REFERENCE DATA CENTER

Data Management User Guide, 2015 R2







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About the Reference Data Center

The Reference Data Center is a powerful solution for centralizing and managing security reference data for better accuracy, auditing, and reporting. The Reference Data Center composites, validates, and cleanses security reference data from external vendors and internal sources, creating one or more gold copies that downstream systems can leverage. Packaged content — data strategies, fields / field groups, validations, reports — is defined by Eagle and bundled with the product to reduce implementation timelines and eliminate the dependency on release cycles.

With the Reference Data Center, your business users can:

- Search for securities and exceptions
- View and edit securities
- View and edit security detail information
- Override and release exceptions
- View and edit overrides
- Authorize and reject overrides
- Audit manual changes to securities and exceptions
- Create and delete securities
- Attach documents and comments to securities
- Generate reports of reference data and the associated audit information

You can manage how your business users access and work in the Reference Data Center by assigning permissions in the User Administration area of the System Management Center.

To access the Reference Data Center:

- 1. From any Eagle window, click the Eagle Navigator button.
- 2. Enter reference data center in the Start Search text box and click the Reference Data Center link. Or, click All Programs and select Reference Data Center.
 - You see the Reference Data Center with the Securities workspace as the default.
- 3. To exit the Reference Data Center, click the **Eagle Navigator** button, hover over **Sign Out** and click **Close Reference Data Center**.
- 4. To close all Eagle programs and log out, click the Eagle Navigator button and click Sign Out.

About the Reference Data Center Workflow

The Reference Data Center allows you to composite, validate, and cleanse security reference data from external vendors and internal sources, creating one or more "gold copies" that downstream systems can leverage.

There are multiple validation checks throughout the workflow. For example, the system can optionally validate the vendor data, the enrichments to the gold copy security, and the gold copy security information. You can also perform validations when you create a new security in the Reference Data Center UI.

The workflow consists of the following steps:

- 1. Load the security reference data
- 2. Validate the vendor data (optional)
- 3. Create the gold copy security record
- 4. Enrich the gold copy security record (optional)
- 5. Validate the gold copy security record (optional)
- 6. Resolve the exceptions
- 7. Release the gold copy security record
- 8. Distribute the gold copy security record

A description of each step in the workflow follows.

Load the Security Reference Data

The security reference data is loaded from external vendors and internal systems into the SECURITY database tables in the Eagle data warehouse, creating a centralized data repository. This includes the following data:

- Securities
- Analytics
- Ratings
- Variables rates
- Prepayment time series
- Underlying securities
- Vendor History (view only)

You can also load, view, and edit the following related security detail information, without compositing, validation, and enrichment:

- Corporate actions
- Call and Put schedules
- Factors
- Third Party cash flows

Validate the Vendor Data

The vendor data is validated using validation rules that assign a pass / fail status to each field. You can use the rules provided by Eagle or use your own customized validations. Validation rules can perform simple data integrity checks, for example, making sure the Currency Code field is in the set of approved currency codes. They can also perform complex data integrity checks, for example, a standard deviation check that verifies field values are within a defined range, or a validation check that involves conditional logic. This step is optional.

Create the Gold Copy Security Record

The security reference data is aggregated from one or more source rules. A source rule is a hierarchy of sources used to populate each selected field during the compositing process. The gold copy security record is built from one or more sources of data and written to the SCRUB database. The SCRUB database is a staging area used to maintain failed validations, protecting downstream systems from accessing invalid data.

Enrich the Gold Copy Security Record

The fields in the gold copy security record are enriched to derive additional fields. For example, you can form an enriched Issue Description field by combining the Issue Name and the Maturity Date fields. This step is optional.

Validate the Gold Copy Security Record

The gold copy security record is validated to further ensure the coherence and completeness of the security reference data. This step is optional.

Resolve the Exceptions

A list of exceptions is created for each security in the SCRUB database. You can review the security reference data that has gone through compositing and validation and resolve the exceptions using the Reference Data Center UI.

Release the Gold Copy Security Record

The gold copy security record is released to the SECURITY database in the Eagle data warehouse. To process transactions more quickly, some fields may be released prior to the resolution of all validation errors. This is known as a partial release. They can also be released as a set within a field group.

The release level determines whether the gold copy security record is eligible for use by downstream systems. The release status for the overall security is set to the lowest release level where all fields associated with that release level have been released. For example, suppose the status of the security is Released for Trading because all Level 1 fields have passed. This means, all Level 1 fields are released to the Eagle data warehouse. Suppose some Level 2 and all of the Level 3 fields have also passed. Those Level 2 and Level 3 fields are also released to the Eagle data warehouse, however, the status of the security will still be Released for Trading. Only when all of the Level 3 fields have passed will the Release Level field change to Released with No Exceptions.

Distribute the Gold Copy Security Record

The gold copy security record is exported to external systems.

About the Eagle Data Warehouse

The Reference Data Center is part of Eagle's Data Management solution, a data-centric processing model designed to build and maintain enhanced data in the Eagle data warehouse using various applications and centers, some of which include the following:

- Data Mart. A data repository within the Eagle data warehouse and other databases that allows you to organize information for a specific business purpose and distribute it to support specific business needs.
- Eagle Analytics. A specialized component that provides built-in functionality for the valuation and calculation of analytics for fixed income and derivative securities, under a licensing agreement for the FINCAD® Analytics Suite.
- **Pricing Center.** An application that allows you to manage the daily pricing process for best-of-breed security prices and foreign exchange (FX) rates.
- Metadata Center. A data governance tool that assists you with organizing, managing, and monitoring metadata, data about data.
- **Eagle Enrichment.** A specialized component that uses an original source of accounting data as a baseline to create a modified set of data warehouse data for an entity under a unique source.

