preview shows the selected items as they appear in the printout.

At the top of the print preview is a heading that enables you to identify the alert series and, for the Alert Details window, the alert for which the printout is generated.

For the Alerts window, the heading has the following format:

Alerts View for [alert series]

For the Alert Details window, the heading has the following format:

Details for [alert series]: [alert identifier]

The value that is displayed for the alert identifier might be the actionable entity name or actionable entity ID.

The print preview includes a section (sometimes referred to as a page) for each item that is selected in the header. For example, in Figure 2.49 on page 73, the Details, Notes, and Related Alerts check boxes are selected in the header. The partial print preview in the figure shows a Details page and Notes page.

If the selected item in the header is a table, you can specify whether row numbers are included in the preview section (and the actual printout) by using the Include row numbers option in the User Preferences window. For more information, see “About the Print Preferences” on page 94.

Large tables with multiple columns might not fit within the width of the Print window. In this case, the columns are split into multiple pages. For example, in Figure 2.48 on page 72, the columns in the Alerts table are split into two pages: Alerts_1 and Alerts_2.
The application uses the width of the Print window and the widths of the columns in the table to determine how to split the columns into pages.

For example, assume that the width of the Print window is 700 pixels and you want to print a Related Alerts tab with the following columns and widths:

- Alert ID (175 pixels)
- Alert Status (225 pixels)
- Account Number (300 pixels)
- Transaction Type (175 pixels)
- Transaction Date (225 pixels)
- Deposit Amount (300 pixels)

Given these specifications, the application creates two pages: Related_Alerts_1 and Related_Alerts_2, as shown in the following figure.
Notice that the application prints all of the rows in the table for each page. In the above example, the sample **Related Alerts** tab includes ten rows. All ten rows appear on each page in the print preview.

The page width for the Print window is specified by using the **Page width (pixels)** setting in the User Preferences window. For more information, see “About the Print Preferences” on page 94.
Printing Alerts and Alert Details

Preparing to Print
Consider the following guidelines when you print items in the Alerts window or Alert Details window:

- The alerts list on the Alerts window can span many pages. When you initiate printing from the Alerts window, the Print window displays all of the row items in the alerts list, not just the items that are visible on the current page.

  Before initiating the print feature, you can use the advanced search feature, Filters pane, and find feature to narrow the list of alerts to include only the ones that you want to print.

  Note: Although you can use the check boxes in the alerts listing to specify the alerts that you want to include in an export, the print feature ignores the check box settings.

  Note: Attempting to print a large number of alerts might result in a JavaScript warning being displayed if the length of time required to render the print page is excessive. An alternative to printing a large number of alerts directly from the browser is to export the alerts and print from the spreadsheet program instead. See “Exporting Alerts and Alert Details” on page 82.

- In the Alert Details window, you can use the Find option to narrow the list of items on a tab in the Related Information pane to just the ones that you want to print.

- The Print window uses the column settings that you specify in the Alerts window or for tabs in the Related Information pane in the Alert Details window. These settings include the following:
  - column order
  - column sorting
  - column visibility
Ensure that the column order and sorting is the way you want it before initiating the print feature. Similarly, if you do not want specific columns to print, hide them before initiating the print feature. You cannot modify these settings inside the Print window.

**Note:** If you change the column widths in the Details table in the upper left portion of the Alert Details window, the changes are not reflected in the Print window.

**Note:** If you sort the information on a tab by the values in one of its columns, and then hide the column that you used for sorting, the Print window ignores the sort order.

If you find that you often use the same column, filter, and find settings when you print the Alerts window or Alert Details window, consider creating a custom view that you can use to quickly apply these settings to each window before printing. For information, see “Creating and Managing Custom Views” on page 98.

- Ensure the printing options in the User Preferences window reflect the values that you want to use. For information, see “About the Print Preferences” on page 94.

- To make it easier to correlate the printout for a specific alert in the Alert Details window with the appropriate alert line in the printout for the Alerts window, it is a good practice to make the alert ID, actionable entity ID, or another identifying column visible in both windows when you set up the tables that you want to print.

- If your **Entity Profile** pane has been configured to include a **Notes** tab, ensure that the notes are displayed the way that you want them to be printed before you initiate the print feature. For each note in each category (including the **All Notes** category), select the **Show More** or **Show Less** option, as desired. For more information, see “Adding Notes and Attachments” on page 123.

  **Note:** You cannot print attachments; however, a link for each attachment appears in the Print window and is included in the printout.

### Print Alerts or Alert Details

**Note:** Printout quality might vary based on your browser settings. For best results, ensure that the browser setting that specifies whether to print background colors and images is enabled. For information about this setting, refer to your browser documentation.
To print the Alerts window or Alert Details window:

1 Ensure that the Alerts window or Alert Details window reflects the items that you want to print, and that each of the items is formatted appropriately.

2 Ensure that the options on the Print tab on the User Preferences window reflect the values that you want to use.

3 Click the Print button ( ).

4 In the Print window, select the check boxes that represent the items that you want to print.

5 To preview the results before you print them, click Update Preview.

   Note: If you are printing notes, and you want to select a specific category of notes to print, you must click the Update Preview button to display the categories in the print preview. When the print preview is ready, on the Notes page, select the category that you want to print. You can sort the notes in ascending or descending order by date by clicking on the arrow next to the Date label.

6 When you are ready to generate the printout, click Print.

   Your system Print window appears.

7 In the system Print window, specify the appropriate printer and print settings, and then click Print.

**Printing the Social Network Analysis Diagram**

You can print the social network analysis diagram at any time. When you print the network diagram, any icons and colors that are used in the network legend are included on a separate page in the printout. In addition, if the network diagram has a time slider, time information is also included in the printout below the network diagram. If the **Active nodes only** check box is selected, only the date that is represented by the tick mark on which the slider is located is included in the printout. If the **Active nodes only** check box...
box is not selected on the time slider, the beginning and ending dates on the time slider are printed.

**Note:** The legend and time slider information is included in the printout regardless of whether the legend or time slider are displayed on the **SAS Social Network Analysis** tab.

Clicking the **Print** button when you are on the **SAS Social Network Analysis** tab opens a new tab, called **Print View**, in your browser. The browser’s native print window also appears. The following figure shows an example of a **Print View** tab.

*Figure 2.51  Example of a Print View tab and Browser Print Window*

You cannot modify the social network analysis diagram on the **Print View** tab. Make any modifications that you want to see in your printout prior to initiating the print feature.

**Note:** Printout quality might vary based on your browser settings. To print the color swatches, if any, in the social network analysis diagram legend, ensure that the browser
setting that specifies whether to print background colors and images is enabled. For information about this setting, refer to your browser documentation.

To print the social network analysis diagram:

1. Navigate to the SAS Social Network Analysis tab.

2. Organize the social network analysis diagram in a manner that is consistent with what you want to see in the printout.

3. Click the Print button (Printer Icon).

   The Print View tab opens in the browser, and the browser Print window appears by default.

   **Note:** If you close the browser Print window, you can reopen it by selecting browser’s Print option.

4. In the browser Print window, indicate the print specifications and then click Print.

---

**Exporting Alerts and Alert Details**

The export feature of SAS Social Network Analysis enables you to view or save an .xls version of tabular data displayed at the Alerts window or at the Alert Details window. With the data presented in this format, you can open the file in a compatible application and then manage and save the current data in this or in a different format.

Here are the considerations for use and operation of this feature.

- When you open the exported data directly from the web browser, the listing might open in the compatible application in protected mode by default. You must enable editing if you want to update or make changes. You must save the file if you want to retain the file.

- If you save the file before opening it, the file generally opens in a format that enables you to view and update the file.
At the Alert Details window, if more than one tab exists and contains data, then each tab displays as a tab in the spreadsheet.

By default, when you save the file, it is saved to your default settings location on your local computer, and it is named the same as the name of the alert series from which it originates.

Original cell attribute formatting is not retained. If your data listing includes cell color formatting or text formatting, the formatting is stripped on export.

Cell value formatting is not retained. If your data listing has values, including alert severity indicators, the values are converted to a number stored as text.

**TIP** Depending on the application used to open the exported file, you might be able to use the native tools to convert the text values to an actual number or value format.

Date value formatting is not retained. If your data listing includes dates, the dates are converted to text when the listing is exported.

**TIP** Depending on the application used to open the exported file, you might be able to use the native tools to convert the text dates to an actual date format.

All alert rows are exported by default. If you filter your view to show a subset of the alerts, when you export the listing, all alerts are exported and not just those filtered for the view.

A subset of alerts can be exported. If you want to export only a subset of alerts, either select the check box associated with the alerts that you want to export, or choose the **Select All** check box to export only those alerts displayed on the current page.

Specific columns can be exported. If you hide or rearrange columns, only those columns in view are exported. The column order exported is identical to the column order arranged in the alert listing.

If an image is displayed within the tabular data, when the data is exported, the URL of the image is displayed in the column cell. Click the image URL to view the image at the hosted location.
TIP Attempting to print a large number of alerts might result in a JavaScript warning being displayed if the length of time required to render the print page is excessive. An alternative to printing a large number of alerts directly from the browser is to export the alerts and print from the spreadsheet program instead.

To export tabular information, from either the Alerts window or Alert Details window:

1 Make sure that you have hidden or displayed the columns of interest and ordered them in the sequence that you want for the output.

2 (Optional) If you are exporting from the Alerts window, indicate the rows that you want to export by selecting the check box associated with each row or enabling the Select All check box. If you want to export all rows of the alert listing, do not select specific rows; all rows are exported by default.

3 Click the Export button ( ) from the main toolbar at either the Alerts window or the Alert Details window.

   Depending on your web browser, you might be presented with different options. Select the desired option to open, save, or save and open. Make sure that you enable editing if editing is a required function.

4 View, print, and manage the data as needed.

   You must save the file to retain your changes. The file is saved locally and is a static, stand-alone file with no connection to SAS Social Network Analysis.

Search and Filter Features

To refine the number or type of alerts displayed, SAS Social Network Analysis Server can provide three methods (advanced search, the Filters pane at the Alerts window, and text search) for narrowing the scope of the items displayed or highlighting nodes meeting the search criteria.
Searching versus Filtering

The optional advanced search feature enables an investigator to retrieve alerts from SAS Social Network Analysis Server based on criteria that are controlled by subject matter experts in the business domain of interest. The following display shows a sample Advanced Search window, designed to retrieve a subset of cases as specified by the search criteria.

Figure 2.52  Advanced Search Window

SAS Social Network Analysis Server can be configured so that the Advanced Search window is displayed automatically when you access the interface, and it can be opened anytime the Advanced Search button (🔍) is displayed by clicking the button on the toolbar.

Note: If the Advanced Search window is displayed automatically when you access an alert series, the Close button (🗙) does not appear. You cannot exit the window without submitting a search. When the Advanced Search window is opened from within an alert series, the Close button appears. You can close the window without submitting a search.

In deployments that have a high volume of alerts, the initial loading of the alerts in the Alerts window can reduce system performance because of the amount of data that must be read from SAS Social Network Analysis Server, transmitted across the network, and
then displayed. The advanced search feature provides a window that enables you to set criteria for the alerts that you want to view.

When the Search button (which might have a different name in your deployment) is clicked in the Advanced Search window, the criteria are sent from the web browser to SAS Social Network Analysis Server. SAS Social Network Analysis Server uses the search criteria to subset the alerts that meet the criteria and then sends only those alerts to the web browser and displays them in the Alerts window.

The Filters pane at the Alerts window operates differently from the advanced search feature. After the Alerts window is populated, the Filters pane can be used to set criteria for the alerts that you want to be displayed. Alerts that do not meet the criteria are hidden. The criteria are determined in part by subject matter experts who determine whether an alert field should be in the criteria. If so, then check boxes (used for distinct values that are found in the alerts), range filters (sliding scales), text fields, and date pickers can be configured for the Filters pane of an alert series. This filtering feature is performed in the web browser and does not require communication with SAS Social Network Analysis Server. Refer to “Alerts Window Filters Pane” on page 23 for additional information.

The find feature offers more flexibility for specifying the search term than either of the other two methods.

**Figure 2.53  Example of Populated Text Find Area**

In general, this feature is used to do the following:

- reduce the number of rows (generally reflective of alerts or entities) that are visible in the Alerts window. When you type in the Find field and then press the Enter key, the row items in the Alerts window display reflect the text in the Find field. Only the row items that have a field with matching text or numeric values remain visible. Row items that do not match the filter expression are hidden.
- reduce the number of rows that are visible within the tabular data at the Alert Details window. When you type in the **Find** field and then press the Enter key, the row items in the Alert Details window display reflect the text in the **Find** field. Only the row items that have a field with matching text or numeric values remain visible. Row items that do not match the filter expression are hidden.

