Oracle Financial Services Investigation Hub

User Guide

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ORACLE
Financial Services

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OFS Investigation Hub User Guide

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Document Control

Version Number	Revision Date	Change Log
8.1.1.0.0	October 2021	This is the first version created for IH 8.1.1.0.0 release based on OFS Compliance Studio 8.1.1.0.0 release.

This table records the number of revisions or changes done to this document as part of a release.

Table of Contents

1 Preface

This section provides the functional and navigational information about the Oracle Financial Services Investigation Hub (OFS IH) application.

1.1 Summary

You can find the latest copy of this document in the Oracle Help Center (OHC) Documentation Library which includes all the recent additions/revisions (if any) done to date.

1.2 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website.

1.3 Audience

The Oracle Financial Services Investigation Hub User Guide is intended for end-users such as Data Analysts and Data Scientists.

1.4 Related Documents

This section identifies additional documents related to the OFS IH application. Oracle Financial Services Analytical Applications Infrastructure Related Documents

The following document is available in Oracle Help Center Documentation Library. Oracle Financial Services Analytical Applications Infrastructure User Guide. OFS IH Application Related Documents

The following OFS IH documents are available in Oracle Help Center Documentation Library:

- Oracle Financial Services Investigation Hub Installation Guide
- Oracle Financial Services Investigation Hub Administration and Configuration Guide
- Oracle Financial Services Investigation Hub Release Notes

1.5 Conventions

The following table lists the conventions used in this document.

Table 1: Conventions Used in This Guide

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1.6 Abbreviations

The following table lists the abbreviations used in this document.

Table 2: Abbreviations Used in This Guide

Abbreviation	Meaning
OFS	Oracle Financial Services
OFSAA	Oracle Financial Services Analytical Applications
FCGM	Financial Crime Graph Model
FCDM	Financial Crime Data Model
SQL	Structured Query Language
IH	Investigation Hub
ECM	Enterprise Case Management
PGX	Parallel Graph Analytics
AML	Anti-money Laundering
BD	Behavior Detection
OOB	Out-of-the-Box

2 About Oracle Financial Services Investigation Hub

This chapter provides a brief overview of the OFS IH application.

2.1 Introduction

OFS IH is an application built on OFS Compliance Studio which allows investigators to rapidly view the case and ad-hoc information within the FCGM. The in-built scoring, matching, and correlation engines create meaningful units of investigation, and pre-configured red flags and risk factors target investigative effort effectively. The FCGM on which it is built accelerates investigations by bringing relevant information sources together, preventing the need for the manual collation of information from disparate sources for ad-hoc investigations. OFS IH automatically generate case narratives and insights, highlights risk factors, and red flags which are meaningful to the investigation and recommend actions based on graph scoring algorithms.

2.1.1 Key Features

- Pre-built user interfaces for case investigation and special investigation
- Configurable red flags and risk factors to highlight key areas for investigation
- Case summary in narrative format and case recommendation
- In-built correlation and scoring algorithms. It is applicable only for non-ECM customers
- Exploration of the financial crimes global-graph using an interactive and visual Graph Explorer tool.
- Integrates fully with FCDM (data can be loaded directly from Behavior Detection (AML) or ECM instance) and ICIJ data sources. It can be enhanced to support other data sources such as watchlist and company hierarchy data
- It is built on OFS Compliance Studio, which includes a highly scalable in-memory Oracle Graph Analytics Engine (PGX), AI, and machine learning.
- Review alerts generated by ML models in Investigation Hub:
  - Provide an automated summary of identified patterns
  - Provide investigative guidance based on feature importance
  - Descriptions and impact of model features
  - List of most similar cases to guide the investigator

3 Investigating Business Entity

You can search the graph nodes with attributes (Name, TaxID, Address, and Date) that include business entities (customers, address, and so on), events, and external entities. After searching the graph node, you can investigate the network of that node. The business entity network shows the connection of an entity with other entities based on correlation.

For more information, see **Appendix A** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

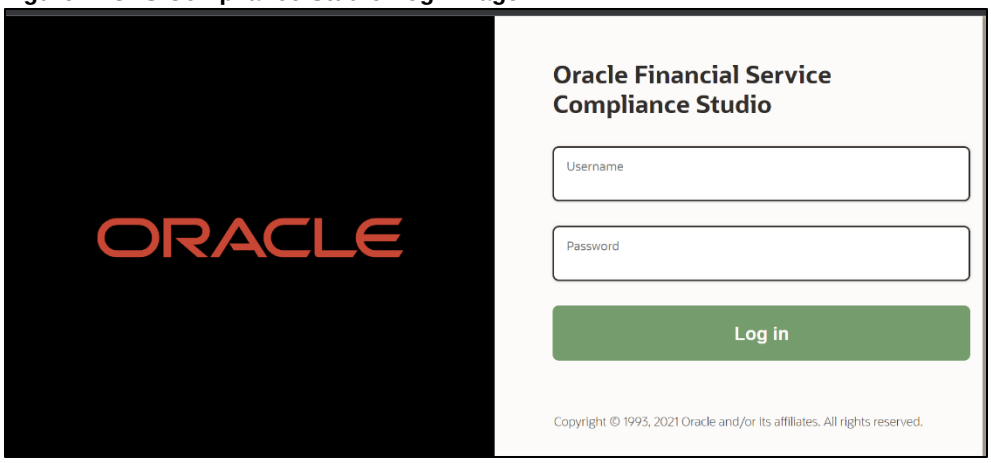
The paragraphs in the Special Investigation are as follows

3.1 Access the OFS Compliance Studio application

To access the OFS Compliance application, follow these steps:

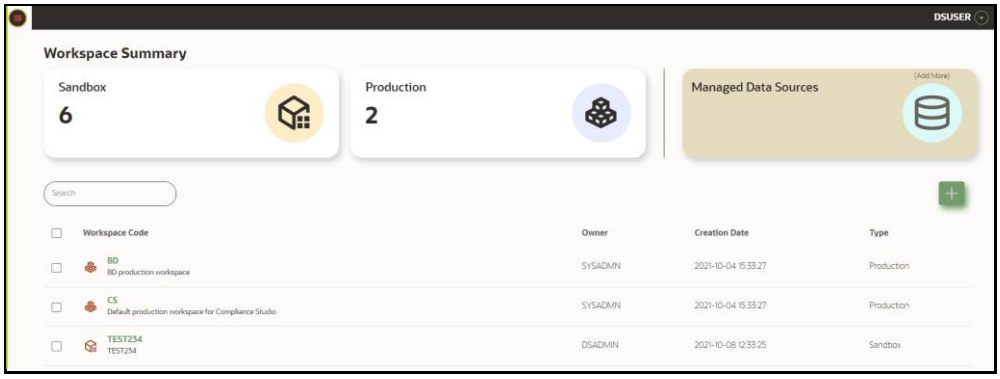
1. Enter the URL in the following format in the web browser:
2. `https://<Host_Name>:<Port_Number>/cs/home`
3. Here `<Port_Number>` is **7001** for the OFS Compliance Studio application installed on-premise.
4. The OFS Compliance Studio application login page is displayed.

Figure 1: OFS Compliance Studio Login Page



5. Enter the Username and Password.
6. Click **Login**.
7. After login into the OFS Compliance Studio application, the Workspace Summary page is displayed.

Figure 2: Workspace Summary Page



3.2 Import the Notebook

> **NOTE** For IH Notebook to be executable, it needs to be imported into the **Sandbox** workspace.

For more information on how to import notebooks, see the **Installing the Software** section in the Oracle Financial Services Investigation Hub Installation Guide.

3.3 Access the Investigation Hub Objective

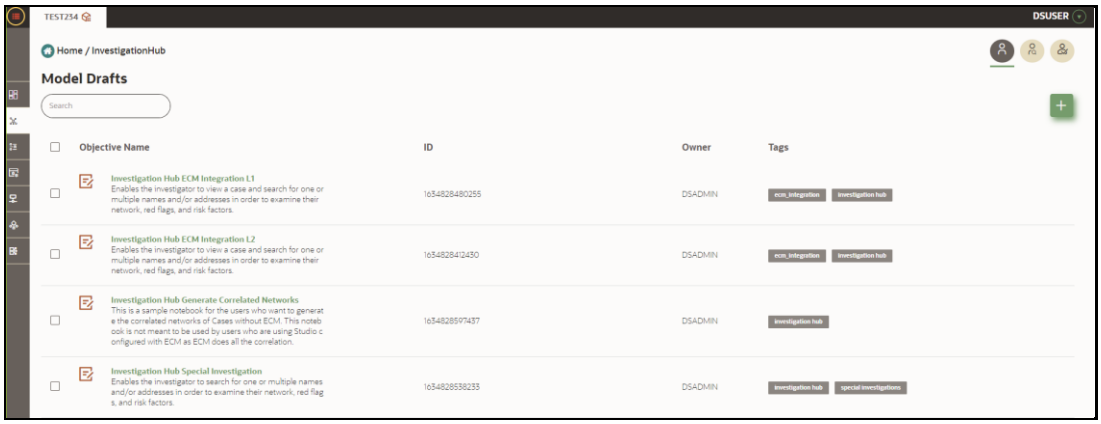
The Investigation Hub objective (folder) displays the Special Investigation Notebook that are mapped to the role of the logged-in user and also displays the details of each Notebook, such as Notebook name, Notebook details, date when the Notebook is published, and related tags. The Detailed

Information section includes the date and time of Notebook creation, the number of compilations performed using different interpreters in a Notebook, and the username of the Notebook creator.

To access the Investigation Hub Objective, follow these steps:

1. Log in to the Compliance Studio application.
2. On the **Workspace Summary** page, click  Launch next to the SI workspace. The Workspace Dashboard is displayed.
3. Hover the mouse over the Advanced Options widget  .
4. Click **Advance Model Management** to display Advance Model Management.
5. Click the **InvestigationHub** Objective. Ensure that the following notebooks are available in the Investigation Hub objective:
   - Investigation Hub_Special_Investigation
   - Investigation Hub_Generate_Correlated_Networks
   - Investigation Hub_ECM_Integration_L2
   - Investigation Hub_ECM_Integration_L1

Figure 3: Investigation Hub Objective



6. Click  next to the corresponding notebook and select **Open in Studio** option. The notebook window is displayed.

3.4 Special Investigation (SI) Notebook

A Notebook is a collection of paragraphs and acts as a container to hold one or more paragraphs. A Paragraph is a piece of code that can be executed to obtain a result. The following seeded notebooks of the OFS IH objective are provided for Investigators:

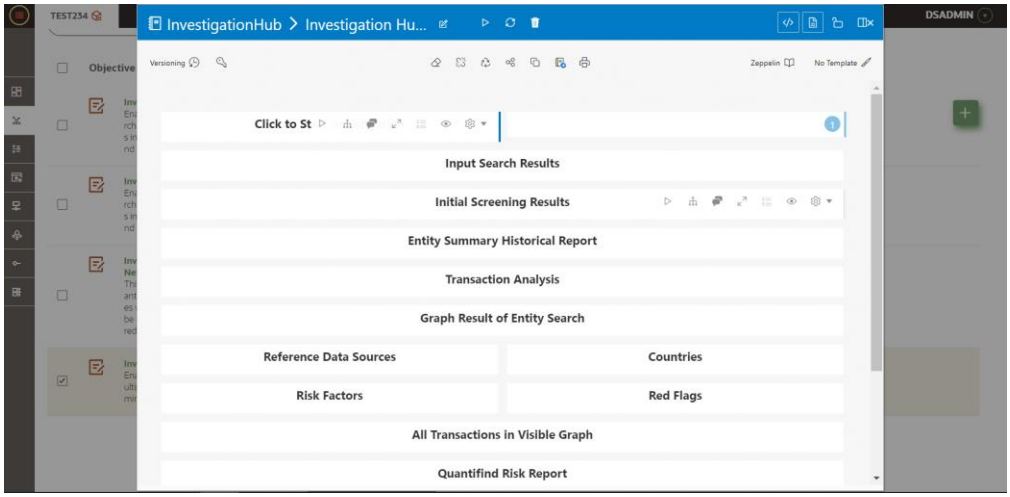
Figure 4: Special Investigation

Special Investigation notebook enables the investigator to search for one or multiple names and/or addresses to examine the network, red flags, and risk factors.

To open the notebook, follow these steps:

7. Navigate to the Investigation Hub objective.
8. Click  next to the Investigation Hub Special Investigation notebook and select **Open in Studio** option. The Special Investigation Notebook window is displayed.

Figure 5: Special Investigation Notebook



NOTE An Administrator can configure the parameters for Investigation using the Special Investigation notebook.

3.4.1 Starting the Investigation

You can directly start the investigation by executing this paragraph. By default, it executes the relevant customer (business entity) paragraph and displays the Initialization successful message in the subsequent paragraph.

To execute the paragraph, follow these steps:

1. Navigate to the Special Investigation notebook that is assigned for a particular user role.
2. Execute **Click to Start Investigation** paragraph. It executes the **Click to Start Investigation** paragraph and also the initialization paragraph automatically.

The successful initialization message is displayed.

Figure 6: Start Investigation Paragraph

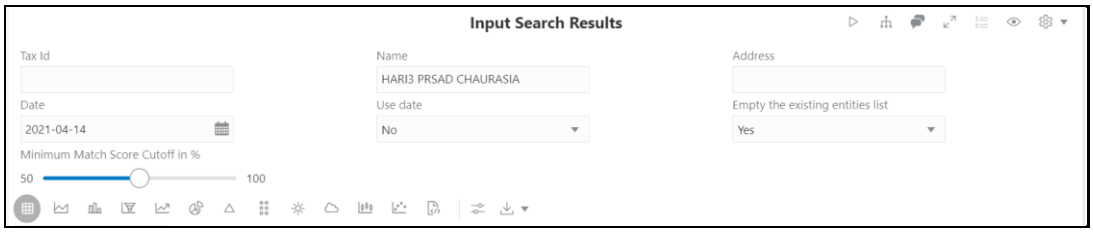
3.4.2 Searching for a Business Entity

You can search for an FCDM/ICIJ entity (customer, account), derived entity, address, event, or external entity in the graph to find a similar match.

