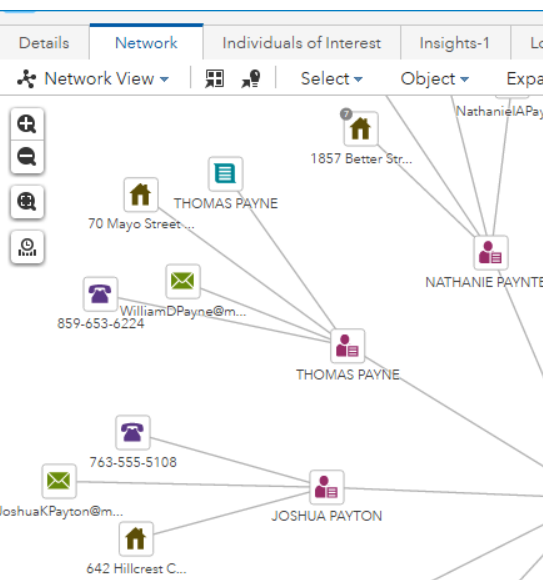


SAS® Visual Investigator on SAS® Viya™

Fast and effective intelligence analysis and investigation



Providing the full power of SAS advanced analytics, our solution has an interactive interface for investigators to conduct visual and directed investigations. This self-service approach can reach throughout your organization so that users can perform any number of activities, such as simple data import, point-and-click exploratory analysis and access to third-party systems.

Streamlined deployment options and IT administrative functions allow you to evolve the solution as your user community changes. To adapt to market conditions and organizational requirements, your operational owners can tailor the solution to their needs and specific business objectives without expensive customization.

Features include text and geospatial search and analysis, data visualization, interactive network building, entity generation and transaction analysis. With these capabilities, you can proactively identify areas needing further investigation, respond to anomalous and suspicious activity as it is happening, and address the demands of regulatory compliance and internal audits.

What does SAS® Visual Investigator on SAS® Viya™ do?

SAS Visual Investigator is a cloud-native investigation and incident management platform that combines large, disparate, structured and unstructured data sources. Users can define, create, triage and manage alerts, perform detailed investigations, manage cases and customize the platform to meet their individual and organizational needs.

Why is SAS® Visual Investigator on SAS® Viya™ important?

Dealing with mounting complexity, intelligence analysts need to boost their efficiency to make sense of the velocity of alerts and far-reaching networks. If your organization needs to uncover hidden behaviors and activities, you can perform deep investigations with SAS Visual Investigator and share the results across your organization for optimal team coordination.

For whom is SAS® Visual Investigator on SAS® Viya™ designed?

SAS Visual Investigator is designed for banks and financial institutions looking for internal fraud or compliance risks; national security and law enforcement organizations looking for terrorism and criminal activities; manufacturing plants and utility companies needing to identify breakages and outages; and hospitals and public health organizations guarding against disease outbreaks.

When all your data is easily accessible, well-governed and up-to-date, intelligence analysts can gain a holistic view of people, relationships, networks, patterns, events, trends and anomalies to keep your organization one step ahead.

Benefits

- **Tailor the configurable platform to each user's requirements without expensive customization.** SAS takes an open, hub-and-spoke, data-driven approach so you can configure solution capabilities to respond to new trends and business problems, access new data sources, and expand the use of the solution across your business as requirements change.
- **Empower your users and increase efficiency.** Our solution automates much of the data management, triage and workflow to streamline your operations and help analysts make decisions quickly. With an easy-to-use interface in a single solution, users can import data, perform advanced searches, and apply temporal or geospatial methodologies while investigating business problems or search results.
- **Harness data in place.** Unlike traditional approaches that require the added expense of data models, ETL, on-site engineers and ad hoc customizations, the SAS approach takes advantage of your data where it lives - regardless of size, structure and format. To meet your unique business challenges, you can tailor the solution so that large numbers of intelligence analysts can actively analyze and make decisions from deep investigational searches on data that may reside throughout your organization.
- **Minimize your total cost of ownership through cloud deployment options and configuration.** The SAS Visual Investigator architecture is engineered to run your analytics processing wherever you need; you can deliver key functions with your preferred deployment model.
- **Understand deep analytical insights that are presented simply.** Analysts shouldn't be expected to know the difference between a p-value and a t test. We deliver descriptive and understandable reasons why an event has occurred or an alert is generated to broaden the reach of analytics throughout your organization.

