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Introduction

This document is intended for use with IBM® Cognos® Metric Studio. Metric Studio is a Web product for managing organizational performance by monitoring and analyzing metrics, projects, and other performance measures at all levels of the organization.

Audience

To use this guide, you should be familiar with

- scorecarding concepts
- database and data warehouse concepts
- security issues

For application authors, this document includes background information and step-by-step procedures for creating a scorecarding environment. It explains how to create scorecards, metric types, and metrics; how to load data into Metric Studio; and how to enhance the scorecarding environment.

For business experts, this document includes background information (p. 17) and step-by-step procedures for managing performance using Metric Studio (p. 139).

Finding information

To find IBM® Cognos® product documentation on the web, including all translated documentation, access one of the IBM Cognos Information Centers at http://publib.boulder.ibm.com/infocenter/cogic/v1r0m0/index.jsp. Updates to Release Notes are published directly to Information Centers.

You can also read PDF versions of the product release notes and installation guides directly from IBM Cognos product disks.

Forward-looking statements

This documentation describes the current functionality of the product. References to items that are not currently available may be included. No implication of any future availability should be inferred. Any such references are not a commitment, promise, or legal obligation to deliver any material, code, or functionality. The development, release, and timing of features or functionality remain at the sole discretion of IBM.

Samples disclaimer

The Great Outdoors Company, GO Sales, any variation of the Great Outdoors name, and Planning Sample depict fictitious business operations with sample data used to develop sample applications for IBM and IBM customers. These fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values, is coincidental. Other sample files may contain fictional data manually or machine generated, factual data compiled from academic or public sources, or data used with permission of the copyright holder, for use as sample data to develop sample appli-
Accessibility features
This product does not currently support accessibility features that help users with a physical disability, such as restricted mobility or limited vision, to use this product.
Chapter 1: What’s New?

This section contains a list of new and changed features for this release. It will help you plan your upgrade and application deployment strategies and the training requirements for your users.

For information about upgrading, see the IBM Cognos® Installation and Configuration Guide for your product.

For more information about new features for this release, see the IBM Cognos New Features Guide.

To review an up-to-date list of environments supported by IBM Cognos products, such as operating systems, patches, Web browsers, Web servers, directory servers, database servers, and application servers, visit the IBM Cognos Information Centers (http://publib.boulder.ibm.com/infocenter/cogic/v1r0m0/index.jsp).

New Features in Version 10.1.0

Listed below are new features since the last release.

Report Model Enhancements

The report model that is included with IBM Cognos® Metric Studio was enhanced to include diagrams. This allows report authors to add interactive data-driven diagrams in reports.

The package published from the report model now includes diagrams in the following tables or folder:

- Metrics table, which contains diagrams that use data from the latest time period available for the metric in question
- Metrics History table, which contains diagrams that use time-period-specific data

Note: Metric type impact diagrams do not contain time-based information; they contain only relationships between metric types.

If you add diagrams from the Metric History table of the metrics package, one diagram is added for each metric per time history. As a result, your report could contain a large number of diagrams. To improve the performance of your report, consider adding a filter to limit the time period.

- Diagrams folder, which contains custom diagrams.

To see how some of these diagrams can be included and used within reports, see the Metric Performance and Scorecard Performance reports that are included with Metric Studio.

For more information about the model, see "Working with the Model" (p. 133).

For more information about adding diagrams in Report Studio reports, see the IBM Cognos Report Studio User Guide.
Accessible Report Output for IBM Cognos Business Insight

In version 10.1.0, you can create accessible report output. Accessible reports contain features, such as alternate text, that allow users with disabilities to access report content using assistive technologies, such as screen readers. With accessibility support enabled, Metric Studio reports can be used in IBM Cognos Business Insight which supports accessibility features.

For information about creating accessible reports, see the IBM Cognos Administration and Security Guide.

New Features in Version 8.4

Listed below are new features since the last release.

New Portlets

In addition to the IBM® Cognos® Metric Studio portlets added in version 8.3, version 8.4 introduces two more Metric Studio portlets for use in IBM Cognos Connection and other portals:

- a metric impact diagram - display an impact diagram associated with a metric
- a metric custom diagram - display a custom diagram associated with a scorecard

For information about deploying all portlets, see the IBM Cognos Administration and Security Guide.

Add Comments to Strategy Elements

In version 8.3, strategies and strategy elements replaced the groups and group views of previous versions. In version 8.4, you can now add comments to strategy elements. For more information, see "Add Comments to a Strategy Element" (p. 92).

New Features in Version 8.3

Listed below are new features since the last release.

New Portlets

Several new portlets from IBM® Cognos® Metric Studio are now available for use in IBM Cognos Connection and other portals. As an author, you can use the new portlets to build multi-paned dashboards and briefing books that include metric information such as

- a scorecard - a list of all the metrics on a scorecard
- an accountability list - a list of all the metrics owned by the current user
- a strategy metric list - a list of all metrics associated to a strategy
- a metric history chart - a graphical chart illustrating the historical performance of a metric
The portlets show the name, status, and values of the listed metrics and provide a link to the metric in Metric Studio. For information about deploying the new portlets, see the IBM Cognos Administration and Security Guide.

Add Actions to Impact Diagrams

You can now include metric actions in metric impact diagrams. This helps you monitor the performance of initiatives, corrective actions, and metrics. For more information, see "Show Actions on Impact Diagrams" (p. 148).

Specify a Derived Index for a Metric Type

A derived index metric is one which has a status and score based on other metrics.

You can now automatically create metrics on multiple scorecards using the same derived index calculation that is defined at the metric type level.

You first define the metric type as a derived index, and then define the metrics that are components of the derived index calculation. When the component metrics exist on the same scorecard, a derived index metric is automatically created and calculated. For more information, see "Steps to Specify How Metric Values Are Calculated" (p. 73).

Multi-format User-defined Columns

You can now create user-defined columns that provide greater control over the type and format of data that can be associated with a metric.

For currency metrics, you can define columns that are text, general numbers, or percentages. For example, you want to create a custom column that reflects an actual percentage but the target data is in dollars. If the actual amount is $1,000,000 and the target is $800,000, you can now express the actual amount as 112% instead of $1,000,000. For more information, see "Specify a Custom Unit of Measurement" (p. 109).

Changed Features in Version 8.3

Listed below are changes to features since the last release.

Strategy Management

Strategies and strategy elements have replaced the groups and group views of previous IBM® Cognos® Metric Studio versions. The hierarchical strategy elements allow you to better organize and communicate corporate strategies and objectives to your users. For more information, see "Organizing Metrics by Strategy" (p. 88).

More Insightful Impact Diagrams

Relationships between metrics are now easier to see. IBM® Cognos® Metric Studio automatically creates impact relationship diagrams that show how the metrics on a child scorecard affect the metrics of the same type on the parent scorecard. You can display these impact relationships by
selecting **Summary Impacts** in the diagram. For more information, see "Diagrams" (p. 93) and "Impact Diagrams" (p. 147).

### Reporting Improvements

Authoring IBM Cognos Report Studio reports of your metrics application is now easier. The new report model that is included with Metric Studio was optimized for better performance. Also, the reporting model now includes new business information, including user-defined columns and most recent periods.

New prepackaged reports provide more useful business reports that can you can use immediately or customize for your organization.

Highlights of the improvements are listed below. For more information, see "Analysis Reports" (p. 121).

### Model Structure

The structure of the metric model is different from the previous release in the following ways:

- Some query names and query item names were changed to be more intuitive.
- While all valid relationships between metric objects are persisted in the model, some relationships between query subjects were changed.
- Star schema groups were created for each subject of interest.
- Because groups were replaced by strategies, the related query subjects were also changed.
- The strategy query subject exposes the strategies hierarchy, where the strategy is the root level object and there are two child levels allowed: Strategy Elem1 (on level 1) and Strategy Elem2 (on level 2).
- All query subjects were revised to ensure that useful reporting information (through query items) is available to the report authors.
- Two query subjects were added to support relative time (year to date, quarter to date, and month to date periods).
- The time dimension was added. Its hierarchy (with a maximum of nine levels) is created or changed whenever the calendar is created or changed.
- Image URLs were added to query subjects containing comment priority, execution status, trend status, and metric status.
- The metrics included in the watch lists were exposed.
- Support for user-defined columns was added. For each user-defined column, the following query items are available: name, description, unit code, and number of decimal places.

### Predefined Filters

There are now two types of predefined filters: content filters, which can be used in reports to filter on a selected metric item, and time filters, which can be used to specify the reporting period.
The time filters further subdivide into:

- Relative time filters, which can be used to specify the relative period or the rollup grain for the relative period.
- Filters that provide support for the most recent period associated with a metric's history.
- Filters that specify which type of time periods are used when reporting on the metric history: regular time periods (from the time dimension) or relative time periods: Include Only Relative Time Periods, Exclude Relative Time Periods.

**Model Version Control**
The upgrade process for the metric package was modified so that if the model has not changed, the reports are not copied to the backup folder.

**Status Lists**
Status lists are now available for project and action execution status, metric status, and trend status. These query subject lists are located in the Status Lists folder and have no relationship with other query subjects in the model.

**Linked Reports**
This query subject lists all the reports linked, in Metric Studio, to metric objects. It has no relationship to other query subjects in the model.

**Metric Functions Folder**
It contains functions that provide useful information for report authors.

**Model Segmentation**
The Compatibility namespace is contained in a segment of the metric model.
Chapter 1: What's New?
Chapter 2: Performance Management with Metric Studio

Use IBM® Cognos® Metric Studio to create a customized scorecarding environment to monitor and analyze metrics and projects throughout your organization. Metric Studio helps you translate your organization’s strategy into relevant, measurable goals that align each employee’s actions with a strategic plan.

A rich scorecarding environment shows you quickly where your organization is successful and where it needs improvement. Metric Studio tracks performance against targets and indicates the current status of the business so that decision makers at every level of the organization can react and plan.

Use the flexibility of Metric Studio to model metrics and their relationships based on any standard or proprietary scorecarding and management methodology that you already use.

Scorecards

A scorecard is a collection of performance metrics and projects designed to reflect the strategic goals of a unit in an organization. The information on a scorecard tells you how well objectives are being met by comparing planned to actual results. Scorecards can contain other scorecards to show the organizations in the business. By using status indicators such as traffic lights, scorecard users can quickly evaluate performance.

You can create scorecards for different audiences to cover different levels of detail. To best manage your metrics application, create separate scorecards for each unit in your organization. You can then apply security to each scorecard so that metrics are accessible only to specific users, groups, or roles.

If one of your data sources can represent at least part of the scorecard structure, you can use IBM® Cognos® Metric Designer or tab-delimited files to export the information from the data source and create the scorecard structure in IBM Cognos Metric Studio. If it does not, you can create the structure in tab-delimited files and import it into Metric Studio or you can manually create the structure directly in Metric Studio.

You must create at least one scorecard before you create any metrics. Each metric appears on at least one scorecard, named the home scorecard. Because security is applied at the scorecard level, home scorecards ensure that all metrics are secured.

Projects

A project is a long-term activity tracked on a scorecard using metrics. For example, you may create a project to expand the European sales office and you may use metrics, such as hire five new sales representatives and increase office space, to track the project.

After a project is created, users can monitor and update the status of the project.
In a balanced scorecard environment, you can use projects to track initiatives.

**Metric Types**

A metric type defines the attributes for a collection of metrics. Usually, a metric type identifies one aspect of performance, such as revenue. For example, the revenue metric type may be associated with metrics such as Revenue - Country, Revenue - District, Revenue - City, and so on. If you view a metric type, IBM® Cognos® Metric Studio shows you the metrics that belong to that metric type regardless of which scorecard the metric belongs to.

Because metric type definitions are not usually stored in any existing databases, you may need to create the metric type directly in Metric Studio.

You can assign diagrams and reports to a metric type so that they appear on the diagram and report tab for every metric of that metric type.

A metric type can also define calculations for the metric type, and for the actual, target, and tolerance metric values. You can compute user-defined columns using user-defined equations. The calculation for the metric type applies to all the metrics that belong to it. You can also define a calculation for an individual metric that will override a calculation defined for the metric type.

A metric type does not contain other metric types.

**Metrics**

Metrics measure performance in key areas of a business and compare current results to target values.

In IBM® Cognos® Metric Studio, a metric monitors the following values:

- **actual**
  
  An actual value is usually derived from operational data.

- **target**
  
  A target value defines a level of expected performance.

- **tolerance**
  
  A tolerance value defines an acceptable range for a result that deviates from a set target.

- **user-defined column**
  
  A user-defined column value usually measures the performance of a metric against a comparable metric, such as an industry-wide standard measurement.

Users explore the status of metrics to evaluate the success of their initiatives. For example, if current expenses are under budget, an expense metric shows a green status indicator to show a positive result.

A metric is associated with only one metric type. The metric type usually represents a specific measure, such as profit margin, and also defines shared behaviors among metrics, such as performance pattern and rollup values.
A metric can appear on any number of scorecards, but you must specify one scorecard as its home scorecard.

