Oracle® Enterprise Transaction Controls Governor
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Preface

This Preface introduces the guides and other information sources available to help you more effectively use Oracle Fusion Applications.

An Oracle Enterprise Governance, Risk and Compliance (GRC) platform hosts several products — Oracle Application Access Controls Governor (AACG), Oracle Enterprise Transaction Controls Governor (ETCG), and Oracle Enterprse Governance, Risk and Compliance Manager (EGRCM).

The GRC platform runs modules. "Financial Governance" is the name of an EGRCM module, and users may create other EGRCM modules. "Continuous Control Monitoring" (CCM) is the name of the module in which AACG and ETCG run. (Moreover, GRC "Tools" offer functionality used across GRC modules.)

This *Enterprise Transaction Controls Governor User Guide* covers features specific to ETCG. (Other product-specific user guides cover features particular to AACG and to EGRCM.)

An *Enterprise Governance, Risk and Compliance User Guide* covers most functionality common to the GRC applications (although the *Enterprise Governance, Risk and Compliance Installation Guide* covers some setup and administration topics). Refer to these guides as well as the ETCG user guide as you use ETCG.

Additionally, implementation guides discuss concepts you should consider as you set up GRC products for use. One implementation guide exists for each of AACG, ETCG, and EGRCM, and a distinct implementation guide covers GRC security. Consult these documents as you begin to use GRC.

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Introduction

Oracle Enterprise Transaction Controls Governor (ETCG) evaluates transaction risk in Oracle E-Business Suite and PeopleSoft. ETCG implements "models" and "controls" that specify circumstances under which individual transactions display evidence of error, fraud, or other risk.

ETCG is one of a set of applications, known collectively as "Oracle Advanced Controls," that regulate activity in business applications. Together with another Advanced Controls application — Application Acces Controls Governor — ETCG runs as a Continuous Control Monitoring (CCM) module in an Enterprise Governance, Risk and Compliance (GRC) platform.

ETCG Models and Controls

An ETCG model returns "temporary" results — a snapshot of risk that is replaced each time the model is evaluated. A control returns "permanent" results — records of violations that remain available to be resolved no matter how often the control is run.

A user creates a model, and may then convert the model into a control; users cannot create controls directly. Although the creation of a model is a preliminary step in the creation of a control, models may be created to run on their own, so that users such as auditors can assess the risk inherent in a system at a given moment.

An ETCG model or control specifies circumstances under which transactions entail risk and so require review. A model, or the control into which the model is converted, consists of one or more elements — "filter," "function" or "pattern." Each, in a distinct way, defines an aspect of the risk a transaction may present and captures records of transactions that meet its definition.

Each of these elements cites a "business object" and an "attribute" of that object, which supply transaction data for analysis. A business object is, in effect, a set of related data fields from an ERP application subject to GRC analysis, and an attribute is one field within the set. (Filters may also cite other object types. A "custom" object is any set of data that meets certain formatting requirements, and a "system-generated" object is data returned by certain transaction filters. More on these later.)

There are two types of ETCG control or model:

- A "Defined" control or model contains filters or functions. These elements enable the user creating a model to define circumstances under which transactions are considered to pose a risk. A model or control can incorporate any number of filters or functions (and may therefore cited any number of business objects and attributes from which they are derived).

  For example, a model may include two filters, both based on a Payables Invoice business object. One filter would select transactions for which an Invoice Canceled Date attribute is not blank. From the transactions captured by the first filter, the second would select those for which an Amount Paid attribute is not equal to zero. The model would therefore identify invoices on which payments had been made even though the invoices had been canceled.

- A "Pattern" control or model contains a pattern — an Oracle-supplied statistical function that identifies a baseline set of transactions, then uncovers outliers to the baseline, as a way of discovering unknown risk. A control or model can use only one pattern (which can be combined with any number of filters or functions).

Records of control violations are known as "incidents," and each control names one or more GRC users as "result investigators" who are responsible for resolving incidents.

Users may create perspectives, each of which is a set of hierarchically arranged values. Each represents a context in which models, continuous controls, and incidents exist. Users can relate individual perspective values to individual models, controls, or incidents, thus cataloging them by organization, region, or any other concept the company finds meaningful. Perspective values also play a part in GRC security. In particular, perspective values associated with controls or incidents determine which users are eligible to be result investigators — those assigned data roles with matching perspective values.

Incident Analysis

Once controls are defined, GRC users may run all or a selection of them, generating incidents. Each ETCG incident provides a record of a transaction that exceeds the risk defined by a control. Each record is made up of values for attributes selected for the model that served as the basis for the control that generated the incident.

Each incident identified by an ETCG control defaults to an Assigned status. This means that result investigators are assigned to address the incidents generated by a control. The investigator might:

- Look at the incidents generated by a control, decide that nothing need be done to resolve them, and change status to Accepted.

- Look at the incidents generated by a control, decide that something must be done in the business-management application to resolve them, and change status to Remediation. For an ETCG incident, remedial action typically involves determining whether a suspect transaction is in fact erroneous, fraudulent, or otherwise damaging, and if so, correcting the situation.

- In this second case, ensure that appropriate action has been taken in the business-management application, and update status from Remediation to Resolved.

In addition to the Assigned, Accepted, Remediation, and Resolved statuses, GRC may automatically assign a Control Inactive status, which means that an incident is no longer of concern because the control that generated it has been inactivated.

(Each incident has not only status, but also one of three states: In Investigation, Approved, or Closed. These are assigned by GRC. See "Resolving Incidents," page 4-1.)

Reporting

Users can run reports concerning ETCG, its companion applications, and GRC administration. Those that apply to ETCG include summary and detail reports about transaction controls and about the incidents they identify.

Some reports can be run "contextually" — from pages in which controls are managed or incidents are resolved. Contextual reporting is discussed on pages 3-6 and 4-6 of this document.

All reports can be run from Report Management pages. Because Report Management features are common to all GRC applications, they are discussed in the *Enterprise Governance, Risk and Compliance User Guide*.

Common Procedures

As you work with ETCG models, controls, and incidents, you may perform certain procedures that are common to GRC applications. You may use a home page or overview pages to view worklists (records of tasks requiring action on your part) and notifications (records of tasks in which you have an interest, but which do not require you to act). You may use navigation features to move among GRC application pages. You may use search features to filter lists of records. You may set "user preferences" — review and edit information about your user account. For complete information on these features, see the *Enterprise Governance, Risk and Compliance User Guide*.

Descriptions of other common procedures follow.

Selecting Perspectives

You can assign perspective values to models, continuous controls, and incidents generated by controls. These may serve as filtering values in the management pages for these objects, or in reports. They also play a part in determining which users have access to any of these objects — those whose job roles contain data roles associated with perspective values that match the values selected for the object. (Users must also have duty roles granting privileges to work with the object.)

Although perspective hierarchies are created in Perspective Management, each hierarchy becomes available for use with models, controls, or incidents only after being associated with that type of object in Manage Module Perspectives. In the pages for creating, editing, or resolving these objects, a Perspective Assignment panel displays a tab for each perspective hierarchy that has been associated with the object.

In Manage Module Perspectives, a perspective may be designated as required for the object with which it is being associated. If so, the tab that displays its name also displays an asterisk; a user is unable to save an instance of the object if he does not select a value for the required perspective.

When you create or edit models, create controls or edit them individually, or edit incidents individually, you select a set of perspective values for the object with which you are working. When you "mass edit" controls or reassign a set of incidents, you select perspective values to be added to, or removed from, the values already selected for each of the objects with which you are working.

To select perspective values:

1. Click on the tab for the perspective hierarchy from which you want to select values.

2. If you are editing two or more selected controls at once, or assigning two or more selected incidents simultaneously, select an Add or Remove radio button to indicate whether you are adding values to, or removing them from, values already selected for the objects with which you are working. (If you are creating objects or editing them individually, this step does not apply, and the radio buttons do not appear.)

3. Choose values to move between Available Perspectives and Selected Perspectives lists. (Ultimately, those in the Selected Perspectives list are assigned to individually configured objects, or added to or removed from those already assigned to mass-edited objects.) In either list, locate a perspective value you want to move from one list to the other. Do either of the following:

   • Click on the plus sign next to the root node to expose perspective values at the next hierarchical level. Click on a plus sign next to a node at that level to reveal its child nodes. Continue until you reach the node you want.

     (For incidents only, you may also select View > Expand All to display, and choose from, all nodes configured for the perspective. Other View options enable you to collapse the entire hierarchy, expand or collapse nodes beneath a selected node, display only a selected node and those that descend from it, and scroll to the first or last node.)

   • Type a text string in the search box to produce a list of matching perspective-value names. You can use the percent sign (%) as a wild-card character; entries are not case-sensitive. A search returns only matching perspective values; it does not display an entire perspective hierarchy.

   If you are assigning perspective values to models or controls, you can choose them only one at a time; click on the value you want. If you are assigning perspective values to incidents, you may choose one value by clicking on it; choose a continuous set by clicking on the first, holding down the Shift key, and clicking on the last; or choose a discontinuous set by holding down the Ctrl key as you click on values.

4. Click the > button to cause values chosen in the Available list to appear in the Selected list. Or, click the < button to remove values chosen in the Selected list from that list.

(Alternatively, click the >> button to place all perspective values in the Selected list, or the << button to remove all values from that list.)

5. Repeat steps 1–4 to select any number of perspective values from any number of hierarchies.

As you assign perspective values to incidents, you may also select a View Perspective button to see a representation of the full hierarchy from which you are selecting a value. Click on any value, and a Related Components panel opens, displaying objects with which the value is associated. (This feature is not available as you assign perspective values to models or controls.)

Synchronizing Data

Models and controls evaluate transactions completed in datasources (instances of business-management applications). It's assumed that a set of datasources is configured for your ETCG instance. (See the *Enterprise Governance, Risk and Compliance User Guide*.)

To ensure models and controls evaluate current data, run synchronization — a process that copies transaction data from datasources to ETCG. You have two options: One is to synchronize the data used only by an individual model (see "Model-Data Synchronization" on page 2-2).