Overview

SAS Visual Investigator is a simple-to-use solution to identify, investigate and govern the end-to-end life cycle of an investigation, search or inquiry. The span of capabilities provides organizations with the ability to acquire, analyze, identify, make decisions, and act on events of interest and suspicious activities. Designed with productivity and efficiency in mind from the start, SAS Visual Investigator provides:

- **Surveillance and alert creation:** Analysts can author scenarios to uncover anomalous events for triage.

- **Alerting and event management:** Intelligence analysts can investigate and disposition alerts and events; initiate cases for deeper investigation; and actively route or make decisions on events of interest as they occur, virtually eliminating information lag.
- **Streamlined alert administration and workflow:** Managers and domain experts can prioritize analyst activities, monitor productivity and effectiveness, and adapt surveillance strategies to new and emerging patterns.

- **Agility to adapt to changing business needs:** Without any custom interfaces to develop, administrators can quickly design and deploy new intelligence assets using an interactive, drag-and-drop page builder.
- **Targeted investigations:** The Insights module is an easy-to-use interface that captures views of the workspace and search visualizations (e.g., maps, time-lines, grids and networks), as well as notes and images documented by the analyst. Dynamic workspaces provide analysts with the ability to gather pertinent data and interact with visualization components as part of an investigation.
- **Flexible deployment options:** Choose cloud, on-site or multitenancy (e.g., to segregate by subsidiary, LOB or country) deployments to help lower costs.

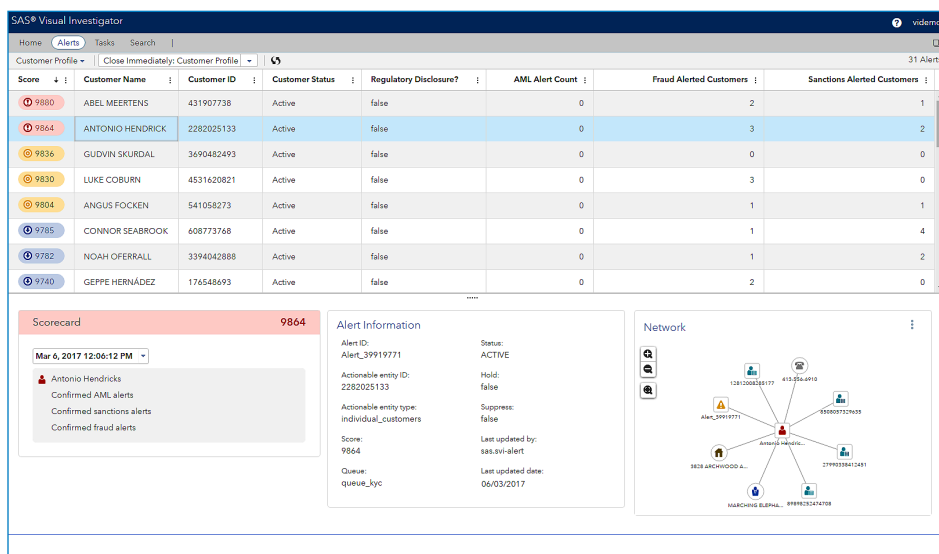


Figure 1. With queues and strategies, you can prioritize alerts so that they're resolved in a timely fashion. Visualization options broaden investigator understanding of the alert's context and immediacy.