About the Security Database

The Eagle data warehouse is designed to consolidate information from multiple sources, reconcile discrepancies among vendors, and enrich the data available to clients. It consists of various databases. The security master data is stored in the SECURITY database in various tables and fields. The SECURITY database contains a variety of tables:

- Composite Tables
- History Tables
- Time Series Tables

Composite Tables

The Composite table stores the current version of the security master record, which is typically built by the Reference Data Center. Data stored in the composite table is not identified with a SRC_INTFC_INST or an EFFECTIVE_DATE because the data at this level is the most current data available for source Eagle PACE and is typically used as production data.

The Composite table stores an UPDATE_SOURCE, which identifies the last person or process that modified the record, and an UPDATE_DATE, which specifies when the record was last updated. There is only a single composite record per security. Additional composite records can be built, but the records are stored in the History tables.

Examples of Composite tables include the SECURITY_MASTER table, which stores general security master data, and the EQUITY table, which stores data specific to equity securities. Similar tables also exist to store information for fixed income securities, mortgage backed securities, and other security types. An example of the SECURITY_MASTER table follows.

SECURITY_MASTER Table

| SEC ALIAS | ASSET ID | ISSUE NAME | TICKER | SEC TYPE | UPDATE SOURCE | UPDATE DATE |
|-----------|-----------|---------------------|--------|----------|------------------|-------------|
| 200 | 123456789 | ABC Incorporated | ABC | cs | Bloom | 11/19 |

History Tables

The History table stores records for each vendor source, as well as for the Eagle PACE gold copy and any other gold copy sources. Each history record is stored with a SRC_INTFC_INST and EFFECTIVE_DATE. A new history record is loaded for each source every time a data element changes from the last history record for the source. Therefore, there are multiple history records per security. Data for the most recent Eagle PACE source history record is identical to the SECURITY_MASTER composite record.

Examples of security History tables include SECMASTER_HISTORY and EQUITY_HIST. Similar tables exist for other security types. An example of the SECMASTER_HISTORY table follows.

SECMASTER_HISTORY Table

| SRC INTFC INST | EFFECTIVE DATE | SEC ALIAS | PRIMARY ASSET ID | ISSUE NAME | TICKER | SEC TYPE | UPDATE SOURCE | UPDATE DATE |
|----------------------|-------------------|--------------|---------------------|---------------------|--------|-------------|------------------|----------------|
| 25 | 11/18 | 200 | 123456789 | ABC Incorporated | ABC | cs | Bloom | 11/19 |
| 23 | 11/18 | 200 | 123456789 | ABC Inc. | ABC | СОМ | IDC | 11/18 |
| 25 | 10/30 | 200 | 123456789 | ABC Incorp. | ABC | cs | Bloom | 10/31 |

Time Series Tables

The Time Series table stores date-specific security data, such as prices, analytics, and ratings data. For example, the CUSIP or Currency for a common stock security typically remains the same for as long as the security is issued. However, the price or earnings per share would likely change on a day by day basis.

The Time Series table is not associated with a History table. Each record in the Time Series table is stored with a SECURITY_ALIAS, SRC_INTFC_INST and EFFECTIVE_DATE. A new record is usually added each day, regardless of whether there has been a change in the data.

Examples of Time Series tables include RATINGS, VARIABLE_RATE, SCHEDULE, FX_RATES, and PRICE. An example of the RATINGS table follows.

RATINGS Table

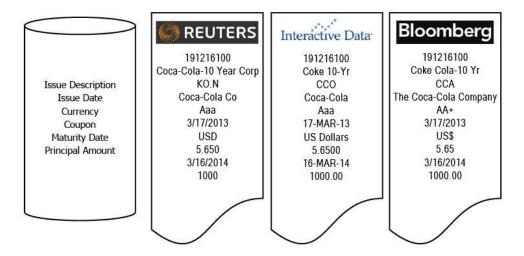
| SRC INTFC INST | EFFECTIVE DATE | SEC ALIAS | ALPHA RATING | UPDATE SOURCE | UPDATE DATE |
|-------------------|-------------------|-----------|--------------|------------------|-------------|
| 8 | 11/18 | 200 | Aa3 | Moody | 11/18 |
| 9 | 11/18 | 200 | AA | S&P | 11/18 |

Build the Gold Copy Security

After the vendor security data is loaded into the Eagle data warehouse, the Reference Data Center processes the security history records via the data strategy, which identifies the following:

- Securities managed by the data strategy
- Field groups and release levels in the data strategy
- Source hierarchy rules for each field
- Validation rules for each field
- Enrichment rules for each field
- Input values, such as the default and override values

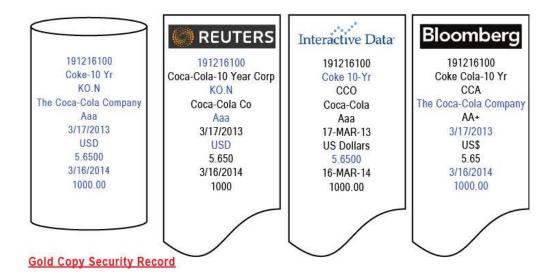
For example, the following diagram shows security reference data received from three different sources: Reuters, Interactive Data, and Bloomberg.