The other is to synchronize data supporting business objects used by all the models and controls currently configured on an ETCG instance. To do so:

1. Open a Manage Application Datasources page: select Setup and Administration under Tools in the Navigator, then Manage Application Datasources under Setup.

2. Select the row for the datasource with which you want to synchronize data.

3. Do either of the following:

    • Click on Actions > Synchronize Transaction. This causes ETCG data to be synchronized once, immediately.

    • Click on Actions > Schedule Synchronize. A Schedule Parameter dialog opens; in it, you may create a schedule on which any number of synchronization operations run automatically. Select the Transaction check box to synchronize ETCG data, and enter values that set the name of the schedule, its start date and time, the regularity with which the synchronization should occur, and an end date (if any). Then click on the Schedule button.

Attaching Files

In the pages in which you edit incidents, you can attach files to them. An attachment may, for example, be a text file, spreadsheet, or web site that provides more information about an object than can be contained in its Description field.

For most attachments, you need to specify a content type. These values are configured in Manage Content Types, which is available in the Setup and Administration tasks. If no existing content type is appropriate for your attachment, have one created in Manage Content Types. (See the *Enterprise Governance, Risk and Compliance User Guide*.)

To attach a file:

1. Click on the green plus sign next to the Attachment label in a create or edit page. An Attachments pop-up opens.

2. Select Actions > Add. A new row appears.

3. Select a Type — desktop file or url. (During a mass update of incidents, only the url type can be attached.)

4. If you select desktop file, click the browse button to navigate to, and select, the file you want. Select a content type, compose a title, and optionally enter a description.

   If you select url, enter it in the File Name/URL field, compose a title, and optionally enter a description. (Content type does not apply in this case.)

5. If you wish to create additional attachments, repeat steps 2 through 4 for each attachment.

6. Click the OK button to exist the Attachments pop-up.

You can also delete an attachment by opening the Attachments pop-up, selecting a row, and selecting Actions > Delete.

To view an attachment, click on its name in the management, creation, or edit page for an object.

Importing and Exporting Models and Controls

You can export models and controls from a source instance to a file, or import them from a file to a destination instance. However, several rules apply:

• A version of "seeded content" (elements created by Oracle for use with GRC) is released with each GA release of GRC. That version of seeded content can be imported into the GA release or any patch to that release.

• Content exported from an instance of a GA release can be imported into any patch for that release (but not from one patch to another, or one GA release to another).

• Content exported from a GRC instance at any particular version can be imported into another instance at the same version.

To export models, controls, or global conditions:

1. In the Manage page for models, controls, or global conditions, select items to export. To select one, click on it. To select a continuous set, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold the Ctrl key as you click on models.

2. Click on Actions > Export. An Information pop-up window opens, identifying a job number. Note the number, then close the window (click on its OK button).

3. Using the Navigator, go to Tools > Setup and Administration > Manage Jobs. the Manage Jobs page, locate the row displaying the job ID you noted in step 2. In its Message cell, click on the Job Completed link.

4. A Job Detail window opens. In it, click on the Job Results link.

5. A File Download window offers you options to open or save the export file. Click on its Save button and, in a Save As dialog, navigate to a folder in which you want to save the file. The file is saved in .xml format. The first word of its name —*Models*, *Conditions*, or *Controls* — identifies its content.

6. Close the Job Detail window (click on its OK button).

Models and controls may specify perspective values, and upon import are available to users whose data roles are associated with those perspective values. (Before importing, be sure the perspectives are set up in the target instance.) Global conditions do not specify perspective values.

To import:

1. Return to the Manage page for the item you are importing — models, global conditions, or controls.

2. Click on Actions > Import.

3. An Import File pop-up window opens. Click on its Browse button.

4. A Choose File dialog opens. In it, navigate to, and select, the .xml file you want to import. The path and name of the file then populate the field next to the Browse button in the Import File window.

5. Click on the OK button in the Import File window.

6. A Select Items to Import window lists the items contained in the import file. Select those you wish to import, bearing in mind that you can import only those items that use business objects to which your GRC roles grant you access. To select one item, click on it. To select a continuous set, click on the first item, hold down the Shift key, and click on the last. To select a discontinuous set, hold down the Ctrl key as you click on items.

7. Click on the Next button. An Import Datasource Mapping window opens, displaying one row for each datasource specified in the items you've chosen to import. For each, in a Mapped Datasources list box, select a datasource appropriate for the environment into which you are importing the models. (The list box displays datasources configured in the GRC Manage Application Datasources page, to which your GRC roles provide you access.)

8. Click on the Import button. A pop-up message reports the number of items imported and the status of the import operation. Click on its × button to close it.

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Creating and Managing Models

A transaction model defines circumstances under which transactions in business-management applications might involve error or fraud, or otherwise entail risk. It may employ filters, functions, or a pattern.

- A standard filter specifies an attribute of a business object (or of a custom or system-generated object). It compares the values for that attribute with a fixed value or with the values for another attribute. It includes a "condition" that determines how the comparison is made, and it returns records of transactions for which the comparison is true. For example, a filter may state that payment amount (an attribute of the Payment business object) is greater than (condition) a threshold amount (fixed value).

  A filter may also arrange records of transactions into groups, based on commonality in the values of an attribute. It may, for example, find invoices with similar vendor names, to identify duplicate invoices in which the vendor's name is rendered slightly differently.

- A function, like a filter, creates a formula consisting of an attribute, a condition, and a comparison value, but it also incorporates a function that operates on the attribute term, for example taking the average of a set of attribute values. It also uses the grouping capability to establish sets of records on which the function operates. For example, a function might group records by supplier, calculate an average payment amount for each supplier, then determine whether each average amount exceeds a threshold value.

- A pattern employs a statistical function, provided by Oracle, that identifies baselines and outliers to those baselines.

Managing Models

A Manage Models page provides information about transaction or access models to which your data roles give you access. (Access models are created in Application Access Controls Governor, or AACG.) Within that limitation, you can view and work with models created by any user — create or modify models, view or export results, or export and import models (page 1-6). To open the page, select Manage Transaction Models from among the Continuous Control Management tasks available from the Navigator.

Viewing Models

In the Manage Models page, a "My Models" panel displays a list whose content depends on the option you use to open the page — transaction models if you select Manage Transaction Models in the Tasks list, or access models if you selected Manage Access Models.

The page displays summary information for each model it lists. This information is supplied by GRC, from data recorded when a model is created, edited, or run; you cannot update these records directly.

Among the summary values, the model type may be Transaction—Defined (the model contains user-defined filters or functions) or Transaction—Pattern (the model contains a pattern, but may also contain filters or functions). A third type, Access, applies to models created in Application Access Controls Governor.

Model status indicates whether the model has been evaluated and has produced results — records of transactions it has found to be risky. Values include Not Started, Started, Completed, and Canceled. In addition, an Error status links to the GRC Jobs page, which can provide information about processing errors. Model state is either Approved or Invalid (the latter state applying only to models that are not imported correctly during an upgrade from an earlier version).

Creating, Editing, Copying, or Deleting Models

To create an transaction model, select a Create Transaction Model option, which is available both in the Actions menu of the Manage Models page and among the Continuous Control Management tasks available from the Navigator. Either selection opens a Create Transaction Model page (see "Creating an Transaction Model," page 2-3).

To edit a transaction model, click in the My Models panel on the row for the transaction model you want to edit. Then click on Actions > Edit. This opens an Edit Transaction Model page — a replica of a model-creation page, except that it is populated by values for the model you want to edit.

Rather than create a model from scratch, you can copy an existing model, then modify the copy. To do so, select (click on) the model you want to copy. Then select Actions > Copy. A new row appears in the My Models panel, identical to the listing for the copied model except that the model name ends in a number in parentheses. (The value of the number depends on how often you copy the original.) Once the copy exists, you can select Actions > Edit to modify the model as you please.

To delete a model, click in the My Models panel on the row for the model you want to delete. Then click on Actions > Delete, and respond to a message that asks you to confirm the deletion.

Model-Data Synchronization

From the Manage Models page, you can synchronize data used by an individual ETCG model — capture changes made in the business application (datasource) in which the model evaluates risk. When run from the Manage Models page, data synchronization updates data used only by a selected model, and only for business objects whose data has not already been synchronized:

1. In the My Models panel, select (click on) the row for a model whose data you want to update.

2. Select Actions > Synchronize.

3. A dialog box displays the status of the run — "Successful" if the process ran with no errors. To close the window, click on its OK button.

From a Manage Application Datasources page, you can instead synchronize all transaction data from a datasource at once. See "Synchronizing Data" on page 1-5.

Creating a Transaction Model

To create a transaction model:

1. Open the Create Transaction Model page: Click on Actions > Create Transaction Model in the Manage Models page (see page 2-2). Or, select Create Transaction Model under Control Management in the Tasks panel.

2. Name and describe the model (page 2-3). If an analysis time limit has been set, choose whether to accept or disable it for this model.

3. Select business objects (page 2-4) and datasources (page 2-5) which, in combination, determine the data available for a model to evaluate. You may use custom objects (page 2-5) or system-generated objects (the results of filters that generate sets of values; page 2-12) as if they were business objects. .

4. Create filters, functions, or a pattern. As you create them, arrange their vertical and horizontal alignment to one another, to set the order in which they are to be evaluated (pages 2-7 through 2-17).

5. Select perspective values for the model (page 1-3).

    At minimum, each model is automatically assigned values for CCM Type, Business Object, and Datasource system perspectives. These values represent selections you make as you create the model — whether it is an access or transaction model, and the datasources and business objects you select for it. So at minimum, a model is restricted to users whose data roles include matching values for system perspectives. You can assign other perspective values, further restricting the model's availability. Perspective values associated with a model also apply to any control developed from the model.

6. Define model results (page 2-17), and save the model (page 2-17).

Naming the Model

Near the top of the Create Transaction Model page, locate the Name field. Click in it, and type a name for your model. Then click in the Description field immediately below the Name field, and enter a brief explanation of the purpose for the model.

