Sopheon Accolade®

Process Design - Metric and Matrix Design Training Guide

Version: 17.1

About Sopheon Accolade®

Document Name:	Process Design - Metric and Matrix Design Training Guide
Document Version:	1
Software Version:	Sopheon Accolade 17.1
Document Date:	November 2024

Ownership of Software and Documentation

The Sopheon® software described in this documentation is furnished under a license agreement and may be used only in accordance with the terms of that license agreement.

Sopheon Corporation and its associated Sopheon Group companies, including its subsidiaries, its immediate holding company and its ultimate holding company (together, "Sopheon") have created and own all rights to the software and documentation. Licensees of the software have purchased a limited right to use the software in accordance with their license agreement.

Copyright Notice

Trademarks

No Warranty

The technical documentation is being delivered to you AS-IS, and Sopheon makes no warranty as to its accuracy or use. Any use of the technical documentation or the information contained therein is at the risk of the user. Documentation may include technical or other inaccuracies or typographical errors. Sopheon reserves the right to make changes without prior notice. In no circumstances will Sopheon, its agents or employees be liable for any special, consequential or indirect loss or damage arising from any use of or reliance on any materials in this documentation or in the software.

Patents

Aspects of Sopheon software are protected by U.S. Patents 5634051, 6632251, and 6526404; European Patent EP0914637; and by U.K. Patent GB2341252A.

Contents

About the Accolade Education Program

This module is part of the Sopheon Accolade Education Program (AEP). The AEP modules are designed to help Accolade users perform the tasks in their company's business process using the Accolade application. The content in the modules is meant to be used side-by-side with the application, and is part of the overall documentation suite provided for Accolade.

The benefits of using Accolade as part of your company's innovation development process include the following:

- Reduced cycle time by displaying clear structure and visibility.
- Reduced rework through timely, properly sequenced completion of all key tasks and milestones.
- Assured positive user experience through properly developed product requirements.
- Improved communication by automating collaboration between multifunctional team members.
- Provided decision-making information. Poor projects are stopped or placed on hold so resources can be redirected to more promising and higher value projects and products.
- Provided clear project requirements. Expectations of a project team and project manager at each stage are clearly spelled out.
- Managed business risk. Break resource commitments into increments or stages.
- Established key baseline information and metrics.

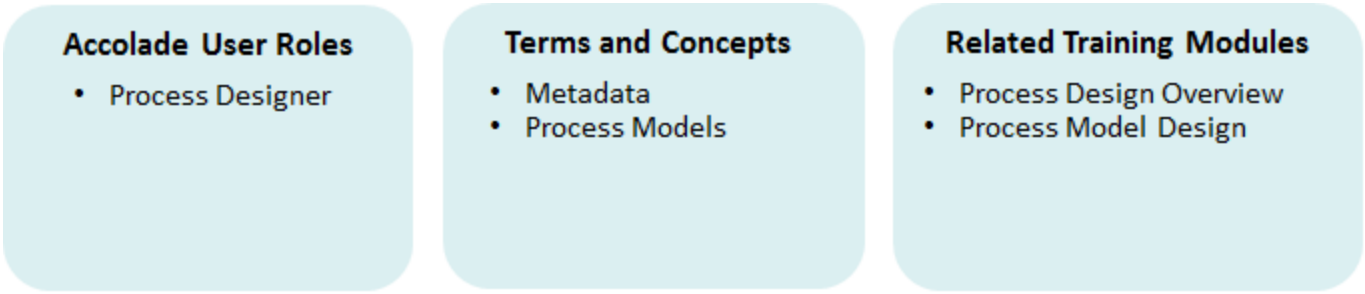
The Accolade documentation suite contains the following additional components:

Document	Contents
Sopheon Accolade What's New in This Release	For each release, review this document for an overview of the new features and changes within the release.
Accolade Online Help	Accessible directly through Accolade, the online Help provides comprehensive how-to and reference information about all aspects of using Accolade.
Sopheon Accolade Administrator's Guide	Provides information for administrative professionals regarding Accolade setup. This information is also provided in the online Help.
Sopheon Accolade Installation Guide	Provides information about the installation of the application and its required databases.
Dashboards for Accolade Installation Guide	Provides installation information for installing the Dashboards for Accolade component.
Quick Reference Cards	A PDF that can be printed double-sided that provides quick tips and navigation information for using Accolade.

Document	Contents
Online Help for Accolade Add-ins	Accolade add-ins, including Accolade Office Extensions, Accolade SmartDocuments for Google, Accolade SmartDocuments for Office, Accolade Portfolio Optimizer, and Accolade's integration with Microsoft Project, each include their own Sopheon created Help file accessible directly from the application after the add-in is installed. Each Help file describes how to use the features of that particular add-in.

Prerequisites for Using this Module

The contents of this training module assumes you are assigned the Accolade user roles and have a basic understanding of the terms and concepts listed below and how they are used in your installation. In addition, the content in the related training modules listed below may be helpful before reviewing the contents of this module.

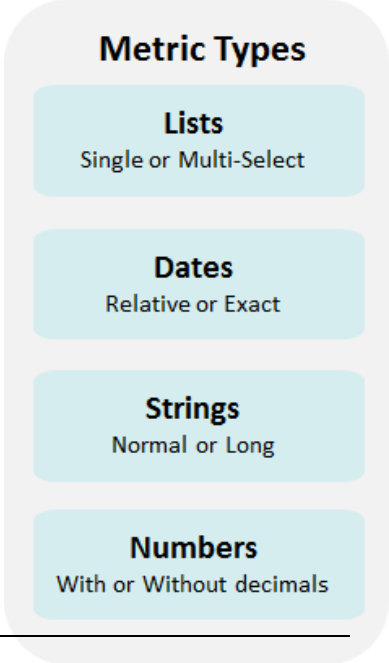


The content of this training module also assumes that you and your company have worked with Sopheon personnel and have a strong understanding of the data you want to capture and track using Accolade, which ultimately determines the metrics and matrices you create in your Accolade implementation.

Metrics to Collect Project Data Overview

A metric is a measure of an aspect of a project, or product, and is unique to each company that implements Accolade. Metrics provide data and status and are available for inclusion in online forms, charts, reports, documents, and other places within Accolade. Use metrics to capture data, such as dates relative to project start and end dates, level of risk, or financial data such as project costs. Each company has their own set of data points that are important to their particular process flow. Use the various metric types to define and capture data points about all projects in your system.

Process Designers create and define metrics and assign metrics to process models, which then are available to projects based on those models. From there, Project Managers can assign values within their projects, and document owners can update deliverables, or activities within the project. A metric must be active and assigned to a model to be available for use within projects based on that model.



Important! Administrators can view existing metric definitions, but cannot add or modify metrics.

Accolade offers metric data types for entering text strings, dates, numbers, and single or multiple selection lists. The type of data captured in each metric determines the data type required for the metric, and the settings available to the metric.

In addition, increase the power and flexibility of metrics using the following:

- **Calculated Metrics** - The value of a calculated metric is defined using an expression within the metric definition. Typically, this metric type is based on the values of one or more metrics, which can themselves be calculated metrics. Valid expressions are comprised of field codes and valid operators and functions.
- **Cascading List Metrics** - Cascading list metrics display different groups of list items depending on a value selected in a different metric or in other project data. Use queries within the metric definition to define the list constraints.
- **Inherited Metrics** - Inherited metrics display metric values that are defined in linked projects, typically in a collection of projects called a portfolio. Inherited metrics are defined using the **Inherited Metric** check box when creating the metric.
- **Filter Metrics** - Filter metrics describe attributes of a project, such as the project type, and are used in searches and on various project access pages to narrow the project list. Filter metrics are defined using the **Filter Metric** check box when creating a metric.

- **Matrix Metrics** - Matrix metrics are metrics that are grouped together in a matrix, which is intended to model complex relationships between different data types. Matrix metrics are defined using the **Available to Matrix** check box when creating a metric.
- **Searchable Metrics** - Searchability is available for metrics and matrix metrics.

Each of the above is defined as part of the basic metric setup.

Metrics Best Practices

Keep the following set of best practice recommendations in mind when creating and defining metrics:

- **Group Like Metrics Using Categories** - A company can use a large number of metrics. Group metrics and assign them to categories. A quick reference guide or a category cheat sheet is also helpful.
- **Use Short, Descriptive Display Names** - For metrics flagged as filter metrics, keep display names short. Longer display names may cut off in search areas within Accolade. Use the display name as the title attribute for metrics in online forms.
- **Minimize the Chance of Duplicate Entry During the Same Project Stage** - Ensure that there is only one method by which a metric can be updated in any given stage of a project. For example, if a metric is available for editing in a quick grid, it should not also be updated on any page in a project when you associate the metric with a model.
- **Know What Data Types to Use** - Long String metrics are not available as filter metrics.
- **Use the Number Data Type for Quantitative Metrics in Microsoft Excel** - Sopheon recommends that you create metrics that display quantitative values in reports, or those that Microsoft Excel formulas could manipulate, using the **Number** data type rather than **String**. Using the **Number** data type prevents the creation of metric values that include financial symbols such as $.
- **Use the Numbering Capabilities in Microsoft Excel** - Excel has its own number formatting capabilities; therefore, format numeric metric values displayed in Excel in the cell where they display rather than when creating the metric in Accolade.
- **Ensure System Names are Usable in Field Codes and Calculated Metrics** - Use only English letters A to Z, numbers 0 to 9, and the underscore character (_) in system names to ensure metrics are usable in field codes and other calculated metrics.