The Reference Data Center interprets the user-defined source hierarchy rules via the data strategy, utilizing the data stored in the History tables. The following table shows an aggregation of the sources defined for each field in the previous diagram.

| Data Element | Source |
|-------------------|-----------|
| Issue Description | IDC |
| Issue Date | Bloomberg |
| Currency | Reuters |
| Coupon | Reuters |
| Maturity Date | Bloomberg |
| Principal Amount | Bloomberg |

When the Reference Data Center processes the data strategy, the gold copy security record is defined, as shown in the first column of the following diagram.



The Reference Data Center takes a "best of breed" approach between the data sources to create the gold copy security record.

About the Reference Data Center Workspace

In the Reference Data Center window, the workspace is the area where data is displayed and edited. A workspace has an associated ribbon with action buttons that allow you to view and manage data. The Reference Data Center supports the following top-level workspaces:

- Reference Desk. This top-level workspace includes a Securities workspace to manage reference data and a Monitor workspace to view the Automation Center monitoring of Reference Data Center RDC processes and events.
- Setup. This top-level workspace includes the workspaces used to set up fields, data strategies, FINCAD analytics functions, sources, rules, and the system settings that control the behavior of the Reference Data Center.

Running across the top of the Reference Data Center window is the application's title bar, the Eagle navigator button, the center tabs, and the ribbon. To the left of the window, running vertically, is the left navigation. Running horizontally at the bottom of the window are the wunderbars, bottom navigation tabs, and status and notification bar.

In the middle of all these elements is the workspace, which is host to your windows and their options. When you edit a security in the workspace it is automatically checked out. No one else can edit the security at the same time. When you save your changes, the security is automatically checked in. The length of time that a security can be checked out and not updated is maintained using the system settings in the Setup area of the Reference Data Center.

Role Based Interface

When working in the Reference Data Center, keep in mind that your system administrator manages how you work by assigning permissions in the User Administration area of the System Management Center.

The role based user interface provides strict access control based on the employee's role:

- RDC Admin Role. Provides full permissions for the Setup and Data areas of the Reference Data Center.
- **RDC Analyst Role**. Provides analyst specific permissions for the Setup and Data areas of the Reference Data Center and restricts maintenance of information and security detail authorization.
- RDC End User Role. Provides view-only permissions for the Setup and Data areas of the Reference Data Center and restricts security data manipulation.
- **RDC Manager Role**. Provides nearly full permissions for the Setup and Data areas of the Reference Data Center and restricts the maintenance of system settings.

The Ribbon

The ribbon for the Data wunderbar allows you to perform actions on the data in the Reference Data Center. The ribbon choices depend on what you are doing. By switching tabs, you change your ribbon choices.

- Home tab
 - Create New. Creates a new security or data strategy.
 - Edit. Edits security detail information, such as corporate actions, factors, call / put schedules, and third party cash flows.
 - Delete. Deletes a security.
 - View. Displays security detail information, such as corporate actions, factors, call / put schedules, and vendor cash flows for a security.
 - Authorize. Authorizes an override to an exception.
 - Release Exception. Releases an exception.

- Attach/Comment. Attaches comments and documents to securities and exceptions.
- Audit. Displays a list of manual changes made to securities and exceptions.
- Data Overrides. Displays a list of all manual changes associated with one or more securities and allows you to modify the changes.
- Released Exceptions. Allows you to list and edit released exceptions.
- Reports. Generates reports that you can print and export.
- MicroStrategy Reports. Generates MicroStrategy reports that you can print and export.
- Submit. Allows you to submit a data strategy or securities data type for processing.
- Check for Conflicts. Lists data strategies with overlapping securities. You must be in the Data Strategies workspace to view this option.
- **Export**. Exports the data displayed in the workspace to an Excel or CSV file.
- **Print**. Prints the data displayed in the workspace.
- Copy. Allows you to select an item in the workspace and copy it to the clipboard.
- Cut. Allows you to remove a selected item from the workspace.
- Paste. Allows you to paste an item you copied into the workspace.
- **Search**. Allows you to view recent securities searches and save search criteria for reuse.
- **Find**. Allows you to quickly find data in the workspace.
- **Refresh Screen**. Refreshes the results in the workspace.

Grid tab

- Columns. Hides / Unhides columns in the grid.
- Freeze Columns. Keeps the first column or the selected column visible while scrolling through the rest of the data.
- Unfreeze Panes. Unlocks all columns, allowing you to scroll through the data.
- Fit To. Allows you to resize the column width to fit the size of the titles or the data.
- Group by. Groups the grid by a column.
- **Ungroup**. Ungroups all columns.
- Show Group by Pane. Allows you to view groups by pane.
- **Expand All**. Allows you to expand all of the rows in the grid.
- Collapse All. Allows you to collapse all of the rows in the grid.
- Ascending. Allows you to sort data in ascending order.
- **Descending**. Allows you to sort data in descending order.
- Custom. Allows you to create multiple custom sorts for the grid.
- Custom Filter. Allows you to create custom filters for the grid.
- Clear Filters. Allows you to create custom filters for the grid.
- Show. Allows you to display row numbers and vertical gridlines
- Find. Allows you to quickly find data in the workspace.
- **Refresh**. Refreshes the results in the workspace.
- Restore Defaults. Clears custom settings that were applied to the grid.
- View Row. Provides a vertical snapshot of the data in a row

The Securities Workspace

The Securities workspace is the main work area in the Reference Data Center where data is displayed or edited. In the Securities workspace, you can review securities and exceptions, create and delete securities, audit manual changes to securities, attach documents and comments to securities, generate reports, and edit overrides.