Alongside the Name field, a Datasource field displays the datasources that are subject to the model you create. Initially, the field may display a default datasource (if one is specified in the Manage Application Data page). You can add datasources to the model, or delete datasources (including the default datasource), but you do so elsewhere. GRC updates the Datasource field, and you cannot do so directly.

Choosing Whether to Limit Analysis Time

An Enforce Allocated Analysis Time Per Filter feature may be enabled in the Properties tab of the Manage Application Configurations page. If so, an Allocated Analysis Time Per Filter checkbox is selected by default in the Create Transaction Model page. You can disable this feature for the model you are creating by clearing the check box.

When this feature is activated, each filter you create for the model runs for no longer than a number of minutes displayed in the checkbox label. If time expires, the filter passes records it has selected to the next filter for analysis, but ignores records it has not yet examined. In this case, the filter may not capture every transaction that meets its definition, and the results returned by the model are labeled "partial" in GRC job-management pages.

When the Allocated Analysis Time feature is disabled, each filter evaluates all appropriate records, no matter how long that takes.

The number of minutes per filter is set in the Properties tab of the Manage Application Configurations page; it cannot be changed in the Create Transaction Model page. Moreover, if the feature is not enabled in the Properties tab of the Manage Application Configurations page, the Analysis Time checkbox on the Create Transaction Model page is cleared by default, and cannot be selected.

Selecting Business Objects

Select one or more business objects. Each corresponds to one or more database tables (existing in one or more datasources) that hold information pertinent to transactions, but each is given a business-language name that evokes the UI screen its tables support (and in which transactions may be completed).

To add business objects to a model:

1. In a grid at the left of the Create Transaction Model page, select (click on) the Business Objects tab, and then on an object in the grid. (Although unlabeled, this grid is known as "the Library.")

2. Do either of the following:

   • In the Library, click on the Add to Model button. The selected business object appears in the panel labeled "Model Objects."

   • Use your mouse to drag the business object to the area labeled "Add Object Here" in the Model Objects panel.

3. Repeat this process if you wish to add more objects to the model.

Within the Model Objects panel, each object appears as a window that lists the attributes belonging to the object. In this window, you can view, but not actually select, the attributes. You can, however, do the following:

• Remove a business object from the model: click on its × button.

• Move a business object to the left or right of other objects: Click on the downward-pointing, green triangle. Two options appear; click on either Move Left or Move Right.

- Create custom attributes. Each specifies an existing attribute and combines its values with a fixed value or with the values for another attribute.

  1. Click on the green + icon. An Add Custom Attribute dialog opens.

  2. In an Attribute Name field, create a name for the new attribute.

  3. In a Base Attribute field, select one of the existing attributes.

  4. In a Modifier field, select a mathematical operator: + (addition), – (subtraction), * (multiplication), / (division), or & (creates a comma-delimited text string of the combined values). You are able to select only among modifiers appropriate for the base attribute selected in step 3. For example, you can subtract dates, but you cannot multiply them.

  5. In a Type field, select Value or Object.

  6. If you selected Value, enter a value to be combined with the base attribute, as defined by the modifier.

     If you selected Object, select a second attribute, whose values are combined with those of the base attribute, as defined by the modifier.

  7. Click on the OK button.

  You can use the custom attribute in filters. Custom attributes appear at the top of the list of attributes displayed by the business object, and each has an edit icon (which looks like a pencil). You can click on a custom attribute to open another dialog box in which you may either edit or delete the custom attribute.

Using Custom Objects

For transaction models, you can import any set of data as a "custom object," and use it as if it were a business object. For this purpose, you can import xml files or zip compressions of xml files. The maximum size for an import file is 2 gigabytes. As you create an xml file, observe the following formatting conventions:

- The first row of the file must be column headers. Each header name serves as an attribute of the object. Each header entry must comprise a name and, in parentheses, a data type — for example NAME(String), IDNUMBER(Integer), DATE(Date) or AMOUNT(Double).

- The second row and beyond are considered its values.

- The file should contain only one sheet. Multiple sheets are not supported.

- Before the file is uploaded, the following format-related conversions must be made:

  – Convert computed values to absolute values.

  – Remove "total" amount rows not directly tied to specific data attributes.

  – Numeric formatting, such as $ signs, is not supported. The format should be changed to Number format.

  – To format negative amounts, use a negative sign, –, not parentheses.

  – Date format is *mm/dd/yyyy*.

    – Excel 2003 and later are supported. (You can take an xls file as the datasource, properly format it to support upload to GRC, and perform a Save As operation to convert it to an xml file.)

A filter may contain an Expresses condition, which determines whether text fields in a specified business (or custom) object contain any term in a custom dictionary. For this condition to be used, the dictionary must be created as a custom object. At minimum, this object must contain a Word attribute (String format) and a Rank attribute (Double format). The Word attribute lists terms for which the Expresses condition searches. The Rank attribute rates their relative importance. You may include other attributes as well (which, along with the Rank attribute, may be selected for the results displayed for incidents generated by a model or control that uses the Expresses condition).

If you choose to refresh an existing custom object, the new file must use the exact format of the original. Columns (attributes) can neither be added nor deleted. Only additional rows of values can be added.

To upload a custom object:

1. Click on Custom Objects > Import in the Library. An Import File dialog opens.

2. Create a name for the object in the Name field. This is the object name the Library will display.

3. In a Type field, select a label that characterizes the content of the custom object — for example, Financials or Procurement.

4. Click the Browse button. A Choose File dialog opens. In it, navigate to, and select, the xml or zip file you want to import. The path and name of the file populate the field next to the Browse button in the Import File window.

5. With the file selected, click on the OK button. The custom object is now available for use as if it were a standard business object.

To delete a custom object, select it in the Library. Then select Custom Objects > Delete, and respond to a prompt to confirm your deletion.

Selecting Datasources

Before a business object can supply transaction data to a model, it must be associated with at least one datasource. As the model is evaluated, a filter citing that business object will analyze data from the associated datasource.

In most cases, a datasource is an instance of a business application that is subject to GRC analysis. Connections to these datasources are configured in a Manage Application Datasources page. In addition, a Grcc datasource corresponds to the GRC instance in which you are working, and it exists automatically. If you select a User or Access Entitlements business object, you must associate the Grcc datasource with it. (Additionally, an XLS datasource is selected/applied against custom objects.)

In the Manage Application Datasources page, one datasource may be designated as default. If so, that datasource is associated with any business object (other than User or Access Entitlement) as soon as you select it for a model. (No matter whether a default datasource has been configured, you must actively select the Grcc datasource for the User or Access Entitlements business object.)

As you add business objects to a model, you can change, or add to, their default datasource selection. If no default datasource has been designated, you can add datasources to each business object. To do so:

1. When you add a business object to the Model Objects panel, a Manage Datasource button becomes active. Click on it. A Manage Datasource window opens.

2. To add a datasource, create a new row: click on Actions > Create New, or on the green + sign. (You can have multiple rows for each business object.) To change a datasource selection already made for an object, work in its existing row.

3. If you're adding a datasource, click in the Business Object field of a new row and select the Business Object for which you want to add a source. If you're modifying an existing datasource, locate the row in which the Business Object field displays the name of the object whose source you want to change.

4. Click in the Datasource Name field, which lists datasources configured in the Manage Application Data page. Click on the datasource you want to associate with the business object. Other fields are populated automatically.

    If you selected the User or Access Entitlement business object in step 3, associate it with a Grcc datasource (which exists automatically). For any other business object, select a datasource for an instance of a business-management application in which a model is to be run. (These are configured in the Manage Application Datasource page.)

5. Click on the Save and Close button. If you've added datasources, their names appear in the Datasource field (alongside the Name field near the top of the Create Transaction Model page.)

You can also delete the association of a datasource with a business object. While the Manage Datasources window is open, select (click on) the row for the association you want to delete. Click on Actions > Delete or on the red × icon.

Arranging Filters, Functions, and Patterns

Each model element (filter, function, or pattern) you create appears as a dialog box in a Model Logic panel. To define the element, make selections in the fields displayed by its dialog box. As you add elements, position each vertically or horizontally with respect to others:

• A vertical arrangement indicates an AND relationship: Elements at one level are evaluated before those at the level below it, the topmost first and the bottommost last. Presuming that processing at any vertical level returns records, processing continues on those records at the next level. For the model to return any results, every vertical level must evaluate to true (filters at every level must identify transactions). A pattern can form only an AND relationship with other objects.

• Filters and functions, however, may be positioned horizontally to one another. Horizontal placement indicates an OR relationship — if any one filter or function within a horizontal set returns results, processing moves to the next vertical level.

To add the first element to a model, click on a button (or a corresponding option in the Actions menu) that selects the type you want — New Filter, New Function, or

New Pattern. To add subsequent elements, click again on any of those buttons (or menu options). As you do, keep these concepts in mind:

- Each element you add appears by default immediately beneath the lowest element in your model hierarchy. If, for example, a model contains four vertical levels and you click on the New Filter button, a filter appears at the fifth vertical level.

- Once two or more elements exist in your model, you can select them: hold down the Ctrl key and click in the title field (labeled *Filter*, *Function*, or *Pattern*) of each element you want to select. When you select an element, the interior of its dialog box turns a dark shade. (An unselected dialog box is light blue.) You can select one element, or multiple elements that are adjacent to one another.

- Having selected elements, you can add a new element specifically in relation to those you've selected. If, for example, your model includes two filters in an AND relationship (stacked vertically), you select the higher one, and you click on the New Filter button, the new filter appears immediately beneath that higher one; the filter that had been second in the model hierarchy moves to the third level.

- You can drag and drop existing elements to new positions within the model.

  – To create an OR (horizontal) relationship, click on one element and drag it to the left or right edge of another.

  – To create or rearrange an AND (vertical) relationship, click on one element and drag it to the upper edge of another, to place it above. Or drag it to the lower edge of another, to place it below.