- highlight nodes on a social network analysis diagram (in standard or in map view). When you view the social network analysis diagram, you can enter text or a numeric string in the **Find** field and press the Enter key. Any nodes that match the filter expression are displayed with a color highlight.

- reduce the number of rows that are visible within the tabular data at the **Show Details** pane of the **SAS Social Network Analysis** tab. When you type in the **Find** field and press the Enter key, the row items in the **Show Details** pane reflect the text in the **Find** field. (Your administrator must have configured the **Show Details** pane with tabular data in order for this functionality to work.) Only the row items that have a cell with matching text or numeric values remain visible. Row items that do not match the filter expression are hidden.

The following table summarizes the key differences between the search and filter features.

**Table 2.12  Search and Filter Feature Comparison**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Advanced Search</th>
<th>Filters Pane</th>
<th>Text Find</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confined to selecting from a predefined set of criteria</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Relies on server communication for execution (that is, the process includes a round-trip call to the server resulting in a response that returns matching alerts)(^1)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Can use free form text as the search or filter criteria</td>
<td>Yes(^2)</td>
<td>Yes(^2)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

\(^1\) Advanced search queries are the only queries that search the database. The others search or filter the displayed data.

\(^2\) Contingent upon the administrator configuring text fields or text areas to enable a free-form search or filter operation.

\(^3\) Applicable only to the **Filters** pane at the **SAS Social Network Analysis** tab.
### Characteristic

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Advanced Search</th>
<th>Filters Pane</th>
<th>Text Find</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlights results on the social network analysis diagram</td>
<td>No</td>
<td>Yes&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Yes</td>
</tr>
<tr>
<td>Has an explicit User Preferences window option to control persistence for each session.</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<sup>1</sup>Advanced search queries are the only queries that search the database. The others search or filter the displayed data.

<sup>2</sup>Contingent upon the administrator configuring text fields or text areas to enable a free-form search or filter operation.

<sup>3</sup>Applicable only to the Filters pane at the SAS Social Network Analysis tab.

Usage information for the search and filter features can be found in “Searching and Filtering Alerts” on page 111.
3

Interface Customization and Alert Management and Disposition

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Overview of the Alert Investigation Process

Although there is no standard procedure that fits every situation for investigating and determining the disposition of alerts, there are several steps that are typical for the process. In general, the process includes the following:

- Access the alert series for which you want to perform investigative tasks.
- Set your personal preferences to enable use of the system in the most efficient manner for your operating style.
- Set format preferences through the use of SAS Preferences, available directly from the SAS Social Network Analysis Server More toolbar button.
- Search and filter alerts to locate or group the alerts of interest.
- Create one or more custom views to enable efficient investigation.
- Investigate the alert by performing a series of review steps to determine the factors that generated the alert.
- If your deployment is configured with the Notes tab visible in the Alert Details window, then you can add notes and attachments or review and update existing notes and attachments as needed.
Determine the disposition of alerts as needed and as specified by the policies of your organization.

The remaining sections of this chapter include a discussion of each avenue of alert management, including disposition methods. Since each deployment is configured to best meet the needs of the organization, your instance might not be set up to enable you to perform all tasks as described.

Specifying Preferences

Preferences Overview

Using the items on the More menu, you can specify two types of preferences—user preferences and SAS preferences.

User preferences are specific to SAS Social Network Analysis and are set in a User Preferences window that is part of the application. Using the options in the User Preferences window, you can specify general settings, such as whether to clear advanced search options for each session. In addition, you can specify preferences for the Print window that is accessed from the Alerts window and Alert Details window.

If you have access to more than one alert series, you can specify different user preferences for each one. User preferences are implemented per user, per alert series, and they remain in effect until they are updated.

SAS preferences are related to the display of date and time information. SAS Social Network Analysis Server enables you to connect directly to the SAS Preferences web application to manage your options for how date and time information is displayed. The selections that you make through the SAS Preferences web application are applied to all alert series for which you have been granted access permission (under the current credentials) and remain in effect until the preferences are updated. In general, the selections that you make through SAS Preferences affect all SAS applications to which you have access using the same credentials.
User Preferences

Accessing the User Preferences Window

To open the User Preferences window, select the More button (⋯) from the toolbar, and then choose User Preferences from the menu.

The User Preferences window appears.

Figure 3.1 General Tab in the User Preferences Window

About the General Preferences

The following table describes the options on the General tab in the User Preferences window.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default tab</td>
<td>Specifies whether the <strong>Details</strong> tab or the <strong>SAS Social Network Analysis</strong> tab appears when you access the Alert Details window by double-clicking an alert or entity in the Alerts window. This option also determines which tab you see if your system administrator configures the application to open to a specific alert when you sign in. By default, the <strong>Details</strong> tab is selected. <strong>Note:</strong> The option to display or hide the <strong>SAS Social Network Analysis</strong> tab is an administrator-configurable setting. If your deployment does not include a <strong>SAS Social Network Analysis</strong> tab, then the option to set a default tab preference is not available.</td>
</tr>
</tbody>
</table>
| Hide node labels    | Specifies the default state of node labels (either hidden or displayed) on the social network analysis diagram. Selecting the check box indicates that you want the labels to be hidden. Clearing the check box indicates that you want the labels to be displayed. By default, the node labels are displayed. **Note:** If the **SAS Social Network Analysis** tab is displayed when you modify this option, you will not see the change in the tab. In order to see the update, you must perform one of the following actions:  
  - Return to the Alerts window and then revisit the network diagram.  
  - Log off from the session and then sign back in to the alert series and retrieve the network diagram. |
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear advanced search options for each session</td>
<td>Specifies whether the advanced search options should be cleared when you log off from the application. Selecting the check box indicates that you want the advanced search options to be cleared. When you log off and sign back in, and then select the alert series, the options in the Advanced Search window are cleared. By default, the check box is not selected, indicating that the advanced search options should be saved between sessions. When you log off and sign back in, and then select the alert series, the advanced search options from the last session are preserved. <strong>Tip:</strong> Using the default setting is handy if the Advanced Search window has multiple tabs and you need to execute different searches at different times based on the same criteria. You can enter the criteria in each tab once, and the settings are saved between sessions. When you access the alert series, you can then select a specific tab in the Advanced Search window and execute the search. For information, see “Searching for Alerts with Advanced Search” on page 112.</td>
</tr>
</tbody>
</table>

### About the Print Preferences

When you initiate printing from the Alerts window or Alert Details window, a Print window appears. For information about the print feature, see “Printing Alerts and Alert Details” on page 78.

The settings on the **Print** tab in the User Preferences window determine the size of the Print window and affect the information inside the window. They take effect immediately after you save them.

**Note:** If you do not change the printing preferences, the application uses the default values when determining how to print the items that you select in the Print window.
The following table describes the options on the Print tab.

**Table 3.1  Settings on the Print Tab in the User Preferences Window**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Page width (pixels)</strong></td>
<td>Specifies the width of the Print window in pixels. This option also controls the width of the actual printout.</td>
</tr>
<tr>
<td></td>
<td>The default value is 700, which creates a printout that fits well on an 8 1/2 x 11 inch page.</td>
</tr>
<tr>
<td><strong>Include row numbers</strong></td>
<td>Specifies whether to display row numbers for tabular data that is selected in the Print window. The row numbers also appear in the printout.</td>
</tr>
<tr>
<td></td>
<td>By default, this option is not selected, and row numbers are not included in the Print window or the printout.</td>
</tr>
</tbody>
</table>

**Setting User Preferences**

To indicate your preferences:

1. Open the User Preferences window.
On the General tab, do the following:

a. In the Default tab list, choose the tab that you want to appear when you open the Alert Details window.

b. Select or clear the Hide node labels check box to indicate your preference.

c. Select or clear the Clear advanced search options for each session check box to indicate your preference.

On the Print tab, do the following:

a. Specify the width of the Print window in the Page width field.

b. Select or clear the Include row numbers check box to indicate your preference.

Click Save to save your selections.

The saved settings remain in effect until you update them.

Restoring Default Settings

You can restore individual options to their default values manually by selecting or entering the appropriate value for each option.

To restore all the options on both tabs of the User Preferences window to their default values, click the Restore Defaults button.

SAS Preferences

SAS Preferences is a web application that provides a central facility for managing preferences and settings for SAS applications. After you have logged on to SAS Social Network Analysis Server, you have access to SAS Preferences. Through SAS Preferences, you select your choices that determine the format and display of several features within the interface. The options for SAS Social Network Analysis Server that are controllable through SAS Preferences include the options under Format that are related to date and time.
When your solution administrator configures the display of information through your deployment of SAS Social Network Analysis Server, the administrator indicates general preferences for date formats. Through SAS Preferences, you can indicate your choice for the display. For example, if your administrator specifies that dates should be in the long date format, you can use the **Long date** selector to specify the display format for all dates with the long date attribute in the current alert series.

To access SAS Preferences from within SAS Social Network Analysis Server:

1. Select the **More** button (▪️) from the toolbar and choose **SAS Preferences** from the menu.
   
   SAS Preferences opens in a new browser instance.

   **Figure 3.3  SAS Preferences Window**

2. Choose **Date Formats** from the navigation menu in the left pane of the interface.

3. Make your desired choices for the **Date Formats** option as needed.

4. Click **OK** to save your choices and to exit from SAS Preferences.
Note: The selections made through the SAS Preferences web application are applied to all of the alert series to which you have been granted access permission, as well as to other SAS applications for which your current credentials have access permission.

Creating and Managing Custom Views

About Creating and Managing Custom Views

SAS Social Network Analysis Server enables investigators to save filter and column settings as custom views. This allows investigators to organize information in a way that best suits their workflow.

You can create custom views for the Alerts window and the Alert Details window. A custom view for the Alerts window can include saved column attributes for the table in the Alerts pane, as well as filter criteria for the rows in the pane. A custom view for the Alert Details window consists of saved column attributes for the tabs in the Related Information pane and for Entity Profile tabs that contain tables.

Note: Changes made to Entity Profile tabs that contain charts are not saved to a custom view.

Custom views make it easy to organize and present information in the Alerts window and Alert Details window in a way that is most meaningful to you. If you find that you always work with a particular subset of alerts, for example, or if you prefer to view columns in a specific order, you can save the settings that you use most often so that you do not have to apply them manually each time you start work.

In addition, you can use custom views to quickly organize and format information that you want to print. For information, see “Printing Alerts, Details, or the Social Network Analysis Diagram” on page 71.

A custom view is created by organizing information in the solution and then saving the settings. The following column attributes can be customized and saved as part of a custom view for either window:
column order

- column sort order
- column width
- column visibility (hidden column specifications)

For the Alerts window, a custom view can also include filter criteria that create a subset of the alerts listing.

**Note:** Beginning with the third maintenance release of SAS Social Network Analysis Server 6.2, range filters are not saved with custom views. Range filters take their minimum and maximum values from the currently displayed data. Because the minimum and maximum values for a range field can vary as new data is added to the database, a range filter created one day might later inappropriately limit the records that are displayed in the Alerts window.

### Working with Custom Views

By default, when you access an alert series, the view that you see in the Alerts window or Alert Details window is the default view that was defined by your solution administrator when the deployment was configured.

If you have saved a custom view for the window, then you can apply it to update the window to display the information the way you want to see it.

You manage custom views by using the **Custom Views** menu items. The following figure shows a sample **Custom Views** menu.

*Figure 3.4  Custom Views Menu*
You can create, save, apply, and delete custom views. Editing a custom view is performed by retrieving the custom view, making the needed changes, and then saving the view with a new, unique name.

The following rules apply to the creation and use of custom views:

- Multiple custom views can be created and saved for the Alerts window and the Alert Details window.
- When you access one of these windows, only the views that were created for that window appear on the Custom Views menu. You cannot apply a custom view that you create for the Alerts window to the Alert Details window, or vice versa.
- Custom views are managed and saved for the current user and are not accessible by other users.
- A custom view is valid only for the alert series in which it is created. Custom views cannot be shared across alert series.
- By default, the alert series do not have custom view associations. However, if you are upgrading from a prior release, you might see entries on the Custom Views menu for the Alerts window, as follows:
  - If you are upgrading from a 6.2 release prior to the second maintenance release, a custom view named Migrated View appears on the Custom Views menu. For information, see “Migrated Views” on page 111.
  - If you are upgrading from the second maintenance release and you created custom views in that release, their names appear on the Custom Views menu.
- Custom views are not applied automatically when an alert series is accessed. When you access an alert series and open the Alerts window or Alert Details window, the default view created by your solution administrator is displayed. The Custom Views menu lists the valid custom views for the alert series and window. You can select one to apply it.
- The name of the custom view that is currently applied appears in bold text on the Custom Views menu.