**Calculated Metrics**
You can create metrics for which you load values or you can create metrics which have calculated values.

A calculated metric provides a status, score, and values based on other metrics.

You can create two kinds of calculated metrics:

- a derived index (p. 75)
- a formula-based calculated metric (p. 77)

We recommend that you add or delete formula-based calculated metrics directly in Metric Studio. You can also import them from a Metric Studio export file; however, modifying the equations export files is not recommended.

**Strategies**
You can use strategies to organize metrics in the way that is most meaningful to users. An IBM® Cognos® Metric Studio application can include a number of strategies that allow you to organize and view metrics in different ways. A metric can belong to more than one strategy.

Strategies are often used to represent an objective which is a statement of intended outcome for a team or a balanced scorecard view of perspectives. Use a perspective type of strategy element to organize metrics and projects around the results you want to achieve, such as improving quality. You can then add the metrics that show whether you are achieving that objective, such as returns, manufacturing defects, and overall defects.

You can also associate reports and projects with a strategy. Note that the projects and reports associated with a strategy are independent of the projects and reports associated with a scorecard. You can create strategies and strategy elements using tab-delimited files or directly in Metric Studio.

**Scorecarding Models**
You should organize scorecards and metric types in useful and meaningful ways. While every organization has unique requirements that shape their scorecard structure, there are several common scorecarding models.

The main ones are

- the franchise model (p. 20)
- the functional model (p. 21)
- the balanced model (p. 22)
Franchise Model

The franchise model is used to monitor the same type of metrics throughout an organization. This standardization ensures that each unit in the organization uses the same measures of success.

Usually, a scorecard structure that follows the franchise model is based on an existing structure within the organization, such as geographical distribution.

For example, Bank International could base its scorecard structure that monitors automated teller transactions on geographical regions. Metric types that it wants to monitor may be client withdrawals, deposits, and transfers using automated teller machines.

This scorecard structure allows managers to monitor client use of automated teller machines for their territory and to drill down to the city level to determine where their use is at its best and worst.
Functional Model

More diverse organizations may have different performance goals for different parts of the organization.

In the functional model, metric types vary by scorecard or by branch of the scorecard tree.

For example, the Great Outdoors Company, which sells sporting equipment, could structure its scorecards based on functional groups in the company, such as Sales, Distribution, Marketing, and Finance.

This scorecard structure allows users to monitor metrics that directly affect the performance of their group. For example, the Finance group is interested in metrics such as profit margin and operating margin while the Sales group is interested in metrics such as commissions and unit sales.
Balanced Model

The balanced model is often used in conjunction with the franchise model or the functional model. You can overlay a balanced model on top of the franchise model or the functional model using metric groups to provide perspective to metrics.

Another way to implement the balanced model is to create a scorecard for each perspective. This is useful for organizations that are beginning to implement balanced scorecarding.

For example, on either the comparative model or the functional model, metrics such as defects per unit, number of returns, and number of recalls can be grouped together to provide perspective on impacts on customers.

These organizations often grow into the functional model with the balanced scorecard model overlaid using groups.
Building IBM Cognos Business Intelligence Applications

The lifetime of an IBM® Cognos® Business Intelligence application can be months, or even years. During that time, data may change and new requirements appear. As the underlying data changes, authors must modify existing content and develop new content. Administrators must also update models and data sources over time. For more information about using data sources, see the IBM Cognos Administration and Security Guide and the IBM Cognos Framework Manager User Guide.

In a working application, the technical and security infrastructure and the portal are in place, as well as processes for change management, data control, and so on. For information about the workflow associated with creating IBM Cognos BI content, see the IBM Cognos Architecture and Deployment Guide. For additional information, see the IBM Cognos Solutions Implementation Methodology toolkit, which includes implementation roadmaps and supporting documents. Information about the toolkit is available on www.ibm.com.

The following graphic provides an overview for how to use IBM Cognos BI to build applications across all of your IBM Cognos BI components.

- Locate and prepare data sources and models
  IBM Cognos BI can report from a wide variety of data sources, both relational and dimensional. Database connections are created in the Web administration interface, and are used for modeling, for authoring, and for running the application.
  To use data for authoring and viewing, the business intelligence studios need a subset of a model of the metadata (called a package). The metadata may need extensive modeling in Framework Manager.

- Build and publish the content
  Reports, scorecards, analysis, dashboards and more are created in the business intelligence studios of IBM Cognos BI. Which studio you use depends on the content, lifespan, and audience of the report, and whether the data is modeled dimensionally or relationally. For example, self-service reporting and analysis are done through IBM Cognos Business Insight Advanced, IBM Cognos Query Studio, and IBM Cognos Analysis Studio, and scheduled reports are created in IBM Cognos Report Studio. Report Studio reports and scorecards are usually prepared for a wider audience, published to IBM Cognos Connection or another portal, and scheduled there for bursting, distribution, and so on. You can also use Report Studio to prepare templates for self-service reporting.

- Deliver and view the information
  You deliver content from the IBM Cognos portal or other supported portals, and view information that has been saved to portals, or delivered by other mechanisms. You can also run reports, analyses, scorecards, and more from within the business intelligence studio in which they were created.
For information about tuning and performance, see the IBM Cognos Administration and Security Guide and [www.ibm.com](http://www.ibm.com).

**The Great Outdoors Company Samples**

The Great Outdoors Company samples illustrate product features and technical and business best practices. You can also use them for experimenting with and sharing report design techniques and for troubleshooting. As you use the samples, you can connect to features in the product.

For examples related to different kinds of businesses, see the product blueprints at [www.ibm.com](http://www.ibm.com). For information about specific installation choices and environments, see the IBM Cognos® Architecture and Deployment Guide, or the Proven Practices and the IBM Cognos Implementation Roadmaps on [www.ibm.com](http://www.ibm.com). For information about audit samples, see the IBM Cognos Administration and Security Guide. For information about Mobile samples, see the IBM Cognos Mobile Installation and Administration Guide.

The Great Outdoors Company, or GO Sales, or any variation of the Great Outdoors name, is the name of a fictitious business operation whose sample data is used to develop sample applications for IBM and IBM customers. Its fictitious records include sample data for sales transactions, product distribution, finance, and human resources. Any resemblance to actual names, addresses, contact numbers, or transaction values, is coincidental. Unauthorized duplication is prohibited.

**Where to Find the Samples**

The samples are included with the product and the samples for each studio are described in the related user guide and online help. To use the samples, you must install, set up, and configure them or contact your administrator to find out where they are installed. For instructions on how to install the samples, see the IBM Cognos Installation and Configuration Guide. For instructions on how to set up and configure samples, see the IBM Cognos Administration and Security Guide or the IBM Cognos Installation and Configuration Guide.

**Samples Outline**

The samples consist of the following:

- Two databases that contain all corporate data, and the related sample models for query and analysis
- Five samples cubes and the related models
- A metrics data source including associated metrics and a strategy map for the consolidated company, and a model for Metric extracts.
- Reports, queries, query templates, and dashboards

To run interactive reports, scripts are required. To see all the reports included in the samples packages, copy the files from the samples content installation into deployment folder and then import the deployments into the IBM Cognos Business Intelligence product.
Security
Samples are available to everyone. To implement security, see the *Installation and Configuration Guide*. 
Chapter 3: Planning Your Scorecarding Environment

Ensuring that the right metrics are monitored by the right people in your organization requires careful planning of your scorecarding environment. Planning includes deciding

- which metrics to monitor
- what scorecard structure to use
- what IBM® Cognos® Metric Studio applications to create
- what data source to use
- how to load the data

**Metrics**

Whether you are migrating existing business metrics to Metric Studio or reengineering your business with new goals and metrics, the following questions will help you identify which metrics to monitor:

- What are the strategic goals?
- Who are the target audiences?
- Which metrics must you track to determine whether these goals are being met?
- What are the target numbers and baselines against which you want to compare these metrics?
- How do you want to roll up information for periods that are in progress?
- Do you want to summarize multiple metrics in a single aggregate measure?

**Scorecards**

You use Metric Studio to organize metrics into scorecards so that users can see the level of performance against their metrics on a single screen. Because different parts of the organization may focus on different metrics, you organize metrics into different scorecards for different audiences or in a hierarchy that reflects the management structure of the organization. For example, you may have a single scorecard for the high-level company goals, a set of scorecards for each functional unit in the organization, and another set of scorecards for each business unit. You may also want to group related metrics to show how they affect each other.

The following questions will help you plan your scorecards:

- Which audiences must see which metrics?
- Which metrics are related?
- How much detail does each audience need?
Choosing Data Sources

After you decide which metrics you want to measure, you must specify the data source that will support these metrics. Typically, an organization has this information in a variety of relational databases, OLAP sources, or spreadsheets. You must identify these sources to help you determine how to load this information into IBM® Cognos® Metric Studio.

If you have user-contributed data, you can enter the information directly into Metric Studio. Use the user interface or create a database to collect the data, and then use an import process to move the data into the metric store. The user interface is useful if the information does not exist in an external source or if there are only a few, infrequently updated values. It is worthwhile to create a database to collect user-contributed data if the information is updated frequently, but you must justify the development costs associated with database creation and maintenance.

You should also consider what kind of access you have to the data and how often the data changes. For example, you may need to use an OLAP cube as your data source if you do not have access to the database on which the cube is based. A cube is also useful if the database is too busy to access when you want to update your metric values.

When planning a scorecard structure, determine if one data source can represent the structure. If no data sources are appropriate, you can create the structure manually. A cube can be a good source for your scorecard hierarchy.

You must also decide where to perform metrics calculations: in Metric Studio, IBM Cognos Metric Designer, cubes, or IBM Cognos Framework Manager models. If possible, it is better to perform the calculations in cubes or Framework Manager models because these calculations will then be available to other components. The next best option is to perform the calculations in Metric Designer. If you are not using Metric Designer or if Metric Studio is the only place where the component values exist together, you can perform the calculations in Metric Studio.

Choosing How to Load Data into Metric Studio

As well as identifying the sources of your data, you must decide which method you will use to extract the data and load it into the metric store. Independent of the method used to load the staging tables, you can use Metric Studio to move the data and metrics to the metric store.

Metric Designer

IBM Cognos Metric Designer is an application for mapping and transferring information from relational and dimensional data sources, such as Framework Manager packages, IBM Cognos Impromptu® Query definition files, and cubes, into extracts that are loaded into the staging tables.

We recommend that you use Metric Designer when loading large amounts of data and metric types or if you are already using IBM Cognos Performance Applications. For more information, see the Metric Designer User Guide.

Metric Studio and Tab-delimited Files

Metric Studio imports data from tab-delimited files. This is useful for loading data that is currently maintained in a spreadsheet or a database. To import the data, save it from the spreadsheet or
database to a set of tab-delimited files that meet the Metric Studio requirements (p. 163), and then import the tab-delimited files into the staging tables (p. 217).

**Extraction, Transformation, and Loading (ETL) Tool**
If you already use an ETL tool, you can use it to populate the Metric Studio staging tables (p. 217).

**Manual Entry**
Enter metric data manually if you have only a small amount of data to enter or if the data does not exist in other sources.

**Configuration and Customization Workflow**

After you install IBM® Cognos® Metric Studio, follow this process to configure and customize your scorecarding environment:

- Plan your scorecarding environment (p. 27).
- Create a Metric Studio application (p. 31).
- Load data into the staging tables (p. 48).
- Load and recalculate data from the staging tables into the metric store (p. 51).
- Define your scorecarding structure (p. 69).
- Specify permissions and set security levels (p. 101).
- Maintain and enhance your scorecards.

Users can see metrics that they own and are accountable for, as well as additional related metrics for which they have read, write, or administrator permissions.
Chapter 4: Creating a Metric Studio Application

An IBM® Cognos® Metric Studio application is a set of scorecards, metrics, and projects used to monitor a specific aspect of an organization’s performance. You can create applications using your own criteria.

Applications are often defined by an audience so that users need only deal with the metrics that are relevant to them. For example, you can create a customer support application that tracks the resolution time for each call and the number of open calls. You can create an inventory application that tracks restocking rates and scrap rates. You can also create an application with cross-functional metrics to provide users with an overall view of performance areas (p. 31).

To create an application, do the following:

- Create a metric store (p. 31).
- Create a metric package (p. 35).

This may include creating a data source connection and initializing a metric store.

Create a Metric Store

A metric store contains scorecard and metric data. A metric store also contains IBM® Cognos® Metric Studio settings, such as user preferences. Metric Studio uses this metric store to store, organize, and retrieve information.

If it does not already exist, you must first create the database that is used for the metric store using Oracle, Microsoft® SQL Server, or DB2®.

For information about creating a metric store, see the IBM Cognos Installation and Configuration Guide.

Metric Package

A metric package is a representation of an IBM® Cognos® Metric Studio application that you make available in the portal, IBM Cognos Connection. A metric package contains connection information, reports, and metric management tasks for that application.

Each metric package must have a unique name.