  – Or, to move an element into an AND relationship with other elements, click on it and drag it to an arrowhead at any point in the model hierarchy.

  As you drag an element, its name appears to move with the mouse cursor. If the element is unnamed, GRC creates a label consisting of the filter logic, which can be lengthy. If the height of this label is greater than the height of the target filter, GRC may not correctly position the filter you are dragging. To minimize the risk of this happening, it is recommended that you provide each filter with a concise name. When you move a filter, wait a moment for the page to refresh. It will appear to flicker, which indicates the application is processing the change. If you do not wait for changes to finish processing, the application may perform erratically.

- You can incorporate elements into groups: select those you want to include and click on the Group Filters button (or on Actions > Group Filters). To dissolve a group, select it and click the Ungroup Filter button (or Actions > Ungroup Filter).

- A transaction model can contain only one pattern, so you can select the New Pattern button (or menu option) only once.

Create structures as complex as you like. For example, an OR statement may contain any number of elements.

Or, a filter may have an AND or OR relationship with blocks of other filters. For example, suppose filters One, Two, and Three are in an AND relationship — stacked vertically. You could drag Two to the left of Three, creating a horizontal pairing between them; One would remain centered above them. At this point, the model would return results if One returned results and then either of Two or Three returned results.

You could then drag One on top of Two, thus creating an AND relationship (vertical pairing) between the two of them, with Three in an OR (horizontal) relationship to both. At this point the model would return results if One and Two returned results, or if Three returned results on its own.

Creating a Filter

To create a standard transaction filter:

1. Click on the New Filter button, or on Actions > New Filter. A dialog box appears in the Model Logic panel.

2. Enter a name for the filter in the Filter field.

3. An Object field lists all of the business objects you've added to the model in the Model Objects panel. Select (click on) the one from which you want to select an attribute for use in this filter.

4. An Attribute field presents a list of attributes belonging to the object you selected in step 3. Select (click on) the one you want to use in this filter.

5. A Condition field presents a list of operators that may be applied to the attribute you selected, usually to force a comparison between each attribute value and a third (yet-to-be specified) term in the filter. Select one. Among the following, you will see only conditions appropriate for the attribute you've selected.

   • Mathematical operators: The filter returns results if the value of the attribute equals, does not equal, is less than, is less than or equal to, is greater than, or is greater than or equal to a specified value.

   • Between: The filter returns results if the value of the attribute falls between two other specified values.

   • Contains and Does not contain: The filter returns results if the value of the attribute is a text string that includes, or excludes, a specified text string.

   • In and Not in: The filter returns results if the value of the attribute is a text string that matches, or does not match, a value in a semicolon-delimited set of text-string values. The match must be exact.

   • Starts with and Ends with: The filter returns results if the value of the attribute begins or concludes with a specified string of alphabetic or numeric characters.

   • Is blank and Is not blank: The filter returns records for which the attribute column either contains no value, or contains any value.

   • Is not related to: The filter returns records of items that should, but do not, have links to other items. For example, invoices should have references (links) to purchase orders, and a filter using this condition would return records of those that don't.

   • Similar and Similar to: The filter collects records into groups when one or two specified attributes have values that are similar to one another. In most cases, similarity is measured in percentage; for example, two text strings would be considered 50 percent similar if half the characters in each were duplicate. Dates, however, are similar if they fall with a specified number of days of one another. The Similar condition checks for similarity in the values

of the attribute you selected in step 4. The Similar to condition checks for similarity in that attribute and a second one; each of their values are compared not only with themselves, but also with the values of the other.

- Different than: The filter returns records for which two specified attributes have *dis*similar values. Again, similarity is measured in percentage or, for dates, number of days. This condition checks for dissimilarity in the values of the attribute you selected in step 4 and a second one; the values of each attribute are compared not only with themselves, but also with the values of the other. In effect, Different than would return the records that Similar to would *not* return.

- Expresses: The filter returns records if the value of an attribute (supplied by either a standard business object or a custom object) is a text string that contains any term listed in a custom dictionary. For the Expresses condition to be used, the dictionary must first be created as a custom object (see page 2-5).

6. Define the third term of the filter, the format of which varies according to the condition you selected.

- If you selected any of the mathematical operators, select either "Value" or "Object" in the Type field. If you select "Value," a Value field appears. In it, enter a value to be compared with values of the attribute you selected in step 4. If you selected a date attribute, the less- and greater-than conditions enable you to select either a fixed value (an actual date) or a relative value (a number of days, weeks, or months from the system date).

    If you select "Object," new Object and Attribute fields appear. In them, select a business object and an attribute within it, whose values are compared with those of the object-attribute pair you selected in steps 3 and 4. If a filter uses the Equals condition, you can select the same business object and attribute as you did in steps 3 and 4; if so, the filter returns sets of values (see page 2-12). If a filter uses the Does not equal condition, you cannot select the same business object and attribute.

- If you selected the Between condition, a Type field reads "Value," and two Value fields appear. In them, enter two values that set the range between which attribute values must fall for the filter to return results.

- If you selected the Contains or Does not contain condition, select either "Value" or "Object" in the Type field. If you select "Value," a single Value field appears. In it, enter a text string that may appear at any position within a larger text string. If you select "Object," new Object and Attribute fields appear. In them, select a business object and an attribute in it, whose values may be contained within those of the attribute in the first term of this filter.

- If you selected the In or Not in condition, a Type field reads "Value," and a Value field appears. In it, enter a text string, or a set of text strings delimited by semicolons, any of which may match values for the attribute you selected in step 4.

- If you selected the Starts With or Ends With condition, select either "Value" or "Object" in the Type field. If you select "Value," a single Value field appears. Enter alphabetic or numeric characters with which attribute values must either begin or conclude. If you select "Object," new Object and Attribute fields appear. In them, select a business object and an attribute within it;

beginnings or endings of its values must match those of the attribute in the first term of this filter.

- If you selected the Is blank or Is not blank condition, there is no third term (because the first two terms are sufficient to define the filter).

- If you selected Is not related to, Object and Attribute fields appear. Select an attribute (and its object) to which the filter's initial attribute should be related. For example, if the initial attribute is Invoice ID, this attribute might be Purchase Order ID, to return records of invoices without linked purchase orders.

- If you selected Similar, the filter will check for similarity in the values of the attribute you've already selected in step 4. If you selected Similar to or Different than, a pair of fields appear; in it, select an attribute (and its object) whose values will also be checked for similarity or dissimilarity. In a Percent Similar field, enter a number from 50 to 99 that defines the precision with which attribute values must match to be considered similar. Or, for date attributes, a Within Days field replaces the Percent Similar field; in it, enter a number of days that defines a range in which dates are considered similar.

- If you selected Expresses, new Object and Attribute fields appear. In the Object field, select the custom object configured as the dictionary containing terms for which the Expresses condition searches in the attribute specified in step 4. In the Attribute field, select "Word."

7. Optionally, select advanced options. The following options are available to filters; click on the ± toggle icon next to the Advanced Options label to reveal them, although you will see only those appropriate for the filter you defined.

- Exclude: Removes records defined by the filter from analysis. In effect, the filter returns all records that do not meet its specifications.

- Include Unique Data Rows: This option is available only if the filter uses the Similar or Similar to condition. Clear it (the default) to create groups of records, in each of which attribute values meet the specified similarity in a particular way, and to exclude records that are not similar to any others. Select the option to create the same groups, but also create one-member groups for records with attribute values that have no similar values. When utilized, this option no longer excludes data.

- Apply condition across the same data row: This option is available when a filter specifies two attributes (one as the first term in the filter, and the other as the third term), and both belong to a single business object. When the option is cleared, the filter compares values in all rows of the business object; when the option is selected, the filter considers each row individually. Suppose that a filter sets an Active Date attribute equal to a Created Date attribute. In each of two data records, the Active Date value differs from the Created Date value, but in the second record, the Created Date value equals the Active Date value from the first record. If this option were cleared, the filter would return both records as results; if the option were selected, the filter would return neither of them. In a third data record, the Active Date value is the same as the Created Date value. In this case, the filter would return the record as a result regardless of whether the option were cleared or selected.

- Partial Match: This option is available for use with filters that return sets of values (see page 2-12).

- Match Case: Consider upper and lower case while looking for matches in text values. If this option is not selected, text searches are case-insensitive.

- Ignore leading and trailing spaces: Do not consider leading and trailing spaces when looking for matches in text values.

- Ignore after floating point: In numeric values, do not consider digits that appear after a decimal point. (For example, if applied to a filter that specified "Payment Amount ends with 5," the filter would return the value 25.67.)

- Enable Synonyms: Apply a basic thesaurus lookup while searching for matches in text values. For example, if this option is selected for a filter that specifies "supplier name contains company," the filter would return records in which the supplier name contains the word *corporation* or *firm* as well.

- Similar Word: When the Similar or Similar to condition is used, take spaces between words into account while judging similarity. If this option is not selected, spaces are ignored.

- Include time with date: Consider both date and time while looking for matches in date values.

- Apply range of time: If "Include time with date" is selected, select a beginning time and an ending time and find matches only for records that fall within the defined time range.

- Apply day of week: If "Include time with date" is selected, select one or more days of the week and find matches only for records worked on those days.

Using Filters That Return Sets of Values

In transaction models (and controls), filters that use certain conditions may return sets of values:

- Equals: A filter may state that an attribute of a business object is equal to itself. If so, the records returned by the filter form sets. The first set consists of all records in which the attribute equals a specific value (for example, Supplier ID = 1234). The second set comprises all records in which the attribute equals another value (for example, Supplier ID = 1235). And so on.

- Similar and Similar to: Whenever the Similar condition is used, a filter compares an attribute of a business object to itself. When Similar to is used, the filter compares the attribute both to itself and to another attribute. In either case, the filter returns sets of records. The first set includes records that satisfy the filter's definition of similarity in one way, the second contains records that satisfy the definition in another way, and so on.