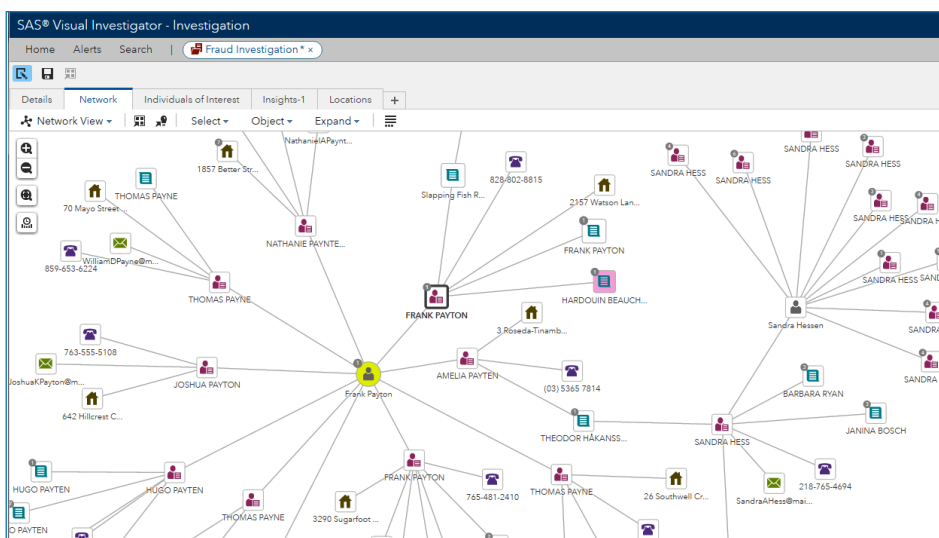


Figure 2. Analysts can view entire social networks, expand or trim the network as required, explore relationships, and manipulate the network layout.

Capabilities

Search and discovery

Perform free-text or geospatial searches across all data (from internal and external sources). Then filter and visualize search results in different ways to aid investigations and discover pertinent information about entities, resolved entities and relationships. Initiate actions such as adding results to investigation workspaces for further analysis.

Features include:

- **Free-text search:** Discover data that is pertinent to an investigation with powerful search capabilities.
- **Search filters/facets:** Refine search results using interactive filters and facets.
- **Form search:** Perform a field-based search for a specific entity type, such as first name and surname for an individual or registration/license plate number to find a specific vehicle.
- **Inspector:** Preview and refine details of search results interactively.
- **Selection tools:** Highlight and collate objects for further investigation.

Key Features

Surveillance

Using an intuitive user interface, you can author scenarios generating alerts in alert management queues for analyst review. For advanced SAS users, the ability to create rules using SAS is available.

- Author scenarios using rule builder, decision table or SAS code.
- Restrict defined scenarios for parameter adjustment by role.
- Scenario testing.
- Creation of score based on scenario(s).
- Batch or on-demand execution.

Alert and event management

SAS provides an alert management function where alerts and events of interest can be triggered through the deployment of advanced analytic models, business rules, scenarios using the included surveillance capabilities, or integrating with third-party surveillance systems (communicating back and forth). The alerts and event management capabilities enable you to:

- Prioritize alerts.
- Visualize alerts in different views to gain context.
- Enhance alerts by adding entities and integrating and connecting data.
- Escalate by routing alerts or changing their priorities.
- Create manual alerts.
- Manage multiple alert domains.
- Designate an alert to prompt a deeper investigation.

Entity analytics

SAS is set apart by interactive entity resolution capabilities that help analysts get the most accurate picture of complex relationships. SAS entity analytics supports and directs intelligence analysts by showing entity closeness, betweenness and influence to highlight areas of potential interest. Seeing the complex network of relationships between people, places, things and events over time and across multiple dimensions helps analysts identify relationships that aren't obvious, traverse and query complex relationships, and uncover patterns and communities interactively.

Search and discovery

- Free-text search.
- Filters and facets.
- Geospatial search, exploration and visualization.

Alert and event management

- Governance, audit and compliance.
- Prioritized queuing model.
- Enrichment.
- Scenario-fired event model, including scenario context.
- Manual alert creation and routing.
- Alert domains.
- Custom disposition actions.

Entity analytics

- Entity resolution.
- Network analytics and visualization.
- Network link expansion.
- Network node decorator and enrichment.

Transaction analysis

- Transaction network visualization.

Targeted investigations

- Interactive investigator workspaces.
- Insights to record findings.
- Print Insights.
- Data visualization (grids, maps, timelines, networks, detailed views).
- Ad hoc data import.

Case management

- Workflow.
- Ability to add attachments.
- Role-based home pages with cascading grid layout.

Surveillance engine

- Author scenarios using rule builder, decision table or SAS code.
- Restrict defined scenarios for parameter adjustment by role.
- Scenario testing.
- Creation of score based on scenario(s).
- Batch or on-demand execution.
- Case creation from alerts.

Configurability

- Open data model.
- Federated query.
- Easy addition of new data sources.
- Page/home page design (Page Builder) with a drag-and-drop interface.
- Monitor and manage processes or jobs.
- Defining of links/relationships (i.e., what types of links users can create).
- Application configuration import/export.
- Data import or query by reference from internal or external sources.