If, after applying a custom view, you change the Alerts window or Alert Details window in such a way that the window no longer reflects the settings in the custom
view, the application removes the bold highlighting from the custom view name on the **Custom Views** menu. The custom view is no longer in effect. For information, see “Apply a Custom View” on page 104.

- After a custom view is applied, it remains in effect until you clear it, alter the filter or column settings in the window to which the view is applied, select a new custom view, retrieve a new alert series, or exit the solution. For information about altering the window settings, see “Apply a Custom View” on page 104.

### Creating Custom Views

You can create a custom view for the Alerts window or Alert Details window.

1. Access the appropriate window.

2. Customize the view by modifying all or some of the following settings:
   - filter settings (for the Alerts window only)
   - column arrangement
   - column sort order
   - column width
   - column visibility (show or hide columns)

3. From the **Custom Views** menu, select **Save Custom View**.

4. Enter a name for the custom view, and then click **Save**.

**Note:** Here are the rules that apply to naming conventions.

- The ampersand (&), left and right angle brackets (<, >) and the question mark (?) are invalid characters.

- Fifty-five is the maximum number of characters that can be used for the custom view name.

- For each window, the custom view names must be unique. You cannot use an existing name. For example, you cannot have two custom views for the Alerts
window that are named myview. However, you can create a custom view called myview for the Alerts window and another called myview for the Alert Details window.

**TIP** It is helpful to use a naming convention that indicates how the view is used and, if you have multiple alert types, the type of alert it is used with. For example, Print View: Type 1, Print View: Type 2, Investigative View: Type 1, Investigative View: Type 2.

- Names are case insensitive. This means, for example, that the name *MyView* would be considered the same as the name *MYview* and would be disallowed, since each name must be unique.
- The solution removes extra spaces (that is, more than one space) between words and letters when the name is saved. The saved name is displayed with the extra spaces omitted.
- The solution removes any spaces that occur before the first character and after the last character of a name when the name is saved. The saved name is displayed with the extra spaces omitted.

The custom view is saved and the name of the view is added to the **Custom Views** menu.

**Note:** When you save a custom view, the application considers that view to be applied. The custom view name appears in bold on the **Custom Views** menu.

**About Applying a Custom View**

For the Alerts window, a custom view is a snapshot of the column information for the table in the **Alerts** pane, and any filter criteria that is applied to the alerts listing, at the time you save the view. For the Alert Details window, a custom view is a snapshot, at the time you save the view, of the column information for all the tabs in the **Related Information** pane and for any **Entity Profile** tabs that contain tables.
About Applying a Custom View to the Alerts Window

The Alerts pane in the Alerts window has one table. When you apply a custom view to this window, the column layout in this table changes to reflect the column attributes (for example, column order) that are saved in the custom view. The rows in the table are filtered based on any filter criteria that is saved with the custom view.

It is possible for columns to be added to or removed from the Alerts pane after you create a custom view, resulting in a mismatch between the columns in the custom view and the columns in the Alerts pane. As long as a custom view contains at least one column in common with the Alerts pane, you can apply the custom view to the Alerts window. If the custom view does not have any columns in common with the columns shown in the Alerts pane, the application displays a message indicating that it does not find any matching columns. The custom view is not applied to the Alerts window.

Similarly, it is possible to create a custom view that filters the values in a column that is later removed from the Alerts pane. In this case, when you apply the custom view, the filter has no effect on the Alerts window.

About Applying a Custom View to the Alert Details Window

The Related Information and Entity Profile panes in the Alert Details window can have multiple tabs with multiple columns. In addition, the tabs that appear in these panes, and the columns that they contain, can vary depending on the alert or entity that you select in the Alerts window.

When working with a custom view for the Alert Details window, keep in mind that the custom view is a snapshot of all the tabs in the Related Information pane and all the Entity Profile tabs that contain tables. This includes any tabs that you did not customize.

To apply a saved custom view to the Alert Details window, the custom view must include at least one of the tabs (other than the Related Alerts tab) that are displayed in the Related Information or Entity Profile pane for the selected alert or entity. In addition, at least one of the matching tabs must have one or more columns in common with its corresponding tab in the Alert Details window. If these conditions are not met, the application displays a message indicating that it does not find any matching columns.

Note: Because the Related Alerts tab contains information that is not unique to specific alert types, this tab is ignored when the application checks for matching
columns between the tabs in the custom view and the tabs in the Related Information pane. If the Related Alerts tab is the only tab that the custom view and the Related Information pane have in common (and there are no matching columns between the custom view and the Entity Profile pane), the application displays the message noting that it can not find any matching columns. The settings for the columns in the Related Alerts tab in the custom view are applied to the Related Alerts tab in the Related Information pane. “Example of Applying a Custom View to the Alert Details Window” on page 105 shows what happens when the columns in a custom view do not match the columns in the Alert Details window.

If the Related Information or Entity Profile pane for the selected alert or entity has tabs or columns that are not in the selected custom view, these tabs and columns are not affected when the custom view is applied.

Apply a Custom View

To apply an existing custom view:

1. Access the appropriate window.

2. On the Custom Views menu, select the name of the custom view that you want to apply.

The custom view is applied. The name of the currently applied custom view appears in bold on the Custom Views menu.

If, after applying a custom view, you change the Alerts window or Alert Details window in such a way that the window no longer reflects the settings in the custom view, the application removes the bold highlighting from the custom view name on the Custom Views menu. The custom view is no longer in effect. To restore the settings in the custom view, reselect the view on the Custom Views menu.

Modifications that cause the application to remove the bold highlighting from the custom view name on the Custom Views menu include the following:

- changing the filter settings in the Alerts window
- clearing the filter settings by using the Clear button on the Filter pane in the Alerts window
- using Find in the Alerts window or Alert Details window

- applying an advanced search

- changing the following column attributes in the Alerts window or Alert Details window:

  - column arrangement

  - column sort order

  - column width

  - column visibility

**Example of Applying a Custom View to the Alert Details Window**

To keep this example simple, the **Entity Profile** pane is not discussed. Assume that no changes are made to this pane, and that when the view is saved and applied to another alert, that alert and the custom view do not have any **Entity Profile** tabs in common.

In this example, a custom view was created for an Alert Details window that has three tabs in the **Related Information** pane. For the purposes of this example, the following changes were made to the tabs:

- On the **Related Alerts** tab, all but the first three columns were hidden.

- On the **Products** tab, the values in the **Purchases** column were sorted in descending order.

- On the **Transaction Details** tab, the **Bank ID** column was moved to make it the first column in the tab. The values in this column were sorted in ascending order. Several columns were hidden. The remaining columns were resized to make the data easier to see.

The following figure shows how each of the three tabs looked when the settings were saved to the custom view. When a view is saved, it is applied automatically.
The following figure shows the result of selecting a different alert in the Alerts window and then opening the Alert Details window. Because there is a custom view in effect, the application tries to apply this custom view to the Alerts Detail window. In this case, the tabs that appear in the Alert Details window (with the exception of the Related Alerts tab) do not match the columns that are saved in the custom view.

Because the Related Alerts tab is ignored during the comparison, the application displays a message indicating that it cannot find matching columns in the Related Information pane. It then applies the settings that it finds in the custom view to the Related Alerts tab.
The following figure shows the result of returning to the Alerts window, selecting a second alert, and then opening the Alert Details window. Again, the application tries to apply the custom view that is in effect. In this case, it finds that the Alert Details window has a matching **Transaction Details** tab. It applies the settings that it finds in the custom view to the **Related Alerts** and **Transaction Details** tabs. Because it does not exist in the custom view, the **Customers** tab in the Alert Details window is not affected when the custom view is applied.
Notice that the Transaction Details tab in the Alert Details window does not have a Bank ID column, so the values in this tab are not sorted the same way as they are in the custom view. Also, the Transaction Details tab in the Alert Details window has two columns that the custom view does not: Account Open Date and Owner’s Name. These columns are not affected when the custom view is applied.

Finally, notice that the Account Open Date and Owner’s Name columns are displayed at the end of the table. When a custom view is applied, any columns that the custom view and the window have in common are listed first in their respective tables. If a table in the Alert Details window contains a column that is not in the custom view, that column is moved after any matching columns. This change in the expected column order can be confusing.

**Editing a Custom View**

A custom view cannot be edited and saved with the same name.

To edit a custom view:

1. Access the appropriate window.
2. On the Custom Views menu, choose the name of the custom view that you want to edit.
The custom view is applied.

3 Make changes to the view to accommodate your needs.

4 From the Custom Views menu, select Save Custom View.

5 Enter a valid name for the custom view, and then click Save. The new custom view is saved.

**TIP** Instead of attempting to overwrite a custom view, you can delete the existing view and then save a new view with the previously used name.

### Deleting Custom Views

You can delete custom views when they are no longer needed.

To delete custom views:

1 Access the appropriate window.

2 From the Custom Views menu, select Delete Custom Views.

3 Choose the names of the custom views that you want to delete.

4 Double-check to ensure that you have selected the correct custom views. You will not be prompted to confirm prior to deletion.

**CAUTION!** There is no undo feature for custom view deletions. After a view is deleted, it is removed from the solution. There is nothing to prevent you from deleting a view that is currently in use.

5 Click Delete.

The views are removed from the list, and the Delete Custom Views window closes.

The custom views are deleted, and their names are removed from the Custom Views menu.
Deleting the current view does not alter any of the current settings (for example, column order), but the view is no longer saved. If you accidentally delete the custom view that is currently applied, you can select the **Save Custom View** option to save the view again.

---

**Clearing Filters and Custom Views**

You can apply filters to the Alerts window and the **SAS Social Network Analysis** tab. You can apply custom views to the Alerts window and the Alert Details window. You can clear the filter and custom view settings at any time.

**Clearing Filters in the Alerts Window**

You can apply a filter to the Alerts window by using the options in the **Filters** pane to create one manually or by applying a custom view that includes filter settings.

To clear the filter settings on the Alerts window:

1. Access the Alerts window.
2. In the **Filters** pane, click **Clear**.
   
   The filter settings are removed from the Alerts window.

**Note:** If you applied a custom view to the window, clearing the filter settings does not affect any column settings that were applied. However, because the alerts listing changes, the window no longer reflects all the settings in the custom view. The application removes the bold highlighting from the custom view name on the **Custom Views** menu. The custom view is no longer in effect.

**Clearing Filters in the SAS Network Analysis Tab**

To clear the filter settings on the **SAS Social Network Analysis** tab:

1. Access the **SAS Social Network Analysis** tab that displays the applied filter criteria.
2. In the **Filters** pane, click **Clear**.
Clearing the Current Custom Views

You can redisplay the default views that were created by your system administrator for the Alerts window and Alert Details window at any time.

To restore the Alerts window and Alert Details window to the default state for the current alert series:

1  Access the Alerts window.

2  Click Refresh.

Migrated Views

Before the second maintenance release of SAS Network Analysis Server 6.2, users could save one set of filter settings for the Alerts window. Column attributes for the Alerts window could not be saved. When upgrading from one of these versions of the application, the filter settings are saved to a custom view named Migrated View. This view appears on the Custom Views menu when the Alerts window is accessed. As the Migrated View does not include any column attribute settings, the columns in the Alerts window are not affected when you apply this custom view.

Searching and Filtering Alerts

Searching and filtering are methods of reducing the number of displayed alerts to enable you to focus on a subset of alerts. The search and filter options that might be available in your deployment include searching with the Advanced Search window, filtering using the Filters pane, or performing a text search using the Find field (available at each window and providing window-specific results). For details about the differences between filtering and searching, see “Searching versus Filtering” on page 85. The following sections describe the use of each method.
Searching for Alerts with Advanced Search

If SAS Social Network Analysis Server is configured with the advanced search feature, then a window that is similar to the following example might be displayed upon accessing the interface (if the administrator has enabled the initial search feature). This window enables selection of search criteria so that only the alerts of interest are retrieved from SAS Social Network Analysis Server.

Figure 3.8 Advanced Search Window

If the advanced search feature is enabled, then the Advanced Search window can be opened anytime the Advanced Search button (ıdır) is displayed by clicking the button on the toolbar.

The Advanced Search window is completely customizable and is unique for each deployment. It is common, however, for the Advanced Search window to display more than one tab. This enables users to select tabs and perform a search that is consistent
with the current needs. Here are items to consider when using the advanced search feature:

- If an Advanced Search window is displayed when the alert series is accessed initially, a Close button ( verbally) is not displayed. You must submit a search in order to continue.