To search for an entity, follow these steps:

1. Navigate to the **Input Search Results** paragraph.

Figure 7: Input Search Results Paragraph



2. Enter the search criteria in the Input Search Results paragraph as described in the following table.

Table 3: Input Search Results

Field	Description
Tax ID	Tax ID of the entity (for example, customer tax ID). You must enter the complete Tax ID to get the exact search result.
Name	Name of the entity (for example, customer name). This filters the names by the title of the business entity that matches the search criteria.
Address	Address of the customer.
Date	Date when a business entity (for example, customer name) is added to the system. You must enter the complete date to get the exact match during the search result. The date format must be in DD/ MM/YYYY.
Use Date	Allows you to enable or disable the Date field.
Empty the Existing Entities List	• **Yes**: It continues with the existing Search list. The searched items are added to the existing Search list. • **No**: It displays view the search results in the New search list/Clears the search list.

	The individual or combination of the following field values are inputs for the search: • Name • Address • Date By default, this field value is set as **Yes**.
Minimum Match Score Cutoff in %	You can set the cutoff value to define the matching criteria. The records that match (equivalent or more than) the configured cutoff value will be displayed in the search results with the score.

3. To reset the searched entities list, use the Empty the Existing Entities List drop-down.
4. Execute the Input Search Results paragraph.

   The matched results will display in the Input Search Results paragraph.

Figure 8: Input Search Results Paragraph

3.4.3 Viewing the Initial Screening Results

The Initial Screening Results paragraph allows you to define the conditions based on which the initial screening results are filtered and fetched.

The following table describes the conditions to be defined based on which the initial screening results are displayed.

Table 4: Initial Screening Results

Field	Description
Top Critical Matches	The value to decide how many matches you want to view in the search result output.
Sources	The following are sources are available for search: • **Internal-Only:** It displays the search result only for internal FCDM data. • **All**: It displays the search result for internal data along with the external data.
Number of Hops to Pre-Fetch	The number of hops that the search result graph can be expanded.
Number of Hops to Display	The number to decide how many hops must be displayed in the search result graph.

Figure 9: Initial Screening Results

You can view these transactions in various formats. For more information on formats, see the Data Visualization section.

3.4.4 Viewing the Entity Summary Historical Report

Enter the entity ID in the Entity ID field of the Entity Summary Historical Report paragraph after searching for similar names and execute the paragraph. You can get the entity ID from the Initial Screening Results or Input Search Results paragraph.

> **NOTE** You can search with multiple entity IDs for Entity Summary Historical Report. The entity IDs should be comma-separated.

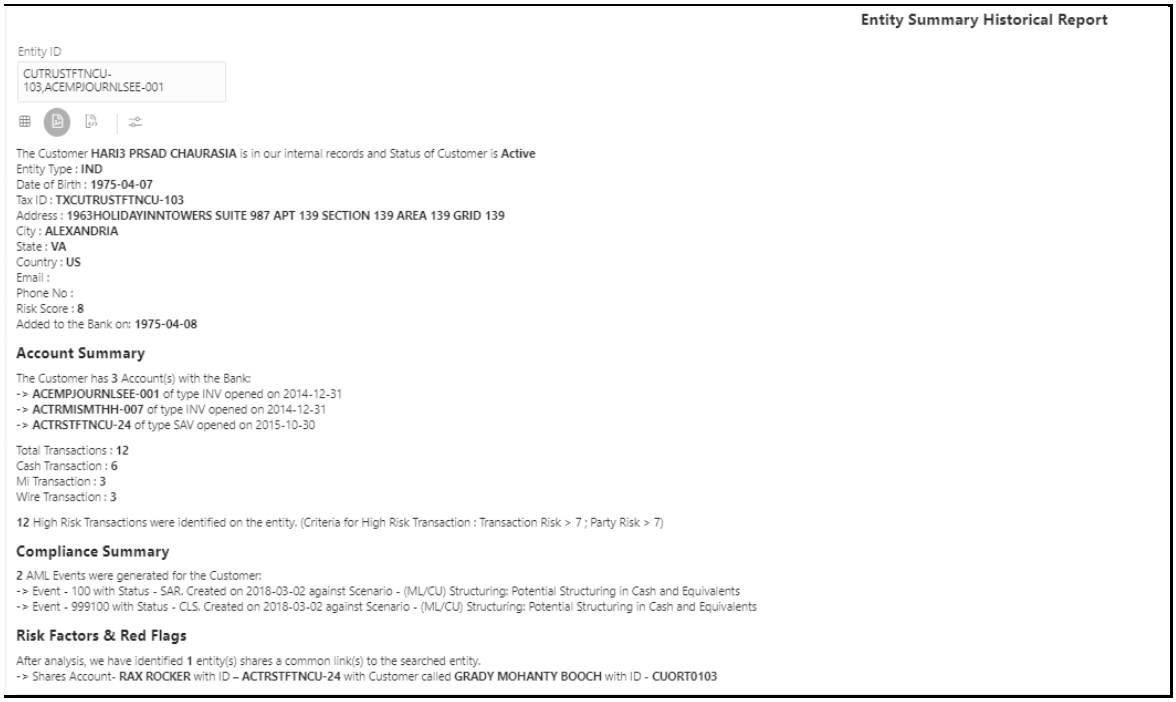
The Entity Summary Historical Report paragraph allows you to view the historical summary (in text format) of the searched entity ID.

This information includes the following parameters:

- Customer details
- Account Summary
- Compliance Summary
- Risk Factor & Red Flags

To view the historical summary of an entity, navigate to the Entity Summary Historical Report paragraph. The following figure shows a sample of the historical summary of an entity.

Figure 10: Entity Summary Historical Report



Entity Summary Historical Report

Entity ID

CUTRUSTFTNCU-103,ACEMPJOURNLSEE-001

The Customer **HARI3 PRSAD CHAURASIA** is in our internal records and Status of Customer is **Active**
Entity Type : **IND**
Date of Birth : **1975-04-07**
Tax ID : **TXCUTRUSTFTNCU-103**
Address : **1963HOLIDAYINNTOWERS SUITE 987 APT 139 SECTION 139 AREA 139 GRID 139**
City : **ALEXANDRIA**
State : **VA**
Country : **US**
Email :
Phone No :
Risk Score : **8**
Added to the Bank on: **1975-04-08**

Account Summary

The Customer has **3** Account(s) with the Bank:
-> **ACEMPJOURNLSEE-001** of type INV opened on 2014-12-31
-> **ACTRMISMTHH-007** of type INV opened on 2014-12-31
-> **ACTRSTFTNCU-24** of type SAV opened on 2015-10-30

Total Transactions : **12**
Cash Transaction : **6**
Mi Transaction : **3**
Wire Transaction : **3**

12 High Risk Transactions were identified on the entity. (Criteria for High Risk Transaction : Transaction Risk > 7 ; Party Risk > 7)

Compliance Summary

2 AML Events were generated for the Customer:
-> Event - 100 with Status - SAR. Created on 2018-03-02 against Scenario - (ML/CU) Structuring: Potential Structuring in Cash and Equivalents
-> Event - 999100 with Status - CLS. Created on 2018-03-02 against Scenario - (ML/CU) Structuring: Potential Structuring in Cash and Equivalents

Risk Factors & Red Flags

After analysis, we have identified **1** entity(s) shares a common link(s) to the searched entity.
-> Shares Account- **RAX ROCKER** with ID – **ACTRSTFTNCU-24** with Customer called **GRADY MOHANTY BOOCH** with ID - **CUORT0103**

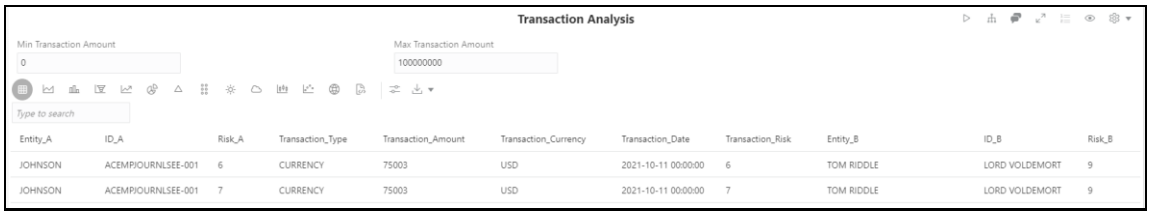
3.4.5 Viewing the Transactions Analysis

This paragraph shows all transactions related to the search entity from the FCDM. In addition, you can filter the transaction details based on the transaction amount specified in the following fields:

- **Min Transaction Amount**: You enter the minimum transaction amount.
- **Max Transaction Amount:** You enter the maximum transaction amount.

To view the transaction details, navigate to the Transaction Analysis paragraph.

Figure 11: Transaction Analysis Paragraph Details



Transaction Analysis

Min Transaction Amount: 0
Max Transaction Amount: 100000000

Type to search

Entity_A	ID_A	Risk_A	Transaction_Type	Transaction_Amount	Transaction_Currency	Transaction_Date	Transaction_Risk	Entity_B	ID_B	Risk_B
JOHNSON	ACEMPJOURNLSEE-001	6	CURRENCY	75003	USD	2021-10-11 00:00:00	6	TOM RIDDLE	LORD VOLDEMORT	9
JOHNSON	ACEMPJOURNLSEE-001	7	CURRENCY	75003	USD	2021-10-11 00:00:00	7	TOM RIDDLE	LORD VOLDEMORT	9

You can view these transactions in various formats. For more information on formats, see the Data Visualization section.

3.4.6 Viewing the Graph Result of the Entity Search

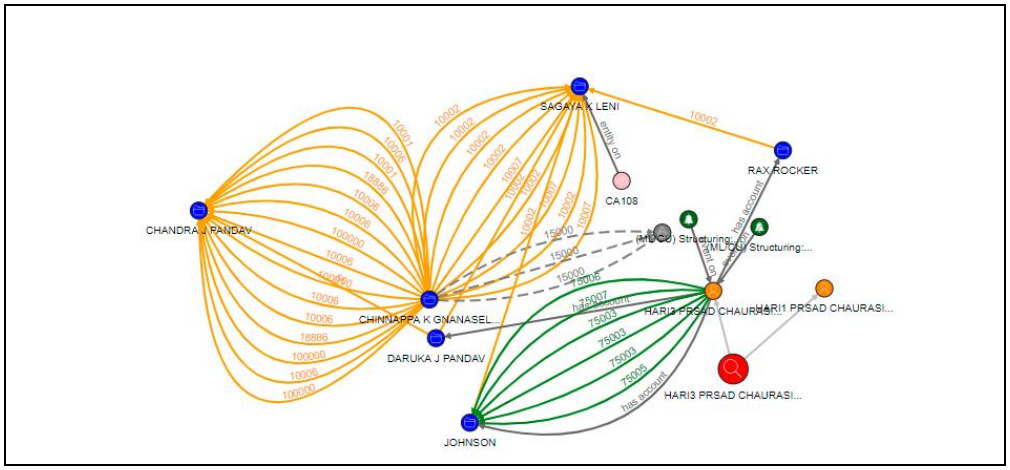
This paragraph allows you to view the network graphical representation of the searched entity that was displayed in the Entity Search paragraph.

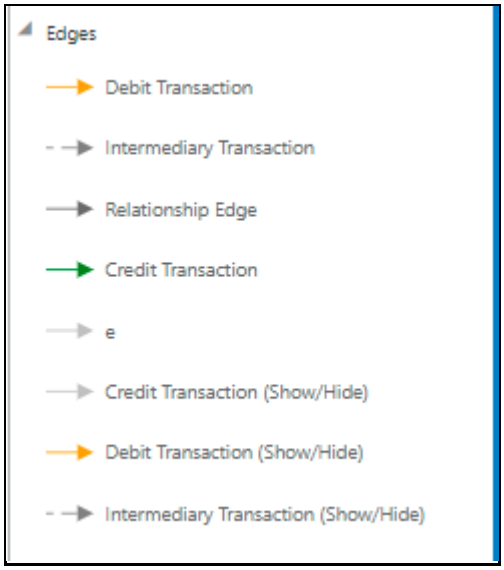
A typical network graph shows nodes and links. Nodes are entities such as a customer or account. Each node can join to zero, one or many other nodes via a link. Each type of node is associated with a specific icon on the graph. Table 10 describes the icon displayed on the graph for each type of node. For example, for a customer entity, the links of the customer are displayed with other customers, accounts, and so on.

To view the graph result of the entity search, navigate to the Graph Result of Entity Search paragraph. The graphical view is displayed in the Graph Result of Entity Search paragraph.

The following figure shows the sample graph.

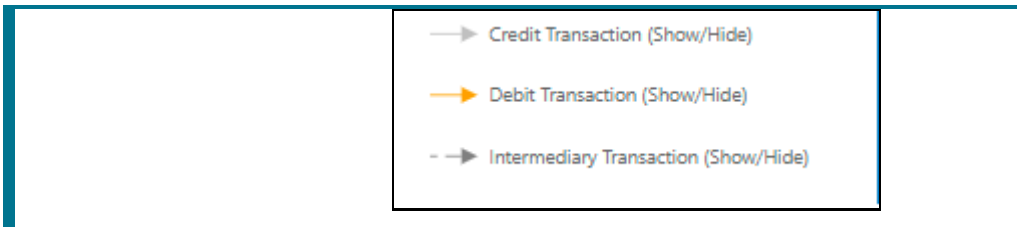
Figure 12: Graph Result of the Entity Search Paragraph





NOTE

- You must re-execute the paragraph after any modification to view the results in the subsequent paragraphs.
- This graph will provide the end-to-end transactions (account to derived entity and account to account vice versa) and transactions via correspondent banks. And also, users can switch between them by hiding/showing the transactions.