The summary information is the top section of the Securities workspace. This pane displays the counts of securities released, the Top 5 Exceptions by count, and the count of exceptions by data strategy. You can guery counts by:

- Source
- As Of Date
- Composite Date

The options in the middle section of the Securities workspace allow you to search for securities and exceptions. The following options are always visible:

- View By. Required. Allows you to search for securities and exceptions.
- Composite Date. Required. Specifies the composite date on which to filter the securities and exceptions displayed in search results. When data is not available for the composite date, no data is displayed. This field is used so you can view, resolve, and release exceptions for any given date. If you resolve exceptions for the most recent build record, the system updates both the Composite and the History tables. For all other dates, the system updates only the History tables. The most recent build record is decided at the security level. This field is not available when you use As of Date to select your securities.
- As of Date. Required. Specifies the as of date on which to filter the securities and exceptions displayed in search results. When data is not available for the as of date, the latest data prior to the as of date is displayed. If you resolve exceptions for the most recent build record, the system updates both the Composite and the History tables. For all other dates, the system updates only the History tables. The most recent build record is decided at the security level. This field is not available when you use Composite Date to select your securities.
- Gold Copy. Required. Specifies the gold copy source name for the security reference data.
- Composite Status. Specifies the status of the composite on which to filter the securities and exceptions displayed in search results. Options include any combination of Critical Exceptions, No Exceptions, and Warning Exceptions.

The middle section of the Securities workspace displays the securities that have gone through compositing and validation. These securities may include securities that require further review or have one or more exceptions that need to be resolved before being released to the Eagle data warehouse. Options include:

Exception Status. Specifies the severity of exceptions historically detected for the security. You can hover over the field to view the count of composite errors, warning messages, and vendor errors for the security.

Options include:

- Green icon. Indicates that no errors were detected.
- Orange icon. Indicates only warning and vendor errors were detected for the security.
- Red icon. Indicates one or more composite errors were detected.
- Release Level. Specifies the status of the security. You can release field level changes to the Eagle data warehouse on a field by field basis, allowing you to process transactions more quickly, or as a set within a field group, as determined by the data strategy. Field level changes can be released independently to process transactions more quickly, recognizing the different amounts of data required to trade versus settle a position in the back office versus calculate performance or produce client reports.

Options include:

- Not Released (Level 0). Indicates the security has one or more exceptions.
- Released for Trading (Level 1). Indicates the security has passed all Level 1 edit checks.
- Released for Trading and Back Office (Level 2). Indicates the security has passed all Level 1 and Level 2 edit checks.
- Released with No Exceptions (Level 3). Indicates the security has passed all Level 1, Level 2, and Level 3 edit checks and is eligible for use by downstream systems.
- Effective Date. Specifies the most recent effective date for the security.
- Issue Name. Specifies the issue name of the security.
- Primary Asset ID. Specifies the primary asset identifier of the security.
- Data Strategy. Specifies the data strategy that governs the security.
- Investment Type. Specifies the investment of the security.
- Currency. Specifies the currency for the security.
- **Exchange.** Specifies the exchange for the security.
- Needs Authorization. Specifies whether the security needs authorization to release.

The bottom section of the Securities workspace displays the different exceptions associated with the selected security. In the title bar, you can view the count of exception records that follow. You can drill down on a specific exception record for better identification of the problem. Options include:

- Field. Displays the name of the composite field in error.
- **Source**. Displays the vendor source of the field in error.
- **Error Code**. Displays the error code of the validation error.
- Status. Displays the status of the error.
- **Severity**. Displays the severity level of the exception. Options include:
 - Warning
 - Critical
- Error. Describes the validation error.
- Resolution. Explains how to resolve the error.
- Business Description. Describes what caused the error.

The Edit Security Window

When you drill down on a specific security or exception record, the Reference Data Center displays the Edit Security window with the Security Details tab selected. Options include:

- **Security Details tab.** Provides information for each failed exception:
 - Field. Displays the name of the field with the exception.
 - **Source**. Displays the vendor source of the data.
 - Error Code. Displays the error code.
 - Status. Indicates whether the exception is an error or warning.
 - **Severity**. Indicates whether the exception is a warning or critical.
 - Validation. Displays the name of the validation rule.
 - Error. Describes the validation error.
 - Reason. Describes what caused the error.
 - **Resolution**. Explains how to resolve the error.
 - Last Updated By. Identifies who made the last update.
 - **Last Updated**. Provides a date and timestamp.

Clicking on an exception record brings you directly to the field with the exception in the Details tab. The Details tab displays the security master details based on the fields selected in the data strategy for the given security. Options include:

- Field Name. Displays the name of the field. The system indicates whether there is an override (blue arrow), a failed gold copy field (red square) or failed vendor field (yellow triangle), and the release level (1 Released for Trading, 2 Released for Trading and Back Office, or 3 Released with No Exceptions) to the left of the field name.
- Current Day Gold Copy. Displays the value of the current day's gold copy security.
- 1st Vendor. Displays the value received from the first vendor. The name of the column displays
 the vendor source and date received.
- 2nd Vendor. Displays the second, third, and so forth vendors, as specified by the data strategy.
- Analytics tab. Displays security analytics based on the Analytics data strategy governing the security.
- Variable Rates tab. Displays variable rates based on the Variable Rates data strategy governing the security.
- Ratings tab. Displays security ratings based on the Ratings data strategy governing the security.
- Vendor History tab. Displays vendor history based on the Vendor History data strategy governing the security.
- Corporate Actions tab. Displays corporate actions if specified in the Security data strategy governing the security. Note you can view and edit this information, however, it is not part of the full Reference Data Center workflow. That is, you cannot override and release an exception or authorize and reject an override.
- Final Factor tab. Displays factors if specified in the Security data strategy governing the security. Note you can view and edit this information, however, it is not part of the full Reference Data Center workflow. That is, you cannot override and release an exception or authorize and reject an override.
- Schedules tab. Displays call and put schedules if specified in the Security data strategy governing the security. Note you can view and edit this information, however, it is not part of the full Reference Data Center workflow. That is, you cannot override and release an exception or authorize and reject an override.
- Third Party Cash Flows tab. Displays third party cash flows if specified in the Security data strategy governing the security. Note you can view and edit this information, however, it is not part of the full Reference Data Center workflow. That is, you cannot override and release an exception or authorize and reject an override.