- When the Advanced Search window is accessed by clicking the toolbar button, a Close button is displayed. You can close the window without submitting a search.

- The persistence (that is, the ability for the Advanced Search window to retain user selections between sessions) is controlled by the choice made at the User Preferences window for the **Clear advanced search options** for each session option.

- When multiple tabs are available, only the selections made on the tab in the forefront on submission are executed. This means that if you make changes on several tabs and then click the submit button, only the search criteria on the tab that was active when the submit button is clicked are submitted. All other criteria on the remaining tabs are ignored.

- For radio buttons, after you select an item, you can click it again to deselect the item.

- The administrator can set maximum and minimum value restrictions for the **Maximum alerts returned** field. If you enter a value that is less than the minimum value restriction, the value automatically adjusts to the configured minimum value when you submit the search. If you enter a value that is greater than the maximum value restriction, a warning is displayed and the value automatically adjusts to the configured maximum value when you submit the search.

- When multiple items are present and the total width of the items exceeds the horizontal space allocated for display, additional controls are presented to enable navigation between and selection of the items. Here is an example showing scroll controls (1 and 2) and a list control (3).

*Figure 3.9  Example of Additional Controls in Tabbed Area*
To scroll through the selection of tabs, click the scroll controls (1 and 2) and then select the tab name that you want.

To jump directly to a tab, click the list control (3) to display a list of available tabs, and then select a tab name from the list.

The **Restore Defaults** option returns all tabs to their original state. The Advanced Search window remains open to allow additional changes to be made.

**Filtering Alerts**

Whether the advanced search feature is enabled or not, after the alerts or entities are retrieved from SAS Social Network Analysis Server and are displayed, additional features enable you to reduce the number of rows displayed to only the items of interest.

If your administrator has configured a **Filters** pane for the Alerts window, then the **Filters** pane appears to the left of the **Alerts** pane. The following example shows the Alerts window with alerts filtered in the **Alerts** pane to show those that have an Overall Rank of 18.

*Figure 3.10  Alerts Pane Filtered for Overall Rank*
The **Filters** pane is expanded by clicking the **Expand Pane** button (▶) at the top of the pane and is collapsed by clicking the **Collapse Pane** button (◀) at the top of the pane.

Although each **Filters** pane (see “Alerts Window Filters Pane” on page 23) is customized for a specific deployment, the **Clear** button displayed at the top of the pane is standard. You can save filter settings to a custom view. For more information, see “Creating and Managing Custom Views” on page 98.

**Window-Specific Text Search**

By default, a **Find** field is displayed on the toolbar. The **Find** field is always available, but its use produces different results depending on the window that is active when the search is used.

You can filter alerts at the Alerts window by any text string or numeric value by entering it into the **Find** field. When you type in the **Find** field and then press the Enter key, row items not matching the criteria are hidden from view. The following example shows the Alerts window filtered for the value 18.

*Figure 3.11  Search Feature at the Alerts Window*
Using the find feature from the Alert Details window of SAS Social Network Analysis Server results in tabular data being searched. Tabular data includes data in the Entity Profile pane as well as data in the Related Information pane. The items in the tabular data that match the search criteria are displayed, and all other tabular information is suppressed. The display of non-tabular information at the Alert Details window is not affected by search.

**Figure 3.12  Search Feature at the Alert Details Window**

Using the find feature from the **SAS Social Network Analysis** tab of the Alert Details window results in nodes with matching criteria being highlighted and tabular data in the Show Details pane (not displayed in the following image) being filtered to show only those rows of data that match the criteria. For nodes, the search is performed on the node label text. The node label text does not have to be turned on in the diagram for a match to be indicated. Nodes that do not have labels are excluded from the search.
To clear a search term (and restore the interface to the pre-search view), click $\times$ to the right of the text in the **Find** field.

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**Investigating Alerts**

**Reviewing the Alert Details**

By default, when you access an alert series within SAS Social Network Analysis Server, the Alerts window is displayed. You can double-click a row item, generally an alert or an entity, in the **Alerts** pane to view the alert details. In the following display, Figure 3.14 on page 118, an alert that warrants further investigation is indicated at the **Alerts** pane.
Accessing the details related to an alert or entity displays customized information, depending on the setup and configuration provided by your administration team, specific to the alerted entity. For example, in the following display, the details related to the entity that is highlighted in the previous display are shown.
The information that is provided in the sample display is configured to meet the needs of the deployment.

**Reviewing the Related Information**

The transactional data that is related to the alert and the alerted entity (a patient, a claim, an account, a physician, and so on) is typically shown in tables in the lower portion of the Alert Details window. The number of tabs and the data that is shown depend on the deployment and the type of alerted entity.
If more than one tab is available, navigate the information by selecting tabs. You can select the vertical separator handle and drag it upward or downward to increase or reduce the size of the section that is used to display the transactional data.

*Figure 3.16  Alert Transactions Display and Vertical Separator Handle*

---

**Reviewing the Entity Profile Pane**

Depending on the analytics that are performed for identifying suspicious activity, charts and graphics might be displayed to provide more information about the alert and the alerted entity. Many tabs can be available in this pane, as shown in the following display. When more than one tab is displayed, the information is presented in alphabetical order based on the named tab. A control button (⋮) at the top right section of the pane enables you to launch the pane content in a floating window. The floating window contains **Previous** and **Next** buttons, as appropriate, to enable you to scroll between the tabbed content in this area. The tabbed content in the floating window is presented
If the SAS Social Network Analysis tab has been configured for your deployment, click the SAS Social Network Analysis tab to view the entities and relationships that are associated with the alerted entity. In some instances, previously undetected relationships are noticed and the relationships increase the level of suspicion. The
following display shows a sample social network displaying the entities and relationships that are active on April 13, 2009.

**Figure 3.18**  Social Network Analysis Diagram Example

The icons and colors that are used in a network diagram are configurable. By default, a Legend window, containing the list of icons used in the diagram, can be launched by enabling the **Legend** option of the **Show** menu. In addition, if the administrator has configured a color legend, then information relevant to the colors used in the diagram is available also. For details about the legend and its use and operation, see “Reviewing the Node Icon and Color Legend” on page 143.
Adding Notes and Attachments

Overview of the Investigative Notes Feature

Depending on your configuration, you might be able to add investigative notes and attachments to alerts and nodes. If the ability to add notes to an alert is enabled for your deployment, then a Notes tab appears in the Entity Profile pane in the Alert Details window. If the ability to add notes to a node is enabled for your deployment, then a Notes tab appears in the Show Details pane on the SAS Social Network Analysis tab.

Here are considerations for use of the Notes tab:

- Each note must be assigned to a category. When you create the note, you can select an existing category or create a new one.
- Category names are limited to 255 characters.
  
  **Note:** Leading and trailing white space is removed automatically and does not affect the character count.

- Categories can have multiple notes.
- When the first note is created, an All Notes category is generated automatically.
- By default, when you add a note to a specific category, it is also added to the All Notes category.
- If the All Notes category is selected, the notes are listed in chronological or reverse chronological order when they are sorted by date, without respect to the category to which they are assigned. The name of the category is displayed in each note for reference.
- By default, the All Notes category is displayed when you access a Notes tab. You can select a name from the category list to display only the notes in that category.
- Multiple attachments associated with a note cannot be removed individually. All attachments must be removed at the same time that the files are staged for upload.
After a note has been posted, the note cannot be edited or deleted through the solution. Attachments cannot be removed, and no additional attachments can be added to the posted note.

**Understanding the Basic Operation**

Investigative notes are associated with a specific alert or node. The areas of text entry or other functions available on the **Notes** tab depend on the state of note entry or the presence of existing notes.
**Note:** The format of the date that is displayed is controlled by the selections made through SAS Preferences. See “SAS Preferences” on page 96. The default date includes the date as well as the time.

**Note:** The input fields on the **Notes** tab contain hint text to guide you through text entry. This hint text is not visible in some supported versions of Microsoft Internet Explorer.
<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Notes tab</td>
<td>Shows a sample <strong>Notes</strong> tab without any entries.</td>
</tr>
<tr>
<td>2</td>
<td>Notes tab</td>
<td>Shows a sample <strong>Notes</strong> tab in which a note is in the process of being created. Text for the note is entered, but the note is not complete and has not been saved. The <strong>Add Attachment</strong> button and category list are available.</td>
</tr>
<tr>
<td>3</td>
<td>Notes tab</td>
<td>Shows a sample <strong>Notes</strong> tab with multiple categories defined. The <strong>All Notes</strong> category is selected and the notes are sorted in chronological order.</td>
</tr>
<tr>
<td>4</td>
<td>Note field</td>
<td>Specifies the text that you want to include in the note. Placing the mouse pointer in the field causes other interface features (including the <strong>Add Attachment</strong> button) to appear.</td>
</tr>
<tr>
<td>5</td>
<td>Cancel button</td>
<td>Displayed during note creation. Clicking the <strong>Cancel</strong> button enables you to exit the active creation process without saving the work in progress.</td>
</tr>
<tr>
<td>6</td>
<td>Add Attachment button</td>
<td>Displayed during note creation. Clicking the <strong>Add Attachment</strong> button enables you to stage files to be uploaded and associated with the note.</td>
</tr>
<tr>
<td>7</td>
<td>Category selector list</td>
<td>Displayed during note creation. Enables you to assign the note to an existing category or create a new category for the note.</td>
</tr>
</tbody>
</table>

The list displays the names of the existing categories and a **New Category** option, which displays the New Category window. In addition, before you assign a note to a newly created category, you can use the **Rename "<category_name>"** option to change the category name.

**Note:** After a note is posted to a category, you cannot change the category name.
### Adding Notes and Attachments

<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| 8    | Notes area               | Displayed after the first note has been added. Shows the notes in the selected category and their details. By default, **All Notes** is the selected category.  
Note details include the following:  
- User name of the person who created the note.  
- Name of the category to which the note has been added.  
- Text of the note. If there is too much text to display, a **Show More** link is available to enable you to expand the text to read the entire entry. After you read the text, you can use the **Show Less** link to collapse the note again.  
- Attachment links, if one or more attachments are associated with the note. |
| 9    | Expand All / Collapse All links | Enable you to show all (**Expand All**) or only some (**Collapse All**) of the text in all the notes in the selected category.  
If you select **Expand All** or **Collapse All** in the **All Notes** category, then all the notes in all the categories are expanded or collapsed, as appropriate. |
| 10   | Date sort                | Enables you to sort the notes in chronological or reverse chronological order.  
**Note:** Regardless of which category is selected, all notes in all categories are sorted. The notes that are displayed are those in the selected category. |
| 11   | Category pane            | Displayed after notes are created. It shows the names of each category, and the number of notes that are assigned to each category. The **All Notes** category is created by default and displays the total number of notes in all the categories.  
Clicking an item in the **Category** pane updates the Notes area to show only the notes in the selected category. |
<table>
<thead>
<tr>
<th>Item</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
|      | Search field | Enables you to search for notes in the selected category based on the entered text. You can include characters, symbols, or numeric values in the Search field.  
As you enter text in the field, the list of notes is filtered to show only those notes that contain the entered text.  
**Note:** The search is case insensitive.  
To clear the text field, click the Clear search results button. |

**Displaying Note Text**

To conserve space, the application collapses long notes. When the application collapses a note, an ellipsis (...) appears at the end of the note text, and a Show More link appears below the text. You can click this link to expand the note and display the remaining text. After you click a Show More link, the link text changes to Show Less. You can click the Show Less link to collapse the note.

When you expand or collapse an individual note, the change to the note is reflected in the specific category and in the All Notes category. Similarly, if you use Show More or Show Less to expand or collapse a note in the All Notes category, the change to the note is reflected in the All Notes category and in the category to which the note is assigned.

Expanding or collapsing a note by using Show More or Show Less does not affect other notes in the same category.

The Expand All and Collapse All links above the Notes area enable you to expand or collapse all of the notes in the selected category. When you use one of these links, the changes to the notes are reflected in the specific category and in the All Notes category. Notes in other categories are not affected by the change.

If the All Notes category is selected when you click the Expand All or Collapse All link, then all notes in all categories are expanded or collapsed, as appropriate.
If a category does not have any expandable notes (in other words, none of notes has been truncated), the **Expand All** or **Collapse All** link appears in italics and is disabled.

Notes retain their state (either collapsed or expanded) if you take either of these actions:

- Switch between categories.
- Switch between the **Details** tab and the **SAS Social Network Analysis** tab in the Alert Details window.