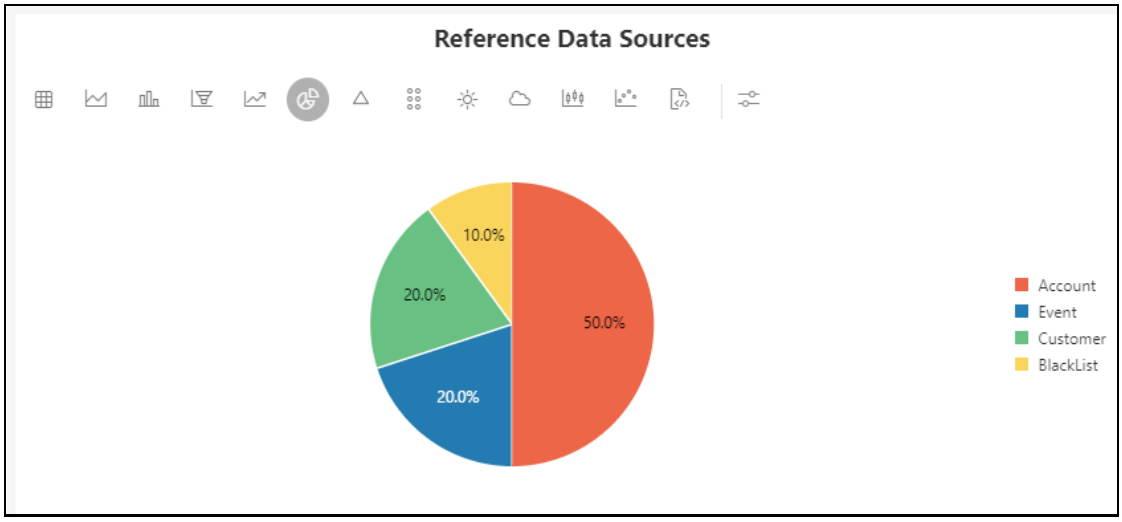
You can perform many actions on a graph. For more information, see the Graph Details.

3.4.7 Viewing the Reference Data Sources

This paragraph shows the reference data of the searched entity from the **All Transactions in Visible Graph** paragraph along with other associated entities.

To view the reference data sources, navigate to the Reference Data Sources paragraph. The following figure shows the sample reference data source details.

Figure 13: Reference Data Source Details Paragraph



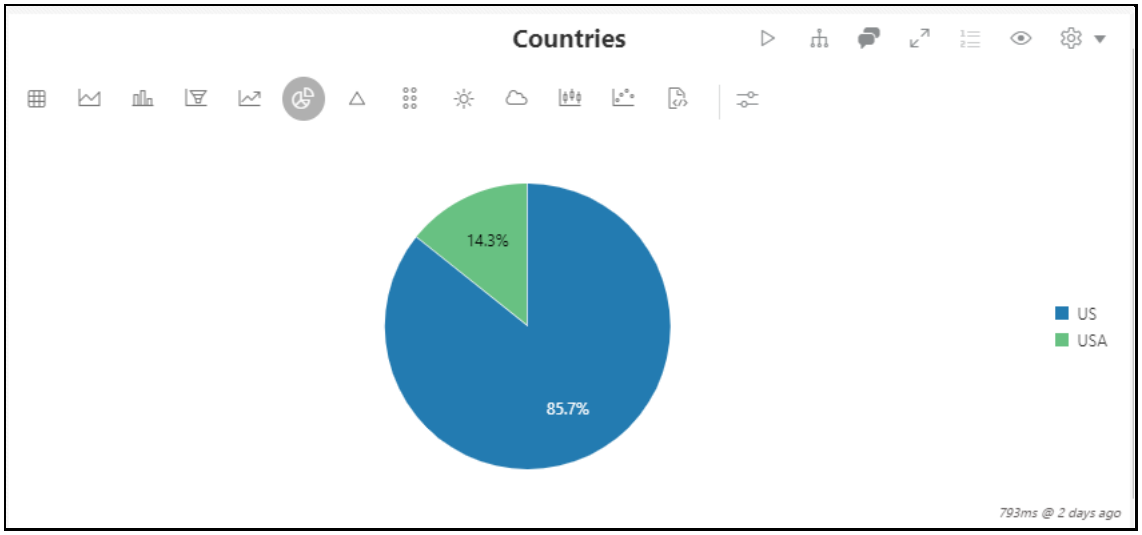
You can view these transactions in various formats. For more information on formats, see the Data Visualization section.

3.4.8 Viewing the Countries

This paragraph shows the countries of the searched entity from the **All Transactions in Visible Graph** paragraph along with other associated entities.

To view the countries, navigate to the Countries paragraph. The following figure shows the sample reference data source details.

Figure 14: Countries Details Paragraph



You can view these transactions in various formats. For more information on formats, see the Data Visualization section.

3.4.9 Viewing the Risk Factors

This paragraph shows the risk factor details of the searched entity with other associated entities. You can also search for a specific risk factor. For more information, see the **Configuring Risk Factors** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

To view the risk factor details, navigate to the Risk Factor paragraph. The following figure shows the sample risk factor details.

- **Hits (Initial)**: It fetches the information from **Result Graph** for each item in the Risk Factors.
- **Hits (Investigator)**: It fetches the information from the **Visible Graph** for each item in the Risk Factors.

  For more information on Result Graph and Visible Graph, see Graph Types.

Figure 15: Risk Factor Details

3.4.10 Viewing the Red Flags

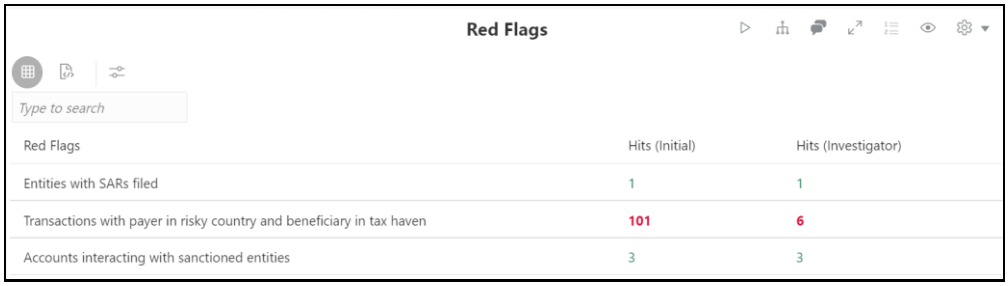
This paragraph shows the red flag details of the searched entity with associated entities. You can search for a specific risk factor. For more information, see the **Configuring Red Flags** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

To view the red flag details, navigate to the Red Flags paragraph. The following figure shows the sample red flag details.

- **Hits (Initial)**: It fetches the information from **Result Graph** for each item in the Red Flags.
- **Hits (Investigator)**: It fetches the information from the **Visible Graph** paragraph for each item in the Red Flags.

  For more information on Initial Graph and Visible Graph, see Graph Types.

Figure 16: Red Flag Details



3.4.11 Viewing the All Transactions in Visible Graph

This paragraph displays information on transactions that are available in **Visible Graph**. For more information, see All Transactions in Visible Graph section.

For more information on Visible Graph, see Graph Types.

3.4.12 Viewing the Quantifind Risk Report

This paragraph displays information of customers/derived entities that are available in the **Visible Graph**. The results are displayed as a card, which displays the risk status of the identified node details.

The minimum criteria for displaying the Quantifind report is that the customers should have first and last names, and the name must have two characters.

For more details, see the Quantifind Risk Report section.

For more information on Visible Graph, see Graph Types.

3.4.13 Viewing the Network Disposition Score

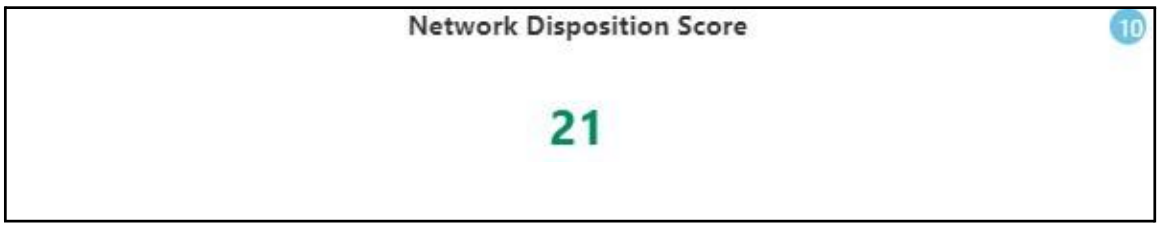
This paragraph shows the network disposition score based on the nodes' risk on the **Visible Graph**.

The formula to calculate the network score is "`(Total risk of nodes in Visible Graph/Number of nodes in the Visible Graph) * 10.`"

You can divide the total risk of nodes by the number of nodes in the Visible Graph and multiply the output by 10.

For more information on Visible Graph, see Graph Types.

Figure 17: Network Disposition Score Details



For more information, see the **Configuring Network Disposition** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

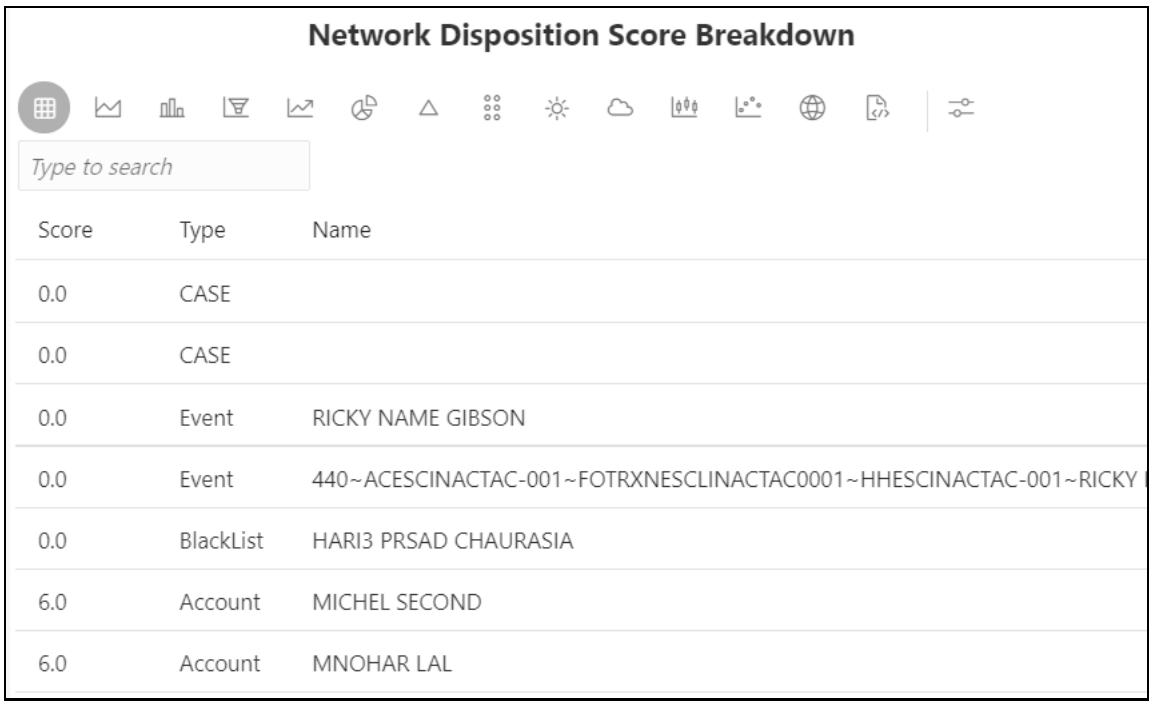
To view the network disposition score, navigate to the Network Disposition Score paragraph.

3.4.14 Viewing the Network Disposition Score Breakdown

This paragraph shows the details of the network disposition score breakdown based on the visible graph.

To view the network disposition score breakdown, navigate to the Network Disposition Score Breakdown paragraph.

Figure 18: Network Disposition Score Breakdown Details



For more information, see the **Configuring Network Disposition** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

You can view these transactions in various formats. For more information on formats, see the Data Visualization section.

3.4.15 Viewing the Investigation Recommendation

After the case investigation is performed and based on the scores, the recommendation for the case is displayed in the Recommendation paragraph.

The Investigator can investigate the case details and take further action.

For more information, see the **Configuring Investigation Recommendation Score** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

To view the investigation recommendation, navigate to the Recommendation paragraph.

Figure 19: Viewing the Investigation Recommendation

Following is the criteria for recommendation:

- If the investigation score is between 25 to 51, the case status is displayed as **Low Risk Network**.
- If the investigation score is between 50 to 76, the case status is displayed as **Medium Risk Network**.
- If the investigation score is greater than 76, the case status is displayed as **High Risk Network**.

An Investigator can print or save the notebook after viewing the investigation recommendation.

3.4.16 Exporting Investigation Detail to PDF format

Use the **Export to PDF** option to save the notebook. For more information, see Exporting a Notebook to PDF.

4 Investigating ECM Cases Using OFS IH

OFS IH is integrated with ECM to enable Case Investigators to access additional rich information about a case such as, case summary, a detailed narrative about case entities, graph view of a case, and so on, which is otherwise not available in ECM.

Investigators can expand the graph view to view the relationship between case entities and search for additional entities within a graph. Investigators can also update a case with any customers, account, derived entities, or transactions that are part of the graph view.

> **NOTE** All the additional information, which is not part of the case in a graph, will be added to the case.

By default, two different sets of information are displayed in the **Investigation Hub** tab that are targeted at Level 1 and Level 2 Case Investigators. Depending on a user role, a user is displayed with Level 1 or Level 2 information.

- **ECM Integration_L1**: Enable Level 1 case Investigators to access additional rich information about a case such as, case summary, a detailed narrative about case entities, graph view of a case, and so on, which is otherwise not available in ECM. Allows the investigator to explore a case - including graph, risk factors, and red flags.
- **ECM Integration_L2**: Enable Level 2 case Investigators to access additional rich information about a case such as, case summary, a detailed narrative about case entities, graph view of a case, and so on, which is otherwise not available in ECM. Allows the investigator to explore a case - including graph, risk factors, and red flags.

The paragraphs in the Investigation Hub tab are as follows:

- Accessing OFS IH from ECM
- Elements of the Investigation Hub Tab
- Updating a Case with Entities in a Graph

4.1 Accessing OFS IH from ECM

You can access the Investigation Hub tab from ECM to perform graph-based investigation for cases in ECM.

To access the Investigation Hub tab from ECM, follow these steps:

1. Login to the OFS ECM application. For more information, see Accessing OFSECM Application section in the Oracle Financial Services Enterprise Case Management User Guide.
2. Search for a case that has the Investigation Hub tab enabled.

> **NOTE** To access the Investigation Hub tab, the Case Type must have the required mapping in the Case Designer in ECM. For more information, see Oracle Financial Services Investigation Hub Administration and Configuration Guide.