Creating Metrics

Metrics vary widely based on the type of information required at your company. The procedure below discusses how to create the *basis for any metric*.

Planners can also create metrics when defining a planning element in Accolade Innovation Planning. Metrics created in Innovation Planning contain a subset of options that are applicable to metric usage in Innovation Planning.

To create a metric:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:

   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click  in the **Copy** column to create a copy that can be used as a base to build a new metric.

   To copy a metric, the user must have "Can Edit" for at least one access group in the system and "Can View" for at least one access group on the metric. If you "Can Edit" any of the access groups the metric belongs to, the copy will have those groups. If you do not have "Can Edit" on any of the metric's access groups, the copy inherits your highest access group you can edit.

3. Complete the following information to identify and describe the metric:

   Required fields display with **red** text and an asterisk * if the field is empty.

Field	Description
Display Name	Enter a name, up to 64 characters long, which identifies the metric.
System Name	Enter a unique, shorter name that identifies the metric in queries, reporting views, Accolade Office Extensions add-in, Accolade online reports, and field codes, and other areas in Accolade. The name must be unique among metrics and can contain only letters (English alphabet), numbers, and the underscore. **Note:** Modifying system names of existing metrics is not recommended. If you modify an existing system name, you must also update the name in each query, report, template, and so on that references the metric.

Field	Description
Description	Enter a description of the purpose or nature of the metric. This description helps other users identify the metric throughout the system.
Category	Enter or select the group to which this metric belongs. Use categories to organize like metrics together. For example, if there is a large number of metrics assigned to a process model, a Project Manager can use a category selection to locate metrics within their projects. • Leave this field blank to add to the **Default** category. • To define a new category, select **New Category** and enter the category name. • To delete a category, remove every item from the category. Empty categories are deleted automatically.
Order	Enter a number to specify the metric's place when it displays in a list of metrics. Lower numbered metrics display higher in the list.

4. Select one or more of the "Available to" options to make the metric available in other portions of Accolade.

Option	Description
Available to Business Intelligence Tools	Select this check box to enable the metric for use in your organization's business intelligence application. **Note:** If the **Available to Planning** check box is selected, the **Available to Business Intelligence Tools** and **Available to Reporting** options will be automatically added to the metric settings when the metric is created. If the metric is selected for inclusion in a portfolio snapshot, you cannot clear this option.
Available to Matrix	Select this check box to enable the metric for use in matrices. **Important!** A metric that is available to matrices can only be used in matrices, and is not available as a standard metric. This setting cannot be changed after the metric is created.

Option	Description
	Metrics available to a matrix cannot be displayed individually on project pages or in a standard quick grid. They can only be displayed in a project document based on the matrix Excel template or in a matrix grid within a quick grid. This option is not available for metrics created within Innovation Planning
Available to Phases	Select this check box to allow the metric to be defined as a phase metric for use with element types in Accolade Innovation Planning. This option is only available to select or modify from within Innovation Planning.
Available to Planning	Select this check box to allow the metric to be added to element types in Innovation Planning. If the **Available to Planning** check box is selected AND the metric is defined as a date type, select a shape from the drop-down list to represent a milestone date when included in a planning view. **Note:** If the **Available to Planning** check box is selected, the **Available to Business Intelligence Tools** and **Available to Reporting** options will be automatically added to the metric settings when the metric is created. If the metric is used as a setting for a public planning view, you cannot clear this option.
Available to Portfolio Optimizer	Select one of the following to indicate the metric availability within Portfolio Optimizer: • **Not Available** - Not available in Portfolio Optimizer. • **Reporting Only** - Included in reports and in calculations, but is not visible or editable in Portfolio Optimizer. This option allows you to create metrics for reporting or calculations that are available to other metrics in Portfolio Optimizer without including the metric in the list of available columns in Portfolio Optimizer. • **Edit** - Visible and fully available in Portfolio Optimizer. Metrics that display on a project's Portfolio page should be selected for Portfolio Optimizer for users to see the same

Option	Description
	metric data in Portfolio Optimizer as seen in the project.
Available to Reporting	Select this check box to allow the metric in reports created using the Accolade Office Extensions add-in, Accolade Online Reporting, or reporting view, and within snapshots. **Note:** If the **Available to Planning** check box is selected, the **Available to Business Intelligence Tools** and **Available to Reporting** options will be automatically added to the metric settings when the metric is created. If the metric is selected for inclusion in a portfolio snapshot, you cannot clear this option.
Available to Resource Editor	Select this check box to make the metric displayable in the project details within Resource Editor, when associated with a project's model.
Available to Workflow Line-up	Select this check box to make the metric displayable in the Workflow Line-up page. **Important!** The number of metrics selected as available to the workflow line-up has the potential to exponentially slow down the Workflow Line-up page load and navigation. Consider which metrics require visibility on this page.

5. *(Optional)* If the **Available to Planning** check box is selected AND the metric is defined as a date type, select a list metric with defined colors to set the color of a milestone date icon when included in a planning view.
6. Select the **Active** check box when the metric is ready to use in projects.

   To deactivate a metric that is not in use, clear the **Active** check box. Note that you can only deactivate metrics that are not included on a model.
7. Check the metric options to determine how and where a metric displays throughout the system.

Option	Description
Allow Updates from All My Work page	Select this check box to include the metric as part of updating projects from the All My Work page. Users must have **Allow Updates from All My Work page** rights to update projects from the All My Work page.

Option	Description
	This option is not available for calculated metrics.
Filter Metric	Select this check box to make this metric available as a filter in Search and various other locations throughout Accolade. A filter metric should contain values that clearly distinguish different project types or project groups. By default, you can create three filter metrics in Accolade, however the **Maximum Filter Metrics Allowed** parameter can be updated to allow for a maximum of 10. Although any type of metric other than long string can be designated as a filter metric, list metrics may be most usable for this purpose because of the ease of selecting the exact value needed. Using string metrics as filter metrics requires entering the exact string when filtering projects using filter metrics. EXAMPLE Example When a project contains descriptive metric data, such as project type, select the same filter values Search and similar pages to find the project. The pages list only those projects with matching filter values.
Inherited Metric	Select this check box to have this metric inherit its value from an instance of the same metric in a project higher in a portfolio structure. Finish creating the base metric and continue with creating a metric that inherits its value.
Track History	Select this check box to save information such as when a metric value changed, who made the change, when the change was made, and the original value before the change for historical reporting purposes. **Important!** Tracking metric history has the potential to create a large amount of history information. Carefully consider which metrics require history tracking, and track only those needed for historical purposes.
Searchable Metric	Select this check box to make the contents of the metric searchable. This applies to: • **String** • **List** • **Long String**

Option	Description
	• **Multi-Select List**

8. In the **Restrict to These Roles** field, select one or more user roles to restrict the metric availability to users with one of those roles.
9. In the **Initialize From** field, select the metric whose value you want to display in this metric before another value is entered. This list contains other metrics of the same data type.
10. In the **Data Type** field, select the type of data this metric represents.

    The **Data Type** selection determines what other options are available when configuring the metric.

Data Type	Description
String	Creates a text box that accepts up to 500 characters.
Number	Creates a text box that accepts only numerals, a decimal point, and a dash. Number metrics have a 15 character limit (including decimal points and dashes).
Date	Creates a calendar control that enables a date selection. Date metrics can also be defined as milestone dates.
List	Creates a drop-down list of items for a single selection. The complete list has a 2500 character limit, and each entry in the list has a 500 character limit for the list item display name. If the list source is a query or reference table, the list character limit does not apply.
Long String	Creates a text box where the options and character limit depends on if the Rich Text check box is enabled: • **If Rich Text is enabled** - Allows users to format the text using buttons in the toolbar of the text box. There is a 2 GB limit to data that can be entered. • **If Rich Text is not enabled** - Allows users to enter plain text that can be formatted using markdown formatting. There is a 2000 character limit. Long String metrics cannot be flagged as filter metrics. If you require more than 2000 characters, enable the Rich Text check box or enable one or more **Extended Project Data** fields in the metadata in the process model.
Multi-Select List	Creates a drop-down list of items for multiple selections. Data limits are the same as for an ordinary list. The complete list has a 2500 character limit.

11. Complete the appropriate options for the metric type you are defining.

Number

Field	Description
Number Format	Enter a custom number format to specify how the value displays in a Word or PowerPoint document, or in quick grids when added to an Accolade field. If you do not enter a number format, numbers display without formatting.
Decimal Places	Enter an integer from **0** to **14** to specify the number of decimal places allowed in values for this metric. This is also the number of places to which the value is rounded in Accolade and in metric field codes. If you did not create a number format for Microsoft Office documents, this value also determines the value's decimal places when displayed in Microsoft Word and PowerPoint.  Example To display the metric value as an integer, enter **0**. To display its values with two decimal places, such as 3.14, enter **2**. Metrics do not show trailing zeroes except in Portfolio Optimizer, project history, and Smart documents. For example, metrics set to 3.20 will show as 3.2.

Date

Field	Description
Relative Date	Select this check box to specify a time period before or after another date that serves as the metric reference date, such as a project start date or another date metric. The actual date is calculated and is displayed in reports in a column named <*metric name*> Calculated.  Example If **Period** is set to **Monthly**, **Relative To** is set **Project End Date**, and the Project End Date is June 1, then a metric value of 1 equals July 1, a metric value of 2 equals August 1, and so on. You can also enter negative numbers to specify periods before the **Relative To** date.