Notes do not retain their state if you take any of the following actions:

- Switch between the Alerts window and the Alert Details window and then access the **Notes** tab in the **Entity Profile** pane or on the **SAS Social Network Analysis** tab. When you access either of these areas from the Alerts window, all notes in the **Notes** tab are collapsed by default.
- Switch to another alert series.
- End the current user session.

You can print notes. However, the ability to expand or collapse notes is not available in the Print window. Be sure to expand or collapse the notes as desired before you initiate the print feature. For information, see “Printing Alerts, Details, or the Social Network Analysis Diagram” on page 71.

### Adding a Note to an Alert

After selecting an alert to investigate, if the notes feature is enabled, then you can add a note from the Alert Details window. The note is associated with the entity identifier and the entity type.

Notes are assigned to a category. When you add a note, you can assign it to an existing category or create a new one for it. Multiple categories can be added to an alert.

1. In the Alert Details window, select the **Notes** tab.
2. Enter the text of the note into the note field.
Note: The field must contain non-whitespace characters to cause the **Post** button to become enabled.

3 Do one of the following:

a To create a new category for the note, select **New Category** from the category selector list.

   The New Category window is displayed.

   Enter a unique category name.

   **Note:** Category names are case insensitive. This means, for example, that the name **MYCategory** is the same as the name **mycategory**.

   Click **OK**.

   The new category name is displayed as the selected item in the category selector list.

   **Note:** During this process, you can change the name of the newly created category by selecting the **Rename “<category_name>”** option in the category selector list. You cannot change the category name after the note has been posted.

b To assign a note to an existing category, choose the name in the category selector list.

4 (Optional) Add one or more attachments by clicking the **Add Attachment** button and selecting the files that you want to attach. Click **Open** to stage the files for upload.

   **Note:** To add multiple attachments, press Ctrl and select each file to be included (Microsoft Windows), or press Shift and then select the first and last file in a sequence of files to select them all. If necessary, consult your operating system documentation to learn about multiple-select operations specific to your environment.

   **Note:** After files are staged for upload, no additional files can be included. Files that are staged for upload can be removed by clicking the **Remove Attachment** button. All staged files are removed.
The files are not uploaded until the note is posted.

5 Click **Post** to add the note to the category and to upload any attached files.

**Note:** You cannot create a note that includes only attachments. The **Post** button is not enabled if you do not enter text for the note.

You can add more than one note to an alert or entity. All notes are listed separately and can be viewed individually.

Categories, notes, and attachments cannot be edited or deleted after they have been posted.

If necessary when you are creating a note, you can click **Cancel (×)** to reset the form. A confirmation window is displayed to enable you to continue with the cancellation. When the cancellation is confirmed, all of the text in all of the fields is removed, and all staged files are removed from staging. If a new category has been created, then the new category is removed. The **Post** button is disabled.

**Adding a Note to a Node**

If the ability to add notes to a node is enabled for your deployment, a **Notes** tab appears in the **Show Details** pane when you select a node on the **SAS Social Network Analysis** tab.

**TIP** A social network analysis diagram can contain many nodes, making it hard to identify which node has notes with the information that you want. It is more efficient to create a note for an alert in the Alert Details window and include information about the specific nodes there.

**CAUTION!** **Notes cannot be saved with nodes that have an ID with a length greater than 36 characters.** Attempting to attach and save a note to a node that has an ID of greater than 36 characters results in process failure. You must ensure that the node ID is 36 characters or less to avoid encountering this issue.

1 Select a node (with an ID of 36 characters or less) from the social network analysis diagram and select **Show Details** from the **Properties** pane.
The **Show Details** pane is displayed beneath the social network analysis diagram.

2 Enter the text of the note into the note field.

**Note:** The field must contain non-whitespace characters to cause the **Post** button to become enabled.

3 Do one of the following:

   a To create a new category for the note, select **New Category** from the category selector list.

      The New Category window is displayed.

      Enter a unique category name.

      **Note:** Category names are case insensitive. This means, for example, that the name *MYCategory* is the same as the name *mycategory*.

      Click **OK**.

      The new category name is displayed as the selected item in the category selector list.

      **Note:** During this process, you can change the name of the newly created category by selecting the **Rename** option in the category selector list. You cannot change the category name after the note has been posted.

   b To assign the note to an existing category, choose the name from the category selector list.

4 (Optional) Add one or more attachments by clicking the **Add Attachment** button and selecting the files that you want to attach. Click **Open** to stage the files for upload.

**Note:** To add multiple attachments, press Ctrl and select each file to be included (Microsoft Windows), or press Shift and then select the first and last file in a sequence of files to select them all. If necessary, consult your operating system documentation to learn about multiple-select operations specific to your environment.
Note: After files are staged for upload, no additional files can be included. Files that are staged for upload can be removed by clicking the **Remove Attachment** button. All staged files are removed.

The files are not uploaded until the note is posted.

5 Click **Post** to add the note to the category and to upload any attached files.

Note: You cannot create a note that includes only attachments. The **Post** button is not enabled if you do not enter text for the note.

You can add more than one note to a node. All notes are listed separately and can be viewed individually.

Categories, notes, and attachments cannot be edited or deleted after they have been posted.

If necessary when you are creating a note, you can click **Cancel (X)** to reset the form. A confirmation window is displayed to enable you to continue with the cancellation. When the cancellation is confirmed, all of the text in all of the fields is removed, and all staged files are removed from staging. If a new category has been created, then the new category is removed. The **Post** button is disabled.

---

**Locating Notes and Attachments**

By default, when you access a **Notes** tab, the **All Notes** category is selected. If multiple notes exist, they are ordered by date, generally with the date of the most recently posted note listed first. Depending on the number of notes, you might have to filter, sort, or search in order to locate a note of interest. Here are three methods that you can use to locate a note.

- Select a category.

  The **Category** pane lists the name of each category and the number of notes the category contains. When you select a category, the category name is highlighted, and the Notes area is filtered to display only those notes in that category.

  To locate a specific note within the indicated category, you can click the **Date** option to toggle a date sort of the notes, or you can scroll to locate the note of interest.
Sort all notes by date.

By default, the **All Notes** category is selected. This means that all notes, regardless of category association, are displayed. If **All Notes** is not highlighted, click **All Notes** to select this category.

To locate a specific note, click the **Date** option to toggle a date sort of all the notes. You can also scroll to locate the note of interest.

Use the search feature.

In the **Search** field at the top of the **Notes** tab, enter the text that you want to find. You can enter characters, symbols, or numeric values.

Regardless of which category is selected when you enter text, the search feature finds, for all categories, all of the notes that contain that text. The numbers next to the category names are updated to reflect the number of notes in each category that contain the entered text.

The application filters the list in the Notes area to display only the notes in the selected category that contain the entered text. Within each note, the matching text is highlighted in yellow. If the list is long, you can scroll to find the text in each note.

The following figure shows the result of searching for the word “accounts.”

**Figure 3.20  Example of Searching in the Notes Tab**

You can move from one category to another to display the notes in each category that contain the text string. You can select **All Notes** to display all the notes that contain the text string.
**TIP** If a note appears in the list, but you do not see any highlighted text, it might be because the note is collapsed. Click the **Show More** link to display the remaining text.

To clear the **Search** field, click the **Clear search results** button.

---

**Determining the Disposition of Alerts**

After analyzing the available transactional data, charts, graphics, and social network analysis diagrams, you must take some action on the alert. This action can be to indicate that no further investigation is required, or to assign a status that indicates progress toward taking action against the alerted entity (a person, patient, claim, and so on).

Depending on the configuration of your SAS Social Network Analysis Server and the permissions associated with your credentials, you might have access to **Disposition** menu items that launch a customized Alert Disposition window to enable you to process the alerts.
The availability of the **Disposition** menu items and the available states to use for determining the disposition of an alert are configurable.

To determine the disposition of an alert, from the Alerts window:

1. Select the check box associated with one or more alerts to which a disposition method will be applied.

   **TIP** You can select all of the alerts that are currently in view by selecting the check box in the header row of the Alerts window.

2. Select the appropriate disposition method from the drop-down list of choices.

   **Note:** The options and the associated window are configurable and might not resemble the examples displayed in this guide. It is also possible that your administrator has configured your deployment to disallow disposition of items from the Alerts window. It is also possible that your instance is configured to disallow disposition of more than one item at a time.
3 Apply the appropriate disposition criteria and methods using the Alert Disposition window.

4 Click the submit button, which can have any name, to execute the disposition method specified by the selections in the Alert Disposition window.

If configured by your solution administrator, a confirmation message is displayed in the Alerts window, and the Alert Disposition window closes.
Social Network Analysis

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Examining and Manipulating the Social Network Analysis Diagram

Accessing and Saving a Social Network Analysis Diagram

When your instance of the SAS Social Network Analysis Server is deployed, the administrator configures the solution for the business needs of the installation. This includes, but is not limited to, surfacing a social network analysis diagram to enable visualization of the entity interactions. The social network analysis diagram can be manipulated and managed to enable visualization of the important relationships and to add or delete nodes, links, and groups as needed. For an overview of this tab, see “Social Network Analysis Diagram” on page 38.

When the SAS Social Network Analysis tab is accessed for the first time for a specific alert or entity, a stored process creates the social network analysis diagram that is displayed. If your solution administrator enables the Save button, users can save certain changes to the diagram.

The modified social network analysis diagram is saved to the database. The social network analysis diagram that is created by the stored process is not changed. After changes are saved to the social network analysis diagram, whenever a user accesses the SAS Social Network Analysis tab, the diagram that is stored in the database is displayed. For more information, see “Overview of Diagram Features” on page 38.

Note: The application does not save changes to the social network analysis diagram per user. Rather, the social network analysis diagram that is saved to the database is shared by all users. Any changes that you save to the diagram are visible to other users who have access to the diagram. Conversely, any changes they save to the social network analysis diagram are visible to you.
Here are the issues related to accessing and saving a social network analysis diagram that should be considered.

- If lone nodes (that is, nodes that are not connected to any other node or group) are saved, these nodes are not retrieved when the social network analysis diagram is retrieved from the database.

- If hidden nodes are expanded, customized, and then removed before saving the social network analysis diagram, then all expanded node customizations are lost.

- A social network analysis diagram cannot be saved if it does not have at least one node connected to a link. For the user, this can be accomplished only by linking two nodes. Administrators can code a scenario that presents an apparent single node by making the to_node_id and the from_node_id point to the same node. In this instance, the social network analysis diagram can be saved, since the solution recognizes that the criteria has been met.

- If a lone group (that is, a group that is not connected to any other node or group) contains lone nodes and is saved, then when the social network analysis diagram is retrieved, the canvas shows a zoomed out view, and the group containing the lone nodes cannot be selected or otherwise managed.

When changes are saved to the social network analysis diagram, the next time the SAS Social Network Analysis tab is accessed, the diagram is retrieved from the database and is displayed as saved with the exceptions noted in the preceding list.

Note: Among the administrative customization features for SAS Social Network Analysis is the ability to configure a direct web address that leads to the details of a specific alert or entity. If you are accessing the network diagram from a direct web address such as this, then begin the process at Step 2 below.

To access the social network analysis diagram for an alert or entity:

1. In the Alerts window, double-click a row item to display the Alert Details window.
   
   Note: The tab displayed, either Details or SAS Social Network Analysis, is configurable. The default operation is that the Details tab is displayed when a row item is double-clicked from the Alerts window.

2. In the Alert Details window, select the SAS Social Network Analysis tab.
The social network analysis diagram is displayed.

The first time the SAS Social Network Analysis tab for an alert or entity is accessed, the social network diagram created by the stored process is displayed. If the social network analysis diagram has been saved, then the diagram that is stored in the database is displayed.

When you are working on the SAS Social Network Analysis tab you can choose which social network analysis diagram to display. To select a diagram:

1. On the toolbar, click the Open ( ) button.

2. Do one of the following:

   a. To display the social network analysis diagram that is created by the stored process, select From Stored Process.

   b. To display the social network analysis diagram that is stored in the database, select Last Saved to Database.

**Note:** If the Save button is not enabled for your deployment, you are still presented with the options to open a social network analysis diagram from either the stored process or from the database. In general, the diagram that is displayed when either of these options is selected is the one created by the stored process. In rare cases, if the save feature was disabled by your administrator after a modified social network analysis diagram was saved, then this modified diagram is displayed. If the modified diagram contains configuration issues, then an error is displayed.

To save a social network analysis diagram:

1. Access the SAS Social Network Analysis tab from the Alert Details window and perform network management tasks as needed.