3. Click the desired Event ID.

Figure 20: Investigation Hub Tab in ECM

4. Click the Investigation Hub tab.

   The ECM_Integration_L1/L2 are cloned and displayed in the Investigation Hub tab. All the paragraphs of the notebooks will be pre-executed whenever the user opens a case for the first time.

4.2 Elements of the ECM Integration for Level1/Level2

The paragraphs in the ECM_Integration_L1/L2 are as follows:

- Starting the Investigation
- Viewing Case Details
- Searching for Non-Case Entities
- Viewing the Initial Screening Results
- Viewing the Entity Summary Historical Report
- Viewing the All Transactions for Focal Entities
- Viewing the Graph Result of the Entity Search
- Viewing the Reference Data Sources
- Viewing the Countries
- Viewing the Risk Factors Details
- Viewing the Red Flag Details
- Viewing the Quantifind Risk Report
- Viewing the Network Disposition Score
- Viewing the Network Disposition Score Breakdown
- Exporting Investigation Detail to PDF format

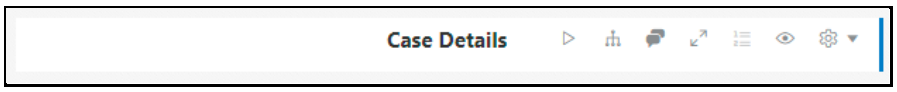
4.2.1 Starting the Investigation

You can directly start the investigation by executing this paragraph. For more details, see Starting the Investigation section.

4.2.2 Viewing Case Details

The Case Details paragraph will take the case ID automatically whenever user opens the case from ECM for the first time.

Figure 21: Case Details Paragraph



4.2.3 Searching for Non-Case Entities

Follow these steps to search for an FCDM entity (customer, account), derived entity, address, event, or external entity in the graph to find a similar match.

> **NOTE** It is an optional step if additional entities that are not part of the case are investigated alongside the case.

1. Navigate to the Search for Non-Case Entities paragraph.

Figure 22: Search for Non-Case Entities Paragraph

2. Enter the search criteria in the Search for Non-Case Entities paragraph as described in the following table.

Table 5: Search for Non-Case Entities Paragraph Details

Field	Description
Tax ID	Tax ID of the entity (for example, customer tax ID). You must enter the complete Tax ID to get the exact search result.
Name	Name of the entity (for example, customer name). This filters the names by the title of the business entity that matches the search criteria.
Address	Address of the customer.
Date	Date when a business entity (for example, customer name) performed a transaction. You must enter the complete date to get the exact match during the search result. The date format must be in DD/ MM/YYYY.

Use Date	Allows you to enable or disable the Date field.
Empty the Existing Entities List	• **Yes**: It continues with the existing Search list. The searched items are added to the existing Search list. • **No: It displays** view the search results in the New search list/Clears the search list. The individual or combination of the following field values are inputs for the search: • Name • Address • Date By default, this field value is set as **Yes**.
Minimum Match Score Cutoff in %	You can set the cutoff value to define the matching criteria. The records that match (equivalent or more than) the configured cutoff value will be displayed in the search results with the score.

3. To reset the searched entities list, use the Empty the Existing Entities List drop-down.
4. Execute the Search for Non-Case Entities paragraph.

   The matched results will display in the Search for Non-Case Entities paragraph.

Figure 23: Search

You can view these transactions in various formats. For more information on formats, see Data Visualization section.

4.2.4 Viewing the Initial Screening Results

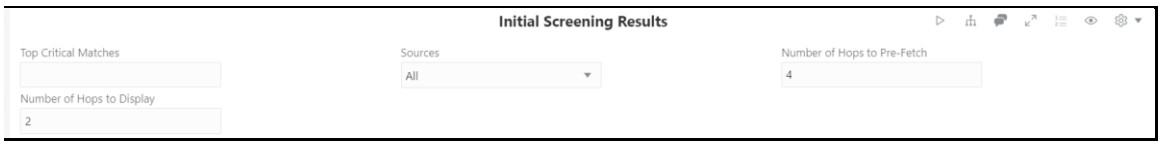
The Initial Screening Results paragraph allows you to define the conditions based on which the initial screening results are filtered and fetched.

The following table describes the conditions to be defined based on which initial screening results are displayed.

Table 6: Initial Screening Results

Field	Description
Top Critical Matches	The value to decide how many matches you want to view in the search result output.
Sources	The source can be Internal-Only or All. If Internal-Only is selected, then the search result displays only the internal FCDM data. All option displays search result for the internal data along with the external data.
Number of Hops to Pre-Fetch	The number of hops that the search result graph can be expanded.
Number of Hops to Display	The number to decide how many hops must be displayed in the search result graph.

Figure 24: Initial Screening Results Paragraph



4.2.5 Viewing the Entity Summary Historical Report

Enter the entity ID in the Entity ID field of the Entity Summary Historical Report paragraph and execute the paragraph. You can get the entity ID from the Initial Screening Results or Input Search Results paragraph.

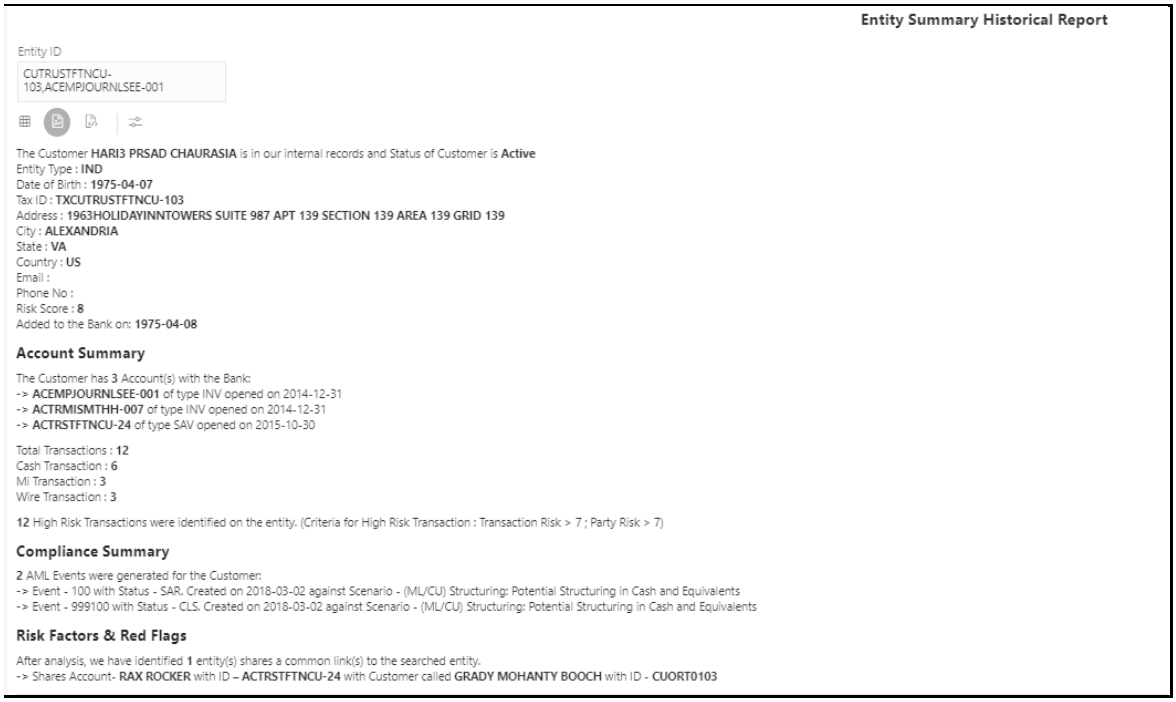
In addition, this paragraph displays the details of focal entities associated to the case ID.

> **NOTE** You can search with multiple entity IDs for Entity Summary Historical Report.

The Entity Summary Historical Report paragraph allows you to view the historical summary (in text format) of the searched entity ID. This information includes the following parameters: Customer Summary, Account Summary, Compliance Summary, Risk Factor & Red Flags.

To view the historical summary of an entity, navigate to Entity Summary Historical Report paragraph. The following figure shows a sample of the historical summary of an entity.

Figure 25: Entity Summary Historical Report



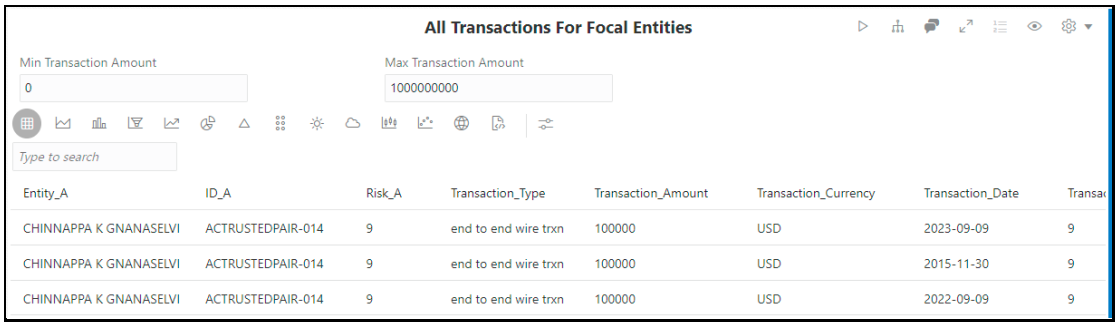
4.2.6 Viewing the All Transactions for Focal Entities

This paragraph shows all transactions related to the searched entity and focal entities of a case from **Result Graph**. In addition, you can filter the transaction details based on transaction amount specified in the following fields:

- **Min Transaction Amount**: You enter the minimum transaction amount.
- **Max Transaction Amount:** You enter the maximum transaction amount.

To view the transaction details, navigate to the Transaction Analysis paragraph.

Figure 26: All Transactions for Focal Entities Paragraph Details



You can view these transactions in various formats. For more information on formats, see Data Visualization section.

4.2.7 Viewing the Graph Result of the Entity Search

The Graph Result of the Entity Search paragraph allows you to view the network graphical representation of the case and its associated entities. This paragraph also displays the case graph along with the graph for the non-case entities searched in the Input Search Results paragraph.

A typical network graph shows nodes and links. Nodes are entities such as a customer or account. Each node can join to zero, one or many other nodes via a link called an edge. Each type of node is associated with a specific icon on the graph. Table 10 describes the icon displayed on the graph for each type of node. For example, for a customer entity, the links of the customer are displayed with other customers, accounts, and so on.

When the Investigation Hub tab is opened for the first time, it displays the following details:

The case node and four hops from the case node to include all the events, customers, derived entities, accounts, and transactions that are the focal entities and impact the case.

Additional nodes and edges that provide case context such as relationship and similarity edges to include external data sources.

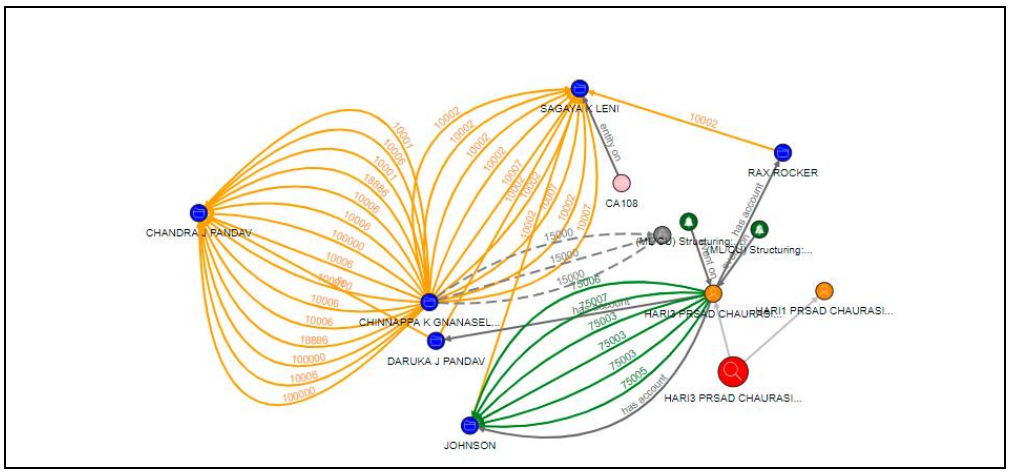
If the analyst searches for additional entities, all the search nodes and their surrounding nodes and edges are displayed as part of the graph visualization.

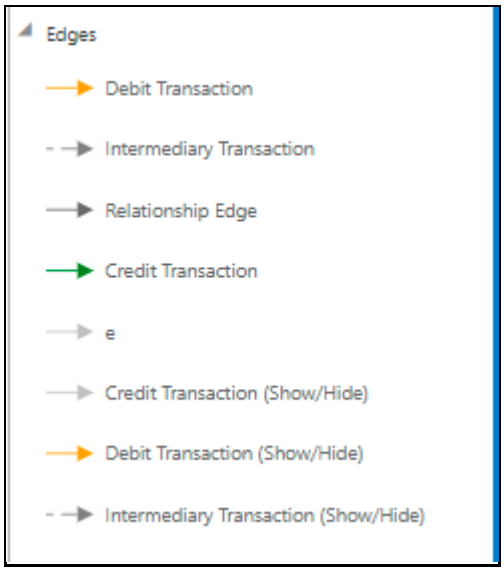
The analyst can then be able to manipulate the graph by expanding any high-risk entities or parties on unusual transactions to obtain better understanding of the context and risk associated with the case. The analyst can also remove entities and transactions which are not pertinent to the case to provide a snapshot of only the pertinent information.

When a graph shows the relevant information, the case narrative and other paragraphs can be re-run to provide updated summary information. The following figure shows the sample graph.

The default template is FCGM template. For more information, see the Managing Template section in the Oracle Financial Services Compliance Studio User Guide.

Figure 27: Graph Result of Entity Search





You can perform many actions on a graph. For more information, see the Graph Details.

> **NOTE** You must re-execute the paragraph after any modification to view the results in the subsequent paragraphs.

4.2.8 Viewing the Reference Data Sources

This paragraph shows the reference data of the searched entity from the **Visible Graph** paragraph along with other associated entities.

For more information, see Viewing the Reference Data Sources section in SI Notebook.

For more information on Visible Graph, see Graph Types.

4.2.9 Viewing the Countries

This paragraph shows the countries of the searched entity from the **Visible Graph** paragraph along with other associated entities.