The metric package content is stored in a metric store. As part of creating a metric package, you either initialize a new metric store or use an existing metric store. If you initialize a new metric store, you also specify business calendar settings (p. 32).

If you are using an existing metric store, you may be prompted to upgrade the metric store if it was used with a previous version of Metric Studio.
Business Calendar

Initializing the metric store includes providing information, such as fiscal periods and the start and end dates of the fiscal year, to create your business calendar. The business levels that you define affect the storage, summarization, and appearance of the metric history list. By default, the business calendar starts on the first day of the current year and continues to the current period plus 12 periods into the future. If you change the fiscal periods after you import data, you must delete the data, and then reimport it.

When you initialize a metric store, you choose whether to create a standard calendar (p. 32), a manufacturing calendar (p. 33), or a custom calendar (p. 33).

Standard Calendar

Create a standard calendar if you monitor performance using traditional months and weeks. A calendar can include other levels, such as quarters and days, but almost always includes weeks or months.

Fiscal Year Name

The start date of the calendar affects the name of the fiscal year. By default, if the first month of your fiscal calendar is anything other than January, the name of the fiscal year is the next year. For example, if your calendar starts in March 2006, the fiscal year is 2007.

You have the option to change the default when you initialize the metric store. You can choose to name the fiscal year the year in which it begins. You can also choose a combination of the calendar year in which the fiscal year begins and the calendar year in which the fiscal year ends, such as 2006/2007.

Weeks

You can include weeks in a standard calendar. Unlike manufacturing calendars, these weeks can begin in one month, quarter, or year, and end in another. This fact can affect how IBM® Cognos® Metric Studio loads and represents data. You cannot calculate totals for higher level periods by rolling up weekly totals. Therefore, if weeks are the lowest level in the calendar, you must set the data load level of the metric to a value other than weeks. Regardless of this setting, you can always load data at the week level.

Each week belongs to a month so that users can go to a specific week in the calendar. This setting is only for navigation purposes and does not imply any rollup from weeks to months.

When you create a package, you can set a week to belong to the month

- in which it begins
- in which it ends
- to which the majority of its days belong

This setting also controls how many weeks are in a year.

When your calendar includes weeks, you can also choose the day on which a week begins.
Rollups
If your calendar includes weeks, in order to calculate high-level rollups, you must load data at one of the following levels because weeks do not span higher-level periods:

- **days**
  In a calendar that includes days, you can load data at the daily level so that Metric Studio can calculate rollups for weeks, months, quarters, and years.

- **weeks and months (or any other level that would be the lowest level in your calendar, such as quarters)**
  In a calendar whose lowest level is weeks, you must load data at a higher level, such as months, so that Metric Studio can calculate rollups for quarters and years.

Manufacturing Calendar
Choose the manufacturing calendar if you monitor performance using manufacturing weeks that do not span periods or quarters.

Week Pattern
If your manufacturing calendar includes quarters, each quarter contains thirteen weeks. You must specify how to distribute the weeks across the months in a quarter. For example, if you select 4-5-4, four weeks are allocated to the first month of the quarter, five weeks are allocated to the second month of the quarter, and four weeks are allocated to the third month of the quarter.

Because a manufacturing calendar can contain only whole weeks, your business calendar may start one or two days earlier each year and eventually rotate through an entire year. To prevent your calendar from starting earlier each year, Metric Studio may need to add an extra week to the third month of the fourth quarter. For example, if your manufacturing calendar starts on January 1, adding the extra week keeps you within three days on either side of January 1. The exception is in a manufacturing calendar with a 4-4-5 distribution, where you can choose to add the extra week to the second or third manufacturing month.

Custom Calendar
If neither the standard calendar nor the manufacturing calendar contains the calendar levels that you need, you can create a custom calendar. An example is a calendar that divides the fiscal year into two 6-month periods.

A custom calendar requires an import time periods file (.cal) (p. 198), an import time levels file (.lvl) (p. 209), and a time language text file (.tlt) (p. 208) in the installation_location/deployment/cmm directory. For information about these files, see "Tab-delimited Files" (p. 163).

For information about the columns used to create a custom calendar, see "Adding an Import Source, Creating a Custom Calendar, and Setting Security Permissions" (p. 58).

If you want to upgrade an IBM Cognos Metrics Manager 2.2 calendar that uses a customized period start date and end date, you must create a standard calendar in IBM Cognos BI that reflects your custom calendar as closely as possible. You must then export the standard calendar and modify the
import time periods file (.cal), import time levels file (.lvl), and time language text file (.tlt) so that the calendar matches your Metrics Manager 2.2 calendar.

**Recommendation - Simplify the Creation of a Custom Calendar**

Developing properly formatted tab-delimited files for creating a custom calendar can be complicated. You cannot create a custom calendar that contains weeks that span higher-level periods. Weeks that span periods are supported only through the Metric Package calendar wizard.

It is easier to modify an existing import time periods file (.cal), import time levels file (.lvl), and time language text file (.tlt) than it is to create these files yourself. To create a custom calendar from existing files, do the following:

- Create a package with a standard calendar (p. 35).
- Use IBM Cognos Connection to export the business calendar or to schedule the export of the business calendar.
  
  For information about the export processes, see the IBM Cognos *Administration and Security Guide*.
- Modify the exported import time periods file (.cal), import time levels file (.lvl), and time language text file (.tlt) to reflect the structure of your custom calendar.
  
  For information about these files, see "Tab-delimited Files" (p. 163). For information about the columns used to create a custom calendar, see "Adding an Import Source, Creating a Custom Calendar, and Setting Security Permissions" (p. 58).
- Move the modified files to the `installation_location/deployment/cmm` directory.
- Create a package and use the modified files in the `installation_location/deployment/cmm` directory to initialize the metric store and create the business calendar.

**Recommendation - Check the Structure of a Custom Calendar**

Creating a custom calendar can be complicated. We recommend that, after your create a package with a custom calendar, you check that the structure of the calendar is as you expect.

- View the business calendar settings (p. 36) and use the time period selector (p. 142) to verify the calendar structure.
- If the calendar is not as you expected, do the following:
  - Modify the import time periods file (.cal), import time levels file (.lvl), and time language text file (.tlt), and save the files again in the `installation_location/deployment/cmm` directory.
  - Use the **Clear metric history and calendar data** option in Metric Maintenance to clear the calendar information.
    
    Running the **Clear metric history and calendar data** task deletes all content from the metric store.
    
    For more information, see the IBM Cognos *Administration and Security Guide*.
    
  - Re-create the calendar by clicking the link to Metric Studio.
Because the calendar information for this package was deleted, the Create Calendar wizard appears. Complete the Create Calendar wizard.

☐ Repeat until the calendar is as expected.

Create a Metric Package

Creating a metric package can involve three phases. Each phase uses a different wizard.

In the first phase, you name and describe the package. In the second phase, you select or create a data source connection. If you are initializing a metric store, in the third phase you specify business calendar settings.

Business Calendar Settings

If you are initializing a metric store, you must specify the following business calendar settings:

- type of business calendar
- number of fiscal period levels
- start date of earliest fiscal period

Select the start date carefully. If you want to extend your calendar to include earlier periods, you must export the calendar and import it as a new calendar.

- number of fiscal periods to include

If you use the day calendar level when initializing the metric store, ensure that the Business calendar level for loading and entering data setting in the metric type properties is set to match the time level (time_period_cd in version 2.2) defined in the rows contained in the .cmv files.

For more information about business calendars, see "Change the Time Span of the Metric Store" (p. 112).

Steps

1. In the left pane, click the down arrow.
2. Click Create a New Metric Package.
3. Follow the directions in the New Package wizard.
4. Select an existing data source or click New data source and follow the directions of the New data source wizard.
   
   For information about creating a data source, see the IBM® Cognos® Administration and Security Guide.
5. If you are initializing a new metric store, follow the steps in the Initialize metric store wizard.
View the Business Calendar Settings

You can see the business calendar settings for a package. This is useful for verifying that your custom business calendar (p. 33) is configured as you expected.

For information about adding or removing time periods, see "Change the Time Span of the Metric Store" (p. 112).

Steps
1. In the Tools list, click Business calendar.
2. Click the Structure tab.

Score Calculations

In IBM® Cognos® Metric Studio, the status of a metric is determined by its score. A score is a numerical representation that determines whether a metric is on target, above target, or below target, and by how much.

Whether a metric is above target or below target is determined by the tolerance value set for the metric. The default tolerance for metrics is 10% above or below target.

Scores can be calculated as a global setting from the target, actual, and tolerance values of a metric (p. 39). Otherwise, scores can be calculated using thresholds defined by targets and user-defined columns (p. 110).

Tolerance-based Scores

We recommend that you do not change the default settings for tolerance-based score calculations. However, you can change the settings if required.

Note: The On target score and Score per tolerance settings also apply to threshold-based scores (p. 38).

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On target</td>
<td>The score to assign if the metric is on target.</td>
</tr>
<tr>
<td></td>
<td>Default: 0</td>
</tr>
<tr>
<td>Default tolerance</td>
<td>The maximum percentage of deviation from the target that is acceptable.</td>
</tr>
<tr>
<td></td>
<td>Default: 10%</td>
</tr>
<tr>
<td>Score per tolerance</td>
<td>The change in score when an actual value is one tolerance away from the target.</td>
</tr>
<tr>
<td></td>
<td>Default: 1</td>
</tr>
<tr>
<td></td>
<td>Example: If the target = 100%, actual = 120%, and tolerance = 10%, the score per tolerance is 2 (assuming a default of 1).</td>
</tr>
<tr>
<td>Score</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Minimum score</td>
<td>The lowest score to assign. Default: -10</td>
</tr>
<tr>
<td>Maximum score</td>
<td>The highest score to assign. Default: +10</td>
</tr>
<tr>
<td>Score decimals</td>
<td>The number of decimal places to use when calculating the score. Default: 5</td>
</tr>
<tr>
<td>Range for on target is positive (%)</td>
<td>The width of the on target range as a percentage of the tolerance. Default: 50%</td>
</tr>
<tr>
<td></td>
<td>Example: If the target value is 7, the defined range for on target is positive is 6.65 to 7.35.</td>
</tr>
<tr>
<td>Offset value for on target is positive (%)</td>
<td>The percentage by which to skew the above target tolerance. Default: 100%</td>
</tr>
<tr>
<td></td>
<td>Example: Using a value of 120% as the upper scale for on target is positive, if the target value is 7, the defined range for on target is positive becomes 6.65 to 7.42.</td>
</tr>
</tbody>
</table>

**On Target Is Positive Range**

If a metric is on target when it falls within a range of values instead of a single value, you set the range for on target as a percentage of the tolerance value. The target range appears as a green band on either side of the target point. The default for the range is 50% of the tolerance.

If the value range that is on target is skewed to the upper side of the target, you specify an offset value for the on target range. The offset value for on target is positive is specified as a percentage of the range for on target is positive.
### Score setting

<table>
<thead>
<tr>
<th>Offset value for on target is positive (%)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The percentage by which to skew the above target range. Default: 100%</td>
</tr>
<tr>
<td></td>
<td>Example: If the tolerance is 10%, the range for on target is positive is 50% (the default), and the upper scale for on target is positive is 120%, the green range is 6% (10% x 50% x 120%) on the upper side of the target, and 5% (10% x 50%) on the lower side of the target.</td>
</tr>
</tbody>
</table>

### Example - Use the Upper Scale for on Target Is Positive Setting

This example demonstrates two ways that you can use the offset value for the on target is positive setting to focus attention where you want it in your metrics display.

The tolerance is set to 10% (the default) in both cases. In the first case, the on target range is narrower above the target (upper scale set to 40%). In the second case, the range is wider above the target (upper scale set to 120%). In both cases, remember that the range for on target is positive is set to 50% (the default), which defines the target range as evenly split above and below the target, before adjustment for the upper scale setting.

The green portion of the range indicates scores that are on target. The yellow portion indicates scores that fall within the defined tolerance.

<table>
<thead>
<tr>
<th>Range</th>
<th>Upper scale for on target is positive is 40%</th>
<th>Upper scale for on target is positive is 120%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above target yellow (within the defined tolerance)</td>
<td>4% (10% x 40%)</td>
<td>12% (10% x 120%)</td>
</tr>
<tr>
<td>Above target green (on target)</td>
<td>2% (10% x 50% x 40%)</td>
<td>6% (10% x 50% x 120%)</td>
</tr>
<tr>
<td>Below target green (on target)</td>
<td>5% (10% x 50%)</td>
<td>5% (10% x 50%)</td>
</tr>
<tr>
<td>Below target yellow (within the defined tolerance)</td>
<td>10% (10%)</td>
<td>10% (10%)</td>
</tr>
</tbody>
</table>

### Threshold-based Scores

Scores calculated using thresholds allow you to map ranges of data to status indicators. Integer tolerances are assigned to the user-defined intervals. Scores calculated using thresholds use the same scale as the default score calculation method to produce the same status indicator patterns.