Administration

- Search configuration.
- Events model for maps and timelines.
- Link traversals.
- User permissions.
- Entity resolution configuration.
- Monitor back-end processes.

Analysts can also interact through the network viewer to see entire social networks and the flow of transactions. They can expand or trim the network as required, explore communities and individual relationships, and manipulate the network layout, as well as overlay transaction information to show exchanges between two parties. Finally, they can take snapshots and clips of the insights that they develop, collaborate with other investigators and document their findings.

Features include:

- **Network viewer/Node link diagram (NLD):** Visualize and interactively explore networks and network layout, develop communities, and identify relationships that aren't obvious.
- **Link expansion:** Visualize complete networks and relationships through multilevel expansion.
- **Network analytics:** Identifies areas of interest and centrality within the network by showing entity closeness, betweenness, influence and so on.
- **Node decorators:** Help analysts identify entities at a glance and investigators understand network data by highlighting useful information on the node icon view (for example, to indicate customer accounts held at different banks).

Investigative workspaces

The investigative workspaces offer analysts collaboration, compliance and efficiency. The interactive visualization and search components help analysts build, gather, explore, visualize and manipulate data that's pertinent to their investigation or research. They can take static clips of visualizations and add them to the Insights module to narrate maps, timelines, networks and other content. Users can also print the Insights they create.

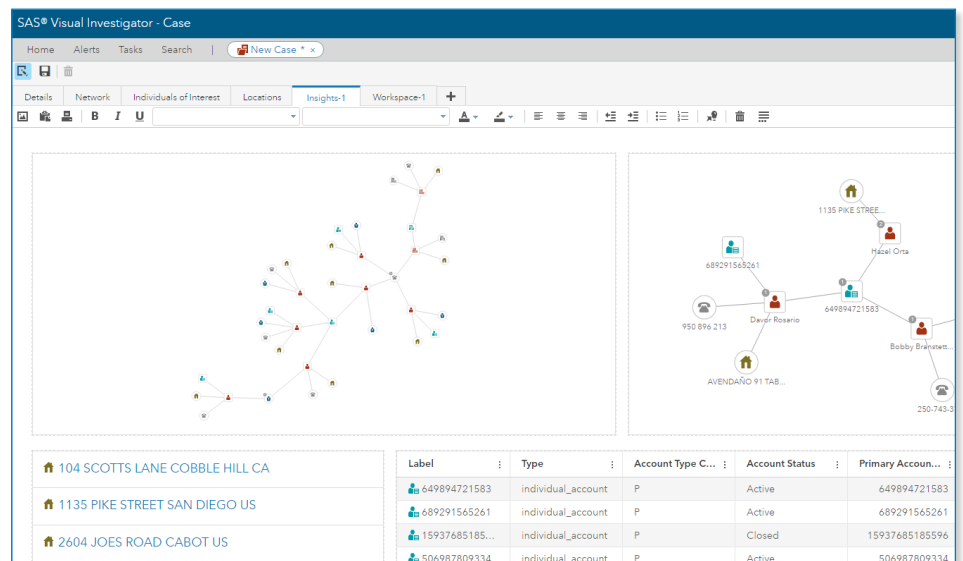


Figure 3. Intelligence analysts can document their findings and conclusions within the Insights module. This easy interface captures views of the workspace and search visualizations (e.g., maps, timelines, grids and networks) and notes and images documented by the analyst.

Product configurability

Organizations can take advantage of the solution's flexibility to respond to different business needs or evolving trends. SAS Visual Investigator supports an open data model and provides a straightforward mechanism for administrative configuration - including designing interfaces, components and screens used to display and work with data.

Administrators have access to:

- An open data model to meet different or evolving business requirements and situations.
- A dynamic page designer and viewer.
- The ability to configure and manage alerts and other entities, such as cases and investigations, with a streamlined, lightweight workflow.
- A solution configuration import/export component that makes it easy to develop, maintain and deploy solutions.

SAS Visual Investigator takes advantage of the SAS Viya architecture for even faster investigative insights. SAS Viya brings new enhancements to the SAS Platform, including high availability, faster in-memory processing, image data types and native cloud support. Trials of products running on SAS Viya, including SAS Visual Investigator, are available from sas.com/viya.

TO LEARN MORE »

To learn more about SAS Visual Investigator, download white papers, view screenshots and see other related material, please visit sas.com/vi.

To contact your local SAS office, please visit: sas.com/offices