  Suppose, for example, the Similar condition is used to find a 50 percent likeness for an attribute all of whose values are six-character text strings. One set of return values might consist of records in which the string contains *blt*, a second set may comprise records in which the string contains *pbj*, and so on.

The records returned by such a filter serve as a "system-generated object," which means they may be used in subsequent filters as if they were a business object. For

this purpose, the records are labeled as *Condition*[*Object.Attribute*], in which *Condition* is replaced by the name of the condition used in the filter, and *Object* and *Attribute* are replaced by the names of the business object and attribute cited in the filter. For example, if a filter equates the Invoice Number attribute of the Payables Invoice object with itself, the return values would be labeled "Equals[Payables Invoice.Invoice Number]."

(Two such filters may be joined in an AND relationship to produce more narrowly defined sets of values. If so, the result sets are named *Condition*[*Object1.Attribute1* AND *Object2.Attribute2*]. If three, then *Condition*[*Object1.Attribute1* AND *Object2.Attribute2* AND *Object3.Attribute3*]. And so on.)

In one common usage, a filter uses Similar, Similar to, or Equals to establish sets of records. A subsequent filter cites those sets as a system-generated object, so that it can apply a function to each set of records. (See "Creating a Function" on page 2-14.)

In another common usage, an Equals filter creates a system-generated object. That object consists of sets, in each of which records share an attribute value. To distinguish among records in each set, a second filter uses the Does not equal condition. It states that an attribute of the system-generated object does not equal itself. This attribute is necessarily other than the one used by the Equals filter.

(Note: In a filter that uses the Does not equal condition, you cannot specify that an attribute of a business object does not equal itself. You *can*, however, specify that an attribute of a system-generated object does not equal itself, if that object is created by an Equals filter. Similarly, if a filter uses the Different than condition, you cannot specify that an attribute of a business object differs from itself. However, you *can* specify that an attribute of a system-generated object differs from itself, if that object is created by a Similar or Similar to filter.)

You may, for example, want to identify distinct suppliers who have been assigned duplicate invoice numbers. To begin, create a filter in which the Invoice Number attribute of the Payables Invoice business object equals itself. This creates a system-generated object called Equals[Payables Invoice.Invoice Number] — sets of records, in each of which all records have the same invoice number. Next, create a second filter in which the Supplier ID attribute of the Equals[Payables Invoice.Invoice Number] object does not equal itself. This identifies distinct suppliers in each set.

(You can use a system-generated object in filters that use conditions other than Does not equal as well — all except Similar, Similar to, and Different than.)

Further, you can create a model in which one or more filters generate "parent" sets of records, and a second one or more filters generate distinct "child" sets of records that have an attribute in common with the parent sets. The model matches values in the parent "set of sets" with those in the child "set of sets" to determine which sets are included among model results and which are discarded.

For example, you might create two filters that use attributes of the Payables Invoice business object. In the first, the Invoice Number attribute equals itself; in the second, the Invoice Amount attribute equals itself. The result is a system-generated object called Equals[Payables Invoice.Invoice Number AND Payables Invoice.Invoice Amount] — sets of invoices, in each of which all invoices have the same number and same amount. A third filter might specify that the Supplier ID of that system-generated object does not equal itself. The result is parent sets of invoices, in each

of which invoice number and amount are the same, but at least one supplier ID differs from the others. (If no supplier ID is unique within a set, that set is discarded.)

A final filter might equate the Taxpayer ID attribute of the Supplier business object with itself. Its result is a new, child set of sets. In each set the taxpayer ID is the same for all records, but it may correlate to any number of supplier IDs. The model would compare parent and child sets, and keep only those parent sets in which it finds matching values.

A Partial Match advanced option determines how this matching is done. You select or clear the Partial Match check box in the filter that defines the child sets. If this check box is cleared (the default), all values for the common attribute in a parent set must match values in at least one child set. If this check box is selected, only one value for the common attribute in a parent set need match a value in a child set.

In the example, the common attribute is Supplier ID. If the Partial Match check box is cleared, then every supplier ID in a given parent set must appear in one of the child sets for the parent set to be kept among the model results. If not, the entire parent set is discarded.

However if the Partial Match check box is selected, and any one supplier ID in a given parent set appears in one of the child sets, the entire parent set is kept among model results. If no supplier ID in a parent set matches an ID in a child set, the entire parent set is discarded.

Creating a Function

A function applies a calculation to groups of attribute values, then determines whether each calculated value poses a risk. To do so, it must establish groups of records to which it applies the calculation.

The function can perform this grouping on its own, in which case each group contains records for which the values of an attribute exactly match. Or, the function can be used in conjunction with a standard filter that uses the Similar, Similar to, or Equals condition to create sets of records (a system-generated object).

If you intend to use such a filter to group records, create it first. Then create the function, placing it in an AND relationship with (below) the filter.

To create a function:

1. Click on the New Function button, or on Actions > New Function. A dialog box appears in the Model Logic panel.

2. Enter a name for the function in the Function field.

3. In a line labeled *Filter*, use Object and Attribute fields to gather records into groups:

  • If the function is to perform the grouping on its own, select a business object in the Object field and one of its attributes in the Attribute field. The function will then create sets of records; in each set, values for that attribute exactly match.

  • If you have created a standard filter that produces a system-generated object, select the name of that object in the Object field. The Attribute field defaults to the value *Group Name*. If you retain this value, the sets of records remain as the standard filter created them. You may, however, select an attribute to re-

fine those sets further. (You may choose among all attributes of the business object cited in the standard filter that created the system-generated object.)

You may, for example, create a standard filter in which the Supplier ID attribute of the Payment business object equals itself. The resulting system-generated object — Equals[Payment.Supplier ID] — consists of sets of records, with each set containing records for an individual supplier.

In a subsequent function filter, you may use these sets as the standard filter has defined them; select the Equals[Payment.Supplier ID] object on its own. Or you may create subsets of those sets; select Equals[Payment.Supplier ID] in the Object field, and an attribute of the Payment business object in the Attribute field. The Date attribute, for example, would group each supplier's records by date.

4. In a line labeled *When*, use a Function field to select the calculation that is to be performed on grouped attribute values. These functions include the following:

   • Average: Calculates the average of the attribute values.

   • Count: Determines how many attribute values exist.

   • Sum: Adds the attribute values together.

   • Exclusive: Determines whether all of a set of semicolon-delimited text strings are included in records for a group. (One use would be to determine whether expenses listed in a set of expense reports contains conflicting values — for example, gasoline purchases and taxi expenses.)

   • Inclusive: Determines whether one or more, but not all, of a set of semicolon-delimited text strings are included in records for a group. (One use would be to determine whether expenses listed in a set of expense reports do not contain complementary values — for example, rental car but no gasoline purchases.)

5. Next to the Function field, use Object and Attribute fields to select the attribute (and the object to which it belongs) upon which the function will perform calculations. (The Attribute field displays only attributes appropriate for the function you selected in step 4.)

6. In the remaining fields of the When line, complete the logical formula that defines what makes a transaction risky. To do so, specify a condition and (if needed) a third term, as described in steps 5 and 6 of "Creating a Filter" (page 2-9).

7. Optionally, select advanced options. The following options are available to functions; click on the Advanced Options ± toggle icon label to reveal them, although you will see only those appropriate for the function you have defined.

   • Exclude: Removes records defined by the filter from analysis. In effect, the filter returns all records that do not meet its specifications.

   • Partial Match: This option is available for use with all functions, because all functions group records into sets of values (see page 2-12).

   • Over interval: This option is available only to a function in which the attribute selected in step 3 is a date. If the option is cleared, the function groups records so that each group contains records that share a date. If the option is selected, the function groups records so that each group contains records whose dates fall within a specified time period. To specify the

period, select *Overlap* or *Successive* in an Interval Type field. *Overlap* means that the time periods overlap with one another (for example, if the time period is every two days, periods may include Monday and Tuesday, Tuesday and Wednesday, and Wednesday and Thursday); *Successive* means that the time periods are distinct (in the every-two-day example, Monday and Tuesday, then Wednesday and Thursday). Next, define the period: In an Interval field, enter a number, and in a Units field, select days, weeks, or months. Finally, select start and end dates.

An example: A function may calculate the average transfer amount for bank account transfers, then find average transfers that are greater than a threshold amount. It must group records by bank account, so that it can take the average transfer amount for each account. To do so, your function might group records by Bank Account ID. Or it might refer to a standard filter that creates sets of records for which an Account Name attribute contains values that are 95 percent similar. (Bank Account ID and Account Name are both attributes of a Bank Account business object.)

In the first case, select the Bank Account object and Bank Account ID attribute in the Filter line of your function. In the second case, having created the standard filter, select the value *Similar[Bank Account.Account Name]* in the Object field of the Filter line. In that second case, the Attribute field would default to *Group Name*.

In either case, in the When line of the function, select the Average function, the Bank Account Transfer object, the Transfer Amount attribute, the greater than condition, and whatever value you choose as a threshold

Creating a Pattern

You can add one pattern to a given model (and the addition of that pattern classifies the model as the pattern type, even if it contains defined filters). There are initially two patterns. Each calculates a baseline value and identifies transactions that vary excessively from the baseline; each takes parameters, which enable you to define the variance that is considered excessive.

- Benford: Monitors variations from lists of numbers from many sources of data, where the leading digit is distributed in a specific, nonuniform way. Its parameters include the percentage above and below the baseline at which outliers are specified.

- Mean: Calculates a mean for a set of attribute values, and identifies individual values that are too far above or below the mean. Parameters include the amounts above and below the mean at which outliers are identified.

To create a pattern:

1. In the Model Logic panel, click on Actions > New Pattern, or on the New Pattern button. A dialog box appears.

   Note, however, that you must first have selected at least one business object for the model with at least one attribute that provides data upon which patterns can operate (in the case of Benford and Mean patterns, numeric values). Otherwise, an error message informs you that no patterns are associated with the selected business objects.