For more information, see Viewing the Countries section in the SI Notebook.

For more information on Visible Graph, see Graph Types.

4.2.10 Viewing the Risk Factors

This paragraph shows the risk factor details of the searched entity with other associated entities. You can also search for a specific risk factor.

For more information, see Viewing the Risk Factors Details section in the SI Notebook.

For more information on Visible Graph, see Graph Types.

4.2.11 Viewing the Red Flags

This paragraph shows the red flag details of the searched entity with associated entities. You can search for a specific risk factor.

For more information, see Viewing the Red Flag Details section in the SI Notebook.

4.2.12 Viewing the Quantifind Risk Report

This paragraph displays information of customers/derived entities that are available in the **Visible Graph**. The results are displayed as a card, which displays the risk status of the identified node details.

The minimum criteria for displaying the Quantifind report is that the customers should have first and last names, and the name must have two characters.

For more details, see the Quantifind Risk Report section.

For more information on Visible Graph, see Graph Types.

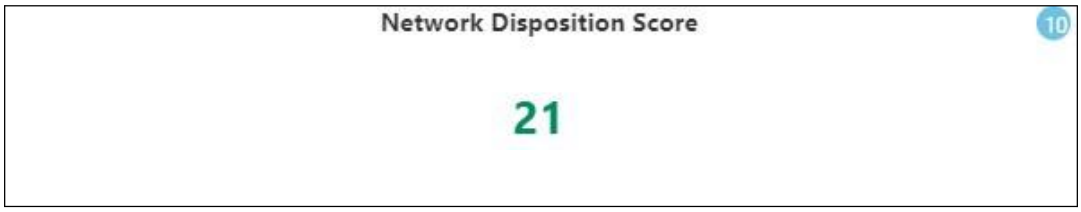
4.2.13 Viewing the Network Disposition Score

The Network Disposition Score paragraph shows the network disposition score of the searched entity.

The formula to calculate the network score is "**(Total risk of nodes in Visible Graph/Number of nodes in the Visible Graph) * 10**."

For more information on Visible Graph, see Graph Types.

Figure 28: Network Disposition Score Paragraph Details



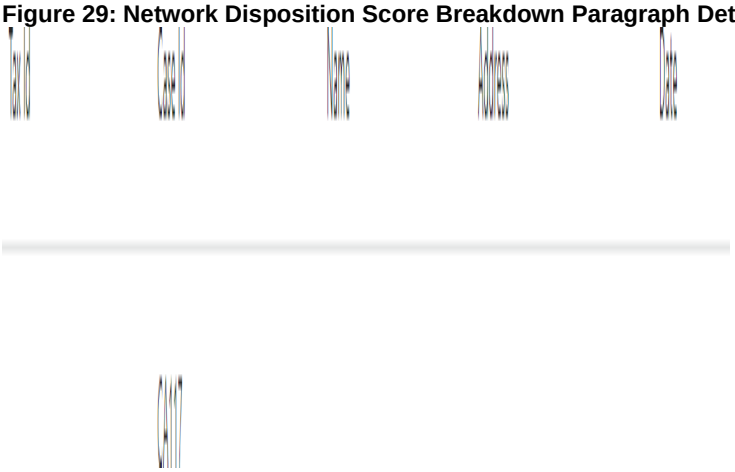
For more information, see the **Configuring Network Disposition** section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

To view the network disposition score, navigate to the Network Disposition Score paragraph.

4.2.14 Viewing the Network Disposition Score Breakdown

The Network Disposition Score Breakdown paragraph shows the details of the network disposition score of the searched entity.

Figure 29: Network Disposition Score Breakdown Paragraph Details



For more information, see the Configuring Network Disposition section in the Oracle Financial Services Investigation Hub Administration and Configuration Guide.

To view the network disposition score breakdown, navigate to Network Disposition Score Breakdown paragraph.

You can view these transactions in various formats. For more information on formats, see Data Visualization section.

4.2.15 Investigator Brief

> **NOTE** This is applicable only if case contains the ML4AML based events.

Additional information to support investigation will provided in Investigation Hub L1, L2 notebooks for a case containing ML4AML based events. This additional information is called as investigator brief, which help the investigator with more relevant information for investigating AIF ML based events.

Additional outputs include

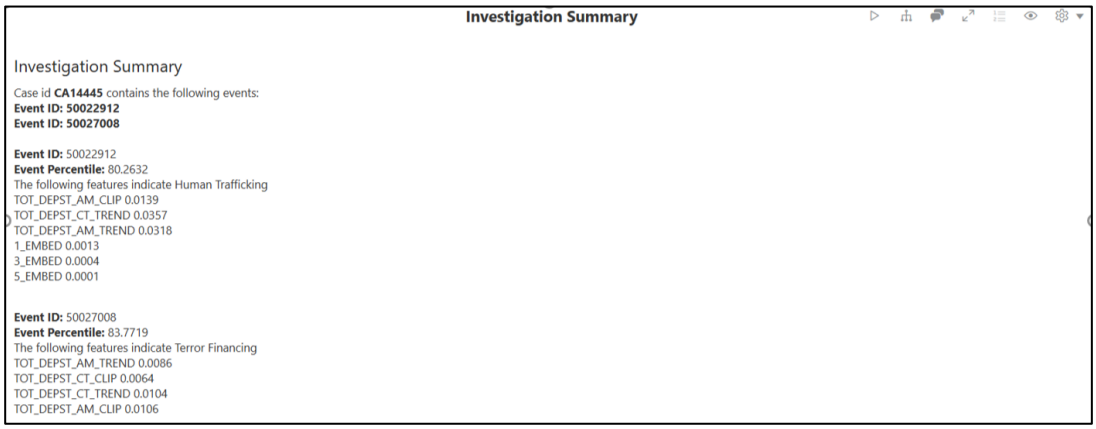
- Investigation summary
- Case/Event related features, feature descriptions, feature contributions, and feature importance.
- Hints with nearest historical cases as per Time series features and Graph embedding.
- Investigator guidance as configured for some feature combination as most relevant.

4.2.15.1 Investigation Summary

This section summarizes and provides additional investigation hints to the investigator regarding the current case being investigated. You can find the detailed information in the subsequent sections.

The sample investigation summary is shown in the following figure.

Figure 30: Investigation Summary

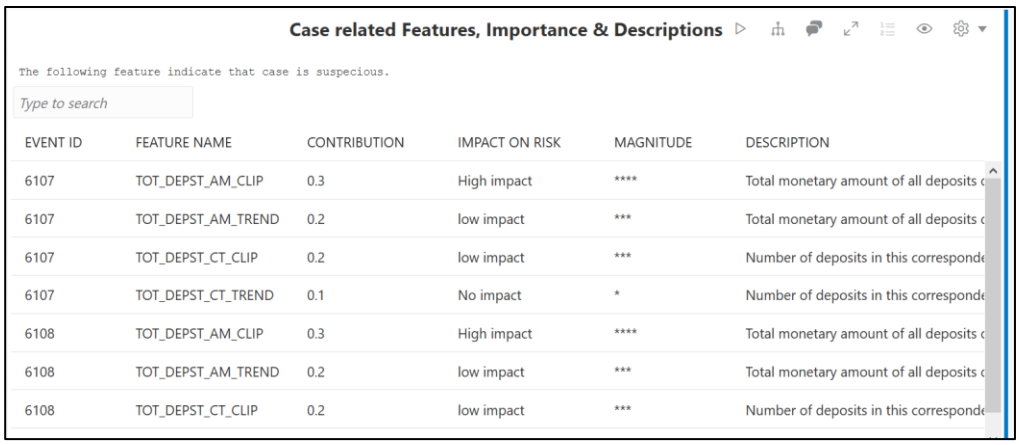


4.2.15.2 Feature description

Feature that indicates case is suspicious will be displayed with additional attributes from the ML model outputs like how much feature is contributing to an event, what is the impact on risk along with detailed description of features. With this investigator gets enough evidences to understand ML events whose most of the components are purely statistical in nature.

Sample feature descript is show here for quick reference.

Figure 31: Feature Description



Case related Features, Importance & Descriptions

The following feature indicate that case is suspecious.

Type to search

EVENT ID	FEATURE NAME	CONTRIBUTION	IMPACT ON RISK	MAGNITUDE	DESCRIPTION
6107	TOT_DEPST_AM_CLIP	0.3	High impact	****	Total monetary amount of all deposits
6107	TOT_DEPST_AM_TREND	0.2	low impact	***	Total monetary amount of all deposits
6107	TOT_DEPST_CT_CLIP	0.2	low impact	***	Number of deposits in this corresponde
6107	TOT_DEPST_CT_TREND	0.1	No impact	*	Number of deposits in this corresponde
6108	TOT_DEPST_AM_CLIP	0.3	High impact	****	Total monetary amount of all deposits
6108	TOT_DEPST_AM_TREND	0.2	low impact	***	Total monetary amount of all deposits
6108	TOT_DEPST_CT_CLIP	0.2	low impact	***	Number of deposits in this corresponde

4.2.15.3 Nearest Historical Cases

As an AML analyst, Investigator only want to review those cases which are most similar to the new event being reviewed so that investigator can focus investigation on what is most relevant.

4.2.15.3.1 Cluster or RLE matching

Possible nearest match will include:

- Exact Match of cluster ID's: No need of finding RLE distance computation in this case. (one to one match of clusters)
- Nearest Match of cluster ID's: Need of RLE distance computation in this case. (Euclidean distance should be used) – matches transaction patterns. Similar patters of other users.
- No Match of cluster ID's: Need of RLE distance computation in this case. (Euclidean distance should be used)

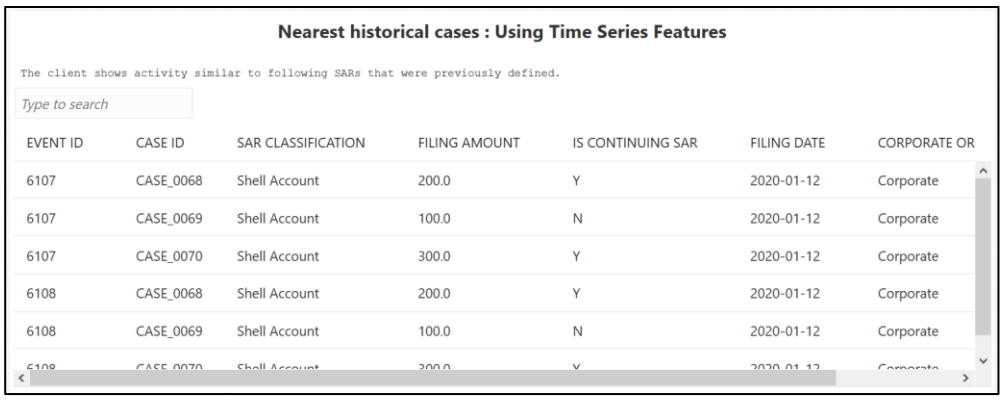
4.2.15.3.2 Graph feature matching

Possible nearest match will include

- Exact Match of graph features: one to one match of features.
- Nearest Match of graph features: cosine similarity should be used to find nearest Cases.

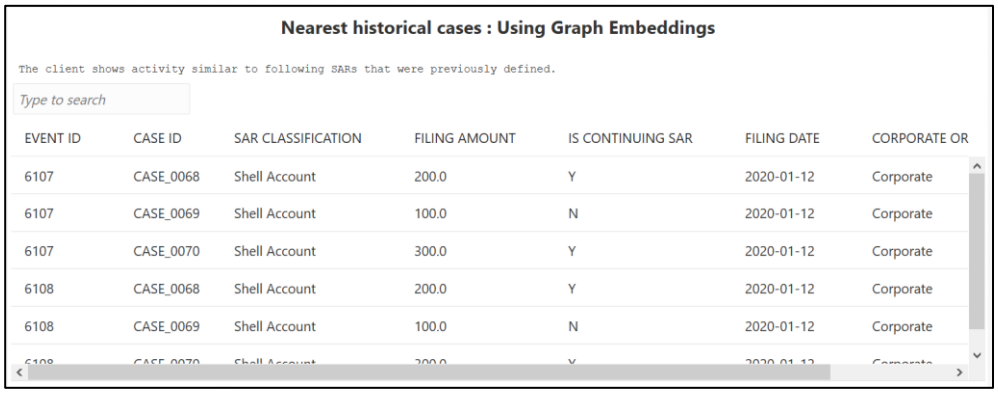
The following sample output shows the nearest cases as per the time series features

Figure 32: Nearest historical cases using time series features



The following sample output shows the nearest cases as per graph features

Figure 33: Nearest historical cases: Using Graph Embeddings



4.2.15.4 Investigator Guidance

To provide guidance to the investigator depending on which variables provide the highest contributions to a prediction so that investigators can focus on the most relevant activity.

For more details, see the OFS Compliance Studio Administration and Configuration Guide.

The following image shows a sample output for investigator guidance

Figure 34: Workflow

4.2.16 Exporting Investigation Detail to PDF format

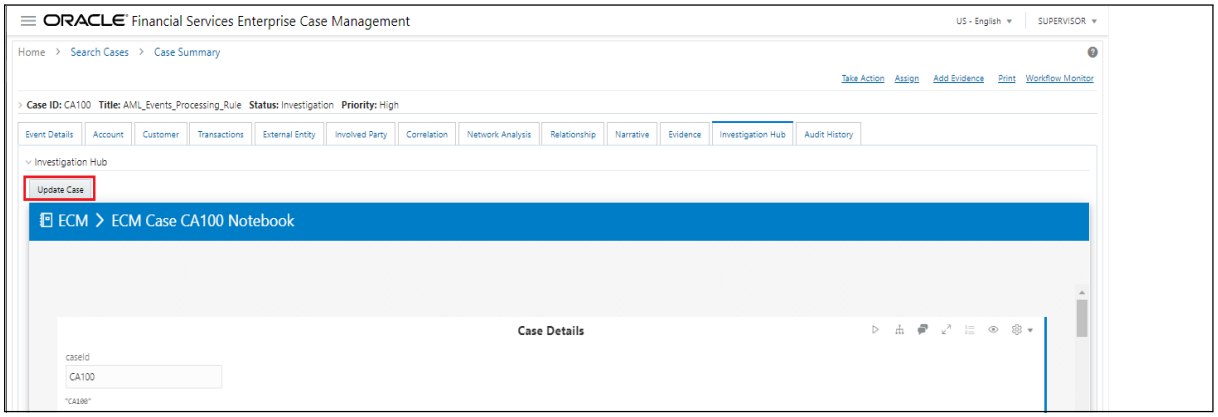
Use the **Export to PDF** option to save the notebook. For more information, see Exporting a Notebook to PDF.