List

Field	Description
List Source	Select how to enter the list items, by entering a list manually, by query, or by reference table column selection. Finish creating the base metric and then continue with creating the list for single and multi-select list metrics or creating a cascading list metric.

Long String

Field	Description
Rich Text	Select this check box to enable rich text editing. When **Rich Text** is selected, the following options are disabled: • Business Intelligence Tools • Planning • Portfolio Optimizer • Reporting • Resource Editor • Workflow Line-up • Allow updates from All My Work page • Filter Metric • Inherited Metrics • Track History • Initialize From • Snapshots In addition to the above, all options on the **Calculated Formula and Events** tab are disabled as rich text metrics cannot be used in calculations. Additionally, long string metrics and matrix metrics configured as rich text cannot contain HTML script tags. **Note:** Rich text metrics are available for use in the following areas: PowerPoint field codes, quick grids, advanced pods, and Web API.

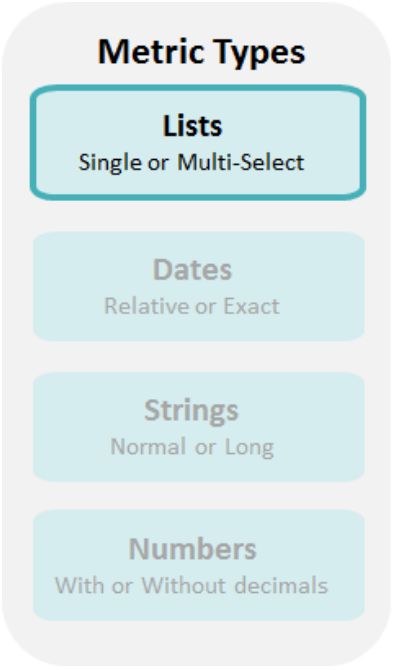
Multi-Select List

Field	Description
List Source	Select how to enter the list items, by entering a list manually, by query, or by reference table column selection. Finish creating the base metric and then continue with creating the list for single and multi-select list metrics or creating a cascading list metric.

12. Associate the metric to multiple models.
13. On the **Security** tab, configure access group restrictions for the metric.

    Click **Process Model Usage** on the **Security** tab to see the list of process models that the metric is associated with. The list includes all process models the metric is included in, as well as links to the process model's component tree pages that you have Edit access to.
14. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.
15. *(Optional)* Continue with creating and scheduling metric calculations by selecting the **Calculated Formula and Events** tab to calculate the metric value from an expression of one or more metrics or Accolade fields and assign when the metric will calculate by based on a specific event or designated time.

Creating Single and Multi-Select List Metrics



Create a metric that displays a list of drop-down items for selection, such as a metric used to define the difficulty of a project using a defined list with the values Easy, Average, and Difficult. Define list metrics for single or multiple selection of static list options that builds from selections in previous lists. To build a list with dynamic list options, see the Creating Cascading List Metrics topic in the online Help.

List metrics can also be defined to select a value based on a calculated expression. For example, you may have a cost metric that has list values of Under Cost, Actual Cost, and Over Cost. Instead of allowing users to select the value of that metric within a project, define the metric to use an expression that determines if a project is under, over, or at cost, and that sets the selection for the list metric. If the calculated value is not available in the list, it is added and set for that project only. The value is always set based on the calculation and is always read-only.

To create a list metric:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create the basic metric, selecting one of the following options in the **Data Type** field:
   - **List** - Creates a list of options for a single selection.
   - **Multi-Select List** - Creates a list of options for multiple selections.
4. In the **List Source** field, select the method to use to define the list:

Method	Description
Defined List	Select this option to define the list manually, creating a static list of items. Enter each list item's data and click **Add New** to create a new item. Enter the following for each item in the list: • **Name** - The item's display name, up to 500 characters long. A manually defined list can contain up to 2500 characters for the total of all the item display names. List item names cannot contain the pipe (|) character.

Method	Description
	• **System Name** - *(Optional)* The item's unique ID, up to 64 characters long. The system name must be unique within metrics, not within all of Accolade. A system name may be required if this metric is integrated with a 3rd party system. • **Order** - The item's display order in the list. • **Color** - If you are creating a list metric in Innovation Planning, assign a color for use in legends within a Gantt view.
Reference Table	Select this option to use columns within a reference table to populate the list of items. Only reference tables set as **Available to Metrics** are available for selection. Select the table and the column within the table that contains the list item selections, noting that list item names cannot contain the pipe (|) character. Only columns set as strings are available for selection. The items in a list generated from a reference table column display in the same order as listed in the column within the reference table. To create a cascading metric using a reference table, see the Creating Cascading List Metrics topic in the online Help.

Query	Select this option to use queries and query codes to populate the list of items. Items in the list change as the data that the query references change in Accolade, creating a dynamic list. Each item in a list derived from a query has a 500 character limit.
	  Example
	To create a list that contain projects that are part of a class called Marketing, use the following query:
	`SELECT ProjectName`
	`FROM RVP_Projects WHERE (ClassName) = ('Marketing')`
	Select an existing query from the list or select **Add New Query** to create a new query. Use the **Edit** and **Preview** options to modify and test the query. See the Queries Overview topic in the online Help for information about building queries.

5. To create a metric whose value is determined by a calculation, select the **Calculated Formula and Events** tab and enter the expression in the **Calculated Formula** field. See the Calculated Metric Expressions Reference topic in the online Help for guidelines when creating calculated expressions, and the Scheduling Metric Calculations topic in the online Help to define when the metric calculates.
6. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- If you modify the list items in the definition of a List or Multi-Select metrics, open and closed projects retain the currently selected list value, even if that value has been removed. However, if a list item is removed from the metric definition, that item is no longer available for selection in new and open projects.

Creating Metrics Using Expressions (Calculated Metrics)

The value of a calculated metric is defined using an expression within the metric definition.

Typically, this metric type is based on the values of one or more metrics, which can themselves be calculated metrics. Valid expressions are comprised of other metrics, metadata (field codes), valid operators, and functions. Calculated metrics display as read-only values when displayed in a project, and can be recalculated on scheduled events. See "Scheduling Metric Calculations" on page 20.

Security profiles cannot contain metrics with calculated values.

The procedure below describes how to define the expression within the metric definition. For information about writing the expressions themselves, the components available, and considerations for Portfolio Optimizer, see the calculated metrics information in the Accolade online Help.

To create a metric using an expression:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create the basic metric and select the **Calculated Formula and Events** tab.
4. In the **Calculated Formula** field, enter the expression following the guidelines in the Calculated Metric Expressions Reference topic in the Accolade online Help.
5. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- If a metric's calculated value extends beyond the allowable characters for the metric type, the data stored and displayed for that metric is truncated as follows:
  - String - 500 characters
  - Long String - 2000 characters
  - Number - 15 characters
  - Multi-Select List - 2500 characters
  - List - 2500 characters

Scheduling Metric Calculations

To ensure metrics calculate and to prevent unnecessary recalculations, Process Designers have the ability to assign events to define when and how often a metric will calculate. Assigning a metric to calculate at a scheduled occurrence or a project event limits disruption to the system and minimizes data buildup of metrics recalculated during other Accolade actions. While metrics may be assigned to multiple events or occurrences be cautious when configuring metrics to prevent duplicating calculations. Additionally, if metrics are assigned to calculate on any associated change, the metrics will recalculate on specific actions or linked updates.

The procedure below describes how to assign metrics to calculate at a specific time or event. For information about calculated metrics see "Creating Metrics Using Expressions (Calculated Metrics)" on page 19.

To assign a metric calculation event:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click  in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create the basic metric and click the **Calculated Formula and Events** tab.
4. Select any of the following to set when calculations occur:
   - Calculate on any associated change.
   - On project events.

Event	Description
Create	Set a metric to calculate when a project is created in Innovation Planning, a layout, from the Workspace menu Add New, WebAPI, and Idea Submission. Ensure metrics scheduled to calculate only on project create do not reference team leader metadata if the default project manager metric is set.
Migrate	Set a metric to calculate when a project migrates. The calculation occurs on the original project at the time of migration before the project is closed.
Re-Open	Set a metric to calculate when a project that was previously closed is reopened. If a model has changed while the project was closed, a metric may not calculate correctly when the project is active again.
Close	Set a metric to calculate when a project closes to ensure metric values are finalized. Once a project is closed metrics will not calculate again.
Phase Change	Set a metric to calculate when a project moves forward or backwards in phases. Project phases move forward when a gate decision is set to Go or Conditional Go. Project create does not constitute a phase change for scheduled metric calculations. Project complete constitutes a phase change for scheduled metric calculations. When the final gate has been set to Go, the scheduled phase change metric will recalculate.

- Schedule date and time events.

  All dates and times are configured and based on the local time of the application server.

Event	Description
Daily	Schedule a metric to calculate at a specified time each day. Consider the quantity of metrics selected to calculate daily.
Monthly	Schedule a metric to calculate at the same time of day, on the same day of each month.
End of Month	Schedule a metric to calculate at the same time each month.

Event	Description
	The end of month date dynamically changes based on the date each month falls on. For example, a metric will calculate on March 31st and April 30th, as April 31st would be invalid.
Quarterly	Schedule a metric to calculate at the same time every three months from a specified month.
Yearly	Schedule a metric to calculate annually on the same date and time.

5. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- More than one occurrence or event may be assigned to a single metric.
- Due to the disruption calculations may have to the system, schedule time intervals to occur when traffic on the server is minimal.
- If a metric is assigned to calculate on project migrate and project close, the metric will only calculate once.

Exercises - Creating Basic List and Calculated Metrics

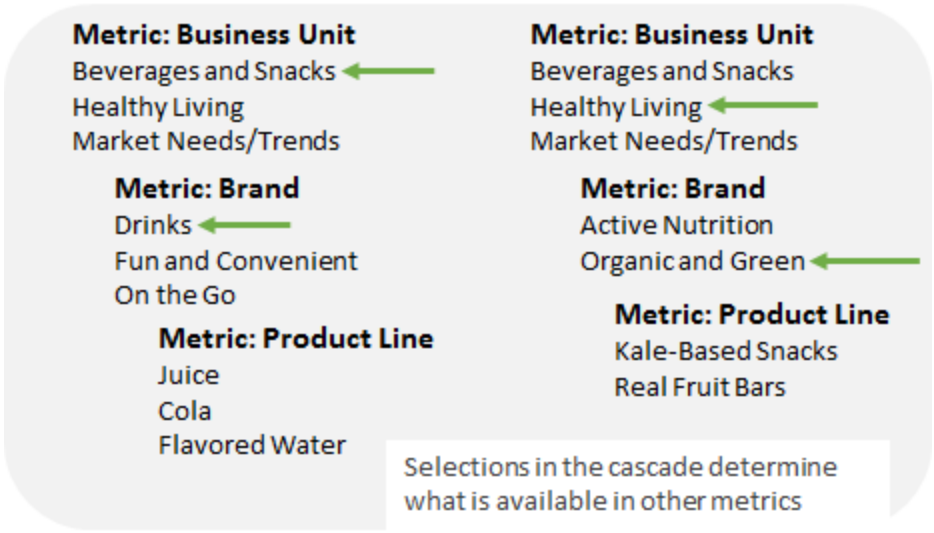
Try out what you have learned!

- Create a basic string metric and a basic number metric.
- Create a single selection list metric by manually entering the list items.
- Create a single selection list metric using a simple reference table.
- If you have access to the online Help, review the Calculated Metric Expressions Reference topic and create a calculated metric that concatenates the values of two metrics together.
- Create a second calculated metric that adds two values together.

Creating Cascading List Metrics

Using the List data type, Process Designers can create a cascading metric, or constrained metric, that displays different groups of list items depending on a data value. Creating the cascade requires a combination metrics: a "reference" metric, whose list options are all available, and a "restricted" metric, whose list options are limited to the values related to the reference metric's value.

For example, you could create the cascading metrics Business Unit, Brand, and Product Line, such that the Business Unit selection limits the Brand list options to the brands that are appropriate to for the currently selected Business Unit, and so on. In this way you can create a cascade, or series, of metrics that will present the appropriate set of choices at each level of the cascade.



Creating a cascading list metric is the same as creating a normal List metric; however, instead of creating a predefined list, either select columns from a reference table or write a query that constrains the returned values using a query field code in a WHERE clause.

Using a reference table to constrain the list allows you to create the constrained list without a custom reporting view and without needing knowledge of SQL.

To create a cascading list metric using a reference table:

Note: This process assumes that you have already created the "reference" metric, and its values are also defined in a column within a reference table.

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create the list metric using the **Reference Table** option in the **List Source** field.

   Only reference tables set as **Available to Metrics** are available for selection.

4. Create or select a reference table and indicate the column within the table that contains this metric's list selections.

   Only reference table columns with the data type set as String are available for selection.

5. In the **Filter** fields, select the reference table column that is used by the "reference" metric and will be used to restrict the list, and enter a query code that defines the value used for the restriction.

   The value entered for the field can be one of the following:

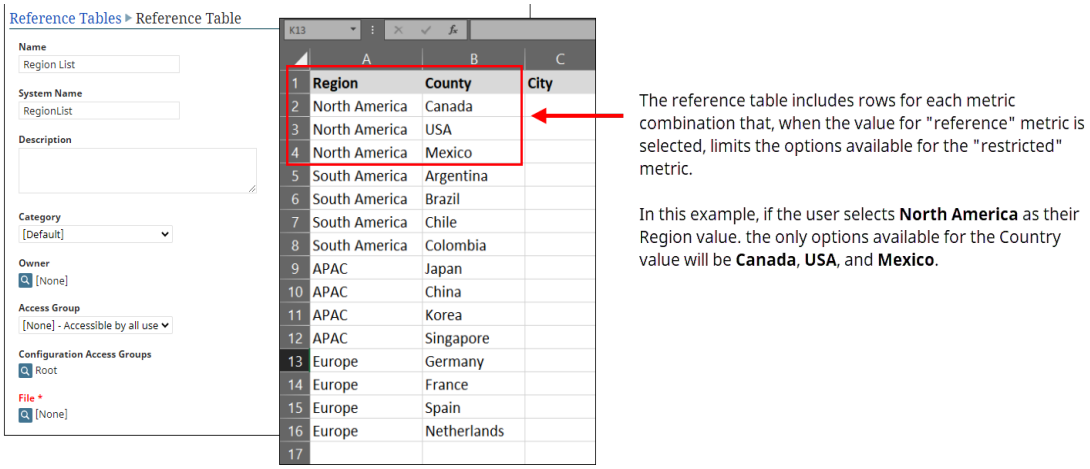
   - A query code that references another metric or a matrix metric within the project. Query codes that reference a metric or matrix metric use the **{*QME:*<*metricsystemName*>*}** format.
   - A query code that references project metadata, such as {*QMD:ProjectAccessGroup*}. Query codes that reference metadata use the **{*QMD:*<*metadataName*>*}**. See the online Help for a list of valid metadata query codes.

   Additional filters can be applied as necessary.

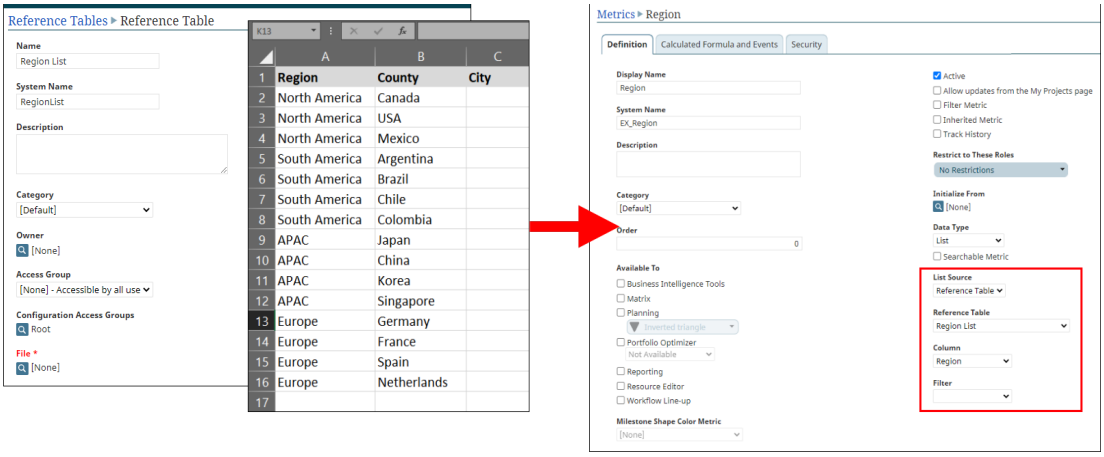
EXAMPLE Example

For example, a user wants to categorize all of their Accolade projects by region and country that they have business assets in. The user has created a reference table called Region List, which contains a column list of regions and a corresponding column list of countries, and has created the list metrics **Region** and **Country** to use in Accolade projects. Both metrics use the Region List reference table as a list source, and use the corresponding table columns to define the list options that can be selected when creating projects. Additionally, to minimize setup errors, the user wants the list of countries available for selection to be restricted by the value selected for the region.

To set up the reference table, the user has included the following rows for each metric combination available for selection.

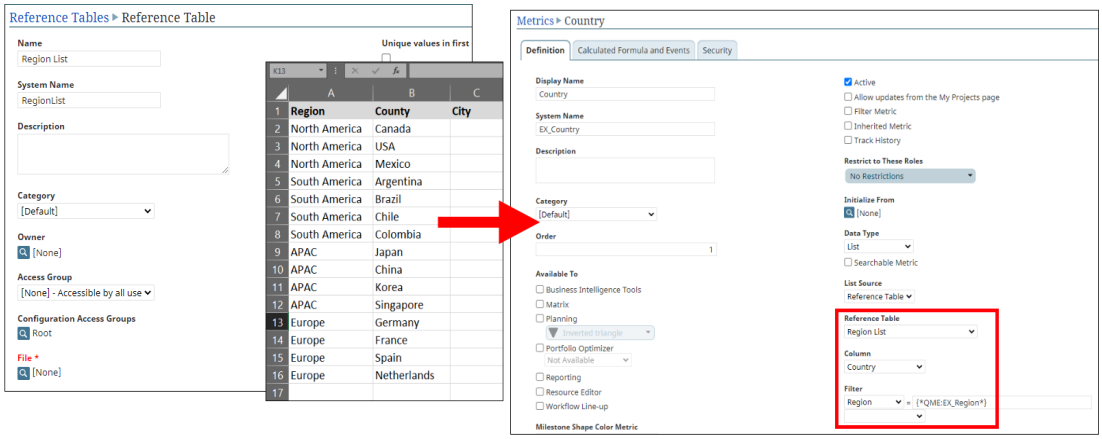


For this example, the user wants Region to be the "reference" metric. To set up the **Region** metric, the user selects Region List as the **List Source** and Region as the **Column** to use as the metric's list value options.