2. From the toolbar, select the Save button ( ) to save the diagram to the solution database.

   A confirmation message is displayed at the top of the window.
Reviewing the Node Icon and Color Legend

In the social network analysis diagram, the legend is hidden from view by default. To view the legend, enable the **Legend** option from the **Show** menu. The node icons and colors that are shown in the legend are only the node icons and colors that are used in the social network analysis diagram that is displayed. Different diagrams can have different node icons and colors, so the legend can differ.

As you manage a social network analysis diagram, if you add nodes, then the new nodes are automatically included at the **Icons** tab of the Legend window.

**Note:** If the legend is open as you add nodes to the diagram, then you must close and reopen the legend to see the new nodes that have been added.

**Figure 4.1  Legend Node Icons Example**

![Legend Icon Example](image)

Legends can be moved around the screen for viewing convenience. To close the legend, click the **X** in the upper right corner.

Node icon colors might be used to indicate status, designate discrete properties, or indicate values within a continuous range. The use of colors is deployment specific. The choice and usage of colors are determined by the subject matter expert in the business domain and implemented by the solution administrator.

If the **Colors** tab has not been configured by your administrator, then a message indicating this is displayed at the tab instead.
Specifying the Social Network Analysis Diagram Layout

In the base installation, the social network analysis diagram layout has two possible modes, Tree and Springy. The Springy layout is a force-directed layout presented with an option of three levels of incremental optimization (400, 4,000, and 40,000) of the network. Depending on the size of your social network analysis diagram, the purpose for the current review, and the length of time the diagram takes to load, you might want to change the layout for your current session. Here are the layouts available.

<table>
<thead>
<tr>
<th>Layout</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tree Layout</td>
<td>Displays the hierarchical relationship of the nodes against the time line of activity.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If your data cannot be organized into a hierarchy, then a message to that effect is presented, and the diagram is not updated. For example, bisected diagrams cannot be displayed reliably in a Tree Layout view.</td>
</tr>
<tr>
<td>Springy (400)</td>
<td>This is the default layout option for the social network analysis diagram. It executes 400 iterations to produce the diagram.</td>
</tr>
<tr>
<td>Springy (4000)</td>
<td>This layout option executes 4,000 iterations to produce the diagram.</td>
</tr>
<tr>
<td>Springy (40000)</td>
<td>This layout option executes 40,000 iterations to produce the diagram.</td>
</tr>
</tbody>
</table>
Here are examples of the same data displayed using each of the layout options. As the examples illustrate, the increased iterations of the Springy layout force the diagram nodes to spread out more. In this context, iteration is defined as an incremental optimization of the graph layout such that link overlaps are minimized. Viewing the same data with different layouts might cause some relationships to become more or less obvious, depending on the layout selection. Again, this is because the goal of additional iterations (400, 4,000, 40,000) is to optimize the layout through node placement so as to minimize link overlapping.

**Note:** If your diagram does not have a significant number of nodes, the difference between the Springy layout modes might be imperceptible.

*Figure 4.3  Example of Tree Layout*
Figure 4.4  Example of Springy (400) Layout
Figure 4.5  Example of Springy (4000) Layout
If you change a layout, the change applies to the current session, and the diagram will return to the default layout when you exit from the session.

**TIP** If your administrator has enabled the save feature, then you can retain the layout as the new default layout by saving the social network analysis diagram.

- To change the layout of the current social network analysis diagram, select the **Run Layout** button on the toolbar, and select the option from the drop-down menu.

  If the layout that you select is supported by the data, then the social network analysis diagram updates to display the new layout.
The various layouts can be applied to bisected diagrams. The result of applying a Springy layout to a bisected diagram is a display of the force-directed layout that is not restrained by the links that were formerly present. This display is generally zoomed out to attempt to show the entire diagram. Because it is zoomed out, the diagram is usually very small, requiring you to zoom in (and recenter the diagram) to examine the relationships.

For example, if you create a bisected diagram displayed in a Springy layout, your diagram might resemble the following (before a layout is applied or reapplied).

**Figure 4.7  Example of Bisected Springy (400) Layout**
After a bisected diagram is created from a Springy layout, if the layout is reapplied (or if the diagram is saved and reopened), the displayed network diagram might resemble the following.

**Figure 4.8 Example of a Reloaded Bisected Springy (400) Layout**

The circle in the preceding display shows the relative size and placement of the nodes with the reapplied layout. To view the diagram relationships, you must zoom in to the diagram.

Here is an example of how the bisected diagram might appear after applying a Springy layout and then zooming in to review the relationships of the entities.
**Figure 4.9** Example of a Reloaded Bisected Springy (400) Layout with a Zoom Applied

**Note:** Since lone nodes are not saved, notice that the reopened network diagram contains only entities that are linked to other entities. The lone nodes are no longer part of the network diagram.

**Note:** Social network analysis diagrams retrieved by using the stored process option might contain nodes that appear to be lone nodes. Administrators can create a diagram with nodes that appear as if they are single nodes without a link. The ability to create this type of node that looks like a lone node is not available through the solution.
Controlling a Map View

Depending on how your deployment is configured, you might be able to superimpose the social network analysis diagram onto a preconfigured map view to enable geographic reference while reviewing and managing the interactions.

The following rules apply to the map view:

- Nodes must have a longitude and a latitude value in order to be displayed in the map view.
  
  In the map view, because nodes are pinned to their longitudinal and latitudinal positions, they cannot be moved. If more than one node has identical longitude and latitude values, the nodes, and any labels, are positioned on top of one another.

- You can view a list of nodes without a longitude and a latitude value by selecting the See Nodes link at the base of the map view.

- In the map view, groups are not displayed. Instead, the individual nodes, if they have longitude and latitude values, are shown. Within groups, you can view nodes that do not have longitude and latitude values by selecting the See Nodes link at the base of the map view.

- In the map view, hidden nodes cannot be expanded. To view hidden nodes on the map, the nodes must first be expanded at the non-map view, and then viewed in the map view.

- In the map view, entity properties (see “Viewing Node and Link Properties” on page 160), node details (see “Viewing Node and Link Details” on page 158), the search feature for visible nodes, and time line functionality are all valid functions.

Note: Although you can view the properties of a selected node, you cannot edit existing annotations or add new annotations to a node in the map view.
The following display shows an example map view along with the See Nodes window listing the nodes not displayed in the view.

*Figure 4.10  Map View Showing See Nodes Window*

To view the social network analysis diagram with a map in the background:

1. From the Alerts window, double-click a row item to display the Alert Details window.
   
   **Note:** The tab that is displayed, either Details or SAS Social Network Analysis, is configurable. The default operation is that the Details tab is displayed when a row item is selected from the Alerts window.

2. At the Alert Details window, select the SAS Social Network Analysis tab.
   
   If it is configured, the social network analysis diagram is displayed.

3. Select Map from the Show menu option on the toolbar.
   
   **Note:** This option is enabled only if the map feature can be invoked.
   
   The diagram is superimposed on a map. Many of the toolbar buttons are dimmed and inaccessible.
**TIP** Use the mouse wheel and keyboard arrow keys to zoom in and out and to move the map view. Here are the available controls:

- To zoom in using the mouse, rotate the mouse wheel away from you.
- To zoom out using the mouse, rotate the mouse wheel toward you.
- To move the map around (left, right, up, down) using the mouse and keyboard, press the Shift key and then click an area of the map view and drag in the desired direction (left, right, up, down).
- To zoom in using the keyboard, press the + key on the numeric keypad.
- To zoom out using the keyboard, press the – key on the numeric keypad.
- To move the map to the left (pan right) using the keyboard, use the right arrow keyboard key.
- To move the map to the right (pan left) using the keyboard, use the left arrow keyboard key.
- To move the map down (pan up) using the keyboard, use the up arrow keyboard key.
- To move the map up (pan down) using the keyboard, use the down arrow keyboard key.

To restore the diagram to the default non-map display, deselect the **Map** option from the **Show** menu on the toolbar. The diagram is redrawn without the map displayed in the background.

**Determining the Time Slider Visibility**

If it is configured for the current alert series, then a time slider is displayed at the bottom of the **SAS Social Network Analysis** tab by default. For details about the time slider and the associated elements, see “**Time Slider**” on page 65. The time slider can be displayed or hidden by enabling the associated menu option.
Here is a display showing the same network diagram with and without the time slider shown.

**Figure 4.11** Social Network Diagram Displayed with and without the Time Slider

To show or hide the time slider:

1. From the Alerts window, double-click a row item to display the Alert Details window.
   
   **Note:** The tab that is displayed, either Details or SAS Social Network Analysis, is configurable. The default operation is that the Details tab is displayed when a row item is selected from the Alerts window.

2. At the Alert Details window, select the SAS Social Network Analysis tab.
   
   If it is configured, the social network analysis diagram is displayed.

3. Do one of the following:
To hide the time slider for the current social network analysis diagram, deselect Time Slider from the Show menu option on the toolbar.

To display the time and scope controller for the current social network analysis diagram, select Time Slider from the Show menu option on the toolbar.

When the time slider is hidden, this state is valid for the current session only and only while at the current SAS Social Network Analysis tab or the associated Alert Details window. If you visit the Alerts window, reload the network diagram, or close and reopen the network diagram, then the time slider is re-displayed when you return to the network diagram.

Note: The time slider can be hidden or shown if it is enabled or if it is disabled (as a result of no valid dates or fewer than two valid dates).

Controlling the Location and Zoom of the Diagram or Nodes

Although the nodes of a social network analysis diagram can be managed individually, several features allow the entire diagram to be moved. During the course of working with the diagram, the diagram might become off-center or might not be displayed in a way that shows the important features in a focal-point area. Several buttons, if configured, enable you to have the diagram redrawn to reposition the items. Available features enable you to perform the following tasks:

- center the diagram
- move the diagram left, right, up, or down
- zoom in or out to view a specific node or diagram area

The toolbar buttons for controlling the location and zoom feature of the social network analysis diagram are listed in the following table.
### Center the Network Diagram

<table>
<thead>
<tr>
<th>Task</th>
<th>Toolbar Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center the network diagram</td>
<td></td>
<td>Use this control to center the network diagram in the display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> You can also move the entire diagram by holding down the Shift key while dragging the network diagram with the mouse pointer. This is generally helpful for relocating the network diagram quickly to enable viewing of nodes and relationships that might have been positioned outside of the immediate viewing area.</td>
</tr>
</tbody>
</table>

### Zoom in on the Network Diagram

<table>
<thead>
<tr>
<th>Task</th>
<th>Toolbar Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoom in on the network diagram</td>
<td></td>
<td>Zoom in on the network diagram. The zoom is executed for each press of the button until maximum size is reached.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> You can also place your mouse pointer over an entity or area and roll the mouse wheel away from you to zoom in on the entity or area.</td>
</tr>
</tbody>
</table>

### Zoom out on the Network Diagram

<table>
<thead>
<tr>
<th>Task</th>
<th>Toolbar Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoom out on the network diagram</td>
<td></td>
<td>Zoom out on the network diagram. The zoom is executed for each press of the button until minimum size is reached.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Note:</strong> You can also place your mouse pointer over an entity or area and roll the mouse wheel toward you to zoom out on the entity or area.</td>
</tr>
</tbody>
</table>

### Rearranging the Diagram Nodes

Diagram nodes can be moved to allow the best possible experience for viewing and analyzing the displayed information.

To move a node, drag the node to the new location.

**Note:** The node that is being dragged will rest on top of any nodes that it is dropped onto. So dragging node A to node B, for example, will place node A on top of node B. Dragging node B to node A will place node B on top of node A. The layered placement of nodes when dragging and dropping is not time dependent. This means that regardless of the order of the appearance of the node on the time line, the order of the layers is based on where they are dragged, and not on which node appeared before the other.
To move more than one node at a time, either use the mouse to lasso the nodes, or select multiple nodes by using holding down the Ctrl key and clicking to select the nodes. Then drag the collection of nodes to the new location.

Exploring and Managing Network Entities

The social network analysis diagram of SAS Social Network Analysis Server is constructed of identified entities that include nodes and links. Nodes can be grouped together to create an entity that represents two or more discrete entities. Links generally join nodes or groups to other nodes or groups. Nodes and links are created and edited by using the Graph Entity Wizard or the Edit Entity window. Nodes can be included in a group by using the Group Nodes toolbar button. Nodes and links can include annotations or labels to help understand the purpose of the entity.

Viewing Node and Link Details

Depending on how your administrative team has configured your deployment, you might have details associated with specific nodes or links in your network view. A table of node or link details might appear on a tab beneath the time and scope controller.

To view the Show Details pane with details related to an indicated node or link, double-click a node icon or link. The Properties pane opens and the Show Details pane expands at the bottom of the window, as configured by your administrator.