4.3 Updating a Case with Entities in a Graph

Updating a case enables investigators to add additional entities to the case from the graph. To update a case, follow these steps:

1. Navigate to the Investigation Hub tab in a case.
2. Click Update Case to add the account, customer, transaction, and external entities.

Figure 35: Updating a Case



NOTE

- Both Level 1 and Level 2 Investigators can expand the case graph to update a case, to add or remove edges and nodes. For more information, see Working with Graph Nodes.
- On updating a case, all the customers, accounts, derived entities, and transactions that are part of the visible graph and are not already part of the case are added to the case.
- Level 1 and Level 2 Investigators are displayed with different information on the Investigation Hub tab depending on the configuration for that user.
- Level 1 or Level 2 Investigators can continue to work as each other with same privileges but a Level 1 user must update a case before the information can be viewed by a Level 2 user.

5 Common Features

Topics:

- Managing the Notebooks
- Managing the Paragraphs
- Managing the Results
- Quantifind Risk Report

5.1 Managing the Notebooks

A notebook acts as a frame for Paragraphs.

Topics:

- Common Screen Elements in Notebooks
- Exporting a Notebook
- Refreshing Session
- Deleting a Notebook

5.1.1 Common Screen Elements in Notebooks

The following table describes the common screen elements in a notebook that can be used to perform various actions on a notebook.

Table 7: Common Screen Elements in Notebooks

Button	Icon	Action/Description
Modify Notebook		Click this button to modify the details of a notebook such as name, description, and/or tags.
Hide Code		Click this button to hide or show the Code Section in all the paragraphs in a notebook.
Hide Result		Click this button to hide or show the Results Section in all the paragraphs in a Notebook.
Read Only		Click this button to set the notebook to Read-only mode. Note: The notebook is protected from edit, clear result, delete, reset session, run paragraphs, and share in Read-only mode.
Write		Click this button to set the notebook to Write mode.

Run Paragraphs		Click this button to execute all the paragraphs in a notebook in sequential order. For more information, see Run All Notebook Paragraphs. You can view the results in various formats. For more information, see Managing the Results.
Reset Session		Click this button to reset any connection or code executed in a notebook.
Delete Notebook		Click this button to delete a notebook.
Clear Result		Click this button to clear results for all the paragraphs in a notebook. Warning: This action clears all the results. You must run the paragraphs again to view the results.
Clear Paragraph Dependencies		Click this button to remove all defined paragraph dependencies.
Open as Iframe		Click this button to open a notebook in iFrame. This allows a notebook to be embedded inside another webpage.
Share Notebook		Click this button to share a notebook with another user, user group, or role.
Clone Notebook		Click this button to create a copy of a notebook. All paragraphs in the current notebook are replicated in the new notebook. The cloned notebook is created with the default name, Copy of <Current Notebook Name>.

Export Notebook		Click this button to export a notebook to your computer as a DNSB file.
Layout		Click this button to set the preferred layout, Zeppelin, or Jupyter.
Default Template		Click this button to apply the overall look and feel of the notebook using the default template.
Default View		Click this button to switch between Default, Simple, and Report views.
Show Panel		Click this button to show or hide the Paragraph Settings Bar Commands, Results Toolbar, and Settings Dialog for a selected paragraph in a panel to the right of the notebook.

5.1.2 Exporting a Notebook

The Export notebook feature enables you to export notebooks available in the OFS IH to your local machine. Notebooks are exported in the OFS IH Notebook (*.pdf) file format, which can be saved, shared, or printed.

5.1.2.1.1 Exporting a Notebook to PDF

The Export individual notebooks option enables you to export selected notebooks in OFS IH to your local machine.

To export individual Notebooks, follow these steps:

1. Log in to the OFS Compliance Studio application.
2. On the Workspace Summary page, select Launch workspace  to display the application configuration and model creation menu.
3. Hover the mouse over the Advanced Options widget  and click Advance Model Management.

4. Open Advanced Model Management.
5. Click InvestigationHub Objective.
6. Click  next to the corresponding notebook and select **Open in Studio** option.
7. Click the Notebook that you want to export. The selected Notebook is opened.
8. Click **Export to PDF**. The Notebook is downloaded to your local machine in.pdf format.

5.1.3 Reset Session

The Reset button allows you to refresh any connection or code executed in a notebook. Follow these steps:

1. Navigate to Advanced Model Management.
2. Click InvestigationHub Objective.
3. Click  next to the corresponding notebook and select **Open in Studio** option.
4. Click **Refresh**. If the refresh is successful, then a confirmation message is displayed.

5.1.4 Deleting a Notebook

1. Navigate to Advanced Model Management.
2. Click InvestigationHub Objective.
3. Click  next to the corresponding notebook and select **Open in Studio** option.
4. Click Select Notebooks.

   The check boxes are displayed for notebooks.
5. Select the required notebooks, and click Delete. The selected notebooks are deleted.

5.2 Managing the Paragraphs

Topics:

- Common Screen Elements in Paragraph
- Paragraph Dependencies
- Run All Notebook Paragraphs

5.2.1 Common Screen Elements in Paragraph

A paragraph is a piece of code that can be executed to obtain the result. In OFS IH, paragraph offers a workbench to author code or a query using various interpreter friendly scripting languages supported in OFS IH.

The following table describes the elements in the Paragraph Settings Bar that can be used to perform various actions on individual paragraphs in a notebook.

Table 8: Elements in Paragraph Settings Bar

Button/Icon	Action/Description
Execute Paragraph 	Click this button to execute the code or query in a paragraph. After execution, you can view the result in various formats. For more information, see Managing the Results.
Enter Dependency Mode 	Click this button to add or remove dependent paragraphs. Paragraphs with dependent paragraphs are executed in the dependency order. For more information, see Paragraph Dependencies.
Comments 	Click this button to add comments to a paragraph.
Expand 	Click this button to expand a paragraph and view the paragraph in full-screen mode.
Show/Hide Line Numbers 	Click this button to show or hide line numbers in the code in a paragraph. Note: This button is applicable only to the code section.
Visibility 	Click this button to manage the visibility settings in a paragraph. It controls how a paragraph may be viewed by the author and other users who have access to the notebook.
Settings 	Click this button to perform the following actions: Resize the width of a paragraph. Change the order of placement of the paragraphs by moving them up or down. Clear the paragraph result. Delete a paragraph.

5.2.2 Paragraph Dependencies

The Paragraph Dependencies feature allows you to add dependencies between paragraphs. The dependents of a paragraph are automatically executed after the original paragraph itself or any graph manipulation on the original paragraph is executed.

To create paragraph dependencies, follow these steps:

1. Click the **Dependency** icon in the Paragraph Settings Bar of a paragraph. The Dependency Mode window is displayed.

2. Select or deselect paragraphs to add or remove them as dependents.

   The order in which the paragraphs are selected appears as a number over the selected paragraphs. The number indicates the order in which the dependent paragraphs will be executed.

3. Click **Save**.

   The changes are saved. Every time a paragraph is executed or graph actions are applied, its dependent paragraphs will be executed automatically.

5.2.3 Run All Notebook Paragraphs

A paragraph is a piece of code that can be executed to obtain the result. Notebook execution includes the execution of all paragraphs.

To run all the paragraphs in a notebook, follow these steps:

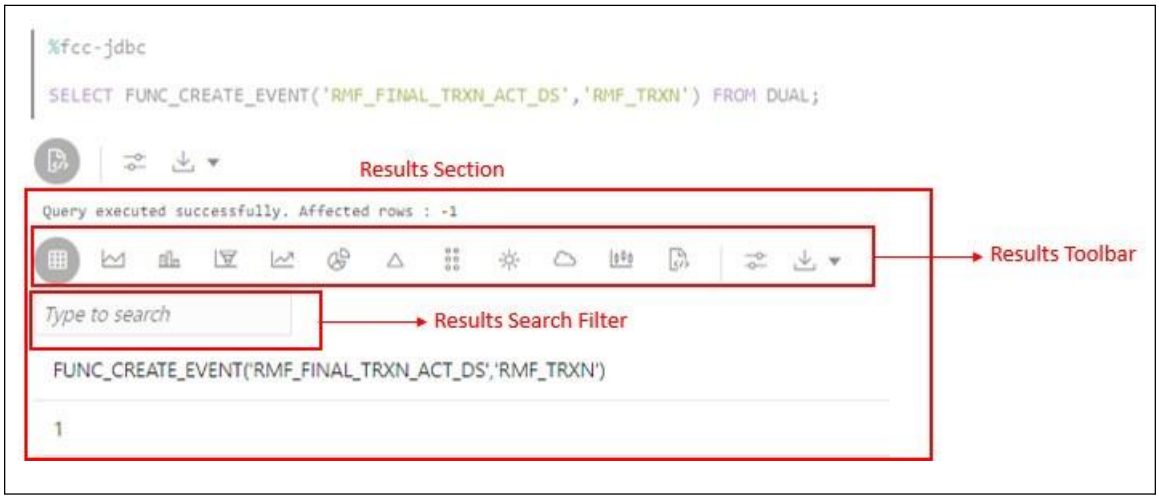
1. Click **Run Paragraphs** in the Notebook Toolbar.

All the paragraphs will execute in order from top to bottom. If a paragraph was deleted during the Run Paragraphs job execution, it is ignored and paragraph execution continues for the rest of the paragraphs.

5.3 Managing the Results

After executing a paragraph, the result is displayed in the Results section.

Figure 36: Paragraph Results Section



Topics:

- Result Toolbar
- Results Search Filter

- Customizing Result Settings
- Result Toolbar

The following table describes the various result formats supported in OFS IH.

Table 9: Result Formats in Studio

Chart	Button/Icon	Action/Description
Table Chart		Click this button to view results in tabular format.
Area Chart		Click this button to view results in the area chart format.
Bar Chart		Click this button to view the results in bar chart format.
Funnel Chart		Click this button to view the results in the funnel chart format.
Line Chart		Click this button to view the results in line chart format.
Pie Chart		Click this button to view the results in pie chart format.
Pyramid Chart		Click this button to view the results in pyramid chart format.
TreeMap Chart		Click this button to view the results in tree map format.
Sunburst Chart		Click this button to view the results in sunburst chart format.
Tag Cloud Chart		Click this button to view the results in tag cloud chart format.
Box Plot Chart		Click this button to view the results in the plot chart format.
Text		Click this button to view the results in text format.

Settings		Click this button to customize the results based on the selected format. Enter the required values for the General, Visualization, and Text settings.
Download As		Click this button to download the result in the following format: Raw: Available for all formats. SVG Format: Available for Graph and Visualization formats.

5.3.1 Results Search Filter

The Results Search Filter is available only in Table Format. This feature instantly searches for an entered value in the results.

5.3.2 Data Visualization

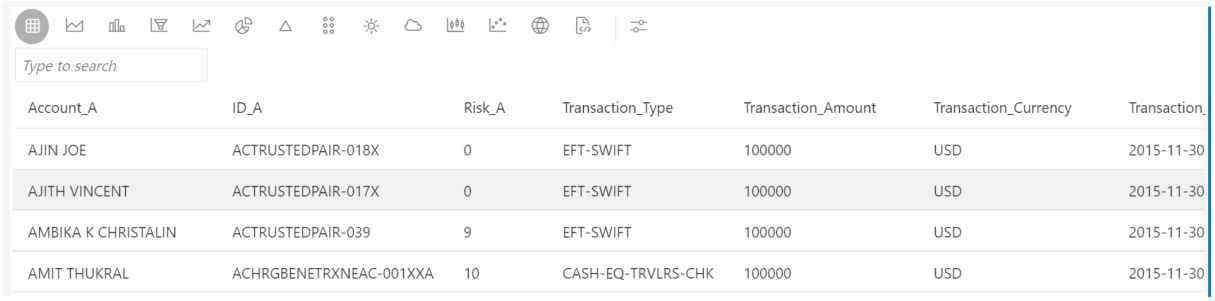
You can view the transactions in the following formats:

- Table
- Area Chart
- Bar Chart
- Funnel Chart
- Line Chart
- Pie Chart
- Pyramid Chart
- Treemap Diagram
- Sunburst Diagram
- Tag Cloud
- Box Plot
- Scatter Plot
- Map Visualizer
- Text

5.3.2.1 Table

The Investigation Data Hub allows you to visualize your data in the form of a Table Diagram. The table can be sorted by column in ascending or descending order. Additionally, the table can be filtered for a specific search term. Rows that do not contain this term are hidden from view and the remaining rows highlight the location of the search term within the row.

Figure 37: Table Diagram



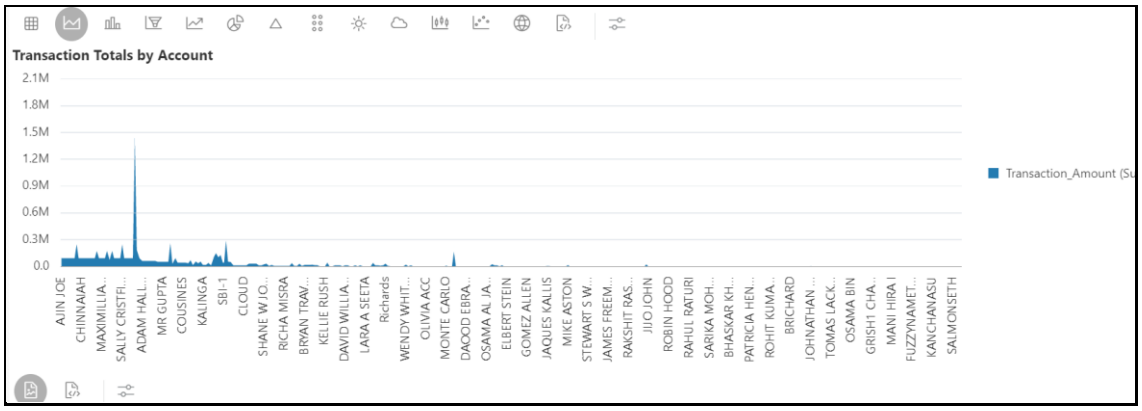
Type to search

Account_A	ID_A	Risk_A	Transaction_Type	Transaction_Amount	Transaction_Currency	Transaction_
AJIN JOE	ACTRUSTEDPAIR-018X	0	EFT-SWIFT	100000	USD	2015-11-30
AJITH VINCENT	ACTRUSTEDPAIR-017X	0	EFT-SWIFT	100000	USD	2015-11-30
AMBIKA K CHRISTALIN	ACTRUSTEDPAIR-039	9	EFT-SWIFT	100000	USD	2015-11-30
AMIT THUKRAL	ACHRGBENETRXNEAC-001XXA	10	CASH-EQ-TRVLRS-CHK	100000	USD	2015-11-30

5.3.2.2 Area Chart

The OFS IH allows you to visualize your data in the form of an Area Chart.