The Monitor Workspace

The Monitor workspace displays the Automation Center workspace, allowing you to monitor Event Type equal to **Reference Data Center** events. You can monitor jobs/events status for any job you wish to select. The information displays below the results in several panes:

- Jobs/Events Status pane. This area lists all the jobs/events for the Reference Data Center event type.
- List/Dependencies/SLA pane. This pane displays the data strategies processed for the job/event selection above.
- Exceptions pane. This area displays the exception details for a data strategy selection above.

Search for Securities and Exceptions

In the Securities workspace, you can search for the securities that have gone through compositing and validation and the exceptions that result from the validations.

Search for a Security

To search by security:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation. You see the Securities workspace with all the available gold copy securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the search criteria and click the **Search** button.

NOTE: You must filter by gold copy source and your choice of composite date or as of date. You can optionally filter by the composite status, data strategy, issue name, data strategy, processing security type, needs authorization indicator, security exchange, error code, release level, primary asset ID, currency code, and investment type for securities. For example, you can filter by Critical Exceptions, Warning Exceptions, and No Exceptions composite status values.

You see the search results based on the criteria you selected. Results include the Exception Status (red/yellow/green icons), Release Level, Effective Date, Issue Name, Investment Type, Currency, Primary Asset ID, Data Strategy, Needs Authorization property, Composite Date, Processing Security Type, and Composite Exceptions (Count) for the securities listed.

4. Single click a security in the list.

You see the list of exceptions associated with the security in the bottom pane.

Search for an Exception

To search by exception:

- 1. Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available gold copy securities.
- 2. Click the View By drop down and select Exception.
- 3. Complete the required search criteria and click the **Search** button.

NOTE: You must filter by gold copy source and your choice of composite date or as of date. You can optionally filter by the composite status, data strategy, processing security type, needs authorization indicator, security exchange, error code, release level, issue name, primary asset ID, currency code, and investment type of the securities with exceptions.

You see the search results based on the criteria you selected. Results include the Exceptions Code, Severity, Error, Business Description, Resolution, Assigned To, Category, Field, and Source for the exceptions listed.

4. Single click an exception in the list.

You see the list of securities associated with the exception in the bottom pane.

View and Edit Securities

In the Edit Security window, you can view and edit a gold copy security. You can edit any composite-related field on the Security Details, Analytics, Ratings, or Variable Rates tabs.

The Reference Data Center supports multiple gold copies for a given security. You can view and edit a security for a specific source.

View and Edit Gold Copy Securities

To view and edit the gold copy security:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available gold copy securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see a list of gold copy securities based on the criteria you selected. You can use the **Export** buttons on the ribbon to export this list in an Excel or CSV file format.
- 4. Double click the security you wish to view or edit.
 - You see the Edit Security window with the Security Details tab as the default. You can edit any composite-related field on the Security Details tab and the Analytics, Ratings, or Variable Rates tabs as configured for this data strategy. You can also view and edit other security detail information. Refer to the *View and Edit Security Detail* section for more information.
- 5. Click the tab you wish to edit.
- 6. In the Security Details tab, double click the **Current Day Gold Copy** field you wish to change.

You see the Current Value dialog box.

NOTE: For security cross reference fields, single click the field, enter the value into the text box, and go to Step 11.

- 7. In the New Value text box, enter the name of the new field.
- 8. In the Edit Type drop down, select an edit type.

Available options include:

- Override. The system uses the new value for the field.
- Default. The system uses the new value if no vendor data is received and the override date has not expired.
- Temporary Override. The system uses the new value until new vendor data is received.
- 9. In the Expires After text box, enter the expiration date of the override. This field optional.
- 10. In the Reason Code drop down, select a reason code, enter a comment, and click Save.

The system holds the update and displays a blue arrow to the left of the field.

- 11. Click **Save** when you have finished editing all the appropriate fields.
 - You see the Change Summary dialog box with the summary of changes.
- 12. Click **Submit Changes** to update the composite record.
 - You see an information message with comments about any remaining exceptions for the composite.
- 13. Close the **Edit Security** bottom tab to return to the Securities workspace.

View and Edit Multiple Gold Copy Securities

If multiple gold copy sources exist within your environment, the Gold Copy filter option is available in the Securities workspace. This option allows you to view and edit a security for a specific source.

To view and edit multiple gold copy securities:

- 1. In the Gold Copy drop down, select the gold copy source name, complete the required search criteria, and click the **Search** button.
 - You see a list of gold copy securities based on the criteria you selected.
- 2. Double click the security you wish to view or edit.
 - The Reference Data Center applies a different set of logic to the gold copy security, as defined by the data strategy which governs the process of validating the vendor data, creating, enriching, and validating the gold copy security, and releasing the gold copy security to the SECURITY database in the Eagle data warehouse.

You can edit any gold copy field on the Security Details, Analytics, Ratings, or Variable Rates tabs, as described in the previous procedure.