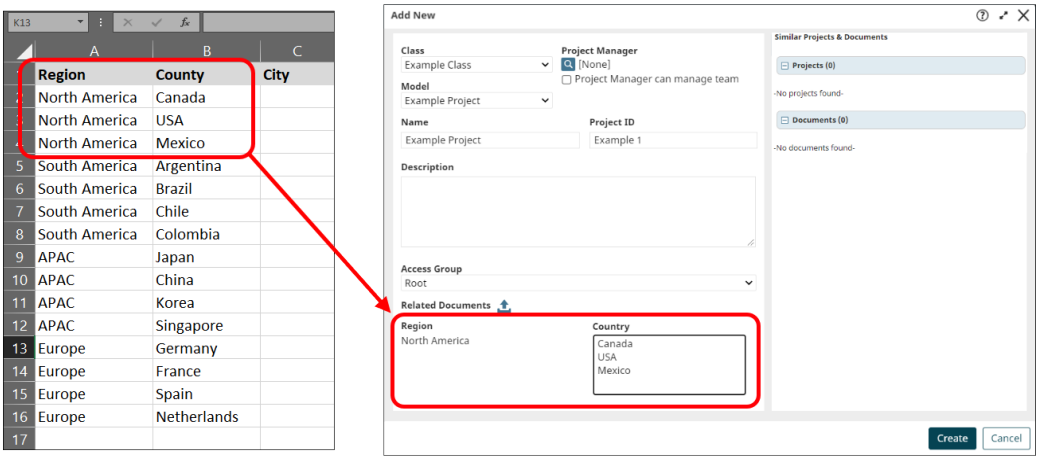


For this example, the user wants the Country metric to be the "restricted" metric. To set up the **Country** metric, the user selects Region List as the **List Source** and Country as the **Column** to use as the metric's list value options, but must add an additional filter in order to restrict the available list selections based on the Region value. In the **Filter** fields, the user selects **Region** as the column to be used as the filter to restrict the list, and enter **{*QME:EX_Region*}** as the value of this filter.

As entered, the filter and query expression combination states that **Country** values that have a matching **Region** value should be included in the list of options available for selection.



To further illustrate this: in the example below, the user has selected **North America** as the **Region** value. Based on the applied filtering, the available country selections are restricted to **Country** values that have corresponding North America **Region** values (which are Canada, USA, and Mexico, based on the table setup).



Note that in the example above, the user could have created and applied additional list metrics, for example creating a **City** metric in the reference table whose list options can be restricted both by applying filters both to the **Region** value **{*QME:EX_Region*}** and to the **Country** value **{*QME:EX_Country*}**.

6. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

To create a cascading list metric using a query:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.

2. Do one of the following:

   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click in the **Copy** column to create a copy that can be used as a base to build a new metric.

3. Create a list metric using the **Query** option in the **List Source** field.
4. Create or select a query that uses a query field code included in a WHERE clause to restrict the list.

   At the highest level, a SQL query for a cascading list looks like:

   ```
   SELECT Child Column
   FROM View
   WHERE Parent Column = {*QME:<metric system name>*}
   ```

EXAMPLE Example

Consider the following SQL query that uses the GlobalRegions reference table, and refines the city selections based on the selections made for the region, country, and state. The city list only displays cities that are within the region/country/state area:

```
SELECT Distinct City
FROM CRV_Ref_GlobalRegions
Where Region = '{*QME:qblRegion*}' AND Country
= '{*QME:qblCountry*}' AND State
= '{*QME:qblState*}'
```

The top level of the cascade can be a list metric that is either populated by a query or defined manually.

5. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- It is not necessary for the parent metric in a cascade to appear on the same page as the child metric. The constraint is based on the selected value of the parent metric as found in the database.
- You can create a constrained metric that is not part of a cascade. The query is constrained by metadata rather than by another metric.
- If a cascading metric is selected as a filter metric, it does not cascade on the page where it is used as a filter. All of its list items display as if it were an ordinary list.
- If a query contains a reference to a RVP_ or CRVP_ reporting view, the result displays **[Unavailable]** when used on an external Idea Submission form. External users do not have the security rights to see the data contained within those views.
- In Innovation Planning and Roadmapping, a cascading list metric included in a matrix does not enforce the cascade. For example, if there is a state selection that restricts the cities available for selection, the city list shows all cities and does not filter to the selected state.

Custom Format for Number Metrics

A custom number format specifies how a number metric displays in an Accolade field code in a Word or PowerPoint document, or in quick grids.

Metric values in Accolade or in Excel documents are not affected. Excel has its own number formatting capabilities. Set the number format of the cell in which a field code applies to format numbers in Accolade fields in Excel. For information about formatting numbers in an Excel document, see the Excel online Help.

A metric with a custom number format that is attached to a quick grid will only use that format if the grid cell is read only.

A custom number format creates masks or patterns that show how numbers display. If a user enters a number in Accolade that differs from the pattern, the value displays according to the pattern. For example, if a user enters 89.453 in a metric with the custom number format ##.##, the number displays in Word as 89.45. The actual value, as entered and stored in Accolade remains the same.

To create a custom number format, use the guidelines and examples in the table below and enter the format in the **Number Format** field when defining a number metric. Number metrics without a custom format display exactly as they are stored in Accolade.

Use the following rules and guidelines to build a custom number format.

	Characters, Notes, and Examples
To display significant digits but not insignificant zeroes.	**Character:** # **For example:** #.## displays the following: 6.357 as 6.36 125.3 as 125.3 125.300 as 125.3 0.678 as .68
To display insignificant zeroes if a number has fewer digits than there are zeroes in the format.	**Character:** 0 **For example:** 00.000 displays the following: .62 as 00.620 6.03 as 06.030 125.72000 as 125.720 Trailing zero formatting is only applicable to Portfolio Optimizer, project history, and smart documents.
To mark the location of the decimal placeholder.	**Character:** . (period) Enter a period for the decimal placeholder even if you are working in a region that uses a different symbol. Each user's computer displays the symbol appropriate to their selected region.
To place the location of the thousands separator	**Character:** , (comma) **For example:** #,### displays the following: 1234 as 1,234 1234.56 as 1,235 1,234 as 1,234 Enter a comma as the thousands separator even if you are working in a region that uses a different symbol. Each user's computer displays the symbol appropriate to their selected region.
To add standard text to the number format	**Character:** 'text'" Enclose the text in single quotation marks. Precede the currency value with a variety of currency symbols or add text. **For example: #.00 'dollars'** displays **17** as **17.00 dollars**.
To add supported single characters	**Characters:** $ + ( ) : ^ ' { } < > = - / ! & ~ (and the space character) Add these characters before or after the number format *without* using double quotes.

	Characters, Notes, and Examples
	For example: $#,###.## displays 1234.56 as $1,234.56
To add a single characters	**Character:** \ Insert single characters, with some exceptions, preceding the character with a backslash (\). *Excluded* characters include date and time formatting characters (d, t, h, m, etc.), numeric formatting characters described above (#, 0, comma, period, etc.) and string formatting characters (@, &, <, >, and !).
To display a percentage	**Character:** % Enter % as the final character in the format. The value is multiplied by 100, and then the formatting rules (for # and 0, etc.) are applied. **For example:** #.0% displays the following: 0.4567 as 45.6% 0.45 as 45.0% 1.453 as 145.3% #.##% displays the following: 0.45678 as 45.68% 0.45 as 45% 0.456 as 45.6%

Building a Number Format with Multiple Sections

A number format can have up to three sections, separated by semi-colons.

- A one section format applies to all values. For example, **$#,###.##** displays positive and negative values the same way.
- In a two-section format, the first section is for positive values and zeroes, and the second section is for negative values. For example, **$#,###.##; ($#,###.##)** displays 16.50 as $16.50 and -16.50 as ($16.50).
- In a three-section format, the first section applies to positive values, the second to negative values, and the third to zeros. For example: **$#,###.##;($#,###.##);0.00** displays zero as 0.00. In order to prevent a zero from appearing, place a single # in the third section.

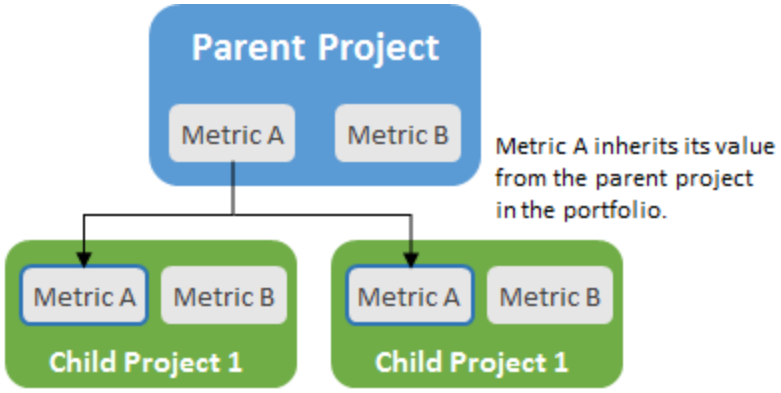
Creating Metrics that Inherit Their Value

Inherited metrics display metric values that are defined in linked projects, typically in a collection of projects called a portfolio. Within a portfolio, when information is entered in the metric in the parent project, it displays in any instance of the same metric in the child projects within the portfolio. If those projects also contain child projects, the same data is displayed in the metric in those projects as well, and so on down through the portfolio structure.