Metric Studio does not validate the target values against higher thresholds to ensure that they have higher values. For example, Metric Studio does not ensure that the maximum threshold is higher than the minimum threshold. Since the highest status always takes precedence, if the actuals meet the conditions for green status it is irrelevant if they meet the conditions for yellow status.
A user-defined column or target can be used as the threshold for multiple statuses but then the lower status is not shown. This allows you to create metrics that have a subset of the states. Minimum and maximum score settings are not taken into consideration for threshold-based scores.

**Note:** The score-based trend for a metric, using threshold-based scores, will only reflect a change if the actuals, in the periods being compared, fall in different ranges as defined by the thresholds (that is, only if the metric status has changed color).

**Change Tolerance-based Score Calculations**

You can change the settings so that scores are more precise or so that you get score values in a specific range.

If you make changes to global score settings, you must recalculate metric values using the **Recalculate metric store derived values** task in IBM Cognos Connection. For more information, see the IBM Cognos Administration and Security Guide.

**Steps**

1. In the **Tools** list, click **Import and data calculation settings**.
2. Click the **Score Settings** tab.
3. Change the settings as required.
Chapter 5: Importing and Exporting Data

You can import data into the metric store or export data from the metric store to populate or migrate metric applications.

When you import data, it is first stored temporarily in staging tables. You can run different processes from IBM® Cognos® Connection to import the data. For information about the import processes in IBM Cognos Connection, see the IBM Cognos Administration and Security Guide.

You can export data to move data between environments. For example, you can move data from a development environment to a production environment or from one database platform to another. After you export the data to the tab-delimited files, you can load these files back into the same instance or into a different instance of IBM Cognos Metric Studio.

You can run the export process from IBM Cognos Connection. For more information about the export processes in IBM Cognos Connection, see the IBM Cognos Administration and Security Guide.

If you are importing data using Metric Studio or an existing extraction, transformation, and loading (ETL) tool, see "Preparing Data for Staging" (p. 55) before proceeding.

Specify Import Settings

The metric deployment location is the location of all the import source directories or folders for the current metric store. In a single-server environment, the deployment location is set to a default at installation time. You do not need to specify it when importing data. In distributed environments, when importing data, you must choose the deployment location from a list. For more information, see the IBM® Cognos® Installation and Configuration Guide.

You also select the import sources that are used by this metric package. You must define an import source (p. 42) before you can select it.

Steps

1. In the Tools list, click Import Sources.

2. If the Change the deployment location link is present, click it, then click Select another location and select the deployment location from the list.

3. Click OK.

4. Select the import sources for this package.

   - To include individual import sources, select the corresponding check box under the Name column.

   - To include all import sources, select the check box next to Name.

   - To exclude individual import sources, select the corresponding check box under the Exclude from the import column.
• To exclude all import sources, select the check box next to Exclude from the import.

**Define an Import Source**

You begin the data loading process by defining import sources, which can be relational databases or tab-delimited files. An import source is the location of the metric data to be imported into the metric store.

**Relational Databases**

Many organizations track operational measures in relational databases. You can specify a relational database as an import source and then load the data directly into IBM® Cognos® Metric Studio staging tables using an ETL tool.

We recommend that you use IBM Cognos Metric Designer when loading large amounts of data and metric types that exist elsewhere, such as relational databases, data warehouses, or cubes, or if you are already using IBM Cognos Performance Applications. For more information, see the Metric Designer User Guide.

**Tab-delimited Files**

You use tab-delimited files to load the staging tables when your data is currently maintained in a spreadsheet.

When you define the data source for tab-delimited files, you are specifying where the tab-delimited files are located and the file format that the tab-delimited files are using.

We recommend that you use the file formats that were created for Metric Studio version 2.2 and subsequent releases.

You can manually enter small amounts of data into the metric store using the Metric Studio user interface.

The Metric Studio character set encodings equate to SQL Server as follows.

<table>
<thead>
<tr>
<th>Metric Studio</th>
<th>SQL Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern European (Microsoft® Windows® 1250)</td>
<td>Albanian_BIN</td>
</tr>
<tr>
<td>Cyrillic (Windows 1251)</td>
<td>Cyrillic_General_BIN</td>
</tr>
<tr>
<td>Western (Windows 1252)</td>
<td>Latin1_General_BIN</td>
</tr>
<tr>
<td>Greek (Windows 1253)</td>
<td>Greek_BIN</td>
</tr>
<tr>
<td>Turkish (Windows 1254)</td>
<td>Turkish_BIN</td>
</tr>
<tr>
<td>Hebrew (Windows 1255)</td>
<td>Hebrew_BIN</td>
</tr>
</tbody>
</table>
**Metric Studio** | **SQL Server**
---|---
Baltic (Windows 1257) | Latvian_BIN
Vietnamese (Windows 1258) | Vietnamese_BIN
Korean (MS949) | Korean_BIN
Japanese (Shift-JIS) | Japanese_BIN
Chinese (Simplified) | Chinese_PRC_BIN
Chinese (Traditional) | Chinese_Taiwan_Stroke_BIN
Thai | THAI_BIN
UTF16 | SQL Server does not have a collation name for UTF16. Instead, UTF16 is supported in bcp using the -w option.

*Note:* This version of UTF16 expects a byte order mark when importing.

---

<table>
<thead>
<tr>
<th>Metric Studio</th>
<th>Oracle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern European (Windows 1250)</td>
<td>EE8MSWIN1250</td>
</tr>
<tr>
<td>Cyrillic (Windows 1251)</td>
<td>CL8MSWIN1251</td>
</tr>
<tr>
<td>Western (Windows 1252)</td>
<td>WE8MSWIN1252</td>
</tr>
<tr>
<td>Greek (Windows 1253)</td>
<td>EL8MSWIN1253</td>
</tr>
<tr>
<td>Turkish (Windows 1254)</td>
<td>TR8MSWIN1254</td>
</tr>
<tr>
<td>Hebrew (Windows 1255)</td>
<td>IW8MSWIN1255</td>
</tr>
<tr>
<td>Baltic (Windows 1257)</td>
<td>BLT8MSWIN1257</td>
</tr>
<tr>
<td>Vietnamese (Windows 1258)</td>
<td>VN8MSWIN1258</td>
</tr>
<tr>
<td>Western (ISO)</td>
<td>WE8ISO8859P1</td>
</tr>
<tr>
<td>Central European (ISO)</td>
<td>EE8ISO8859P2</td>
</tr>
</tbody>
</table>

The Metric Studio character set encodings equate to Oracle as follows.
<table>
<thead>
<tr>
<th>Metric Studio</th>
<th>Oracle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyrillic (ISO)</td>
<td>CL8ISO8859P5</td>
</tr>
<tr>
<td>Greek (ISO)</td>
<td>EL8ISO8859P7</td>
</tr>
<tr>
<td>Hebrew (ISO)</td>
<td>IW8ISO8859P8</td>
</tr>
<tr>
<td>Turkish (ISO)</td>
<td>WE8ISO8859P9</td>
</tr>
<tr>
<td>Baltic (ISO)</td>
<td>BLT8ISO8859P13</td>
</tr>
<tr>
<td>Western (ISO with Euro)</td>
<td>WE8ISO8859P15</td>
</tr>
<tr>
<td>Korean (MS949)</td>
<td>KO16MSWIN949</td>
</tr>
<tr>
<td>Japanese (Shift-JIS)</td>
<td>JA16SJIS</td>
</tr>
<tr>
<td>Chinese (Simplified)</td>
<td>ZHS16GBK</td>
</tr>
<tr>
<td>Chinese (Traditional)</td>
<td>ZHT16MSWIN950</td>
</tr>
<tr>
<td>Thai</td>
<td>TH8TISASCII</td>
</tr>
<tr>
<td>UTF8</td>
<td>UTF8</td>
</tr>
<tr>
<td>UTF16</td>
<td>AL16UTF16</td>
</tr>
</tbody>
</table>

Note: This version of UTF16 expects a byte order mark when importing.

The Metric Studio character set encodings equate to DB2® as follows.

<table>
<thead>
<tr>
<th>Metric Studio</th>
<th>DB2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern European (Windows 1250)</td>
<td>1250</td>
</tr>
<tr>
<td>Cyrillic (Windows 1251)</td>
<td>1251</td>
</tr>
<tr>
<td>Western (Windows 1252)</td>
<td>1252</td>
</tr>
<tr>
<td>Greek (Windows 1253)</td>
<td>1253</td>
</tr>
<tr>
<td>Turkish (Windows 1254)</td>
<td>1254</td>
</tr>
<tr>
<td>Hebrew (Windows 1255)</td>
<td>1255</td>
</tr>
</tbody>
</table>
Steps Using Metric Designer or Another ETL Tool

1. In the Tools list, click Import Sources.

2. Click New.

3. Click a language.

4. In the Name box, type a descriptive name for the data source.

5. Click Metric store staging tables.

6. If you want, in the Identification code box, type a code for this import source.
If you leave this box blank, Metric Studio automatically generates an identification code.

**Steps Using Tab-delimited Files**
1. In the **Tools** list, click **Import Sources**.
2. Click **New**.
3. Click a language.
4. In the **Name** box, type a descriptive name for the data source.
5. Click **Metrics import directory**.
6. If you want, in the **Identification code** box, type a code for this import source.
   If you leave this box blank, Metric Studio automatically generates an identification code.
7. Specify the location of the tab-delimited files by clicking the button next to the name of a metric deployment location.
   For information about specifying a metric deployment location, see "Specify Import Settings" (p. 41).
8. If required, click **Include sub-directories**.
9. In the **File format** box, click the Metric Studio version with which the tab-delimited files are compatible.
10. Click the name of the character set to use or, in the **Other** box, type its name.
11. Click the character to use as the decimal separator or, in the **Other** box, type the character.
   This option is available only for Oracle and DB2 databases.

**Increase Security When Loading Data into a SQL Server**

You can add an extra layer of security to database passwords on UNIX® operating systems and to temporary data files on all platforms by turning on UDA loading.

On UNIX, UDA loading is more secure because database passwords are not shown in processes lists.

On all platforms, UDA loading is also more secure because temporary files are not used to store data.

UDA loading may slow performance when recalculating large amounts of data.

**Step**
- In the `installation_location\bin` directory, edit the `mmloader_sql.xml` file as follows:

  ```xml
  <udaLoad>
  <document/>
  <sql>Y</sql>
  </udaLoad>
  ```
Specify Load and Data Calculation Options

You can specify how newly imported data affects existing data.

Tip: Click Import and data calculation settings under the Tools list to access these options.

Load Options
You can choose to
- reload previously rejected data that you corrected
- convert the time period code from Period to Month or Week for staged data
- specify whether to create or update various objects

Trend Options
You can choose to
- calculate trends by comparing metric scores or by comparing variance percent values
- calculate trends by comparing data to the previous period or to the same period in the previous year

If you make changes to how trends are calculated or to score settings, you must recalculate metric values using the Recalculate metric store derived values task in IBM® Cognos® Connection. For more information, see the IBM Cognos Administration and Security Guide.

Score Settings
You can specify the settings you want to use to determine scores. For more information, see "Score Calculations" (p. 36).

Logging Settings
You can choose the level of logging detail that is captured for this metric package. For example, to troubleshoot a problem, you can select Full. This level of logging affects performance so when you have solved the problem, you should select Basic or Minimal as your logging level. The default is Basic. For information about logs and troubleshooting, see "Metric Studio Log Files" (p. 157).

Steps
1. In the Tools list, click Import and data calculation settings.
2. Click the Logging tab.
3. Choose a level of logging detail.

Re-creating an Application

Use the following process to load data or to reload an IBM® Cognos® Metric Studio application that you previously exported:

- If using tab-delimited files, determine the columns that you need for each object.
Specify import sources, which can be tab-delimited files or relational databases.

Stage data and then load it, or enter data manually.

Organize the metrics on a scorecard.

Create a metric from other metrics.

Create a report to view a metric you have defined.

## Loading Data into Staging Tables

In IBM® Cognos® Metric Studio, data is first stored temporarily in a staging area before you transfer it to the metric store.

You load data from external sources into the staging area using IBM Cognos Metric Designer, IBM Cognos Connection, or an existing extraction, transformation, and loading (ETL) tool. You must understand the structure of the staging tables if you are creating an ETL process or are creating the tab-delimited files manually (p. 55).

Use Metric Designer to load large amounts of data and metric types that exist elsewhere, such as relational databases or data warehouses.

Use IBM Cognos Connection to load data using tab-delimited files when your data is currently maintained in a spreadsheet or a database.

If you already use an ETL tool, you can load the staging tables directly or by using tab-delimited files.

You can also enter information directly into Metric Studio using the user interface. For example, you can do this if the information does not exist in an external source or if there are only a few infrequently updated values.