View and Edit Security Detail Information

In the Edit Security window, you can directly view and edit other security details in the data repository. For example, you can add or edit a new factor using the Final Factor tab. Or, you can add or edit corporate action information using the Corporate Actions tab. You can also view vendor history.

The additional security information is linked to the security by the security data strategy but is not currently part of the full Reference Data Center workflow, that is, the information is not validated, composited, or enriched.

To view and edit security detail information:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation. You see the Securities workspace with all the available gold copy securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.

You see the search results based on the criteria you selected.

4. Double click the security you wish to view or edit.

You see the Edit Security window with the Security Details tab as the default. You can edit any additional enabled security tab.

5. Click the tab you wish to view or edit.

Available options include:

- Corporate Actions.
- Final Factors
- Schedules
- Third Party Cash Flows
- Vendor History (view only)
- 6. Make the appropriate changes and click Save.
- 7. Close the **Edit Security** bottom tab to return to the Securities workspace.

Override and Release Exceptions

In the Edit Security window, you can resolve security exceptions in several ways. You can override the value of a failed gold copy field, release the exception on a failed gold copy or vendor field, or replace the failed gold copy field value with the vendor field value. When you attempt to resolve a security, the Reference Data Center automatically validates the changes.

Override the Value of a Failed Gold Copy Field

To override the value of a failed gold copy field:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
- 4. Scroll down the list and select the security you wish to resolve and then click Edit.
 - You see the Edit Security window with the Security Details tab selected.
 - A red square indicates a failed gold copy field. A blue arrow indicates an updated gold copy field.
- 5. Select the exception for the reference data type you wish to resolve.
 - You see the field displayed in the Details pane.
- 6. Double click the **Current Day Gold Copy** field to change the gold copy field.
 - You see the Current Value dialog box with the current value displayed.
- 7. In the New Value text box, enter a new value. Or, check the **Make this Null** check box to release the field to the Eagle data warehouse with a null value.
- 8. In the Edit Type drop down, select an edit type.
 - Options include:
 - Override. The system uses the new value for the gold copy field.
 - Default. The system uses the new value if no vendor data is received and the override date has not expired.
 - Temporary Override. The system uses the new value until new vendor data is received.
- 9. In the Expires After text box, enter the expiration date of the override.
- 10. In the Reason Code drop down, select a reason code, enter a comment, and click Save.
 - The system updates the gold copy field and displays a blue arrow to the left of the field.
- 11. Close the **Edit Security** bottom tab to return to the Securities workspace.

Release the Exception on a Failed Gold Copy or Vendor Field

To release the exception on a failed gold copy or vendor field:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
- 4. Scroll down the list and select the security you wish to resolve and then click Edit.
 - You see the Edit Security window with the Security Details tab selected.
 - A red square indicates a failed gold copy field. A yellow triangle indicates a failed vendor field.

- 5. Select the exception for the reference data type you wish to resolve.
 - You see the field in the Details pane.
- 6. Click Release Exception.
- 7. You see the Release Exception dialog box.
 - If you are releasing an exception on a gold copy record, the system clears the exception icon and releases the field to the SECURITY database in the Eagle data warehouse. If you are releasing an exception on a vendor record, the value is no longer in a failed status and it can be used in the compositing process.
- 8. Click the **Begin Date** and **End Date** drop downs to establish the time frame to release this exception. Or, use today's date default to release for this composite only.
- 9. In the Comment text box, enter a comment about the exception release.
- 10. Click the Reason Code drop down and select a reason for the exception release.
- 11. Click **Save** to complete the release of this exception.
- 12. Close the **Edit Security** bottom tab to return to the Securities workspace.

Replace the Failed Gold Copy Field Value with the Vendor Field Value

To replace the failed gold copy field value with the vendor field value:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
- 4. Scroll down the list and select the security you wish to resolve and then click Edit.
 - You see the Edit Security window with the Security Details tab selected.
 - A red square indicates a failed gold field. A yellow triangle indicates a failed vendor field.
- 5. Select the exception for the reference data type you wish to resolve.
 - You see the field displayed in the Details pane.
- 6. Right-click the vendor field and select **Push to Gold Copy**.
 - You see the Push to Gold Copy dialog box with the current vendor value displayed.
- 7. Click the Reason Code drop down to enter a reason code, enter a comment, and click Save.
 - The system updates the gold copy field with the vendor value.
- 8. Close the **Edit Security** bottom tab to return to the Securities workspace.

List and Edit Data Overrides

You can list and edit the data overrides that you have committed to create composites.

To list and edit data overrides:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
- 2. Click **Data Overrides** on the ribbon.
 - You see the Data Overrides dialog box with the list of overrides that satisfy the default filter options.
- 3. In the filter section, you can change the default options as you require.
 - Options include:
 - Data Strategy
 - Expiration Date Range
 - Status (Required)

- Error Code
- Primary Asset ID
- Issue Name
- Field
- Reason Code
- Exchange
- Currency
- Investment Type
- Source
- Data Type
- 4. Click Search.

You see the list of overrides that satisfy the changed filter options.

5. Select an override in the list and click **Edit Data Override**.

You see the Edit Data Override dialog box.

6. Revise the override as required and click OK.

You see the refreshed list of data overrides with the change applied.

List and Edit Released Exceptions

You can list and edit the exceptions you have released for creating composites.

To list and edit released exceptions:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
- 2. Click Released Exceptions on the ribbon.

You see the Released Exceptions dialog box with the list of released exceptions that satisfy the default filter options.