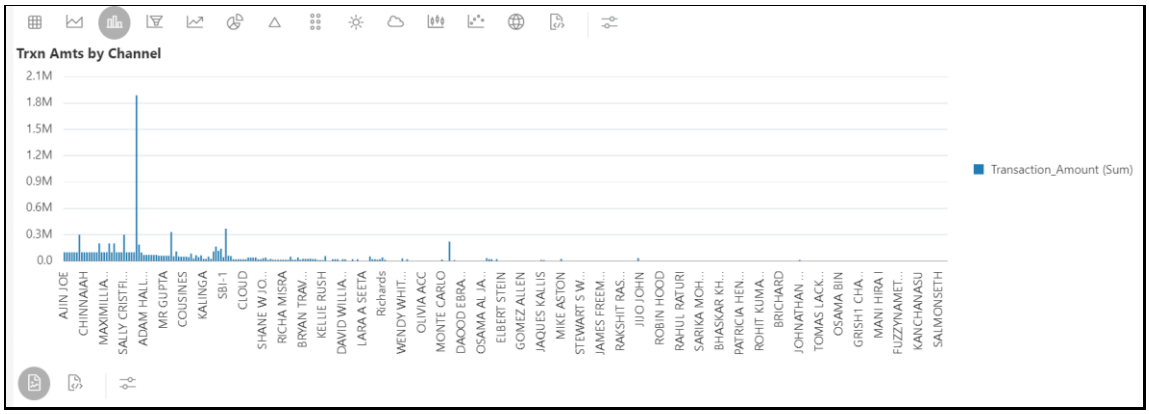
Figure 38: Area Chart



5.3.2.3 Bar Chart

The OFS IH allows you to visualize your data in the form of a Bar Chart.

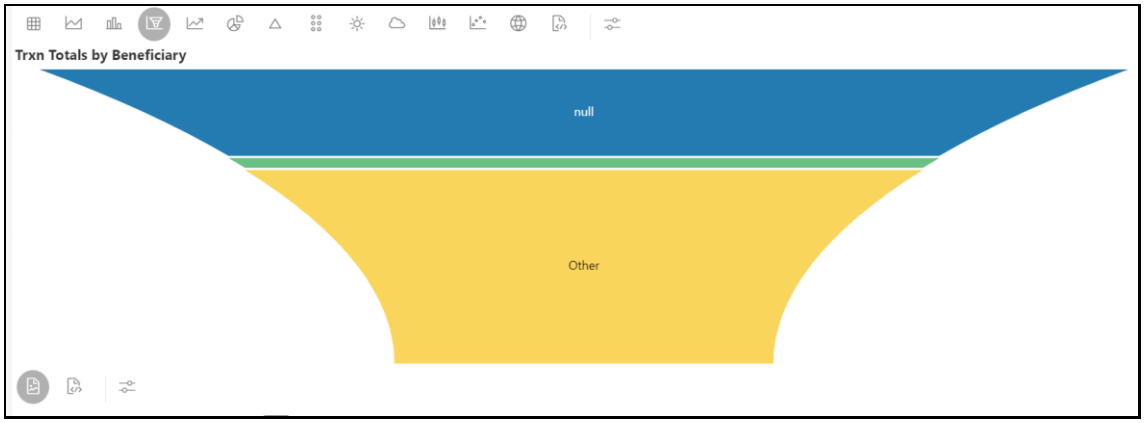
Figure 39: Bar Chart



5.3.2.4 Funnel Chart

The OFS IH allows you to visualize your data in the form of a Funnel Chart.

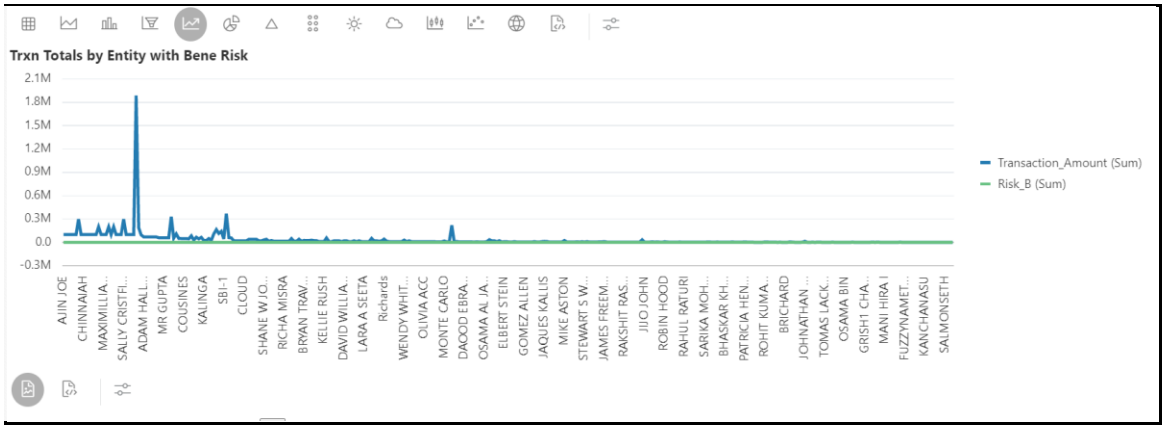
Figure 40: Funnel Chart



5.3.2.5 Line Chart

The OFS IH allows you to visualize your data in the form of a Line Chart.

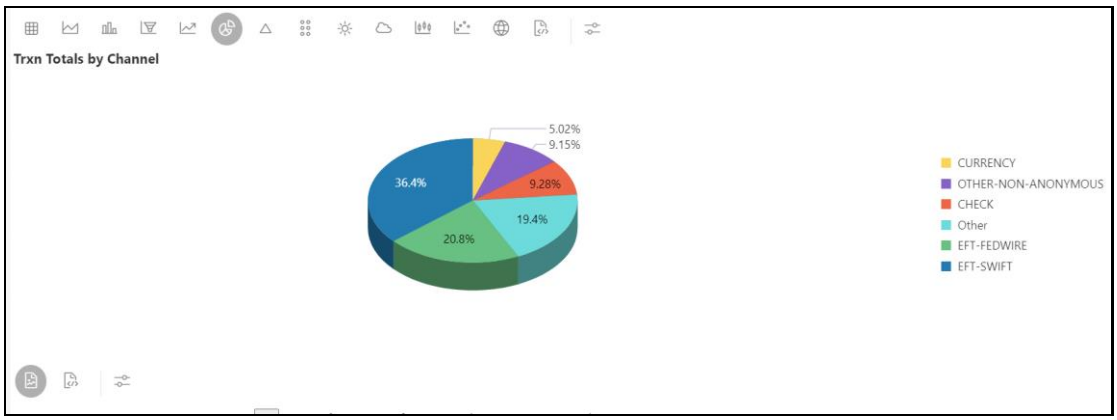
Figure 41: Line Chart



5.3.2.6 Pie Chart

The OFS IH allows you to visualize your data in the form of a Pie Chart.

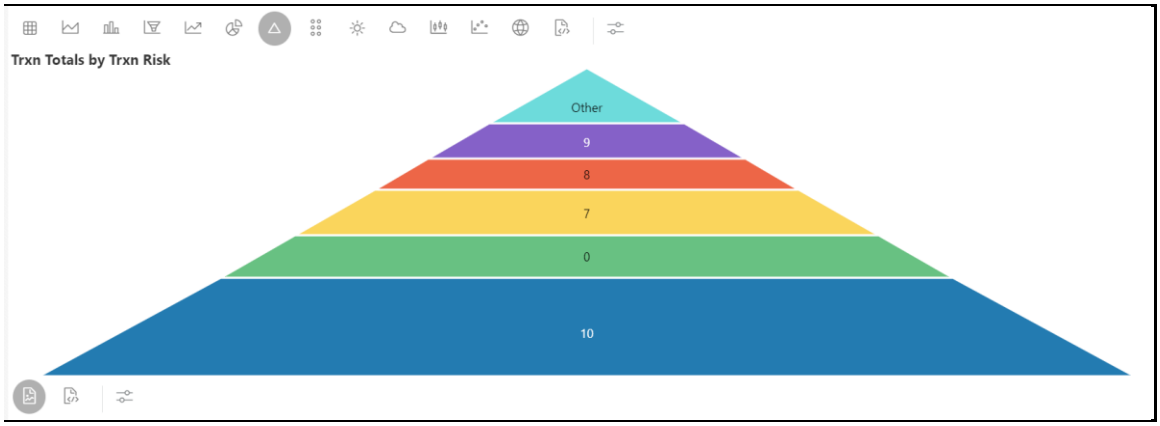
Figure 42: Pie Chart



5.3.2.7 Pyramid Chart

The OFS IH allows you to visualize your data in the form of a Pyramid Chart.

Figure 43: Pyramid Chart



5.3.2.8 Tree Map Diagram

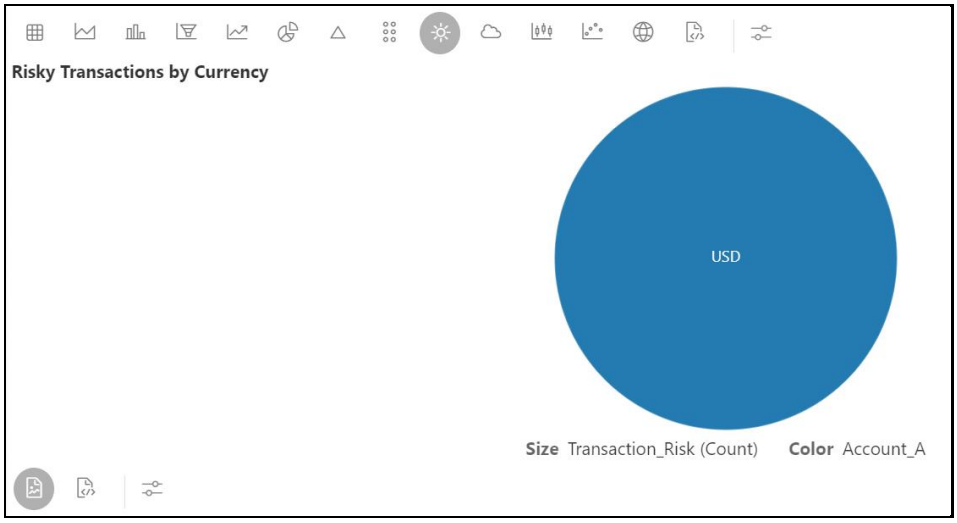
The OFS IH allows you to visualize your data in the form of a Tree Map Diagram.

Figure 44: Tree Map Diagram

5.3.2.9 Sunburst Diagram

The OFS IH allows you to visualize your data in the form of a Sunburst Diagram.

Figure 45: Sunburst Diagram



5.3.2.10 Tag Cloud

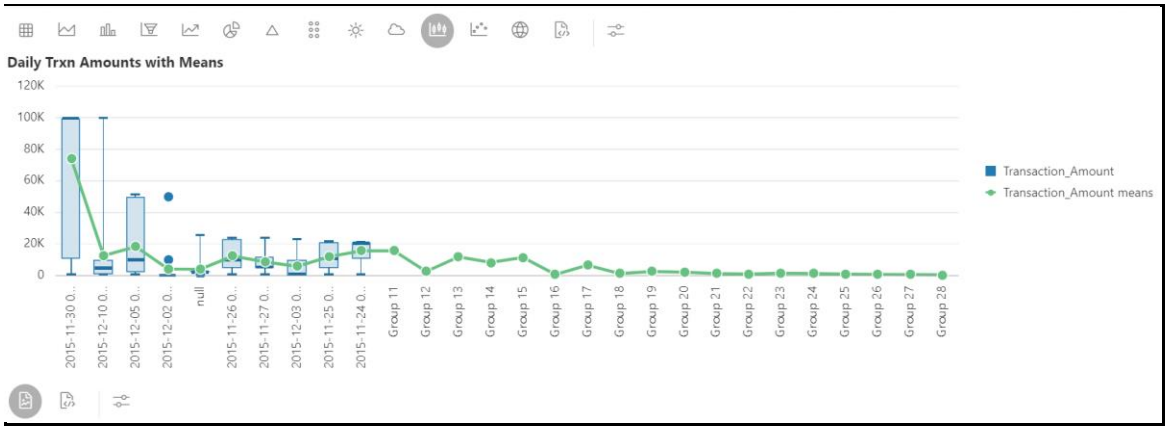
The OFS IH allows you to visualize your data in the form of tags. The tag cloud operation is used to identify the spots where there are more flags.

Figure 46: Tag Cloud

5.3.2.11 Box Plot

The OFS IH allows you to visualize your data in the form of a Box Plot.

Figure 47: Box Plot



5.3.2.12 Scatter Plot

The OFS IH allows you to visualize your data in the form of a Scatter Plot.

Figure 48: Scatter Plot

5.3.2.13 Map Visualizer

The OFS IH allows you to visualize your data on top of a Map.

Figure 49: Map Visualizer

5.3.3 Customizing Result Settings

To customize the result format, follow these steps:

1. Navigate to the Notebooks page.
2. Click the required result format for a paragraph in the Result section and then click Settings. The Settings window is displayed and contains the following category:
   - General
   - Visualization
   - Text
3. Select a category and enter the required values for that category. The result is customized as per the entered values.