Use the following table to decide which method you should use.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Data loading source</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have well-defined data sources for both your scorecard structure and your metrics.</td>
<td>Metric Designer</td>
</tr>
<tr>
<td>Data sources are spreadsheets and databases.</td>
<td>Metric Studio and tab-delimited files</td>
</tr>
<tr>
<td>An ETL tool is already used to extract from this source or to load a previous version of Metric Studio.</td>
<td>An ETL tool</td>
</tr>
<tr>
<td>You must consolidate and aggregate data from many different data sources.</td>
<td>An ETL tool</td>
</tr>
</tbody>
</table>
### Situation | Data loading source
--- | ---
Metrics do not exist elsewhere. | Manually, using the Metric Studio user interface
You must enter only a few metrics. | Manually, using the Metric Studio user interface

If you installed Metric Studio on the same computer as a DB2® metric store, you must grant read access for the staging files to the user account under which DB2 is running. Otherwise, the staging tables will not successfully load.

### Handling Rejected Data

There are two points during the loading process at which errors can occur.

<table>
<thead>
<tr>
<th>Point of error</th>
<th>Tools for troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading data into the staging area</td>
<td>Use the log files found in <code>installation_location\logs\MetricMaintenance\databasename-timestamp</code>. In the logs directory, a directory is created for each data load. The directory name consists of the database name and the time stamp. These files list improperly formatted entries in the tab-delimited files, such as a string in a numeric field.</td>
</tr>
<tr>
<td>Loading data from the staging area into the metric store</td>
<td>Use the database views to locate errors. The name of a database view is created using the staging table name, such as <code>STAGE_ERR_staging_table_name</code>.</td>
</tr>
</tbody>
</table>

If errors occur during the loading process, the rejected rows are placed in a reject table for review, correction, and reloading. The table name is the staging table name with _rejects appended to it.

For example, you create a new metric named SouthWest Revenue without specifying a currency code. An error occurs. Metric Studio creates SouthWest Revenue but rejects the data, which goes to the `kpi_value_stage_rejects` table. You add the currency code to the rejection file and reload the data.

Each rejection table contains the following additional columns that provide a status of the error.

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>reject_created_dt</code></td>
<td>The date and time when the error occurred</td>
</tr>
</tbody>
</table>
If Metric Studio finds an error condition, it stops processing that row. If it finds only a condition that warrants a warning, it processes the row, but it will set some default. Metric Studio issues only one warning or error per row.

Each rejection table maps to a view that describes the error. The view name is STAGE_ERR_, followed by the staging table name. An example is STAGE_ERR_METRIC_TYPE.

You query the view to determine the cause of the error. To optimize performance and to see the messages only in your language, qualify the query with a language code. For example, when determining the cause of errors when loading values, type

```
select * from stage_err_metric_type
where text_language_cd = 'EN'
```

If you do not specify the language code in the query, error descriptions for all languages are generated for each error which will slow performance significantly.

**Import Previously Rejected Data**

When you are loading the staging tables, some data can be rejected (p. 49). After you determine the cause for the rejection and correct the problem, you can import the previously rejected data.

The rejects tables are not cleared automatically after you reload the metadata and data. Each time there are rejects, they are added to the tables so that you can fix the problem and reload.

**Steps**

1. Correct the problem that caused the data to be rejected.
   
   For example, if you loaded metric data but the metric type does not exist, create the metric type.

2. In the **Tools** list, click **Import and data calculation settings**.

3. On the **Import settings** tab, select the **Reload rejected data** check box.

4. Click **OK**.

5. In IBM® Cognos® Connection, clear the tables after you finish troubleshooting.

   For more information, see the IBM Cognos Administration and Security Guide.
Load Data from Staging Tables into the Metric Store

In IBM® Cognos® Connection, a loading process moves rows of data from the staging area to the metric store and then recalculates data.

Alternatively, you can load the metric store from the command line. An external application can schedule or trigger a load, using batch files in a Microsoft® Windows® operating system environment or shell scripts in a UNIX® operating system environment.

When loading data that has owners, the owners must exist in the same namespace as the person who is loading the data. This is because checking user permissions for the data load requires searching the namespace, and to search a namespace you must be logged on to it. If the owners do not exist in the namespace, data in the stage policy, stage object note, and watchlist stage tables is rejected. Data in other tables, such as the object stage, metric type stage, and stage project tables, is loaded but the staged record appears in the rejects table with a warning that the owner could not be resolved. For information about rejected data, see "Handling Rejected Data" (p. 49).

For instructions about loading data using IBM Cognos Connection, see the IBM Cognos Administration and Security Guide.

Exporting Data from the Metric Store

You may want to export data from a metric store to move an application from a development environment to a production environment or from one database platform to another. After you export the application into tab-delimited files, you can load these files back into IBM® Cognos® Metric Studio.

You can also export data from the metric store to synchronize your files if you entered data about the application through both tab-delimited files and the user interface.

Metric Studio exports equations into two text files (.equ and .eqi). You cannot modify equations before loading these files back into Metric Studio.

You can export a Metric Studio application to archive files. The archive files are tab-delimited files.

You use IBM Cognos Connection to export data or to schedule exports of data. For information about the export processes, see the IBM Cognos Administration and Security Guide.

If you export user-entered values, Metric Studio changes the value type to user-staged.

The following items are not part of the import-export process and you must re-create them manually:

- global settings, such as languages, currencies, and calendar settings
- user preferences
- available columns that can be shown
- default display columns
- diagram font settings
- default permissions for objects
- status indicators
Scheduling Imports and Exports

You can update and back up data on a regular basis by scheduling imports and exports.

Use the **New metrics import from files** wizard and the **New metrics export** wizard in IBM® Cognos® Connection to schedule data imports and exports. For information about the wizards, see the IBM Cognos Administration and Security Guide.

Upgrading Tab-delimited Files

The format of the tab-delimited files that are used to load data into an application may differ between releases of IBM® Cognos® Metric Studio. You can use the cmm_convert_file command line utility to upgrade existing tab-delimited files to make them compatible with the current version of Metric Studio.

You cannot upgrade tab-delimited files from releases prior to IBM Cognos Metrics Manager 2.2.

The following parameters can be set by appending them to the command.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>--input&lt;filename/directory&gt;</td>
<td>Specifies the fully qualified name of the input file or directory</td>
</tr>
<tr>
<td>--format&lt;file format version&gt;</td>
<td>Specifies the Metric Studio version of the tab-delimited files</td>
</tr>
<tr>
<td></td>
<td>Values: 2.2, 8.1.1, 8.1.2MR1, 8.1.2MR2, 8.2.1, 8.3.1, 8.42</td>
</tr>
<tr>
<td>--output&lt;filename/directory&gt;</td>
<td>Specifies the fully qualified name of the output file or directory</td>
</tr>
<tr>
<td>--prefix&lt;prefix&gt;</td>
<td>Determines the prefix that is added to the output file names</td>
</tr>
<tr>
<td></td>
<td>If this parameter is not supplied, the output file names will have default prefix new_</td>
</tr>
<tr>
<td></td>
<td>Default: new_</td>
</tr>
<tr>
<td>--subdirectories</td>
<td>Processes subdirectories</td>
</tr>
<tr>
<td></td>
<td>Default: NOT</td>
</tr>
<tr>
<td>--createdirectories</td>
<td>Creates the output directory if it does not already exist</td>
</tr>
<tr>
<td></td>
<td>Default: NOT</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>--help</td>
<td>Generates a message which allows you to verify the parameters</td>
</tr>
</tbody>
</table>

**Step for Windows® operating system**

- At a command prompt, change to the installation_location\bin directory and type the following command:

  cmm_convert_file.cmd

  An example of the conversion utility syntax is

  cmm_convert_file --input C:\flat_file\v2.2 --format 2.2 --subdirectories --output C:\flat_file\v8.1.1 --prefix v811_ --createdirectories

  This example
  - specifies the location of the files to be upgraded
  - upgrades tab-delimited files from Metrics Manager 2.2
  - includes subdirectories when the source location is processed
  - specifies the location where the output files are created
  - specifies the prefix to be added to the output files
  - creates the output directory if it does not already exist

**Step for UNIX® operating system**

- At a command prompt, change to the installation_location\bin directory, and type the following command:

  cmm_convert_file.sh

  An example of the conversion utility syntax is

  cmm_convert_file.sh --input /flat_file/v8.1.1 --format 8.1.1 --subdirectories --output /flat_file/v8.1.2 --prefix v812_ --createdirectories

  This example
  - specifies the location of the files to be upgraded
  - upgrades tab-delimited files from Metric Studio 8.1.1
  - includes subdirectories when the source location is processed
  - specifies the location where the output files are created
  - specifies the prefix to be added to the output files
  - creates the output directory if it does not already exist
Chapter 6: Preparing Data for Staging

Data is loaded into the staging tables before you load it into the IBM® Cognos® Metric Studio metric store.

If your data is currently maintained in a spreadsheet or a database, use tab-delimited files to load the staging tables.

If you already use an extraction, transformation, and loading (ETL) tool, you can load the staging tables directly.

Load data using IBM Cognos Metric Designer to define and load your Metric Studio application quickly and easily using existing IBM Cognos sources including IBM Cognos PowerCubes, IBM Cognos Impromptu® Query Definition files, and IBM Cognos Framework Manager models. For more information about Metric Designer, see the Metric Designer User Guide.

You can also enter information directly into Metric Studio using the user interface. This method is useful if the information does not exist in an external source or if there are only a few infrequently updated values.

If you are creating an ETL process or are creating the tab-delimited files manually, you must understand the structure of the staging tables. You must ensure that your data is formatted correctly before loading it into the staging tables.

Tab-delimited Files

IBM® Cognos® Business Intelligence can import data from tab-delimited files into the staging tables. This means that you can import data that is currently maintained in a spreadsheet or a database.

To import the data, you save it from the spreadsheet or database to a set of tab-delimited files and then import the tab-delimited files.

You can also export a metric application to tab-delimited files. You can then reimport these files following the same process you use to create an application.

IBM Cognos BI imports data from different types of tab-delimited files, each containing different types of data. IBM Cognos BI provides a default data source for tab-delimited files named installation_directory/deployment/cmm. However, you can store these files in any directory that IBM Cognos Metric Studio can access, and that you have defined as an import source.

To insert tabs in a tab-delimited file, type \t. To insert a new line in a tab-delimited file, type \n. To insert a backslash in a tab-delimited file, type \\

If you are using a UNIX® operating system, the file path cannot contain spaces.

File Formats

We recommend that you use the file formats created for IBM Cognos Metric Studio version 8.1 and subsequent releases.
Each tab-delimited file can have any name that you want. However, you can use only the extensions that IBM Cognos BI recognizes for metadata and data files. Each extension identifies a specific type of file. IBM Cognos BI uses these extensions to determine the contents of the files, the order in which to load the contents, and into which table to load the contents.

**Object Loading Order**

The tab-delimited files are interdependent. The files are loaded as a set and objects in one file may depend on objects in other files.

IBM Cognos BI loads objects in a specific order, regardless of which file they are in. Therefore, you should consider the object types, rather than the files, when you are planning.

After you create the files, you can load them at the same time.

IBM Cognos BI loads the object types in the following order.

<table>
<thead>
<tr>
<th>Object type</th>
<th>Staging file</th>
</tr>
</thead>
<tbody>
<tr>
<td>User-defined columns</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Qualifier IDs</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td></td>
<td>value stage (.cmv)</td>
</tr>
<tr>
<td>Diagram IDs (description and name only)</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Caption IDs (diagram and caption text only)</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td></td>
<td>value stage (.cmv)</td>
</tr>
<tr>
<td>Import sources</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Metric types</td>
<td>metric type stage (.cmm)</td>
</tr>
<tr>
<td>Scorecards</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td></td>
<td>value stage (.cmv)</td>
</tr>
<tr>
<td>Metrics</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td></td>
<td>value stage (.cmv)</td>
</tr>
<tr>
<td>Strategies</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Strategy elements</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Reports</td>
<td>object stage (.cmo)</td>
</tr>
<tr>
<td>Projects</td>
<td>stage project (.pro)</td>
</tr>
</tbody>
</table>
Updating the Scorecarding Environment Using Tab-delimited Files

To update your scorecarding environment, the files you need will depend on what you are updating. For example, if you previously loaded metrics and the changes do not involve the metrics, you only need to load the .cmv file. You do not need to re-create and load the .cmm file.

If you are adding a metric or report to a scorecard, you must already have created a .cmo file for that scorecard. You can then add the metric or report to the .cmo file and create the link to the .cml file.

Note that you must upload tab-delimited files to the UNIX® operating system in binary mode.