3. In the filter section, you can change the default options as you require.

Options include:

- Data Strategy
- Field
- Status (Required)
- Expiration Date Range
- Reason code
- Exchange
- Currency
- Investment Type
- Issue Name
- 4. Click Search.

You see the list of released exceptions that satisfy the changed filter options.

5. Select an exception in the list and click Edit Released Exception.

You see the Edit Released Exception dialog box.

6. Revise the exception as required and click **OK**.

You see the refreshed list of released exceptions with the change applied.

View and Edit Overrides

The Overrides window displays the overrides that are currently in effect, including the name of the field, the current override value, and the expiration date. You can filter the results by data strategy, field, status, expiration date, issue name, and investment type. And you can change the override value and the expiration date.

To view and edit an override:

1. From the Reference Desk workspace, click **Securities** in the left navigation.

You see the Securities workspace with all the available securities.

2. Click Data Overrides.

You see the Overrides window with a list of overrides.

3. Complete the search criteria and click the **Search** button.

You see the search results based on the criteria you selected.

NOTE: You can change the value in the Override Value and Expiration Date columns.

Right-click the value you wish to edit and click Edit Override. Or, double click the value you wish to edit.

You see the Override Value dialog box.

5. Complete the fields on the Override Value dialog box and click Save.

Options include:

- Current Value. Displays the current value of the field in the Override Value column.
- **New Value.** Allows you to specify a new value for the field.
- Edit Type. Indicates the type of override: Default, Override, and Temporary Override. Default is an override value used to populate a field in the gold copy security record if no data exists for the default source or vendor source defined in the source rule. Override is an override value used to populate a field in the gold copy security record regardless of whether or not the vendor source value exists. Temporary Override is an override value used to populate a field in the gold copy security record temporarily. That is, until the vendor source value is received.
- Expires After. Allows you to specify a new expiration date.
- Reason Code. Allows you to specify a reason for the override.
- **Comment.** Allows you to enter comments.
- **Update Date.** Displays the update date.
- **Update User.** Displays the name of the user.
- 6. Click **Save** and then click **View Change Summary** to review the changes.
- 7. Click Submit Changes. to override the field. Or, click Cancel to return to the previous window.

Authorize and Reject Overrides

You can manage whether manual edits to reference data require authorization before being released to the Eagle data warehouse. For example, you can authorize or reject an override posted to a gold copy field.

Authorize an Override

To authorize the override posted to a gold copy field:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Exception.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the exception you wish to authorize and click Edit.
 - You see the Edit Security window with the Security Details tab selected.
- 5. Select the exception for the reference data type you wish to authorize.
- 6. Click Authorize.
 - You see the Needs Authorization dialog box with the list of fields that have been overridden and require authorization by a manager.
- 7. Select the exception override you wish to authorize and click Authorize.
 - You see the authorization status for the exception override change from Require Approval to Authorized.
- 8. Click Save.
 - The system clears the gold copy field exception.
- 9. Close the Edit Security bottom tab to return to the Securities workspace.

Reject an Override

To reject the override posted to a composite field:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the **View By** drop down and select **Exception**.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the exception you wish to reject and click **Edit**.
 - You see the Edit Security window with the Security Details tab selected.
- 5. Select the exception for the reference data type you wish to reject.
- 6. Click Reject.
 - You see the Needs Authorization dialog box with the list of fields that have been overridden and require authorization by a manager.
- 7. Select the exception override you wish to reject and click **Reject**.
 - You see authorization status for the exception override change from Require Approval to Rejected.
- 8. Click Save. The system displays a blue exclamation mark to indicate the override was rejected.
- 9. Close the **Edit Security** bottom tab to return to the Securities workspace.

Audit Manual Changes to Securities and Exceptions

In the Securities workspace, you can view the list of manual changes made to a security and exception. Additionally, the Security Audit report shows all data changes and the User Audit report shows the manual changes made to all securities and exceptions.

To audit manual changes to a security and exception:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation. You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security or Exception.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Click the security or exception you wish to audit and click **Audit**.

 You see the Security Audit window with a list of all historical changes by field, including the original value, new value, and the user ID and date timestamp for the change.
- 5. Close the **Security Audit** bottom tab to return to the Securities workspace.

Monitor Jobs/Events Status

From the Reference Data Center's Monitor workspace, you can view the Automation Center monitoring of all RDC processes and events without leaving Reference Data Center.

To view the status of Reference Data Center events and jobs:

- From the Reference Desk workspace, click **Monitor** in the left navigation.
 You see the Monitor workspace with status results filtered for Reference Data Center events.
 - **NOTE**: You can click the **double arrow** to the right of the workspace and change the filter options. For example, you can change the time stamp for selection of status records.
- 2. In your search results, click the Reference Data Center job that you wish to view. You see bottom panes with information for the events processed for this job.
- 3. Click the **List**, **Dependencies**, and **SLA** tabs to view the list of job events, stream messages, job dependencies, and service level agreement statuses, respectively.
- 4. To drill down to the job details, click the row with the job event type in the left bottom pane. In the right bottom pane, you see detailed information for the job you selected.
- 5. Click the **Run Details**, **Entities**, **Securities**, and **Job Status** tabs to view additional details about the processed job. For example, in the Run Details tab, you can view the job effective date, actual start/stop times, queue ID information, and the submitting source.
- 6. To display execution details for the processed RDC job and open the Job Execution Details bottom tab. click ...

Run Reports

In the Reference Data Center, you can use the Reports button on the ribbon to run reports. A full history is maintained for each data record in the application. Reports show all reference data and the associated audit information. You can sort columns alphabetically, remove columns, clear a filter on a column, use Find to quickly identify items in a column, and freeze and unfreeze a column. You can use the **Print** or **Export** buttons on the ribbon to print or export a report in an Excel or CSV file format.