**TIP** To view node or link details, you can also select a node icon or link, expand the Properties pane, and then click the Show Details button in the Properties pane.

After the Show Details pane is expanded, clicking a new node or link repopulates the pane with information pertaining to the newly selected node or link. Group details are not available, and clicking a group hides the Show Details pane. Neither properties nor details are available when multiple nodes or links are selected.
Here is a sample window showing an expanded **Show Details** pane with details related to the selected node Chiropractor.

**Figure 4.12  Example Window Showing Expanded Show Details Pane**

The **Show Details** pane is fully customizable.

**TIP** To close the **Show Details** pane, click the X at the top right side of the pane.

If there is tabular data displayed in the **Show Details** pane, the tabular data is searchable. As shown in **Figure 4.13**, when you search for the word “chiropractor” at the **SAS Social Network Analysis** tab, nodes containing a label meeting the criteria are highlighted, and row data in the table is excluded from the list if the row does not contain the search term. Hidden nodes must be expanded in order to be included in the search. If your administrator has enabled the notes feature and configured notes to be
available in the social network analysis diagram, then notes, including attachments, can also be added to a node. See “Adding a Note to a Node” on page 131.

Figure 4.13  Example Window Showing Search Criteria Highlighting and Exclusion

Viewing Node and Link Properties

All nodes and links of a network diagram can include properties to identify or specify the physical parameters of the nodes and links.

To view the properties associated with a node or a link:

1  Select a node or a link from the social network analysis diagram.

TIP  Because the narrow width of links in most non-zoomed views makes them difficult to select, you might have to zoom in on the link to select it.
2. Expand the **Properties** pane to view the associated properties.

**TIP** If you double-click a node or a link, the **Properties** pane expands automatically.

*Figure 4.14  Example of Node and Link Properties Displayed*

The properties associated with the indicated node or link are displayed in the **Properties** pane. Annotations (for a node) and labels (for a link) can be added or edited through the field of the **Properties** pane. You must click **Apply** to save the new or modified text for a node or a link.

**Highlighting Nodes and Links of Interest**

If your administrator has implemented the **Filters** pane, then you can impose filter criteria that highlights nodes and links that match the criteria. For a detailed discussion of network highlighting using filter criteria, see “Social Network Filters Pane: Network Highlighting” on page 41.

To highlight nodes and links meeting specified criteria, adjust the filters in the **Filters** pane to refine the filter criteria.
In Figure 4.16, for example, the range slider for the Overall Rank filter has been adjusted to reflect a range of 0–355, and the time slider handle indicates an end date of February 10, 1977. As a result, the social network analysis diagram displays the appropriate nodes and links as highlighted to indicate that they meet the criteria. The nodes that are inactive during this time period, shown as dimmed nodes, are also highlighted if they meet the criteria.

**Figure 4.15** SAS Social Network Analysis Tab with Date-Adjusted Filtered Overall Rank Criteria Highlighted in Diagram

Here is an example of a node that represents a group. There is no limit to the number of groups that might be displayed in the social network analysis diagram.

**Figure 4.16** Group Icon

**Viewing Grouped Node Properties**

Here is an example of a node that represents a group. There is no limit to the number of groups that might be displayed in the social network analysis diagram.
A grouped node can contain two or more nodes. By reviewing the properties of a group, you can see a list of all nodes in the group. For groups viewed in the standard view (as opposed to the map view), you can view and modify annotations associated with a node without expanding the group. Nodes that were added to the network as part of the network generation process (as opposed to manual addition) also show name-value pair information, as appropriate.

To view grouped node properties, at the **SAS Social Network Analysis** tab:

1. Expand the **Properties** pane.
2. Click a group.
   - The **Properties** pane displays a list of nodes included in the selected group. The first listed node is generally selected.
3. Select the node for which you want to view the associated properties.

*Figure 4.17  Example of Node Properties within a Group*

**TIP** Annotations related to the selected node can be added or modified through the **Annotation** field. Clicking **Apply** saves the annotation with the node.

**Note:** If a grouped node in the **Properties** pane is represented by more than one icon based on specified change dates, then the icon shown in the **Properties** pane reflects
the icon in view when the group was selected. The icons are not updated in real time. If you adjust the time line while the Properties pane is showing group icons, you must collapse and then re-expand the Properties pane to see the updated icons.

Expanding and Removing Hidden Nodes

When the solution administrator configures the network diagrams associated with alerts, hidden nodes can be identified. Hidden nodes can be managed and the properties can be updated through the interface, but they cannot be created using the interface.

When a node is hidden, the visible node to which the hidden node is linked displays a plus sign (⁺) at the bottom of the node to indicate that there is additional information that can be displayed.

A hidden node is a node that resides in the database and is retrieved and placed on the canvas when you click the plus sign.

Since the revealed nodes do not live on the canvas originally, when they are retrieved from the database, the network diagram then contains new information, and is rendered in an unsaved state. A copy of the nodes remains in the database.
With the source node expanded to reveal hidden nodes that are placed on the canvas, you can perform several tasks, each resulting in a different outcome for the network diagram and the database nodes.

Here are descriptions of the various tasks and outcomes.

- **Expanded node automatic removal.**
  
  With the hidden nodes expanded and placed on the canvas, you can visit the Alerts window or exit the solution. If you fail to save the network diagram before navigating away, then when you access the network diagram again, the hidden nodes will not be on the canvas.

  If the intention is to retain the expanded nodes on the canvas, then make sure that you save the network diagram before navigating away. The nodes reflected in the node database are an exact copy of those on the canvas.
- Expanded node manual removal.

With the hidden nodes expanded and placed on the canvas, several properties can be added or managed. Selecting the **Remove Expanded Nodes** option results in a rendering of the network diagram displayed with the nodes re-hidden.

Any changes made to the revealed nodes that are not saved before removing them from the canvas are lost. Removed nodes are not deleted from the database; they are removed from the network diagram canvas.

- Modify properties of revealed node.

Using the Edit Entity window, you can update various properties associated with revealed nodes.
To retain updates made to revealed nodes, you must save the network diagram after making changes to the properties. The new properties are then associated with the revealed nodes and the updated nodes are saved to the node database.

The updated nodes on the canvas replace the original nodes in the node database.

**TIP** If you inadvertently save the social network analysis diagram, you can display the social network analysis diagram created by the stored process by clicking the **Open** button and then selecting **From Stored Process**.

You can either save the diagram with the new assets or you can remove the new assets to return to the previous state of the diagram.
To expand hidden nodes:

1. Locate a non-group node displaying a plus sign at the bottom.

2. Click the plus sign at the bottom of the node.

   Hidden nodes and associated links are revealed and appear in the social network analysis diagram.

   **Note:** You must save the diagram to save the changes that you made to the node or link.

3. To save your updates, click **Save**.

   A confirmation message is displayed at the top of the window.

You can remove (re-hide) nodes that have been expanded.

**Note:** If you updated parameters that are associated with a node (such as icon, border, and so on), these changes are lost if you remove the nodes before saving. Consider grouping the nodes to avoid losing your customizations.

To remove (or re-hide) the revealed nodes:

- Select the **Remove Expanded Nodes** button from the social network analysis diagram toolbar.

  The nodes that were expanded last are removed to conceal the originally hidden nodes.

**TIP** If you expanded more than one set of hidden nodes consecutively, then you can click the **Remove Expanded Nodes** button more than once to remove the other expanded nodes in sequence.

The following rules apply to removing expanded nodes:

- When multiple nodes have been expanded, clicking the **Remove Expanded Nodes** button removes the nodes in the reverse order of the original expansion process.
If a node in the collection is added to a different group before you attempt to remove the original collection, then the **Remove Expanded Nodes** button is inaccessible, and this procedure cannot be completed.

If a node in an expanded collection is deleted before you attempt to remove the original node collection, then the **Remove Expanded Nodes** button is inaccessible and this procedure cannot be completed.

Hidden nodes are not included in search results.

### Creating a Node Group

Node groups can be created by selecting nodes that are to be grouped together and represented by a single node and then clicking the **Group Nodes** button on the toolbar. To group nodes, perform the following steps:

1. **Click a node that will be included in the group.**
   
   A border is displayed around the item to indicate that it is successfully selected.

2. **Hold down the Ctrl key and click each of the remaining nodes that will be included in the group.**
   
   Each selected node is displayed with a border surrounding it to indicate that it is selected.

   **TIP** To select nodes, you can also use the mouse to lasso the nodes. When you release the mouse button, those nodes encircled will have a black border to indicate that they are selected. You can use this method in conjunction with holding down the Ctrl key and clicking to add more nodes to the selection.

   **Note:** Groups cannot be nested. This means that if you have an existing group, you cannot add additional groups or nodes to an unexpanded group, and you cannot add groups to groups. Selecting a group and attempting to include an additional group or node within the existing group results in a warning message being displayed.

3. **Select **Group Nodes** ( ) to group the nodes into a single icon.**
A link is created between the new group and one or more existing nodes. The group links are system-created links, and they cannot be edited or deleted. To remove a group link, delete or ungroup the group.

**Figure 4.18  Example Showing a Black Border on Selected Nodes**

The nodes are included in the new group and the Group icon is used to represent the group.

**TIP** To add one or more nodes to an existing group, you must first expand the group and then select all nodes to be included in the group. Once all of the nodes are selected, click the **Group Nodes** button to create a new group containing all of the nodes indicated.

### Ungrouping and Regrouping Nodes

Nodes representing groups are displayed as shown in **Figure 4.16 on page 162**, including the plus sign (⁺) at the bottom of the icon to indicate that there is information that is not displayed. Clicking the plus sign expands the group to show the contained nodes.
To ungroup the group:

- Click the plus sign at the base of a Group icon.

  The nodes in the group are displayed, and the graph might be redrawn to better display the diagram.

To regroup nodes easily:

- Select **Regroup Nodes** from the social network analysis diagram toolbar.

  The nodes that were ungrouped last are regrouped.

  The following rules apply to regrouping nodes:

  - When multiple groups have been expanded, selecting **Regroup Nodes** collapses the groups in the reverse order of the original expansion process. So, for example, if groups one, two, and three are expanded (in that order), then the regrouping occurs in the order of group three, group two, and then group one.
  
  - If a node in the group is included in a new group before you attempt to regroup the original group, then the **Regroup Nodes** button is inaccessible and this procedure cannot be completed.
  
  - If a node in an expanded group is deleted before you attempt to regroup, then the **Regroup Nodes** button is inaccessible and this procedure cannot be completed.

**Editing Existing Nodes and Links**

Most of the parameters associated with nodes and links can be updated. The edited information replaces the previous information.

**Note:** Links joining a group to a node cannot be edited. This link is a system-created link.

To edit a node or a link:

1. Select the node or the link from the social network analysis diagram.
Because the narrow width of links in most non-zoomed views makes them
difficult to select, you might have to zoom in on the link to select it.

2. Choose **Edit Entity** (edit icon) from the toolbar.

   The node- or link-specific Edit Entity window is displayed.

3. Make the required updates and click **OK** to return to the diagram.

   **Note:** You must save the diagram to save the changes that you made to the node or link.

4. To save your updates, click **Save** (save icon).

   A confirmation message is displayed at the top of the window.

### Linking Existing Nodes

When reviewing a social network analysis diagram, you might notice a potential connection that is not linked automatically by the solution. You can add links manually to indicate a connection between nodes.

To add a link between existing nodes:

1. Select the nodes to which a link will be added and click **Add Link** (link icon) from the social network analysis diagram toolbar.

   The Graph Entities Wizard appears.

   For additional information about the link properties in the Graph Entities Wizard, see Table 2.7 on page 62.

2. Specify the parameters for the link that joins the nodes.

3. After all the parameters have been specified, click **OK** to continue.

   The new link appears in the diagram connecting the indicated nodes.
**Note:** You must save the diagram to save the changes that you made to the node or link.

4 To save your updates, click **Save**.

A confirmation message is displayed at the top of the window.

**Annotating or Viewing the Annotation of a Node**

For nodes that are generated by the system as well as for nodes that you add to the diagram, annotations can be included to provide additional information. The node annotations are displayed in the **Properties** pane when the node is selected.

Node annotations can be created as text or, if formatting is required, the annotation can be created using Markdown syntax. Markdown syntax enables you to format text and to include links and images without having to learn HTML syntax.