Creating Objects

You can use tab-delimited files to create the objects that you need for your scorecard application. Each object that you create includes required columns that you must define. In addition, there are other columns that may be relevant to the object you are creating. You should also check these

### Table: Staging Files

<table>
<thead>
<tr>
<th>Object type</th>
<th>Staging file</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>stage unit (.unt)</td>
</tr>
<tr>
<td>Links between objects in the object stage file</td>
<td>object link stage (.cml)</td>
</tr>
<tr>
<td>(.cmo) and the metric type stage file (.cmm), and</td>
<td></td>
</tr>
<tr>
<td>links between objects within the object stage file</td>
<td></td>
</tr>
<tr>
<td>(.cmo)</td>
<td></td>
</tr>
<tr>
<td>Security policies</td>
<td>stage policy (.cms)</td>
</tr>
<tr>
<td>Custom parameters</td>
<td>stage custom parameters (.cmp)</td>
</tr>
<tr>
<td>Import source mappings</td>
<td>import source reportlet stage (.crm)</td>
</tr>
<tr>
<td></td>
<td>import source currency stage (.ccm)</td>
</tr>
<tr>
<td></td>
<td>import source time levels (.ctl)</td>
</tr>
<tr>
<td></td>
<td>import source time periods file (.ctp)</td>
</tr>
<tr>
<td>Comments</td>
<td>stage object note (.cmn)</td>
</tr>
<tr>
<td>Diagram objects</td>
<td>stage diagram (.cdo)</td>
</tr>
<tr>
<td>Equations</td>
<td>equation stage (.equ, .eqi)</td>
</tr>
<tr>
<td>Cube query</td>
<td>cube query stage (.ccq)</td>
</tr>
<tr>
<td>Watchlist</td>
<td>watchlist stage (.cwl)</td>
</tr>
<tr>
<td>Data</td>
<td>value stage (.cmv)</td>
</tr>
</tbody>
</table>
columns to ensure that they contain the appropriate information. For example, a column may have a default value that you must change.

Ensure that each tab-delimited file contains the correct columns, even if the columns are null. For more information about columns in tab-delimited files, see "Tab-delimited Files" (p. 163).

You must also consider any dependencies between objects. For example, a home scorecard must exist before the metrics that belong to it can exist.

For information about the order in which IBM Cognos BI loads object types and how the object types map, see "Object Loading Order" (p. 56).

**Linking Objects**

You can link objects to copy a metric to a scorecard, add metrics to a strategy element, or add a diagram to a metric.

If you specify a language code, the link is also created in every other language that you defined for Metric Studio. For example, English is the default and you defined French and German. If you link the metric Revenue to the metric Profit, the link is created in French and German as well as English.

In all cases, you must create the objects that you want to link before you create the link.

You create all links using the object link stage (.cml) file (p. 181).

**Importing Data from a Cube Import Source**

The import source currency (.ccm), import source reportlet (.crm), import source time levels (.ctl), and the import source time period (.ctp) tab-delimited files are used to map information from a cube import source to a metric store. Usually, you would map information from a cube import source to a metric store when you are exporting data from one environment and then importing the data into another environment.

**Deleting Objects**

You can delete some objects using the tab-delimited files rather than the user interface. The files that allow you to delete objects contain a column named delete_flag. For example, files from which you can delete objects are .cmm (metric types), .cmo (scorecards and metric custom titles), .cml (object links), and .cmp (custom parameters) files. Depending on the type of file, set delete_flag to Y (Yes) or T (True) to delete an object.

Metric Studio deletes the rows whose delete_flag is set to Y or T when you load tab-delimited files and recalculate the data.

When you delete a scorecard, you delete the metrics and child scorecards that are associated with it.

**Adding an Import Source, Creating a Custom Calendar, and Setting Security Permissions**

You can use tab-delimited files to add an import source, create a custom calendar, and create security permissions. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.
## Add an Import Source

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: DS)</td>
<td>object_desc</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>ds_filename</td>
</tr>
<tr>
<td></td>
<td>supports_cube_kpi_def (R, T, C)</td>
<td>include_subfolders_ind</td>
</tr>
<tr>
<td></td>
<td>package_path (required for a cube import source)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>data_format_cd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>db_character_set</td>
<td></td>
</tr>
<tr>
<td></td>
<td>enabled_for_load</td>
<td></td>
</tr>
<tr>
<td></td>
<td>decimal_char</td>
<td></td>
</tr>
</tbody>
</table>

## Create a Custom Calendar

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cal</td>
<td>level_id</td>
<td>fiscal_year_value</td>
</tr>
<tr>
<td></td>
<td>start_time_cd</td>
<td>period_number</td>
</tr>
<tr>
<td></td>
<td>end_time_cd</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>language_text_id</td>
<td></td>
</tr>
<tr>
<td>.tlt</td>
<td>language_text_id</td>
<td>short_object_name</td>
</tr>
<tr>
<td></td>
<td>language_cd</td>
<td>long_object_name</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>description</td>
</tr>
<tr>
<td></td>
<td></td>
<td>default_row</td>
</tr>
<tr>
<td>.lvl</td>
<td>language_text_id</td>
<td>level_number</td>
</tr>
<tr>
<td></td>
<td>level_id</td>
<td>reference_display_level_id</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>parent_link_rule</td>
</tr>
</tbody>
</table>
### Create Security Permissions

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cms</td>
<td>object_id</td>
<td>security_namespace</td>
</tr>
<tr>
<td></td>
<td>object_type_cd</td>
<td>security_reference_id</td>
</tr>
<tr>
<td></td>
<td>kpi_indicator_type_id</td>
<td>delete_policy</td>
</tr>
<tr>
<td></td>
<td>kpi_home_sc_id</td>
<td>read_perm</td>
</tr>
<tr>
<td></td>
<td>kpi_qualifier_id</td>
<td>write_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>setpolicy_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>annotate_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writeactual_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writetarget_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writetolerance_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writeudc_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udc1_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writeudc2_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udc2_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writeudc3_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udc3_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>write_udc4_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udc4_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>writeudc5_perm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>udc5_perm</td>
</tr>
</tbody>
</table>

### Creating a Scorecard and Adding a Metric to a Scorecard

You can use tab-delimited files to create a scorecard or to add a metric to a scorecard. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.
Create a Scorecard

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: SC)</td>
<td>object_desc</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>object_technical_desc</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>parent_object_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>default_sort_order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>owner_user_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>diagram_object_nm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>delete_flag</td>
</tr>
</tbody>
</table>

Add a Metric to a Scorecard

You create this link only to add a metric to a scorecard other than its parent or to change the sort order of metrics on a scorecard.

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cm1</td>
<td>object_id</td>
<td>sort_order</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: SC, KPI)</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>linked_object_id</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>kpi_indicator_type_id</td>
</tr>
<tr>
<td></td>
<td>linked_object_type_cd</td>
<td>kpi_home_sc_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kpi_qualifier_id</td>
</tr>
</tbody>
</table>

Creating Metric Types and Metrics

You can use tab-delimited files to create a metric type and create a metric. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.

If you are using user-defined columns, you must create them first.

Create a Metric Type

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmm</td>
<td>metric_type_id</td>
<td>All remaining columns are optional.</td>
</tr>
<tr>
<td></td>
<td>metric_type_nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>
Create a Metric

Before creating a metric, you must create the parent scorecard and owner (p. 69), the metric type (p. 70), and add the data source for each metric.

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_type_cd (value: KPI)</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_id (required to later modify the home scorecard, metric type, or qualifier of the metric using tab-delimited files)</td>
<td>kpi_qualifier_id</td>
</tr>
<tr>
<td></td>
<td>owner_user_id</td>
<td>kpi_actuals_ds_id</td>
</tr>
<tr>
<td></td>
<td>kpi_indicator_type_id</td>
<td>kpi_target_ds_id</td>
</tr>
<tr>
<td></td>
<td>kpi_home_sc_id</td>
<td>kpi_tolerance_ds_id</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>kpi_benchmark_ds_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kpi_rollup_cd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>object_desc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>object_technical_desc</td>
</tr>
<tr>
<td></td>
<td></td>
<td>diagram_object_nm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>delete_flag</td>
</tr>
</tbody>
</table>
Load Metric Values

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmv</td>
<td>day_nr</td>
<td>year_nr</td>
</tr>
<tr>
<td></td>
<td>currency_cd</td>
<td>time_period_cd</td>
</tr>
<tr>
<td></td>
<td>kpi_class_id</td>
<td>kpi_id</td>
</tr>
<tr>
<td></td>
<td>kpi_nm</td>
<td>value_type_cd</td>
</tr>
<tr>
<td></td>
<td>kpi_text</td>
<td>kpi_value</td>
</tr>
<tr>
<td></td>
<td>scorecard_id</td>
<td>period_nr</td>
</tr>
<tr>
<td></td>
<td>scorecard_nm</td>
<td>created_dt</td>
</tr>
<tr>
<td></td>
<td>data_source_id</td>
<td>data_source_nm</td>
</tr>
<tr>
<td></td>
<td>parent_scorecard_id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>qualifier_id</td>
<td>qualifier_nm</td>
</tr>
<tr>
<td></td>
<td>level_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>start_time_cd</td>
<td>last_updated_dt</td>
</tr>
</tbody>
</table>

Create an Impact Relationship Between Metrics

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cml</td>
<td>object_type_cd (value: KPI)</td>
<td>object_id</td>
</tr>
<tr>
<td></td>
<td>linked_object_id</td>
<td>language_id</td>
</tr>
<tr>
<td></td>
<td>linked_object_type_cd (value: KPI)</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>link_qualifier (value: DRIVES, DRIVEN BY)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Create Equations

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.equ</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>.eqi</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>
## Create a Derived Index

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cml</td>
<td>object_type_cd (value: KPI)</td>
<td>object_id</td>
</tr>
<tr>
<td></td>
<td>linked_object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>linked_object_type_cd (value: KPI)</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>link_qualifier (value: DRIVES, DRIVEN BY)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>include_in_calc</td>
<td></td>
</tr>
</tbody>
</table>

## Create a Comment

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmn</td>
<td>comment_id</td>
<td>kpi_indicator_type_id</td>
</tr>
<tr>
<td></td>
<td>object_id</td>
<td>kpi_home_sc_id</td>
</tr>
<tr>
<td></td>
<td>user_id</td>
<td>kpi_qualifier_id</td>
</tr>
<tr>
<td></td>
<td>note</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>year</td>
<td>action_cd</td>
</tr>
<tr>
<td></td>
<td>period_nr</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

## Create a Qualifier

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_nm</td>
<td>default_sort_order</td>
</tr>
<tr>
<td></td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: QUAL)</td>
<td>object_desc</td>
</tr>
</tbody>
</table>
Create User-defined Columns

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: UDC)</td>
<td>sort_order</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Creating Strategies and Strategy Elements

You can use tab-delimited files to create a strategy and strategy elements. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.

Create a Strategy and Strategy Elements

Use the object stage file to create a strategy and strategy elements. Each row in the object stage file (.cmo) creates a strategy and a strategy element.

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>object_desc</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td>object_technical_desc</td>
</tr>
<tr>
<td></td>
<td>primary_group_type_id</td>
<td>default_sort_order</td>
</tr>
<tr>
<td></td>
<td></td>
<td>parent_object_id</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kpi_rollup_cd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>show_group_status_counts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>all_metrics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>expand_groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>diagram_ind_style_cd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>secondary_group_type_id</td>
</tr>
</tbody>
</table>
Add a Metric or All Metrics of a Metric Type to a Strategy Element

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cml</td>
<td>object_type_cd (value: user-defined name of a strategy element)</td>
<td>object_id</td>
</tr>
<tr>
<td></td>
<td>linked_object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>linked_object_type_cd (value: KPI, KPICL)</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Creating Diagrams

A diagram consists of the following objects:

- diagram
- caption
- diagram objects

You create each of these objects separately.

You can use tab-delimited files to create a diagram. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.

Define a Diagram

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: DGM)</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>parent_object_id (indicates home objects)</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Define a Caption After Defining a Diagram

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: DGMT)</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>
Define Diagram Objects After Creating Metrics

You can define diagram objects after you create the diagram, the caption, and the metrics that you want to use in the diagram.

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cdo</td>
<td>diagram_id</td>
<td>object_visible_flag</td>
</tr>
<tr>
<td></td>
<td>image</td>
<td>linked_object_id</td>
</tr>
<tr>
<td></td>
<td>palette</td>
<td>linked_object_type_cd</td>
</tr>
<tr>
<td></td>
<td>symbol_id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>object_id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: DGMT, KPI, DGM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>xpos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ypos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Adding Reports

You can use tab-delimited files to add a report. Some columns in the tab-delimited files are required and others are optional, as shown in the following tables.

Add a Report Using a URL

You can add a report to a scorecard or metric using the object stage file (p. 164). Type the URL of the report in the URL column.