Data Strategy Report

The Data Strategy report provides field level information on data strategies, such as the field group, field group owner, field group release level, database, field name, table name, precision, field type, field process type, reference code name, enrichment field, data category, and approvals.

You can filter the search results by data strategy.

To run the Data Strategy report:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation. You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the security and click Reports.
 - You see the Reports dialog box.
- 5. Click Data Strategy and click OK.
- 6. Click the **Search** button to display the results.

Release Status Detail Report

The Release Status Detail report shows the current release status at the individual security level. Information includes the security alias, release status, issue name, issue description, ticker, primary asset identifier, investment type, security type, maturity date, processing security type, asset currency, issue identifier, effective date, inactive flag, number of errors, number of warnings, number of errors and warnings, update source, update date, source, pool number, update type, alternate asset identifier, number of attachments, data strategy, and gold copy.

You can filter the search results by security, release status level, investment type, currency, data strategy, and gold copy.

To run the Release Status Detail report:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- Select the security and click Reports.
 - You see the Reports dialog box.
- 5. Click Release Status Detail Report and click OK.
- 6. Complete the required search criteria and click the **Search** button to display the results.

Release Status Summary Report

The Release Status Summary report shows the current release status grouped by gold copy and data strategy. Information includes the gold copy, data strategy, release status level, and number of securities.

You can filter the search results by composite source, days to look back, and data strategy.

To run the Release Status Summary report:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You must specify an Effective Date. You see the search results based on the criteria you selected.
- Select the security and click Reports.
 - You see the Reports dialog box.
- 5. Click Release Status Summary Report and click OK.
- 6. Complete the required search criteria and click the **Search** button to display the results.

Security Audit Report

The Security Audit report shows all data changes. Information includes the source, security alias, ticker, primary asset identifier, investment type, issue name, security type, coupon, maturity date, processing security type, effective date, journal type, table name, column name, field name, new value, old value, master journal instance, last modified, action, and last updated by.

You can filter search results by journal instance, source, security, investment type, security type, processing security type, update user, journal type, update type, last hours, and field identifier.

To run the Security Audit report:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You must specify the Begin Date and End Date. You see the search results based on the criteria you selected.
- 4. Select the security and click Reports.
 - You see the Reports dialog box.
- 5. Click Security Audit Report and click OK.
- 6. Complete the required search criteria and click the Search button to display the results.

User Audit Report

The User Audit report shows the manual changes made to all securities and exceptions. Information includes audit type, action, security alias, user, date, issue name, investment type, processing security type, primary asset identifier, comments, start date, end date, old value, new value, source, and error code.

You can filter the search results by security, investment type, currency, and audit type. Options for audit type include authorize, auto expiration, edit xreference, no override, overlay (override), reject, release exception, security, and underlay (default).

To run the User Audit report:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation. You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the security and click Reports.
 - You see the Reports dialog box.
- 5. Click User Audit Report and click OK.
- 6. Complete the required search criteria and click the Search button to display the results.

Create and Delete Securities

In the Securities workspace, you can create and delete a security. Securities are not deleted if they are held by a fund.

Create a New Security

To create a new security:

1. From the Reference Desk workspace, click **Securities** in the left navigation.

You see the Securities workspace with all the available securities.

2. Click Create New.

You see the Create New Security dialog box.

3. Click the **Data Strategy** drop down and select a data strategy.

You see the security reference fields assigned by the data strategy.

4. Complete the options on the Create New Security dialog box and click Save.

You can hover of a field to view information about the field, such as the internal field ID and code instance, the database table and column names, the field and data types, and whether overriding the field requires authorization.

- 5. Click Save.
- 6. Click Refresh Screen.

You see the new security in the Securities workspace.

Delete a Security

To delete a security:

1. From the Reference Desk workspace, click **Securities** in the left navigation.

You see the Securities workspace with all the available securities.

- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.

You see the search results based on the criteria you selected.

4. Select the security you wish to delete and click **Delete**.

You see the Reference Data Center dialog box asking you to confirm the delete.

5. Click Yes to delete the security.

NOTE: You can not delete a security with holdings on the Eagle data warehouse.

6. Click Refresh Screen.

You see the security removed from the Securities workspace.

Attach Documents and Comments to Securities

In the Securities workspace, you can attach a document or comment to a security.

To attach a document or comment to a security:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the security you wish to attach a document or comment to and click Attach/Comment.

You see the Attach/Comment dialog box with the list of comments and attachments currently in effect for the security or exception. You can double click **document name** and open the document for review.

5. Click Add New.

You see the Add New dialog box.

- 6. Complete the options on the Add New dialog box and click Save.
- 7. Click Save.

You see the Securities workspace with all the available securities.

To delete a document or comment from a security:

- 1. From the Reference Desk workspace, click **Securities** in the left navigation.
 - You see the Securities workspace with all the available securities.
- 2. Click the View By drop down and select Security.
- 3. Complete the required search criteria and click the **Search** button.
 - You see the search results based on the criteria you selected.
- 4. Select the security you wish to delete a document or comment from and click Attach/Comment.
 - You see the Attach/Comment dialog box with the list of comments and attachments currently in effect for the security or exception.
- 5. Click the **X** button to the right of the listed comment/document.
 - You see the Reference Data Center dialog box asking you to confirm the delete.
- 6. Click Yes.
- 7. Click Save.

You see the Securities workspace with all the available securities.