2. Enter a name for the pattern in the Pattern field.

3. In the Pattern list box, select the pattern you want to use. (If you have not selected a business object appropriate for your patterns, however, this list box is empty.)

4. Click on the green + icon; a row appears beneath the Object and Attribute headings. In the Object field of this row, select a business object; in the Attribute field, select an attribute belonging to the object. These fields display only objects and attributes upon which your pattern can operate. You may create additional rows to select additional attributes for the pattern to evaluate. You may also select a row and click on the red × icon to delete the row.

5. Under the headings Parameter, Value, and Unit, one row appears for each parameter appropriate for the pattern you've selected. For each parameter row, enter a value in the Value field and select a unit of measurement to apply to that value — for example, 20 percent.

Defining Model Results

Once the model logic is developed, select attributes for which the model, when it is run, will return values for each risky transaction it finds.

Be careful to choose attributes that reflect the level of detail you want to see in your results. A model might identify many records that exceed the risk it specifies, but if you define results so broadly that there would be no way to distinguish these records, the results window will present only one record and eliminate the apparent duplicates. (However, model results include values not only for the attributes you select as model results, but also for the attributes that define the model logic.)

To define results:

1. Scroll down to the Result Display panel in the Create Transaction Model page. (Or, collapse other panels by clicking on their ± toggle icons.)

2. An Available box lists the business objects included in the model. For each, click on the ± toggle to reveal a list of the attributes that belong to the business object.

3. Select an attribute for which you want to see results (click on it), then click on the > button. The attribute moves to a Selected box. Repeat this process for all other attributes for which you want to see results. Alternatively, click on the >> button to move all attributes to the Selected box.

   If you reconsider your choices, select attributes individually in the Selected box and click on the < button to return them to the Available box. Or, click on the << button to return all attributes to the Available box.

Saving the Model

To save the model, click on the Save button or the Save and Close button. Both buttons are located near the upper right corner of the Create Transaction Model page. The Save option saves the model, but leaves its values on display for potential further editing, or for the generation of results. The Save and Close option saves the model but empties the Create Transaction Model page so that it is ready for the creation of a new model. Alternatively, you can click the Cancel button and respond to a confirmation prompt to restore the blank Create Transaction Model page without saving the model.

Viewing or Exporting Model Results

From either the Manage Models page or the page in which you create or edit a model, you can view results from the most recent run of a model (if it has been run before), or run the model and view a new set of results.

Before running a model, consider synchronizing data from the datasource against which the model will run; this would ensure that transaction data is up to date. Use either of the processes described in "Model-Data Synchronization" (page 2-2) or "Synchronizing Data" (page 1-5).

No matter which page you use to display model results:

- For a defined transaction model, the window displays a grid that devotes a row to each risky transaction. Each row includes values for the results attributes selected when the model was created or edited.

- For a pattern transaction model, results are displayed graphically. The image represents a baseline identified by the pattern, and outliers to it. If multiple attributes are used by the pattern analysis, the results page generates multiple results tabs. Each opens an individual graph, with data related to the attribute on which the graph is based.

  If you hold the mouse cursor over a data point in the graph, a box displays the values that define that point. If you click on a data point, a grid appears below the graph, displaying a row for each outlier data point. Columns in the grid once again provide values for the results attributes you've selected.

To open the results window from the page in which you create or edit a model, select one of three buttons, which appear in the title bar of the Model Logic panel:

- Run: The model runs, and the page remains open. If the model had been run before, the new run overwrites the existing results (with no prompt to save or view them).

- Run in Background: The model runs, but you may navigate to another GRC page and work there. Again, if the model had been run before, the new run overwrites the existing results.

- View Existing Results: For a model that had been run before, the results window displays the results generated in the most recent run.

To open the results window from the Manage Model page, do either of the following:

- Locate the column labeled "View Results." In it, the entry for each model contains a prompt (which also reads "View Results") if the model has been run. (If not, the View Results cell is blank.) Click on the prompt (if one appears) for the model whose results you want to view.

- In the My Models panel, click on the row for the model whose results you want to view. Then, in the menu bar, select Actions > View Results.

If the model has not been evaluated previously, GRC simply runs it. If the model has been evaluated previously, a dialog box prompts you to decide whether to over-write existing results. Select No to display the existing results. Select Yes to generate and display a new set of results.

To view the status of a model run, open a Manage CCM Jobs page: select Continuous Control Management under Continuous Monitoring in the GRC Navigator, then select Manage CCM Jobs under Control Administration in the Tasks list. (See "Jobs and Scheduling" in the *Enterprise Governance, Risk and Compliance User Guide*.)

You can export model results to an Excel spreadsheet. To do so:

1. In the results window, click on Actions > Export to Excel.

2. A pop-up window offers you options to open or save the export file. Typically, click on its Save button and, in a Save As dialog, navigate to a folder in which you want to save the file.

3

Creating and Managing Continuous Controls

A continuous control defines risk and generates incidents — records of transactions that exceed the defined risk. To create the control, a user selects a model; the control adopts its risk definition (filtering logic). The user adds information needed for the control to be run and its incidents to be resolved: a datasource to which the control is applied; perspective values, and users (associated with those values) who can resolve incidents; a priority; and more.

A Manage Controls home page presents a list of controls, with summary data about each. To open the page, select Continuous Control Management in the Navigator, then Manage Controls among the Continuous Control Management tasks.

You can see only those controls to which your data roles give you access. Some values are exposed by default, and others are hidden. To display hidden values (or to hide any of those already on display):

1. Right click in the header row of the grid that lists controls.

2. A list of available columns opens. To select a column for display, click on its check box so that a check mark appears. To remove a column from display, click on its check box so that its check mark disappears.

3. Left click anywhere outside the list of columns to close it.

You can edit existing controls or create new controls from existing models. You can also evaluate controls, import or export them (page 1-6), and run a report about them. For each control that you select to edit, GRC opens a distinct, tabbed page. To return to the Manage Controls home page, close the control-view page by clicking its Done button, or click on the Manage Controls tab.

Creating Transaction Controls

Because every control is based on a model, ensure that at least one transaction model exists before you attempt to create a transaction control. You may convert any number of transaction models into controls at once. If you create more than one, their processing logic, names, and descriptions remain distinct. Moreover, each control inherits an Allocated Analysis Time Per Filter setting from the model on which it is based. (For more on this setting, see "Choosing to Set an Analysis Time Limit" on page 2-4.) Other values are the same for all the controls you create at once.

To create controls:

1. In the Manage Controls home page, click on Actions > Create Transaction Control.

2. A Create Control: Choose Model window opens. In an Available Models grid, select models you want to convert into controls: To select one, click on it. To select a continuous set, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold down the Ctrl key as you click on models. A Model Logic panel displays the filters that define each model you select; the last model you select is the one whose filters remain on view.

3. Click on the Next button. A Deploy Control: Define Control Details window replaces the Choose Model window. In it, set the following values, as described below: name and description; priority and status; datasource; perspective values and users who can investigate control incidents; and comments.

    You may click on a Back button, to return to the Choose Model window and revise your model selection. If so, when you return to the Define Control Details window, any values you have selected remain in force.

4. When you are satisfied with all the selections you have made, click on the Submit button in the Define Control Details window.

Naming and Describing Controls

In the Define Control Details window, a Details grid displays a row for each model you selected. Each row contains the name and description of its model. You can accept these as the names and descriptions of the controls you are creating, or click in each Name and Description field to create new values.

Setting Priority and Status

In the Priority field, enter a value that expresses the importance of the controls you are creating in relation to others. The value must be a number. (Your company should establish a set of priority values and enforce consistent usage.)

In the Status list box, select Active (the default) to use the controls you create, or Inactive to hold them in reserve.

Selecting Datasources

The models upon which you are basing the controls you create are already associated with datasources. You may retain those datasources, but if you choose to do so, you must actively select them as you create the controls. Or, you may select new datasources for the controls you are creating.

1. In the Define Control Details window, click on the Manage Datasource button. A Map Datasources window opens, displaying one row for each datasource specified in the models upon which you are basing your controls.

2. In the Mapped Datasources list box of each row, select a datasource appropriate for the environment in which the controls are to be applied.

In each row, a Datasources Used field displays the datasource associated with a source model. You may select this or another datasource in the Mapped Datasources field to apply to controls you are creating.

3. Click on the OK button. The Map Datasources window closes, and your selections appear in the Datasource field of the Define Control Details window.

Selecting Perspective Values and Result Investigators

Two sets of perspective values apply to controls and the incidents they generate:

- "Control Perspectives" values apply to the control itself. Users have access to the control if their job roles include data roles associated with these perspective values (and if their duty roles grant privileges to work with controls). For each control, the Control Perspectives values are those assigned to the model upon which the control is based. You cannot modify these values as you create controls.

  For a control to inherit perspective values from a model, the perspective hierarchy cited by the model must also be associated with the control object (in the Manage Module Perspectives page). If not, the control has no Control Perspectives values, and it is "orphaned" — it is inaccessible to any user whose data roles are associated with any perspective value.

- "Result Management Perspective Assignment" values apply to incidents generated by controls; select them as you create the controls. (See "Selecting Perspectives" on page 1-3.) Users are eligible to review these incidents if their job roles contain both a duty role with the privilege for incident review and a data role associated with perspective values matching those selected here.

As you select perspective values in the Result Management Perspective Assignment panel, GRC users eligible to review incidents become available in the Result Investigator field. In that field:

- Select All Eligible Users to permit incident review by any of those users.

- Select Search to appoint a single user for incident review. A Search and Select Investigator dialog opens. In it, enter text strings to match any combination of username, given name, and surname. (Once again, you can use the percent sign as a wild-card character.) Then select the user you want.

Writing Comments

To add a comment to the controls:

1. Click on the Add Comments button. A Comments dialog opens.

2. In the Comments dialog, type the comment you want to add to the controls.

3. Click on the Save button. The comment appears in the Comments panel of the Define Control Details window, together with the date, time, and your name.