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: URL)</td>
<td>sort_order</td>
</tr>
<tr>
<td></td>
<td>object_nm</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>url</td>
<td>parent_object_id (indicates home object)</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>

Add a Report Using the Object Link Stage File

You can add a report using the object stage file (p. 164) and then use the object link stage file (.cml) (p. 181) to link the report to a scorecard or metric.
## Chapter 6: Preparing Data for Staging

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmo</td>
<td>object_id</td>
<td>language_cd</td>
</tr>
<tr>
<td></td>
<td>object_type_cd (value: URL)</td>
<td>delete_flag</td>
</tr>
<tr>
<td>.cml</td>
<td>linked_object_id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>linked_object_type_cd (value: KPI, SC, KPICL)</td>
<td></td>
</tr>
</tbody>
</table>

### Create Custom Parameters

<table>
<thead>
<tr>
<th>File</th>
<th>Required columns</th>
<th>Optional columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>.cmp</td>
<td>object_type_cd</td>
<td>delete_flag</td>
</tr>
<tr>
<td></td>
<td>object_id</td>
<td>kpi_indicator_type_id</td>
</tr>
<tr>
<td></td>
<td>parameter_name</td>
<td>kpi_home_sc_id</td>
</tr>
<tr>
<td></td>
<td>parameter_value</td>
<td>kpi.qualifier_id</td>
</tr>
<tr>
<td></td>
<td>created_dt</td>
<td></td>
</tr>
</tbody>
</table>
You can manually create a scorecard structure using IBM® Cognos® Metric Studio (p. 69). Use the manual method for data that does not exist in other sources or for small numbers of scorecards.

We recommend that you use IBM Cognos Metric Designer or an extraction, transformation, and loading (ETL) tool to import large amounts of data. If you use a cube as a data source, you must use Metric Designer.

You must have the appropriate security permissions (p. 101) to create and modify scorecards, metrics, strategy elements, and so on.

**Tip:** Click Set properties under the Details tab to access editing options.

---

### Create a Scorecard

You must create at least one scorecard before you create any metrics. If you create a child scorecard, IBM® Cognos® Metric Studio populates the new scorecard with metrics from the parent scorecard.

For more information about scorecards, see "Scorecards" (p. 17).

Instead of creating a scorecard manually using the steps in this section, you can import it from an external data source using IBM Cognos Metric Designer or an ETL tool and an object stage file (.cmo) (p. 164). For information about which columns to use to create a scorecard, see "Creating a Scorecard and Adding a Metric to a Scorecard" (p. 60).

### Steps

1. At the bottom of the left pane, click Scorecards, click the parent scorecard, and then click the new scorecard button on the toolbar.

2. Click the General tab.

3. Under Language, select a language.

4. In the Name box, type a descriptive name for the scorecard.

5. If you want, in the Description box, type a description of the scorecard.

6. If you want, in the Technical description box, type a technical description, such as information about the data source.

7. If you want to change the owner of the scorecard, do the following:
   - Click Change Owner.
   - On the Navigate tab, click a new owner.

   **Tip:** Alternatively, you can click the Search tab, type all or part of the name of the scorecard owner, and then click the string criterion, the Scope item, Search, and the new owner.
8. Under **Default grouping**, click a type.

   For more information about viewing metrics by strategy, see "Create a Strategy" (p. 89) and "View the Metrics on a Scorecard by Strategy Element" (p. 144).

9. If you want, in the **Identification code** box, type a code for this scorecard.

   If you leave this box blank, Metric Studio automatically generates an identification code.

10. If you want to set security for the scorecard, click the **Permissions** tab and click **Edit**.

    For more information, see "Set Explicit Permissions for a Scorecard, Metric Type, Metric, Strategy, or Strategy Element" (p. 102).

---

### Create a Metric Type

You create metric types to define attributes and calculations for a collection of related metrics. For more information about metric types, see "Metric Types" (p. 18).

A trend indicator in IBM® Cognos® Metric Studio shows the direction of change in the performance of a metric, that is, whether it is improving, staying the same, or getting worse. Trends are determined by comparing performance over time. Trend calculation is a global setting and not set for each metric type. For more information, see "Change Trend Calculation" (p. 108).

### Importing a Metric Type

You can also import a metric type from an external data source using IBM Cognos Metric Designer or an ETL tool and a metric type stage file (.cmm) (p. 172). For information about which columns to use, see "Creating Metric Types and Metrics" (p. 61).

### Status Calculation Methods

Metric Studio determines status by using either a single target and a tolerance or multiple thresholds. In the tolerance-based method, the target determines the point at which the status turns green. The tolerance determines a range above or below the target at which the status is yellow. If you use 5-state status indicators, the tolerance also determines the range for the half-red and half-green states. In the threshold-based method, the target and user-defined columns determine the status color.

### Rollups

A rollup defines how values for actual, target, user-defined column, and tolerance metrics are summarized.

The following table describes the types of rollups.

<table>
<thead>
<tr>
<th>Rollup</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of individual values</td>
<td>The sum of the values for all periods in the current year, quarter, or period.</td>
</tr>
<tr>
<td>Rollup</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Average of individual values</td>
<td>The average of the values for all periods in the current year, quarter, or period.</td>
</tr>
<tr>
<td>Minimum of individual values</td>
<td>The lowest value of any period in the current year, quarter, or period, such as the lowest inventory level.</td>
</tr>
<tr>
<td>Maximum of individual values</td>
<td>The highest value of any period in the current year, quarter, or period, such as the highest inventory level.</td>
</tr>
<tr>
<td>First of individual values</td>
<td>The value of the first period that is not null, such as the opening balance.</td>
</tr>
<tr>
<td>Last of individual values</td>
<td>The value of the last period that is not null, such as the closing inventory level.</td>
</tr>
<tr>
<td>Supplied by client</td>
<td>The values supplied in a .cmv file for one or more periods. Metric Studio calculates scores and trends but does not perform any aggregations or allocations.</td>
</tr>
</tbody>
</table>

**Steps for General Settings**

1. At the bottom of the left pane, click **Metric Types**, and then click the new metric type button on the toolbar.
2. Click the **General** tab.
3. Under **Language**, select a language.
4. In the **Name** box, type a descriptive name for the metric type.
5. If you want, type a description and technical description of the metric type.
6. If you want to change the owner, do the following:
   
   - Click **Change Owner**.
   
   - On the **Navigate** tab, click a new owner.
   
   **Tip:** Alternatively, you can click the **Search** tab, type all or part of the name of the owner, and then click the string criterion, the **Scope** item, **Search**, and the new owner.
7. If you want, in the **Identification code** box, type a code for this metric type. If you leave this box blank, Metric Studio automatically generates an identification code.
8. Under **Default grouping**, click a type.

   For more information about viewing metrics by strategy, see "Create a Strategy" (p. 89) and "View the Metrics on a Scorecard by Strategy Element" (p. 144).
Chapter 7: Creating Scorecard Structures in Metric Studio

9. Under **Calendar Details**, do the following:
   - Click a **Business calendar level** value.
     The level that you choose sets the lowest level at which Metric Studio stores data. For example, if you select quarterly, Metric Studio does not load monthly values.
     If you add a lower calendar period to your calendar, such as adding days to a calendar that contained years and months, you must reload your metric data for the data to be allocated to the new level.
   - Click a **Business calendar level for most recent values view** level.
     The level that you choose sets the level of data that Metric Studio shows in the latest data view. For example, if you choose monthly, Metric Studio shows data for the latest month for which there is a score. If there is no score for the latest month, Metric Studio shows the latest month with actual values. If a metric has no score or actual value, then Metric Studio shows the period based on the last time a score was successfully generated for other metrics. If the metric store has never had scores calculated, then Metric Studio displays **No data**.

10. Under **Number Format**, do the following:
    - **Under Unit**, click the unit of measurement for the metric type.
      If you choose **Currency, General**, or a user-defined unit as the unit of measurement, the default **Tolerance type**, on the **Columns and Calculations** tab, is **Percentage**.
      If you choose **Percent** as the unit of measurement, the default **Tolerance type**, on the **Columns and Calculations** tab, is **Absolute**.
    - **Under Unit Symbol**, click **Display unit symbol** or **Do not display unit symbol**.
      If you choose **Percent** as the measurement, a metric value appears differently depending on whether you choose to display the unit symbol. If you choose to display the unit symbol, the metric value is shown as a percent. If you choose not to display the unit symbol, the metric value is shown as a decimal number. For example, if the metric value is 38 and you have chosen to display the unit symbol, the metric value will be 38%. If you choose not to display the unit symbol, the metric value will be .38.
    - **Under Decimal Places**, click the number of decimal places to show for the metric type.

11. Under **Weight**, type a value for **Default Weight**.
    The weight determines how much influence a metric of this type has in a derived index using the weighted average rollup. The definition of the derived index can override the default weight.

12. Under **History Chart Properties**, do the following:
    - Type the value for **Minimum value**.
    - Type the value for **Maximum value**.
    - If you want, select the **Show zero value** check box.
13. Click OK or continue by specifying how metric values are calculated.

**Steps to Specify How Metric Values Are Calculated**

1. Click the **Columns and Calculations** tab for the metric type that you are creating.

2. Under **Metric type default calculation**, click **No calculation - this value will be loaded or entered**, **Define calculation**, or **Derived index**.

   Metrics created using calculations use mathematical operations to generate a value for actual, target, tolerance, or user-defined columns (p. 77).

   A derived index uses the scores of other metrics to generate a status and a score (p. 75).

3. If you select **Define calculation**, do the following:
   - Click **Edit**.
   - Define the expression for the calculation.
   - Click **OK**.

   **Note:** When you define a calculation for a metric type, the **Columns and Calculations** tab is disabled for each metric that belongs to this metric type.

4. If you select **Derived index**, do the following:
   - Under **Rollup rule**, click the rule that you want to apply to the derived metric type.
     For information about rollup rules in a derived index, see "Derived Index" (p. 75).
   - Click **Add**, and then select the metric types that you want to include.
   - In the **Weight** box for each metric type, specify a number that indicates the relative importance of that metric type in determining the status.
     You must enter a value.

   **Note:** When you define a derived index for a metric type, the **Columns and Calculations** tab is disabled for each metric that belongs to this metric type.

5. If you select **No calculation - this value will be loaded or entered** or **Define calculation** as the metric type default calculation, under **Actual** and **Target**, do the following:
   - Click the **Business calendar rollup calculation** to use.
     Metric Studio rejects data that you load and enter at a level other than the one you specify unless you select **Rollup is supplied by client** and the data entry levels are equal to or greater than the business calendar level for the metric type.
     If you define a calculation for actual, target, tolerance, or user-defined columns, the values for business calendar rollup calculations change to reflect the after rollup and before rollup behaviors of the calculated metric types. The **rollup is supplied by client** value is not available (p. 77).
   - Click a **Business calendar level for loading and entering data** level.
   - Click the type of **Value calculation** to use.
If you select **Define Calculation**, see step 3.

6. If you select **No calculation - this value will be loaded or entered or Define calculation** as the metric type default calculation, under **Tolerance**, do the following:
   - Select the **Tolerance type** to use.
   - Click the **Business calendar rollup calculation** to use.
     For more information, see step 5.
   - Click a **Business calendar level for loading and entering data** level.
   - Click the type of **Value calculation** to use.
     If you select **Define Calculation**, see step 3.

7. If you select **No calculation - this value will be loaded or entered or Define calculation** as the metric type default calculation, under **User Defined Columns**, click any user-defined columns that you want to use to calculate the status of the metrics and set the rollup calculation and value calculation for the column.

8. Click **OK** or continue by specifying performance behavior for the metric type.

**Steps to Specify Performance Behavior**

1. Click the **Status Indicator** tab for the metric type that you are creating.

2. Click a **Performance pattern** value.
   For information about performance patterns, see "Score Calculations" (p. 36) and "Status Indicators" (p. 105).

3. Under **Score Settings**, do the following:
   - Click **Use default score calculation** (p. 105) or **Set target boundaries with user defined values**.
     - If you select **Set target boundaries with user defined values**, you must set the target thresholds that define the status of a metric.
       The available thresholds are either user-defined values (p. 110) or targets.
       In a 3-state environment, from the list of available thresholds, click the criteria for changing the status from red to yellow and from yellow to green.
       In a 5-state environment, from the list of available thresholds, click the criteria for changing the status from green to partially green, from partially green to yellow, from yellow to partially red, and from partially red to red.
   - Click **OK** or continue by setting the metric type security.

**Steps to Set Metric Type Security**

1. Click the **Permissions** tab for the metric type that you are creating.

2. To change or add users, click **Edit**.
Create a Metric

Create a metric to measure performance in a key area of your organization.

You can create three types of metrics:

- metrics for which values are loaded
- derived indexes (p. 75)
- formula-based calculated metrics (p. 77)

Derived Index

A derived index uses the scores of other metrics to generate a status and a score and is useful for:

- tracking the performance of related metrics
- providing a numerical assessment of something that cannot be directly measured
- generating an overall status and score of multiple metrics

When you define a derived index, you also include rollup rules. You specify rules to set the status and score of the metric.

The following table describes the rollup rules and shows the metric status and score that would result from applying each rule. In the examples, IBM® Cognos® Metric Studio defaults determine the status.
Weighted average

Based on the scores and the weights of the impacting metrics. For information about scores, see "Score Calculations" (p. 36). For each impacting metric, multiply its score by its weight, add the results of each calculation, and divide that number by the total weight.