**Table 4.1  Valid Text and Markdown Syntax for Node Annotations**

<table>
<thead>
<tr>
<th>Formatting</th>
<th>Implementation Description</th>
<th>Implementation Example</th>
<th>Rendered Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard text</td>
<td>Enter text without any markup formatting.</td>
<td>The cat jumped over the moon.</td>
<td><img src="image" alt="The cat jumped over the moon." /></td>
</tr>
</tbody>
</table>
| Bold text | - Double-underscore before and after the text  
- Double-asterisk before and after the text | The __cat jumped__ over the moon.  
The **cat jumped** over the moon. | ![The cat jumped over the moon.](image) |
| Italic text | - Underscore before and after the text  
- Asterisk before and after the text | The _cat jumped_ over the moon.  
The *cat jumped* over the moon. | ![The cat jumped over the moon.](image) |
To annotate an existing node or to view its annotation:

1. Identify the node that you want to annotate or whose annotation you want to view.

2. Do one of the following:
   - Select the node and click the **Expand Properties Pane** icon to reveal the **Properties** pane.
The Properties pane contains an unlabeled Annotations field.

- Double-click the node to reveal the Properties pane.
  
  The Properties pane contains an unlabeled Annotation field.

- Click the node and then click the Edit Entity button ( ) from the toolbar.
  
  The Edit Entities window is displayed, showing the Annotation field.

The Annotation field enables you to add an annotation or to view or edit an existing annotation.

**Note:** The Annotation box accepts text-only entries and valid Markdown syntax, as listed in Table 4.1 on page 173.

**Note:** The maximum characters that can be entered into the Annotation field is 255, including spaces, Markdown syntax, and punctuation.

3 Enter text for the annotation or modify existing annotation text.

4 Do one of the following:

  - If you added or edited the annotation at the Properties pane, click Apply to save your changes.
  
  - If you added or edited the annotation at the Graph Entities Wizard, click OK to save your changes.

  **Note:** You must save the social network analysis diagram to save the changes that you made to the node or link.

5 To save your updates, click Save ( ).

  A confirmation message is displayed at the top of the window.

### Labeling or Viewing the Label of a Node

For nodes that are produced by the system as well as for nodes that you add to the diagram, labels can be added to provide additional information. The node labels are displayed in the Graph Entities Wizard (when adding a node) and the Edit Entities
window (when editing a node). In addition, if the option to show node labels is enabled through your user preferences, then the labels are visible on the network diagram. Node labels are searchable.

Node labels are created as text-only entries. Node labels do not support formatting or the Markdown syntax. The information included as a node label represents the text that is queried when a search is performed.

**Note:** If the show labels option is enabled for the network diagram, then the node labels are displayed on the network diagram. The node labels cannot be edited at the diagram. Node labels are searchable, and matched searches result in highlighted nodes.

To label an existing node or to view its label through a solution window:

1. Identify the node that you want to label or whose label you want to view.

2. Select the node and then click **Edit Entity** from the toolbar.

   The **Label** field enables you to add a label or to view or edit an existing label.

   **Note:** The **Label** field for nodes accepts text-only entries. Formatting and Markdown syntax are not supported for node labels.

3. Enter text for the node label or modify existing node label text.

4. Click **OK** to save your changes.

   **Note:** You must save the social network analysis diagram to save the changes that you made to the node.

5. To save your updates, click **Save**.

   A confirmation message is displayed at the top of the window.

### Labeling or Viewing the Label of a Link

For links that are produced by the system as well as for links that you add to the diagram, labels can be added to provide additional information about a link. The link labels are displayed in the **Properties** pane when the link is selected.
Link labels can be created as text or, if formatting is required, the label can be created using Markdown syntax. Markdown syntax enables you to impose text formatting and to include links and images without having to learn HTML syntax.

**Table 4.2  Valid Text and Markdown Syntax for Link Labels**

<table>
<thead>
<tr>
<th>Formatting</th>
<th>Implementation Description</th>
<th>Implementation Example</th>
<th>Rendered Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard text</td>
<td>Enter text without any markup formatting.</td>
<td>The cat jumped over the moon.</td>
<td><img src="image" alt="Rendered Example" /></td>
</tr>
<tr>
<td>Bold text</td>
<td><img src="image" alt="Double-underscore before and after the text" /> <img src="image" alt="Double-asterisk before and after the text" /></td>
<td>The <strong>cat jumped</strong> over the moon. The <strong>cat jumped</strong> over the moon.</td>
<td><img src="image" alt="Rendered Example" /></td>
</tr>
<tr>
<td>Italic text</td>
<td><img src="image" alt="Underscore before and after the text" /> <img src="image" alt="Asterisk before and after the text" /></td>
<td>The <em>cat jumped</em> over the moon. The <em>cat jumped</em> over the moon.</td>
<td><img src="image" alt="Rendered Example" /></td>
</tr>
<tr>
<td>Strikethrough</td>
<td>Double-tilde before and after the text</td>
<td>The <del>cat jumped</del> over the moon.</td>
<td><img src="image" alt="Rendered Example" /></td>
</tr>
<tr>
<td>Formatting</td>
<td>Implementation Description</td>
<td>Implementation Example</td>
<td>Rendered Example</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Image display</td>
<td>Complete URL to the image. Alternative text can be included.</td>
<td><img src="http://www.sas.com/image/logo.jpg" alt="SAS Logo" /></td>
<td><img src="http://www.sas.com/image/logo.jpg" alt="SAS Logo" /></td>
</tr>
<tr>
<td></td>
<td>Note: The optional alt text is displayed if the indicated image is missing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Text link</td>
<td>Complete URL preceded by bracketed clickable text</td>
<td>Visit <a href="http://www.sas.com">SAS</a> on the web.</td>
<td><img src="http://www.sas.com" alt="Visit SAS on the web." /></td>
</tr>
<tr>
<td>HTML formatting</td>
<td>HTML formatting is not supported. Any HTML markup included in the text is displayed as text and not rendered as HTML formatting.</td>
<td>The <code>&lt;strong&gt;cat jumped&lt;/strong&gt;</code> over the moon.</td>
<td><img src="http://www.sas.com" alt="The &lt;strong&gt;cat jumped&lt;/strong&gt; over the moon." /></td>
</tr>
</tbody>
</table>

To label an existing link or to view its label:

1. Identify the link that you want to label or whose label you want to view.

2. Do one of the following:
   - Select the link and click the **Expand Properties Pane** icon to reveal the **Properties** pane.
     The **Properties** pane contains an unlabeled **Label** field.
   - Double-click the link to reveal the **Properties** pane.
     The **Properties** pane contains an unlabeled **Label** field.
Click the link and then click **Edit Entity** from the toolbar.

The Edit Entity window is displayed, showing the **Label** field.

The **Label** field enables you to add a label or to view or edit an existing label.

**Note:** The **Label** field accepts text-only entries and valid Markdown syntax, as listed in Table 4.2 on page 177.

**Note:** The maximum characters that can be entered into the **Label** field is 255, including spaces, Markdown syntax, and punctuation.

Enter text for the label or modify existing label text.

Do one of the following:

- If you added or edited the label at the **Properties** pane, click **Apply** to save your changes.
- If you added or edited the label at the Graph Entities Wizard, click **OK** to save your changes.

**Note:** You must save the social network analysis diagram to save the changes that you made to the link.

To save your updates, click **Save**.

A confirmation message is displayed at the top of the window.

### Adding New Nodes and Links

You can add nodes to the social network analysis diagram by invoking the Graph Entities Wizard from the toolbar **Add Node** button. When adding a node to a social network analysis diagram, you specify the features of the node as well as the features of the link connecting the node to the diagram. This feature also enables you to add an annotation during new node creation or after the node is added to the diagram.

You can also add a link between two existing nodes by invoking the Graph Entities Wizard from the toolbar and selecting the **Add Link** button.
To add a new node and link to a diagram:

1. Select a node to which you want to link the new node.

2. From the main menu, select **Add Node**.

   The Graph Entities Wizard is displayed, enabling you to specify the node parameters as well as the link parameters. From the **Add Node** tab of the Graph Entities Wizard, you can also indicate that a specific node is to change one or more characteristics on a specific date within the link period. (See “Adding Change Dates to Nodes” on page 181 for additional information.)

3. Specify the parameters for the node and for the link that joins the nodes, taking into consideration that node labels represent searchable text as performed through the **Find** field at the network diagram.

   **CAUTION!** Using more than 36 characters for the node Id will prevent investigative notes from being attached to the node through the Notes tab.

   If you do not accept the default value for the node Id and instead enter a new value, make sure that the Id is 36 characters or fewer. If you use the **Notes** tab to add an investigative note to a node with an Id length greater than 36 characters, you will not be able to save the note with the node.

4. After all the parameters have been specified, click **OK** to continue.

   The new node and associated link are added to the diagram and are linked to the originally selected node.

5. At the diagram, drag the new node to your location of choice.

   **TIP** If additional links are needed between the new node and existing nodes, use the **Add Link** button to add additional links to other nodes. See “Linking Existing Nodes” on page 172.

**Note:** You must save the diagram to save the changes that you made to the node or link.

6. To save your updates, click **Save**.
A confirmation message is displayed at the top of the window.

To add a new link between existing nodes:

1. Select the two nodes between which you want to include a new link.
2. From the main menu, select Add Link ( ).
   The Graph Entities Wizard is displayed, enabling you to specify the link parameters.
3. Specify the parameters for the ink that joins the selected nodes.
4. After all the parameters have been specified, click OK to continue.
   The new link is added to the diagram between the originally selected nodes.
   **Note:** You must save the diagram to save the changes that you made.
5. To save your updates, click Save ( ).
   A confirmation message is displayed at the top of the window.

**Adding Change Dates to Nodes**

During node creation (see “Adding New Nodes and Links” on page 179), or when you edit an existing node afterward (see “Editing Existing Nodes and Links” on page 171), you can indicate specific dates at which a change occurred. Change dates can also be accompanied by the inclusion of an icon symbol and node attributes that differ from the original.

To indicate a change date for a node:

1. At the Graph Entities Wizard or at the Edit Entity window, locate the **Change Dates** area.
2 Ensure that the initial state of the node (color, border color, and icon) is correct.

3 At the **Change Dates** area, click **Add Row** to insert a new row beneath the default row.

4 At the new row, indicate the change date as well as the symbol background color (Color), border color, and icon of the node for the specific date.

5 If additional change dates are required, repeat the preceding two steps to add and customize the nodes for a specific date.
Click **OK** to save your changes and return to the network diagram.

In the network diagram, as the time slider reaches the specified change dates, the node changes to represent the attributes indicated on those change dates. This is true in the standard network view as well as in the map view (if it is enabled for your deployment).

**Deleting Nodes, Links, and Groups**

Occasionally you might want to remove a node or group from view or a link from specific nodes. Depending on your rights and the solution configuration, you might be able to remove a node, group, or a link (delete it from the diagram). If you delete a node, group, or a link, it cannot be recovered.

**Note:** You cannot delete a group link directly. A group link is deleted when the connected node is deleted or when the group is expanded (ungrouped).

**Note:** If a node is deleted from within a group, then you will not be able to use **Regroup Nodes** to regroup the nodes.

To delete a node, link or group:

1. Locate the node, link, or group that you want to delete and select it on the social network analysis diagram.

   **Note:** If you are deleting multiple nodes or links, you can select the items and delete them at the same time. Either lasso multiple items or hold down the Ctrl key and click to select the items. These two methods can be used together. You cannot delete all items from the network diagram; at least one link with connecting nodes must remain.

   **Note:** You can delete groups and entities from a network, but the network must contain at least one node and one link. In most cases the minimal network will consist of two nodes connected by one link. However, a special network with only one node and one link can be created by the administrator through a stored process by linking a node to itself. It is not possible to create such a network through the user interface. You cannot select a link that is created by the solution and attached to a group. Therefore, you must delete the group directly (and the link is deleted by association).
Note: If you create a bisected network by deleting nodes, and then save the diagram, lone nodes are not saved or redisplayed when the network diagram is retrieved.

2 With the node, group, or link selected, click **Delete Entity** from the toolbar.

   The node or link is removed from the diagram.

   **Note:** You must save the diagram to save the changes that you made to the node or link.

3 To save your updates, click **Save**.

   A confirmation message is displayed at the top of the window.
Other documents related to the SAS Social Network Analysis Server include the following:

- **SAS Social Network Analysis Server: Administration Guide**
  The target audiences for this document are business analysts and scenario administrators. The document contains information related to the administration of SAS Social Network Analysis Server.

- **SAS Social Network Analysis Server: Installation and Configuration Guide**
  This document provides installation and configuration information, including post-installation and migration guidance, for SAS Social Network Analysis Server. The target audience for this document includes SAS administrators, database administrators, and system administrators using SAS Social Network Analysis Server.

For a complete list of SAS publications, go to sas.com/store/books. If you have questions about which titles you need, please contact a SAS Representative:

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