Mass-Editing Controls

You can modify certain settings — priority, status, comments, perspective values, and result investigator — for any number of existing controls at once:

1. Select the controls you want to modify from the list of controls on the Manage Controls home page: To select a continuous set of controls, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold down the Ctrl key as you click on controls. Or, make no selection to edit all in a complete or filtered list of controls.

2. Select Actions > Edit. An Edit Controls dialog opens.

3. Modify any or all of the following:

    *   In the Details panel, enter new values for priority (a number value), status (Active or Inactive), or comment. (The controls retain their original values for any of these fields you leave unedited.)

    *   In each of the perspectives panels, select perspective values to be added to, or removed from, those already chosen for each control you are editing. Select the Add or Remove radio button, then move values to be added or removed from the Available Perspective Items list to the Selected Perspective Items list. As before, "Control Perspectives" apply to the controls you are editing, and "Result Management Perspectives" apply to incidents they generate.

    *   Choose whether to select a result investigator (see page 3-3). By default, the field is blank; if you make no selection, each control retains the result investigator originally assigned to it. Or, a control defaults to All Eligible Users if its original investigator is invalidated by selections you've made for Result Management Perspectives. If you make a selection, it applies to all the controls you are editing. Users available for selection are those whose data roles specify perspective values that are common to the controls you are editing.

4. To complete the edits, click on the OK button.

Viewing and Editing Individual Controls

For each control, you can open a page in which you can view its full details. Or, you can open an edit version of that page, in which you can modify some configuration details, add comments, or revise perspective-value and result-investigator assignments. (Any number of pages, each devoted to a distinct control, may be open at once, but you must open them one at a time, to avoid triggering the mass-edit feature.)

To open a control in view mode, click on its name in the Manage Controls home page.

To open a control in edit mode, do either of the following:

*   Open a control in view mode, then click the Edit button in the view page.

*   In the Manage Controls home page, click in the row for the control you want to edit, and select Actions > Edit.

In each of these pages:

- A Details panel displays the name, description, status, and priority of the control. You can modify those values in the edit-mode page; enter values in write-enabled fields. This panel also displays information that cannot be edited, including the control type; the datasources to which the control applies; dates on which it was created, last run, and last updated; a revision number; and whether the Allocated Analysis Time Per Filter feature (see page 2-4) is enabled or disabled.

- A Comments panel displays existing comments. When the page is in edit mode, you can add a comment as you would if you were creating a control.

- A Control Perspectives panel displays perspective values currently assigned to the control. A Result Management Perspective Assignment panel displays perspective values assigned to control incidents, as well as the current result investigator. In the edit-mode page, you can modify perspective values (see page 1-3) and select a new result investigator (see page 3-3).

- A Control Logic panel displays the filters, functions, or pattern that define the processing logic of the control, arranged in the AND/OR order in which they are analyzed. These elements cannot be edited.

In the edit-mode page, click the Save button to save your modifications. In either the edit- or view-mode page, click the Done button to close the page.

Running Controls

You can cause GRC to analyze, and return incidents for, any selection of controls. To begin, choose the controls you want to analyze from the list on the Manage Controls home page: To select one, click on its row. To select a continuous set of controls, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold down the Ctrl key as you click on controls.

Then, do either of the following:

- Evaluate the selected controls once, immediately. First, consider synchronizing data from the datasources against which the controls will run; this would ensure that transaction data is up to date. See "Synchronizing Data" on page 1-5. To evaluate the controls, select Actions > Run, or click on the Run button. GRC displays status of the run at the base of the Manage Controls home page.

- Create a schedule on which the selected controls run regularly: Select Actions > Schedule, or click on the Schedule button. A Schedule Parameter dialog opens; in it, enter values that set a name for the schedule, the date and time at which it starts, the regularity with which the controls are evaluated, the date and time (if any) on which the schedule expires, and whether data should be synchronized immediately before each control evaluation. Then click on the Schedule button.

To view the status of a control run, open a Manage CCM Jobs page: select Continuous Control Management under Continuous Monitoring in the GRC Navigator, then select Manage CCM Jobs under Control Administration in the Tasks list. For more on this feature, see "Jobs and Scheduling" in the *Enterprise Governance, Risk and Compliance User Guide*.

Contextual Reporting for Controls

From the Manage Controls home page, you can run a Control Detail Extract Report. For each control, it provides the name, description and comments, type (Access or Transaction), priority, the users who created and most recently updated the control, the dates on which they did so, and status (Active or Inactive), as well as the number of pending results it has generated. Finally, it displays the processing logic of the control and, for an access control, any conditions defined for it and entitlements (sets of access points) that belong to it.

To run the report:

1. Select controls upon which you want to focus the report. You can do this by clicking on any number of controls (using the Shift or Ctrl key to select continuous or discontinuous sets). If you do not select individual controls, the report includes information about all controls. Or, you can filter the list of controls to include only those you want — for example, a list of controls at a particular priority.

2. In the Report list box, select the Control Detail Extract Report.

3. In the list box immediately to the right of the Report list box, click on the format in which you want to produce the report. The value *csv* produces a file designed for export to another application, such as a spreadsheet, for further manipulation. The value *pdf* produces a formatted report that can be viewed in Adobe Acrobat.

4. Click on the Print button.

5. A File Download dialog appears. In it, choose whether to save or open the report. If you choose to save the report, another dialog opens; in it, navigate to a directory in which you want to save the report.

4

Resolving Incidents

The evaluation of transaction controls generates "incidents," each the record of a transaction that exceeds the risk defined by a control. Each consists of values for attributes that were selected for a model from which the control was developed.

A Manage Results home page presents incidents belonging to the person currently logged on to GRC — for your purposes, you. Incidents may belong to you because controls that generate them identify you as a result investigator, or because other investigators assigned them to you. To open the page, select Result Management in the Navigator, then Manage Incident Results among the Result Management tasks.

From the Manage Results home page, you may navigate to other pages, which show detailed records of individual incidents. To return from those pages to the Manage Results home page, click on the Manage Results tab.

The actual resolution of incidents occurs outside of GRC. For example, you may determine that a purchase order should be canceled if a transaction control shows that it is suspect; that action would be completed in the business-management application to which it applies. The GRC Manage Results pages enable you to review incident details, and to set the status of incidents to reflect whether anything should be, or has been, done about them.

Initially, incidents appear at an Assigned status, which means that you (potentially along with others) have been designated to address them. You can update an Assigned incident to any of the following statuses:

- Accepted, which means you have determined that nothing need be done to resolve the incident.

- Remediation, which means you have decided that some action must be taken in the business-management application to resolve the incident.

- Resolved, which means you have confirmed that the remedial action has been carried out in the business-management application.

GRC may set other statuses:

- Control Inactive means that an incident is no longer of concern because the control that generated it has been inactivated.

- Authorized and Closed apply exclusively to incidents generated by AACG controls (See the *Application Access Controls Governor User Guide*.)

An incident has not only status, but also one of three states: In Investigation, Approved, or Closed. A user cannot directly set the state of an incident. He can change its status, then either save or submit it, and GRC assigns a state as a result of these actions. A submission can cause a state change; a save cannot.

In general, if the status of an incident is Assigned or Remediation, its state is In Investigation; if its status is Accepted or Resolved, its state is Approved. However, because of the distinction between saving and submitting a status change, this is not always true. For example, an incident may be at the Remediation status and In Investigation state; a user may update status from Remediation to Resolved; but if he saves, rather than submits, the change, the incident remains at the In Investigation state. Or, a Resolved (and Approved) incident may be reopened, its status changed to Remediation; if it is submitted, its state changes to In Investigation, but if it is saved, its state remains Approved.

If the status of an incident is Authorized, its state is Approved; if its status is Closed or Control Inactive, its state is Closed.

State matters in part because the Manage Results page presents pending incidents by default, other pages show counts of pending results, and pending incident results are defined as those at the In Investigation state. (State matters also because each user's access is determined by his data roles, which specify states at which he may access data.) To cause the Manage Results page to display incidents at other states (presuming your data roles give you access to data at those states), use standard search features.

Viewing Controls or Incidents in Summary

To review, edit, or assign status to incidents, open the Manage Results home page: select Manage Incident Results from the Result Management tasks available from the Navigator.

From the Manage Results home page, you may navigate to other pages, which show detailed records of individual incidents (see page 4-4). To return from those pages to the Manage Results home page, click on the Manage Results tab.

You can set the Manage Results home page to display either a list of controls that have generated incidents, or a list of incidents generated by those controls. In the

control list, each control links to a list of the incidents only it has generated. From any list of incidents, you can open pages that provide details of individual incidents.

- For a list of controls, select Control Summary in the View By list box.

- For a general list of incidents, select Incident Results in the View By list box. For a list of incidents generated by a specific control, click on its Pending Result Count in the Control Summary list.

You can hide or restore the columns that appear in the grids displaying controls or incidents; right-click in the header row of the grid to open a checklist of columns. Those available for incidents include the following:

- Incident Information: For a transaction incident, this is the value of the first attribute among those selected to characterize the suspect transaction. (These

values were selected during configuration of the model that served as the basis of the control that generated the incident.)

- Group and Grouping Value fields: For transaction incidents, results vary.

    – If a transaction control uses a filter in which the Equals condition sets an attribute of a business object equal to itself, the Group field reports the business object and attribute cited in the control, and the Grouping Value field reports the common value of this attribute.

    – If a transaction control uses a filter to find transactions with similar values for a specified attribute, the Group field displays the word *Similar* and the specified attribute, and the Grouping Value field displays the value of that attribute for a given incident.

    – If a transaction control uses a function to calculate a value for a specified attribute across a group of transactions, the Group field identifies the calculation (count, sum, or average) and the specified attribute, and the Grouping Value field displays the calculated value for a given incident.

    – If a transaction control uses a pattern to create a baseline value, the Group field displays the pattern type and the attribute upon which the pattern is based, and the Grouping Value field displays the baseline value.