If someone enters a different value in an inherited metric on a child project, that metric on that child project and any project below it in the portfolio structure no longer inherit changes made to the metric

above it in the structure. Change the value in the metric in the child project to be the same value as the metric in the parent project to restore the inheritance.

Administrators and Process Designers create the inherited metrics, and Process Designers associate them with models. Process Managers and Project Managers create links between projects using the **Contains** project link and **Member Of Project** links to create a portfolio structure where the metrics inherit their values.



To create a metric that inherits its value:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.
2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create any metric type and select the **Inherited Metric** check box to indicate the metric inherits its value.
4. Associate the metric with the models of both the top container project in the portfolio structure and the projects in the portfolio that display the value.

   It is not necessary for every project in a portfolio structure to have the same model.
5. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- You can also use inherited metrics outside of portfolios.

Initializing Metrics with Default Display Values

You can set up a metric so it displays a default value before a user enters data into the metric, rather than initially displaying blank. After a user modifies the data in the metric, the link with the source metric is broken, and the modified metric contains the data entered.

Important! Initializing a metric with a default value only displays the value in the target metric within Accolade. The value does not transfer to Smart Excel documents or reports.

Metrics that pull a default display value from another metric cannot be on the same page within Accolade as the metric from which they get their value. Therefore, a metric that is set to contain an initial value from another metric should conform to the following rules:

- The metric should not be in the same category as its initializing metric.
- The metric should not be editable or appear together with its editable initializing metric on the project creation page, Home, or Details pages within a project.
- The metric should not be in the same Smart Excel document or online form with its initializing metric.

To initialize a metric with a default display value:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.
2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click  in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create any metric type.
4. In the **Initialize From** field, select the metric value to use in this metric until another value is entered or selected.

   If you are creating or modifying a metric that uses the List or Multi-Select List data type, select an initializing metric that has an identical set of list items. If either metric is query based, ensure that the initializing metric contains all the list items that could occur if both metrics are based on the same query.
5. Click **Apply** to save your changes.

Notes:

- If the metric selected in the **Initialize From** field is deleted or made inactive, new instances of the metrics that use it for their default value are blank.

Tracking Metric Change History

For historical and tracking purposes, select metrics to track their history including when a metric value changed, who made the change, where the change was made, and the value of the metric before and after the change. Metric history is available for reporting purposes.

Important! Tracking metric history has the potential to create a large amount of history information. Consider carefully which metrics require history tracking, and track only those you need for historical purposes.

To set a metric for tracking history:

1. Create a metric.
2. Select the **Track History** check box.
3. Click **Apply** to save your changes.

Metric History Reporting

Metric history is available for reporting using the **Metric Change History** column set available in the **Projects** subject in Accolade Online Reporting and in the functionality available in the Accolade Office Extensions add-in. Use the columns available in the **Trended Metric History** column set available in the **Projects** subject to trend metric values as gate decisions and project migration events occur.

The columns available in the **Trended Metric History** column set provide the ID of the stage within a project where the update was made. Stage IDs correspond to the placement of the stage in the Phase Gate sequence in the project. For example, a Stage ID 1 indicates the first stage; 2 indicates the stage pair that follows the first gate, and so on. Using a Stage ID column in the report provides insight into a metric value at a particular stage in the project without having to map a date to a stage duration.

See the online Help for information about creating a report and the columns available within the **Projects** subject to create a trended view.

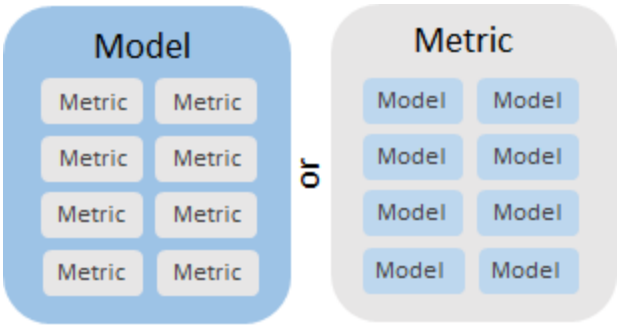
Exercises - Creating a Cascading List Metric

Try out what you have learned!

- Create a spreadsheet that contains the string values for each level in the cascading list. Save the file and upload it as a reference table in Accolade.
- Create a list metric and select the reference table as the source for the list.

Associating Metrics to Process Models

To ensure that metrics are available within projects, associate the metrics to the process model. Create an association from the metric to the model, or from the model to the metric. The procedure to complete the association is similar and has the same result. How you choose to make the association may depend on whether you want to assign multiple metrics to a model at once, or a single model to multiple metrics.



If the metric is part of a matrix, a page layout, or a quick grid (including quick grids contained in a page layout associated with the model), you do not have to associate the metric with a model. If the metric is inactive, it is set to active on association.

> Click **Download** on the Metrics page (**System > Content Sources > Metrics**) to download all the metrics in the table to a spreadsheet. The spreadsheet includes additional information, such as the process models to which each metric is associated, list values for list metrics, and availability settings, allowing a single place to review the current metrics defined throughout the system.

To assign multiple metrics to a single model (Process Designers only):

1. From the **System** menu, select **Process > All Models**, and select the model to edit.
2. Click the **Metrics** tab to display the metrics associated with the model.

   > If you are creating a new process model, the **Metrics** tab is not available until you complete creating the model and click **Create**.

3. Click **Add** to open the Select Metric(s) dialog.

   Use the category, name and system name fields to filter the list of metrics.
4. For each selection, highlight the metric name in the Available Metrics window, and click **Select**, or double-click the metric name to move it from the **Available** list to the **Selected** list.

   Only active metrics are available to add.
5. To define how the selected metrics display for certain actions, select **View** or **Edit** for each of the project locations listed.

Locations with no selections do not contain the metric. You can change these settings for individual metrics after adding them to the model. Metrics without display settings are still available to deliverables, reports, and quick grids.

Calculated metrics can only be set to **Show** on project pages. Rich text metrics cannot display on any other project pages.

6. Click **Done** and make any adjustments to the presentation settings for the associated metrics.
7. *(Optional)* If your company uses Accolade planning and roadmapping features, and the metric is available to Innovation Planning:
   - Select the star in the **Planning Favorite** check box to display the metric on the front of planning elements types that correspond to the model's class. The class to which the process model belongs must also be available to Innovation Planning.
   - If the metric is a date metric, select the check box in the **Milestone** column to designate the metric as a milestone in Innovation Planning. To show relationships between milestones the start and end milestone metrics must first be set as visible in Roadmapping. To set milestone metrics as visible open the data type from the element type menu on the left and click on the diamond next to the relevant metric.
8. *(Optional)* To make a metric required for projects created using the model, select the check box in the **Required** column.

   Metrics cannot be marked as required for idea models.

   If a metric is set as required on project creation, ensure that Process Managers are granted visibility to the metric. Without visibility, the Process Manager is unable to create projects using features that contain the required metric.

   If a metric is set to required, it will be required anywhere it displays in the system as editable. For example, if the metric displays in a data form pod on a project page layout and it is editable, it will be required for users to complete when making changes to the page.
9. Click **Apply** to save your changes.

To assign a single metric to multiple models:

1. From the **System** menu, select **Content Sources > Metrics** and select the metric to edit.
2. Click  in the **Models** section.
3. In the Select Model dialog, enter one or more search criteria to filter by name, or by selecting one or more of the following options:
   - Selecting one or more classes in the **Classes** drop-down will display available models that are assigned to the class.

     Select **Check All** to see all available models.
   - Check the **Show Inactive Classes** and/or **Show Inactive Models** to further define the models that display.
4. For each selection, highlight the model name in the Available Models window, and click **Select**, or double-click the model name to move it from the **Available** list to the **Selected** list.

5. Click **Done** to add the selected models to the metric.
6. For each model, select **Show** to display the metric as view only, or **Edit** to display an editable version of the metric for the Accolade locations listed.

   Locations with no selections do not contain the metric. You can change these settings for individual metrics after adding them to the model. Metrics without display settings are still available to deliverables, reports, and quick grids.

   Calculated metrics can only be set to **Show** on project pages. Rich text metrics cannot display on any other project pages.
7. *(Optional)* If your company uses Accolade Innovation Planning and Roadmapping features, and the metric is available to Innovation Planning:
   - Select the check box in the **Planning Favorite** column to display the metric on the front of planning element types that correspond to the model's class. The class to which the process model belongs must also be available to Innovation Planning.
   - If the metric is a date metric, select the check box in the **Milestone** column to designate the metric as a milestone in Innovation Planning.
8. *(Optional)* To make a metric required for projects created using the model, select the check box in the **Required** column.
   - Metrics cannot be marked as required for idea models.
   - Metrics set to show on project creation cannot be marked as required.
   - If a metric is set as required on project creation, ensure that Process Managers are granted visibility to the metric. Without visibility, the Process Manager is unable to create projects using features that contain the required metric.
   - If a metric is set to required, it will be required anywhere it displays in the system as editable. For example, if the metric displays in a data form pod on a project page layout and it is editable, it will be required for users to complete when making changes to the page.
9. Click **Create** to create the new metric or **Apply** to save changes to an existing metric.