5.4 All Transactions in Visible Graph

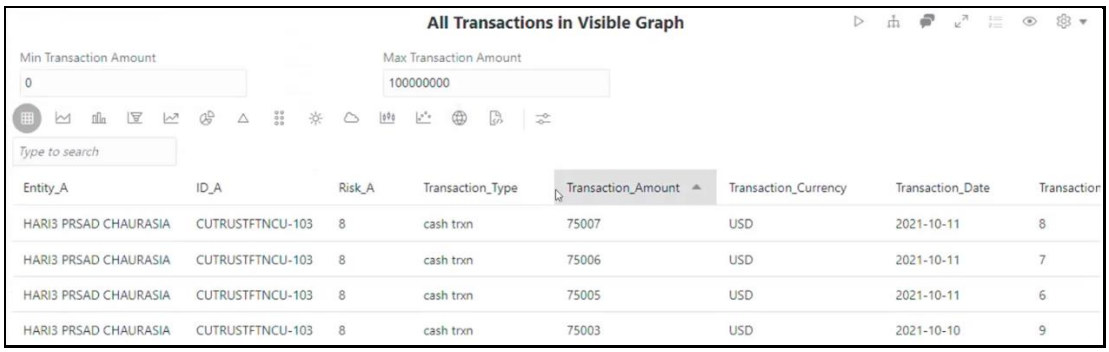
This paragraph shows all the transactions from the **Visible Graph**. In addition, you can filter the transaction details based on transaction amount specified in the following fields:

- **Min Transaction Amount**: You enter the minimum transaction amount.
- **Max Transaction Amount:** You enter the maximum transaction amount.

For more information on Visible Graph, see Graph Types.

To view the transaction details, navigate to the All Transaction in Visible Graph paragraph.

Figure 50: All Transactions in Visible Graph Details



You can view these transactions in various formats. For more information on formats, see Data Visualization section.

> **NOTE** Ensure that **Graph Result of the Entity Search** paragraph is re-execute after modification to view the correct results in this paragraph.

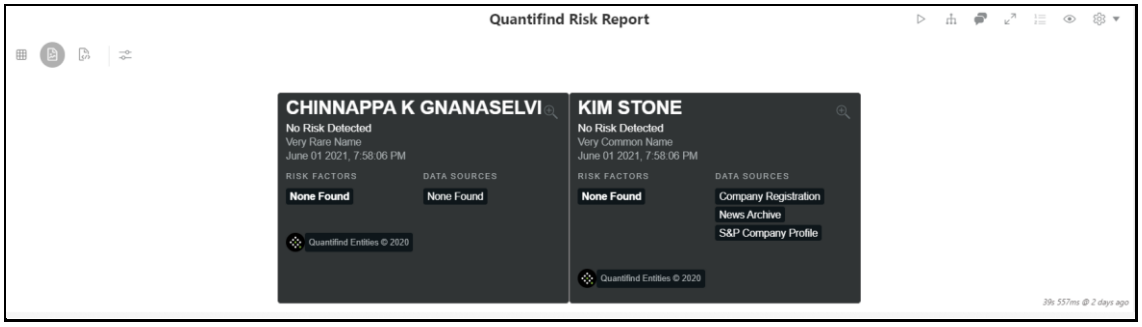
5.5 Quantifind Risk Report

Quantifind integration for real-time risk reports in OFS IH enables the Financial institutions to discover signals of revenue drivers and risk, including fraud and money.

> **NOTE**
> - These **reports are only available for OFS IH integration with ECM**.
> - Ensure that **Graph Result of the Entity Search** paragraph is re-execute after modification to view the correct results in this paragraph.
> - If node ID has invalid data for Quantifind details then it displays an error message.

The results are displayed as a card, which displays the risk status of the identified node details of customers or derived entities in the **Graph Result of the Entity Search** paragraph.

Figure 51: Quantifind Risk Report



Based on the risk you can perform the required measures for the risk analysis. You can click on  in respective card to know more details. It redirects to Quantifind website.

5.6 Graph Details

This chapter provides information on the graph details such as the action performed on a graph, nodes in a graph, and so on.

5.6.1 Graph Types

- **Result Graph**: This graph is created with the result of the Initial Screening Result paragraph.
- **Visible Graph**: This graph state that this is for the end graph after user actions ns (depending on nodes/edges are expanded/dropped)

5.6.2 Graph Highlights

Table 10: Graph Highlights

Button/Icon	Action/Description
	Click this icon to search entity.
	Click this button to view customers.
	Click this icon to view closed events.
	Click this icon to view open events.
	Click this icon to view accounts.
	Click this icon to view open cases.
	Click this icon to view institutions.

5.6.3 Working with Graph Nodes

- Repositioning Nodes
- Collapsing and Expanding Nodes
- Viewing the Node Details
- Deleting a Node
- Removing an Edge

5.6.3.1 Repositioning Nodes

The Network Graph page allows you to move nodes around the screen, using the drag and drop feature, to reposition them.

To reposition nodes, follow these steps:

1. Navigate to the Network Graph in a notebook.
2. Select a node to reposition and click it.
3. Drag and Drop the node to the required position.

> **NOTE** The graph only uses a specific portion of the browser window to display the graph. Dragging a node beyond a certain point towards the right side of the browser hides the portion of the graph dragged beyond that point. However, you can use the Zoom Out feature on the Graph Toolbar to view the hidden portion again.

5.6.3.2 Collapsing and Expanding Nodes

This option allows you to hide all outgoing links and nodes to which these outgoing links are connected from the node being collapsed. The collapsed node remains on the graph and the node icon changes to indicate that the node is in a collapsed state. To collapse nodes, follow these steps.

1. Navigate to the Network Graph in a notebook.
2. Select a node to collapse and right-click the node. An option menu is displayed.
3. Select the Collapse option from the menu. The outgoing links are hidden on the page.

> **NOTE**
> - If any child node has at least one incoming link from any other node, the child node and its child network are not collapsed. But the link from the collapsed node to the child node is hidden and the icon of the collapsed node changes to indicate that the node is in a collapsed state.
> - On the Node menu of a collapsed node, the Collapse option changes to Expand. If the user collapses a node but has no impact on the graph (that is, if no part of the graph is hidden), the Node menu remains unchanged. There is no restriction on how many nodes can be collapsed on a graph.

To expand the node, select Expand from the menu. The outgoing links are then restored on the page.

> **NOTE** The Collapse option does not appear for outer nodes. Outer nodes are nodes that do not have any outgoing links

5.6.3.3 Viewing the Node Details

This section allows you to view the current information associated with the selected node. This is the same information that is displayed on the Entity Summary Historical Report paragraph for this entity.

To view the node details, follow these steps:

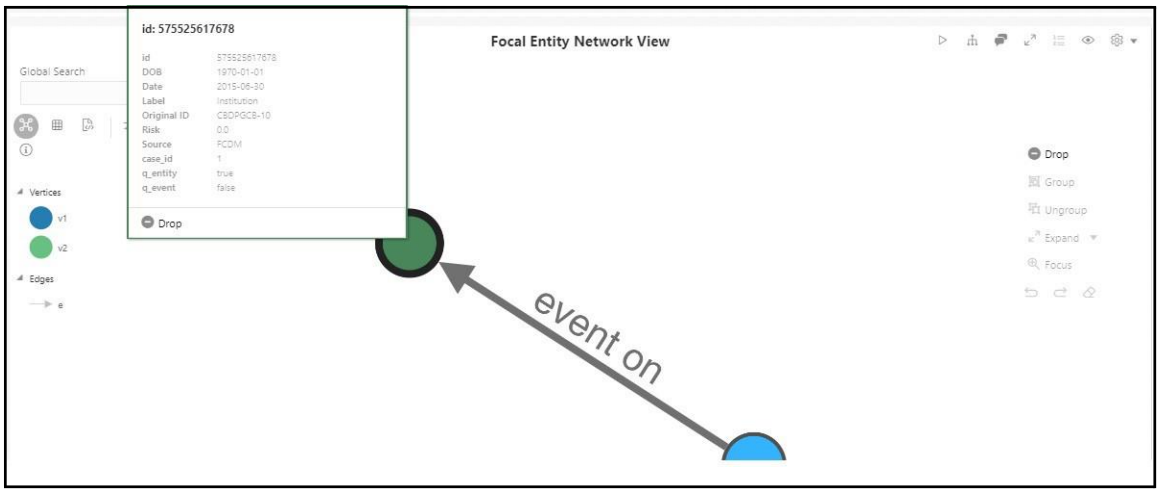
1. Navigate to the Network Graph in a notebook.
2. Select a node and right-click. An option menu is displayed. The Node Details window is displayed with the current information associated with the selected node. This includes the Properties and Risk details of the node.

5.6.3.4 Deleting a Node

You can drop a node to from a network graph view the result on On-screen data. To delete a node, follow these steps:

1. Navigate to the Network Graph in a notebook.
2. Right- click on any node as shown in the following figure and click Drop.

Figure 52: Deleting a Node

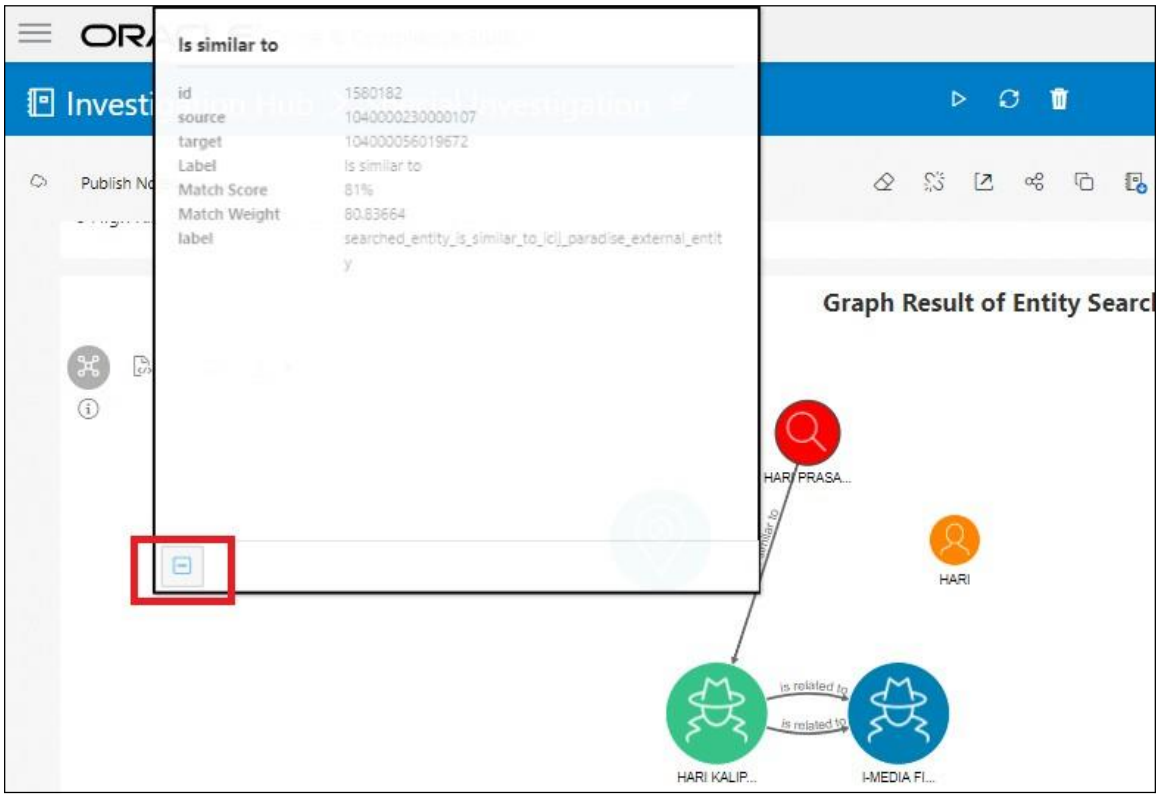


5.6.3.5 Removing an Edge

You can remove and edge from a network graph to view the result on On-screen data. To remove an edge, follow these steps:

1. Navigate to the Network Graph in a notebook.
2. Right- click on any edge and click Drop - Delete selected vertices.

Figure 53: Removing an Edge



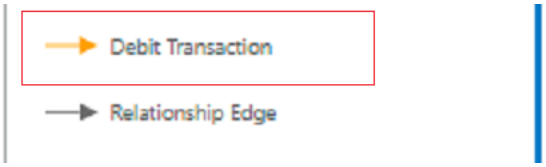
5.6.3.6 Hiding an Edge

You can hide an edge from a network graph to view the result on On-screen data. To hide an edge, follow these steps:

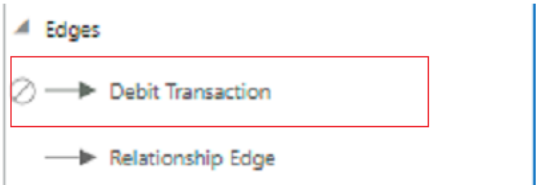
1. Navigate to the Network Graph in a notebook.
2. Click on any edge. The edge highlights is enable. Click on the same edge to disable.

   For example,

   - Enabled

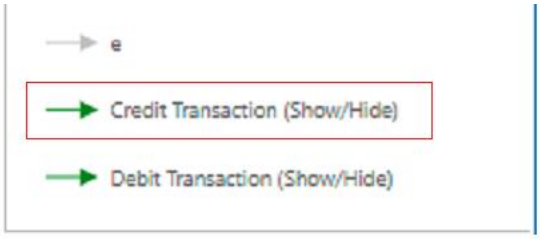
     

   - Disabled

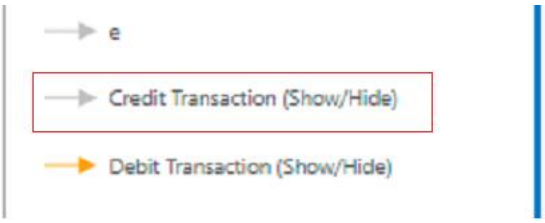
     

   In addition, you can perform **Show/Hide** for the Transactions in the same way.

- Show


e
Credit Transaction (Show/Hide)
Debit Transaction (Show/Hide)

- Hide


e
Credit Transaction (Show/Hide)
Debit Transaction (Show/Hide)

OFSAA Support

Raise a Service Request (SR) in My Oracle Support (MOS) for queries related to the OFSAA applications.

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