Mass-Editing Incidents

You can set status for any number of incidents, or write comments for them, all at once. To do so, first choose the incidents with which you want to work:

1. Generate a list of incidents in the Manage Results home page.

2. In that list, select any number of incidents. To select a continuous set, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold down the Ctrl key as you click on items. Or, make no selection to edit all in a complete or filtered list of incidents.

3. Select Actions > Edit. A Mass Update dialog opens.

4. Do any of the following:

    - Select the status you want to assign to the selected incident in the Status list of values. (See page 4-1 for a discussion of status definitions.)

    - Write a comment in the Comments field.

    - Attach files to the incidents (see page 1-5). For a mass edit, you can attach only URLs.

5. Click the Save, Save and Close, or Submit button. (Remember that a submission can alter the state of an incident, but a save cannot. See page 4-2.)

Because the Manage Results home page displays pending incidents by default, incidents disappear from its list if you select a status other than Assigned or Remediation, and submit the change. You can, however, search for incidents at other statuses.

Viewing and Editing Individual Incidents

For each incident, you can open a page in which you can view its full details. Or, you can open an edit version of that page, in which you can set the incident's status, attach files, add comments, and reassign the incident. (Any number of pages, each devoted to a distinct incident, may be open at once, but you must open them one at a time, to avoid triggering the mass-edit feature.)

To open an incident in view mode, generate a list of incidents in the Manage Results home page (see "Viewing Controls or Incidents in Summary" on page 4-2), then click on the Result ID value for the incident you want to open.

To open an incident in edit mode, do either of the following:

• Open an incident in view mode, then select Actions > Edit Definition in the view page for that incident.

• Generate a list of incidents in the Manage Results home page, click in the row for the incident you want to edit, and select Actions > Edit.

Each view or edit page includes a Details panel, which displays the name, description, and priority of the control that generated the incident; the current incident status and state; dates on which the control was last run and on which the incident was created and last updated; datasources on which the incident exists; and other details.

Below the Details panel, a set of tabbed panels provides additional information:

• Result Details defines the incident in question. The grid displays values for all attributes selected to characterize the suspect transaction. (These values were selected during configuration of the model that served as the basis of the control that generated the incident.)

• Perspectives shows the perspective values and result investigators currently assigned to the incident. (Initially, these are determined by Results Management Perspective Assignment values selected for the control that generated the incident.) You can modify these values (see "Assigning Incidents," below).

• Comments displays the comments currently written for the incident, and enables you to create new comments.

• Relationship Assignment lists associations currently configured between the incident and processes, other base objects, risks, or controls in the Financial Governance module or custom EGRCM modules. You can modify these values (see "Assigning Relationships," page 4-6).

To set status for the incident, open it in edit mode and select a new value in the Status LOV of the Details panel. (See page 4-1 for a discussion of status definitions.) Click the Save button or the Submit button. (Remember that a submission can alter the state of an incident, but a save cannot. See page 4-2.) In the details panel, you can also attach files to the incident (see page 1-5).

To create a new comment, open the incident in edit mode, click the comments, tab, and click the Add Comments button. An Add Comments pop-up window opens; type your comment and click the OK button. Then save the incident.

Assigning Incidents

If you are the result investigator for an incident, you can assign the incident to another user. You can do this either from the Manage Results home page (in which case you can reassign any number of incidents at once) or from the edit page for an individual incident. Because eligible investigators are users whose roles specify perspective values that match those assigned to an incident, reassigning the incident may involve resetting the perspective values configured for the incident.

To reassign incidents from the Manage Results home page:

1. Generate a list of incidents in the Manage Results home page (see page 4-2).

2. Select the incidents you want to reassign: To select a single incident, click on its row. To select a continuous set, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold the Ctrl key as you click on incidents. Or, make no selection to reassign all in a complete or filtered list of incidents. (You cannot reassign more than 1,000 incidents at a time.)

3. Click on the Assign button. A Perspective Assignment pop-up window opens.

4. Select perspective values to be added to, or removed from, those already chosen for each incident you are reassigning. (See "Selecting Perspectives," page 1-3.) Select the Add or Remove radio button, then move the values to be added or removed from the Available Perspective Items list to the Selected Perspective Items list. If you are editing incidents with distinct sets of parameter values, you add or remove the same values to or from each set, but you add or remove only those values, and the sets remain distinct.

5. In the Result Investigator field of the Worklist Assignment box, select a result investigator.

   • Select All Eligible Users to permit incident review by any user whose job roles specify data roles that specify perspective values that match those chosen for the incidents. (Incidents default to All Eligible Users if their original investigators are invalidated by your perspective selections.)

   • Select Search to appoint a single user for incident review. A Search and Select Investigator dialog opens. In it, enter text strings to match any combination of username, given name, and surname. (You can use the percent sign as a wild-card character.) Then select the user you want.

   By default, the Result Investigator field is blank; if you make no selection, each incident retains the result investigator originally assigned to it. If you make a selection, it applies to all the incidents you are editing.

To reassign an incident from its edit page:

1. Open the edit page for the incident (see page 4-4), and select the Perspectives tab.

2. Select perspective values for the incident. (See "Selecting Perspectives," page 1-3.) From the incident's edit page, you directly edit perspective values; those remaining in the Selected Perspectives list are all the values that apply to the incident.

3. Select a result investigator in the Result Investigator field of the Worklist Assignment box. As before, you can select all users whose roles specify perspective values that match those selected for the incident, or any one of those users.

Assigning Relationships

You can establish relationships between incidents in the CCM module and objects in EGRCM modules. Incidents may be related to processes, other base objects, risks, or controls, which may exist in the Financial Governance module or any custom module. Once a relationship is created, the incident is listed both in the CCM Manage Results page and in a Results tab of the Manage page for the EGRCM object to which the incident is related.

From the Manage Results page, you can create relationships for any number of incidents at once. Or, from the edit page for an individual incident, you can create relationships for that incident.

To create relationships from the Manage Results home page:

1. Generate a list of incidents in the Manage Results home page (see page 4-2).

2. Select a set of incidents. To select a single incident, click on its row. To select a continuous set, click on the first, hold down the Shift key, and click on the last. To select a discontinuous set, hold the Ctrl key as you click on incidents. Or, make no selection to modify relationships for all in a complete or filtered list of incidents. (You cannot reassign more than 1,000 incidents at a time.)

3. Click on the Assign button. An Assignment pop-up window opens; select its Relationship Assignment tab.

4. Select the Add radio button to add objects to those already chosen for each of the incidents you've selected. Or select the Remove radio button to remove objects from those already chosen. If you are editing incidents with distinct sets of relationships, you add or remove the same objects to or from each set, but you add or remove only those objects, and the sets remain distinct.

5. Select Actions > Add, or click the green + button. A Search and Select window opens.

6. In a Module field, select an EGRCM module. In an Object Type field, select a type of object within that module. Click the OK button. The Search and Select window expands to list objects of the type, and within the module, you specified.

7. In that list, select objects with which you want to work. You can search for objects. Again, you may use the Ctrl or Shift key to select sets of objects, or make no selection to accept all in a complete or filtered list.

8. Click the OK button. Objects you've selected then appear in the Related Objects grid of the Relationship Assignment window.

9. If you determine you've added objects to the Related Objects grid erroneously, remove them: Select them and select Actions > Remove, or click the red × button.

10. Click on the Submit button.

To configure relationships from the edit page for an incident:

1. Open the edit page for an incident, and select the Relationship Assignment tab.

2. Select Actions > Add, or click the green + button. A Search and Select window opens.

3. In a Module field, select an EGRCM module. In an Object Type field, select a type of object within that module. Click the OK button. The Search and Select window expands to list objects of the type, and within the module, you specified.

4. In that list, select objects with which you want to work. You can search for objects. You may use the Ctrl or Shift key to select sets of objects, or make no selection to accept all in a complete or filtered list.

5. Click the OK button. Objects you've selected then appear in the Related Objects grid of the Relationship Assignment window.

6. As always when you edit an incident, click the Save button or the Submit button. (Remember that a submission can alter the state of an incident, but a save cannot. See page 4-2.)

Contextual Reporting for Incident Results

When you select Control Summary in the View By list box of the Manage Results home page, you can generate a Result by Control Summary Extract Report. It lists access and transaction controls that have generated pending incidents, and provides information about each control.

When you select Incident in the View By list box of the Manage Results home page, you can generate the following transaction reports:

• Result Summary Extract Report lists incidents generated by access and transaction controls, providing summary details for each.

• Transaction Incident Details Extract Report lists incidents generated by a transaction control. It provides not only the information that would be included in the Result Summary Extract Report, but also values for all attributes selected to characterize suspect transactions. These attributes vary from one control to another, so each run of the report must focus on a single control.

To run a report:

1. Generate a list of controls or a list of incidents in the Manage Results home page (see page 4-2).

2. Select controls or incidents upon which you want to focus the report. You can do this by clicking on any number of controls or incidents (use the Shift or Ctrl key to select continuous or discontinuous sets). If you do not select individual items, the report includes information about all controls or incidents in the list.

Or, you can filter the list of controls or incidents to include only those you want. For example, you can generate a list of controls at a particular priority, or a list of incidents at a particular status. (If you do not filter incidents for status, the report contains pending incidents — those at the In Investigation state.)

Some incident reports are specific to access or transaction incidents (or controls), and others are general. GRC automatically filters by type as needed: An access-specific report includes information only about access controls or incidents, a transaction-specific report includes information only about transaction controls or incidents, and a general report includes information about both.

3. In the Report list box, click on the report you want to run.

4. In the list box immediately to the right of the Report list box, click on the format in which you want to produce the report. If the report has the word *Extract* in its name, you can select only the value *csv*; this produces a file designed for export to another application, such as a spreadsheet, for further manipulation. For all other reports, you may choose *csv* or *pdf*; the latter produces a formatted report that can be viewed in Adobe Acrobat.

5. Click on the Print button.

6. A File Download dialog appears. In it, choose whether to save or open the report. If you choose to save the report, another dialog opens; in it, navigate to a directory in which you want to save the report.