Notes:

- To remove an association between a metric and a model, open the model and select the **Metrics** tab. Click  in the **Remove** column next to the association to delete and click **Apply**. To remove all metrics from a model, click **Remove All**.
- For the parent project in a portfolio, select **Edit** in the **Portfolio** column of the number metric that rolls up on the project's **Portfolio** page so that the target value is editable.

  The parent project is the project that has the **Contains** link to the projects in its portfolio. For the child projects, the metric rolls up regardless of where it is editable in the project. Metrics cannot roll up except to the parent project. That is, a metric that is in a grandchild, child, and parent project rolls up from the grandchild to the child (and from the child to the parent) but the roll-up value from the grandchild does not continue to be rolled up to the parent.

- Metrics created in Innovation Planning are added to their model without any presentation settings. You must specify their presentation settings before the metrics are available for use in projects.
- Marking a metric as required on a project's creation page has no effect on a model used for creating Innovation Planning projects. The projects are created automatically without requiring any user to enter the metric value. However, the metric value must be entered if the model is used as the target in a migration.

Financial Data Metrics

Financial data metrics display metric values corresponding to a project's financial information, and are typically used to assess the financial state of a project. To view the financial data metrics, navigate to the **System > Content Sources > Metrics** page, click on the **Category** drop-down and select **Core Cash Flow**.

In Accolade, financial data metrics are system generated, and hence, do not need to be created anew and cannot be deleted. However, if required, these metrics' field information can be edited, with the exception of the **System Name** and **Data Type** fields.

Note: All system generated metrics begin with a tilde (~).

Additionally, when a project is integrated with Acclaim Projects, actual and planned costs are sent back and forth between the two applications. This allows the volumes of financial information stored in Acclaim Projects to be subtotaled and sent to Accolade daily, where it can be rolled up into a single line to make it easy to see monthly totals.

Note: Acclaim Projects is an optional Accolade component that you may not have access to. To implement this solution, contact Sopheon Customer Support.

Securing Metrics by User Role

Your company may have confidential metrics, such as those that contain financial data, which you want to keep secure, and ensure are only available to authorized users. Securing metrics allows you to create metrics that are only visible to a specific set of user roles.

Consider the following when assigning user role visibility settings to metrics:

- If multiple roles are assigned to a metric, a user only needs one of the assigned roles to access the metric.
- If a user does not have one of the assigned roles, the metric is hidden from any place it displays within Accolade. For example project pages, status reports, quick grids, Planning views, and Portfolio Optimizer. Consider using a combination of metrics restricted by user role and deliverables restricted by user role to achieve the correct level of security within a project.
- If a user does not have one of the assigned roles and the metric is included in a report created with the Accolade Office Extensions add-in or in Accolade Online Reporting, the metric value in

the report is blank. However, the metric value is available in reports created using Dashboards for Accolade.

- If a metric is set as required on project creation, ensure that Process Managers are granted visibility to the metric. Without visibility, the Process Manager is unable to create projects using features that contain the required metric.
- Ensure metrics that are set to edit within a project are visible to the user roles that needs to update those values.

To secure a metric by user role:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the metric list, search by the metric name, system name, or category.
2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
   - **To create a metric based on an existing metric** - Click  in the **Copy** column to create a copy that can be used as a base to build a new metric.
3. Create any metric type.
4. In the **Restrict to These Roles** field, select the user roles that have visibility to the metric.

   To leave the metric open to all user rules, leave all user roles unchecked or check all the user roles.
5. Click **Apply** to save your changes.

Notes:

- If a quick grid is set to create and publish PDF versions and also contains secured metrics, the PDF versions display the metrics regardless of the security settings. That is, the generated PDFs do not respect metric security and can be viewed by users who may not have the user roles to view specific metrics. Do not select **Publish PDF** in the quick grid configuration if you want to ensure the security of certain metrics.

Restricting Configuration for Metrics

Restrict who can view and edit metrics by assigning the metric to one or more access groups. Process Designers with matching access group permissions set in their user profile will be able to view or edit the metric.

Note: The access groups that display for selection are based on your access group permissions as defined in your user profile. Additionally, access group settings for the

metric must match the user permissions of other Process Designers in order to display for them.

To restrict metric configuration:

1. From the **System** menu, select **Content Sources> Metrics**.
2. Do one of the following:
   - **To add a new metric** - Click **Add New** in the upper right corner of the page and create the metric.
   - **To edit an existing metric** - Click the name of the metric to open it for editing.
3. Click the **Security** tab to display the configuration access group settings.
4. Select the access group(s) to which this metric belongs.

   The access group(s) displayed are based on the current user's access group permissions. Only access group(s) to which you have Edit permissions are selectable. However, parent access group information is visible for access groups to which you have View permission.

   The metric is selected to the highest level access group listed by default. Note that the metric is only added to access groups that are checked. It does not propagate to child access groups unless those child groups are checked.

   Process Designers with matching access group permissions will be able to navigate to and edit the metric, depending on their individual access group permissions.
5. Click **Apply** to save your changes.

Removing and Deactivating Metrics

As your company's needs for metrics change over time, Process Designers and Administrators can remove or deactivate metrics that are no longer required for projects at your company. You can remove metrics from projects while retaining their history, deactivate a metric, or remove a metric completely from Accolade, which also removes any data associated with the metric.

For more information, see How Changing Process Models Affects Open and Closed Projects to understand what changes are applied to open and closed projects.

Removing Metrics from Projects While Retaining History

If you have a metric that is no longer in use but whose value and project history is important to retain, hide the metric from displaying anywhere in the project where it could be confused as still being in use.

Important! If you want to retain the value and project history, do not deactivate the metric by deleting it from the process model or by deleting the metric from Accolade.

To remove a metric from a project while retaining its value and project history:

1. From the **System** menu, select **Content Sources > Metrics**.

To narrow the process model list, search by the process model name, system name, or class.

2. Click the name of the metric to open it for editing.
3. For each process model in the Models section, clear the drop-downs for each area of the project so neither **Edit** nor **Show** display.
4. Click **Apply** to save your changes.

Deactivating Metrics

If you have a metric that is not ready for use in configuration or is not currently in use, you can deactivate the metric. Deactivating the metric keeps the metric in Accolade and also maintains project history.

Important! You can only deactivate metrics that are not in use on any process model, including deleted models that still have projects associated with it. If you remove a metric from a process model, its value and project history are removed from open projects, and the metric is removed from any location where it displays in both open and closed projects. Metric values that were set in closed projects remain in Accolade and are available for reporting purposes.

Do one of the following to determine if a metric is in use on a model:

- **For active and inactive models** - From the **System** menu, select **Content Sources > Metrics**. Click the name of the metric you want to deactivate and view the **Models** list. The models that contain the metric display.
- **For deleted models with associated projects** - From the **Workspace** menu, select **Charts & Reports**. Click **Add New** and create an online report that contains the following configuration:
  - **Columns** - From the Models subject, add the **Model Name**, **Model Deleted**, **Metric Display Name**, and **Metric System Name** columns. You can add additional columns to the report, as necessary.
  - **Filters** - Create a filter on the **Metric Display Name** or **Metric System Name** columns.

    For example, to search for the Comments - R&D metric, create a filter that contains the word "comments" or "R&D" to return a list of models that contain that specific metric. You can also create a filter on the **Model Deleted** column to return only information about metrics on deleted models.

To deactivate a metric:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the process model list, search by the process model name, system name, or class.
2. Click the name of the metric to open it for editing.
3. Clear the **Active** check box.
4. Click **Apply** to save your changes.

Removing Metrics Completely from Accolade

If a metric is no longer in use and the project history is no longer required, you can remove the metric completely from Accolade.

Important! When a metric is deleted from Accolade, any project data associated with the metric is also deleted.

To remove a metric from Accolade:

1. From the **System** menu, select **Content Sources > Metrics**.

   To narrow the process model list, search by the process model name, system name, or class.
2. Click the name of the metric to open it for editing.
3. Click **Delete**.

Notes:

- You cannot delete a system-generated metric or matrix metric.
- If deactivated and removed metrics are part of deliverables and activity conditions, disable the condition and remove the condition assignment.
- Removing a metric that is included in reports prevents the data from refreshing. A report with a deleted metric cannot be updated until the invalid metric is removed.

Exercises - Associating Metrics to Models

Try out what you have learned!

- From within the Process Model definition, select the **Metrics** tab and associate the metrics you have created in this training to a process model.
- Return to the metric configuration of one of the metrics that you added. Notice that the **Active** option has been disabled, and the bottom of the page lists the process models where the metric is being used.

Matrices for Project Data Analysis Overview

A matrix is a collection of metrics intended to model complex relationships between different data types. For example, a matrix could show how several aspects of project performance change over time. Matrices show how one or more metrics changes or is expected to change in relationship to changes in critical factors such as time or location. A matrix can also be a project management tool. For example, to assign action items to members of a project.

Administrators or Process Designers create metrics, flag them as being available to a matrix, and define matrices. Process Designers assign matrices to deliverables or activities in process models. Project Managers and document owners have access to matrices within projects through an MS Excel template or on a grid within a deliverable or activity.

Initial Plan Investment (Click any row to edit)

Investment Time Period	Capital Costs	Labor Costs	Non-Labor Costs	Remove
Year-2016	2000.00	15000.00	16000.00	
Year-2017	222.00	543.00	345.00	
Year-2018	453.00	222.00	543.00	
Year-2019	333.00	453.00	222.00	
Year-2020	777.00	555.00	666.00	
Planned Project Investments	3785	16773	17776	

Combination Matrices

A matrix added with a Smart Excel template is available to any quick grid that is associated with that matrix in the project. That is, a Smart Excel template on one deliverable could be used to populate a set of rows in the matrix in a quick grid in a different deliverable.

Filterable Matrices

You can create filterable matrices that are associated with multiple documents in the same project, allowing multiple users to work on the same matrix without overwriting each other's entries. Using matrix metric filters in deliverables and activities within a model, you can:

- Delegate the completion of a matrix to multiple team members through separate deliverables and activities within a model.
- Set only portions of a matrix for viewing or editing.
- Provide additional safeguards against unintended matrix data updates.

Creating Matrices

Create a collection of metrics that allows users to track one project's metrics values through time or to create other types of complex comparisons of a project's metrics.

If your company also runs Portfolio Optimizer, see the online Help for information about a matrices are represented within the Portfolio Optimizer application.

To create a matrix:

1. From the **System** menu, select **Content Sources > Matrices**.

   To narrow the matrix list, search by the matrix name, system name, or category.

2. Do one of the following:
   - **To add a new matrix** - Click **Add New** in the upper right corner of the page.
   - **To edit an existing matrix** - Click the name of the matrix to open it for editing.

3. Complete the following to identify and describe the matrix:

   Required fields display with **red** text and an asterisk * if the field is empty.

Field	Description
Display Name	Enter a name, up to 64 characters long, which identifies the matrix.
System Name	Enter a unique, shorter name that identifies the matrix in queries, reporting views, field codes, and other places in Accolade. The name must be unique among reference tables and can contain only letters (English alphabet), numbers, and the underscore.
Category	Enter or select the group to which this matrix belongs. Use categories to organize like matrices together. For example, you may choose to group all the matrices used for financials into the same category, in order to separate them from matrices used for other purposes. • Leave this field blank to add to the **Default** category. • To define a new category, select **New Category** and enter the category name. • To delete a category, remove every item from the category. Empty categories are deleted automatically.
Description	Enter a description of the purpose or nature of the matrix. This description helps other users identify the matrix throughout the system.

Field	Description
Order	Enter a number to specify the matrix's place when it displays in a list of matrices. Lower numbered matrices display higher in the list.
Active	Select the check box when the matrix is ready to use in projects.
Available to Business Intelligence Tools	Select this check box to enable the matrix for use in your organization's business intelligence application. If the matrix is selected for inclusion in a portfolio snapshot, you cannot clear this option. Rich text matrix metrics cannot be made available to Business Intelligence Tools.
Available to Reporting	Select this check box to enable the matrix for use in reports created using the Accolade Office Extensions add-in, Accolade online reports, and within snapshots. If the matrix is selected for inclusion in a portfolio snapshot, you cannot clear this option. If a matrix is made available to reporting, refer to the **Included in Reporting** column in the **Associated Metrics** section to see the included metrics. Rich text matrix metrics cannot be made available to reporting.
Portfolio Optimizer	Select one of the following to indicate the matrix availability within Portfolio Optimizer. The selections in this field are available only if one of the metrics in the matrix is set as unique. • **Not Available** - Not available in Portfolio Optimizer. • **Reporting Only** - Can be included in reports but is not visible in Portfolio Optimizer. This option allows you to create matrices for reporting without having to add them to the list of available columns in Portfolio Optimizer. • **Edit** - Visible and fully available in Portfolio Optimizer.

4. In the **Associated Metrics** section, select the metrics to include in the matrix.

   Click **Add New** to search for metrics to add to the matrix. Only metrics set to be available in a matrix are available in the **Metrics** field. To filter the metric list, select a name in the **Name** field and category in the **Category** field.

   To define a new metric while building a matrix, select **Add New Metric** in the **Metric** field. To reorder metrics after you have added them to the matrix, click a row in the **Associated Metrics** section and drag it up or down to its new location.

5. Repeat step 4 as necessary to add additional metrics to the matrix.
6. Do the following for each metric, as appropriate for the matrix:
   - **To indicate that a metric should have a unique value in each row** - Select the **Unique** check box to enforce unique values for each metric contained in the matrix. Metrics correlate to columns in Excel templates, and unique metrics ensure columns are not duplicated in the workbook. If a matrix is set to edit in Portfolio Optimizer or Innovation Planning, only one relative date metric can be set as unique. For Portfolio Optimizer matrices, also indicate the order in which the unique metrics display from left to right in the **Portfolio Column Header** field.

     Multi-select lists and calculated metrics within the matrix cannot be set as unique.

     If using the calculated metric expression CurrentMatrixValue in a matrix and updating the matrix in Excel, you must uniquely identify other matrix rows by flagging metrics as unique. If matrix columns are not unique or the Excel workbook contains duplicate columns, the Smart Excel template does not update, upload, or publish back to Accolade.
   - **To indicate a metric as a filter for the matrix within a model** - Select the **Filterable** check box if the metric is a filter for a matrix to specify which rows of the matrix are editable or displayed in a deliverable or activity. Making a metric filterable in a matrix makes it possible for different document owners to edit different parts of the matrix based on the content of the filter metric. Multiple metrics in the matrix can be filterable. This option is only available for List type metrics.
7. Click **Apply** to save your changes.
8. *(Optional)* Follow the instructions listed in "Restricting Configuration for Matrices" on page 45 to configure access group restrictions.
9. *(Optional)* Click **Process Model Usage** on the **Security** tab to see the list of process models that the matrix is associated with. The list includes all process models the matrix is included in, as well as links to the process model's component tree pages you have Edit access to.

Notes:

- To delete a matrix, display the matrix and click **Delete**. Take caution when deleting matrices, as the data saved within those matrices, such as the system-generated **Voting Matrix** or data in existing portfolio snapshots, is deleted with it.
- To delete a metric from a matrix, display the matrix and click  next to the metric in the **Associated Metrics** section.

Associating Matrices to Process Models

To ensure that matrices and their metrics are available within projects, associate the matrices you create to the process model. You can create an association from the matrix to the model, or from the model to the matrix. How you choose to make the association may depend on whether you want to assign multiple matrices to a model at one, or a single model to multiple metrics.

When you associate a matrix with a model the metrics within the matrix are automatically associated with the model, although they are not listed when configuring metrics for the model. The same is true if the matrix is part of a quick grid that is added to the model on a deliverable, activity, or that is included in a page layout associated with the model.

To assign multiple matrices to a single model (Process Designers only):

1. From the **System** menu, select **Process > All Models**, and select the model to edit.
2. Click the **Matrices** tab to display the matrices associated with the model.

   If you are creating a new process model, the **Matrices** tab is not available until you complete creating the model and click **Create**.

3. For each selection, highlight the matrix name in the Available window, and click the arrow, or double-click the matrix name to move it from the **Available** list to the **Selected** list.
4. Click **Apply** to save your changes.

To assign a single matrix to multiple models:

1. From the **System** menu, select **Content Sources > Matrices** and select the matrix to edit.
2. Click the **Models** tab to display the models to which the matrix is associated.

   If you are creating a new matrix, the **Models**tab is not available until you complete creating the matrix and click **Create**.

3. For each selection, highlight the model name in the Available Models window, and click the arrow, or double-click the matrix name to move it from the **Available** list to the **Selected** list.
4. In the Select Model dialog, highlight the layout name in the Available window, and click the arrow, or double-click the matrix name to move it from the **Available** list to the **Selected** list.
5. Click **Apply** to save your changes.

Notes:

- To remove an association between a matrix and a model, open the model and select the **Matrices** tab. In the **Selected** list, move the matrices you want to remove to the **Available** list and click **Apply**. Removing a matrix from a model disables the matrix in both and open and closed projects.

Restricting Configuration for Matrices

Restrict who can view and edit matrices by assigning the matrix to one or more access groups. Process Designers with matching access group permissions set in their user profile will be able to view or edit the matrix.

Note: The access groups that display for selection are based on your access group permissions as defined in your user profile. Additionally, access group settings for the matrix must match the user permissions of other Process Designers in order to display for them.

To restrict matrix configuration:

1. From the **System** menu, select **Content Sources > Matrices**.
2. Do one of the following:
   - **To add a new matrix** - Click **Add New** in the upper right corner of the page and create the matrix.
   - **To edit an existing matrix** - Click the name of the matrix to open it for editing.
3. Click the **Security** tab to display the configuration access group settings.
4. Select the access group(s) to which this matrix belongs.

   The access group(s) displayed are based on the current user's access group permissions. Only access group(s) to which you have Edit permissions are selectable. However, parent access group information is visible for access groups to which you have View permission.

   The matrix is selected to the highest level access group listed by default. Note that the matrix is only added to access groups that are checked. It does not propagate to child access groups unless those child groups are checked.

   Process Designers with matching access group permissions will be able to navigate to and edit the matrix, depending on their individual access group permissions.
5. Click **Apply** to save your changes.

Exercises - Creating Matrices

Try out what you have learned!

- Create two metrics to use in the matrix and ensure that they are set to be available to a matrix.
- Add a new matrix that includes the matrix metrics you created above.
- Associate the matrix to a process model.

Sopheon Corporation

6870 West 52nd Avenue, Suite 215

Arvada, CO 80002