Example: Four impacting metrics, Returns, Complaints, Customer Survey, and Repeat Customer Percentage create a calculated metric named Customer Satisfaction Index. The score, status, and weight for each metric are as follows:

- Returns 5, green, 10
- Complaints 0, green, 5
- Customer Survey -10, red, 20
- Repeat Customer Percentage -1, yellow, 15

The calculation would be \( \frac{(5*10)+(0*5)+(-10*20)+(-1*15)}{50} = \frac{-165}{50} = -3.3. \)

Therefore, the Customer Satisfaction Index is -3.3 and the status is red.

The color depends on where the score falls in relation to the default tolerances.

Min: bubble up red

Based on the scores of the impacting metrics. The color assigned to the minimum score appears for the calculated metric.

Example: The score is -10 and the status is red.

Max: bubble up green

Based on the scores of the impacting metrics. The color assigned to the maximum score appears for the calculated metric.

Example: The score is 5 and the status is green.
<table>
<thead>
<tr>
<th>Rollup</th>
<th>Description</th>
</tr>
</thead>
</table>
| Majority rules      | Based on the status indicators of the impacting metrics. The color assigned to the majority of the impacting metrics appears for the calculated metric, and the score appears instead of an actual value. Example: Because A and B are both green, green is the majority status. Using the majority rules rollup, the equation is 
\[(5 \times 10) + (0 \times 5)\) \div 15 = 3.33 \quad \text{The status is green and the score is 3.3.}

In case of a tie, Metric Studio looks at the weighted average for each group of tied impacting metrics. The color assigned to the lowest weighted average of the tied metrics appears for the calculated metric. The weighted average is used for the score and appears instead of an actual value.

If you use 5-state status indicators, note that dark green is not the same color as light green and each green is counted separately. For example, if there are three dark green indicators, two light green indicators, and four yellow indicators, the four yellow indicators are considered the majority. |

For more information, see "Create a Derived Index Metric" (p. 79).

**Formula-based Calculated Metrics**

Formula-based calculated metrics use mathematical operations to generate a value for actual, target, tolerance, or user-defined columns. You can use other metric types in the calculation. For example, you can define Profit as Revenue - Expenses. The value is always calculated using metrics on the same home scorecard.

You can define a calculation for all the metrics of the same metric type, but the metrics must have the same qualifier or no qualifier at all. When you define a calculation at the metric type level, Metric Studio automatically creates a new metric of this type on all the scorecards that have the metric types used in the calculation. In the previous example, a Profit metric would be created on every scorecard that has both Revenue and Expenses.

If you are creating a small number of metrics, use the steps in this topic.

If you are creating a large number of metrics, you can import them from external sources using tab-delimited files. For information about which columns to use, see "Creating Metric Types and Metrics" (p. 61).

Before you create metrics, make a detailed plan to create the metric types and scorecards that you need.

**Steps**

1. At the bottom of the left pane, click **Scorecards**, and then click the scorecard that will be the home scorecard for the metric that you want to create.

2. Click the **Metrics** tab, and then click the new metric button on the toolbar.
3. On the **General** tab, click **Choose a metric type** to select the metric type to which the metric belongs.

4. Select the qualifier for the metric.
   
   For information about qualifiers, see "Create a Qualifier" (p. 80).

5. Click the language for the metric.

6. Choose the display name of the metric:
   
   - To show the default metric name to users, click **Use default name**.
   
   - To specify a different name, click **Use custom name** and type a name.

7. If you want,
   
   - type a description for the metric
   
   - type a technical description for the metric
   
   - assign an owner to the metric
   
   - type an identification code for the metric

8. Click the **Columns and Calculations** tab, and do the following:

   - Click **Imported data** or **Derived index**.
     
     For information about creating a derived index, see "Create a Derived Index Metric" (p. 79).

   - If you selected **Imported data**, click the import sources for the actual, target and tolerance values.

9. If you want to assign permissions to the metric, click the **Permissions** tab and click **Edit**.

   For more information, see "Set Explicit Permissions for a Scorecard, Metric Type, Metric, Strategy, or Strategy Element" (p. 102).

You can now load the values into staging tables (p. 48), and then load them into the metric store (p. 51).

You can change any metric properties. However, you must have Write permission for the metric.

To change the scorecard where the metric is located, you must have Write permission for the original scorecard and for the scorecard to which you want to move the metric.

**Tip:** To modify an existing metric, click the metric name and click the set properties button under the **Details** tab.
Create a Derived Index Metric

You create a derived index metric when you need a metric which has a status and score based on other metrics.

Steps

1. At the bottom of the left pane, click Scorecards, and then click the scorecard to which you want to add a derived index.

2. In the right pane, click the Metrics tab, and then click the new metric button on the toolbar.

3. On the General tab, click Choose a metric type to select the metric type to which the metric belongs.
   
   Note: If you select a metric type that is defined as a derived index, the Columns and Calculations tab is disabled.

4. Select the qualifier for the metric.
   
   For information about qualifiers, see "Create a Qualifier" (p. 80).

5. Click the language for the metric.

6. Choose the display name of the metric:
   
   • To show the default metric name to users, click Use default name.
   
   • To specify a different name, click Use custom name and type a name.

7. If you want,
   
   • type a description for the metric
   
   • type a technical description for the metric
   
   • assign an owner to the metric
   
   • type an identification code for the metric

8. Click the Columns and Calculations tab. Under Import source method, click Derived index.

9. Under Rollup rule, click the rule that you want to apply to the derived metric.
   
   For information about rollup rules in a derived index, see "Derived Index" (p. 75).

10. Click Add, and then select the metrics that you want to include in the derived metric.

11. In the Weight box for each metric, specify a number that indicates the relative importance of that metric in determining the status.

12. If you want to assign permissions to the metric, click the Permissions tab and click Edit.
   
   For more information, see "Set Explicit Permissions for a Scorecard, Metric Type, Metric, Strategy, or Strategy Element" (p. 102).
You must now recalculate metric values using the **Recalculate metric store derived values** metric maintenance task in IBM® Cognos® Connection. For more information, see the IBM Cognos Administration and Security Guide.

**Create a Qualifier**

A qualifier is a label that distinguishes two metrics of the same metric type on the same scorecard. For example, a qualifier distinguishes between two revenue metrics on a scorecard. One metric is for services revenue and one metric is for product revenue. The metrics are Europe Revenue Services and Europe Revenue Products.

**Steps**

1. In the **Tools** list, click **Qualifiers**.
2. Click **New**.
3. Click the **General** tab.
4. Click a language.
5. In the **Qualifier Name** box, type a descriptive name for the qualifier.
6. If you want, in the **Identification Code** box, type a code to identify the qualifier.
7. To view the list of all metrics that use this qualifier, click the **Metrics** tab.
8. Click **OK**.

**Tip:** To modify an existing qualifier, click the set properties button next to the qualifier.

**Add Metric Shortcuts to a Scorecard**

The metrics that you add act as a filter on the scorecard. The metrics measure a specific area in the organization or a subgroup in the organization, such as a product range or a geographical unit. You must first create the metrics (p. 75).

**Steps**

1. At the bottom of the left pane, click **Scorecards**, and then click the scorecard to which you want to add metric shortcuts.
2. Click the **Metrics** tab.
3. On the toolbar, click the add shortcuts to metrics button to add a specific metric. The **Select metrics** window appears.
4. Click the scorecard or metric type that contains the metrics.
5. Click the metrics.
Viewing and Modifying Metrics and Scorecards

You can view and modify each metric in the scorecard or metric type to which it belongs.

You can perform the following actions on scorecards and metrics.

<table>
<thead>
<tr>
<th>Action</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy a scorecard to another scorecard</td>
<td>Creates a new scorecard, with no link to the original scorecard</td>
</tr>
<tr>
<td>Move (cut and paste) a scorecard</td>
<td>Changes the location of the parent scorecard</td>
</tr>
<tr>
<td>Delete a scorecard</td>
<td>Deletes the scorecard</td>
</tr>
<tr>
<td>Delete a metric</td>
<td>Removes the metric from the parent scorecard</td>
</tr>
</tbody>
</table>

Add Reports in Metric Studio

You can add reports to metrics and scorecards to provide additional information and analysis to users. If you use IBM® Cognos® Metric Designer to load data from a cube data source, a report is automatically associated with each metric that you create. If the metric data source is not a cube, you can specify a report by linking your metric type or metric to an IBM Cognos BI report that is based on a cube data source, or to a URL. You can provide parameters that pass metric, metric type, scorecard, and period information from IBM Cognos Metric Studio to other applications.

You can associate a report with the following objects:

- scorecards
- metric types
- metrics
- projects
- actions

You can link several reports to each Metric Studio object, such as scorecards or metrics. One report appears in the main frame in the window. If you specify more than one report, the one designated as the default appears in the main frame when you click the Reports tab. The others are listed in the frame below the main frame. You can click any other report in the list to show it in the main frame. You can also click the order reports button on the toolbar to sort the reports so that the most important report appears first in the list and always appears first in the main frame.

For security purposes, each report is assigned to a home scorecard, metric type, strategy, project, action, or metric. You can edit the report only if you have permissions for the home scorecard, metric type, or metric.

A report for a scorecard can be inherited by all the scorecards under it. It is not inherited by the metric types or metrics that belong to those scorecards.
A report for a metric type can be inherited by all the metrics under it, with one exception. In the case of predefined reports, for a metric that has a different cube as a data source or a different view of the cube, the revised report applies only to that metric.

Metric Studio provides a set of predefined reports that are available through IBM Cognos Connection.

**Steps for an Existing IBM Cognos BI Report**

1. Choose the object for which you want to add an existing report:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click **Scorecards**, **Metric types**, or **Strategies**.
   - For a metric, in the bottom left pane, click **Scorecards**, click the scorecard, click the **Metrics** tab, and then click the metric.
   - For a project, click the scorecard for which you want to create a report, click the **Projects** tab, and then click the project.
   - For an action, click the scorecard for which you want to create a report, click the metric, click the **Actions** tab, and then click the action.

2. Click the **Reports** tab.

3. Click the add IBM Cognos BI report button.

4. On the **Navigate** tab, click the folder containing the report, and then click the report.
   
   **Tip:** You can also click the **Search** tab and type all or part of the report name, click the string criterion, click the **Scope** item, click **Search**, and then click the report.

After you add an IBM Cognos BI report, you can set report parameters manually (p. 84) or by using the user interface (p. 87).

**Steps for a New Non IBM Cognos BI Report**

1. Choose the object for which you want to create a report:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click **Scorecards**, **Metric types**, or **Strategies**.
   - For a metric, in the bottom left pane, click **Scorecards**, click the scorecard, click the **Metrics** tab, and then click the metric.
   - For a project, click the scorecard for which you want to create a report, click the **Projects** tab, and then click the project.
   - For an action, click the scorecard for which you want to create a report, click the metric, click the **Actions** tab, and then click the action.

2. Click the **Reports** tab.

3. Click the new report button.
4. Click the language for the metric.

5. In the **Name** box, type a name for the report.

6. If you want, in the **Description** box, type a description of the report.

7. In the **URL** box, type the URL for the document.

8. If you want the report to be inherited, select the **Show this report on lower-level scorecards** check box.

**Steps for an Existing Non IBM Cognos BI Report**

1. Choose the object for which you want to add an existing report:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click **Scorecards**, **Metric types**, or **Strategies**.
   - For a metric, in the bottom left pane, click **Scorecards**, click the scorecard, click the **Metrics** tab, and then click the metric.
   - For a project, click the scorecard for which you want to create a report, click the **Projects** tab, and then click the project.
   - For an action, click the scorecard for which you want to create a report, click the metric, click the **Actions** tab, and then click the action.

2. Click the **Reports** tab.

3. Click the add existing report button.

4. Click the object that contains the report that you want to add.

5. Choose the report:
   - On the **Navigate** tab, if you chose scorecards, metric types, or strategies, click the item that contains the report, and then click the report.
   - If you chose reports, on the **Navigate** tab, click the reports.

   **Tip:** You can also click the **Search** tab and type the name of the report. If you want, click **Advanced options** and, in the **Search in** box, click a value, in the **Owned by** box, type the owner of the report or click **Anonymous**, and click **OK**. Click the one that you want.

**Change the Properties of an IBM Cognos BI Report**

You can change the properties of an IBM® Cognos® BI report that was added to a scorecard, metric type, metric, strategy, project, or action.

You can change the name of the report to make it more descriptive. You can also change the description of the report or, where available, the identification code for the report.

You can change and test the URL parameters used by the report. For information about report parameters and custom parameters, see "Report Parameters" (p. 84).
For a report that is added to a scorecard, you can select the **Show this report on lower-level scorecards** check box for the report to be inherited down the scorecard hierarchy.

**Steps**

1. Choose the object that contains the report you want to change:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click **Scorecards**, **Metric Types**, or **Strategies**.
   - For a metric, in the bottom left pane, click **Scorecards**, click the scorecard, click the **Metrics** tab, and then click the metric.
   - For a project, click the scorecard for which you want to modify a report, click the **Projects** tab, and then click the project.
   - For an action, click the scorecard for which you want to modify a report, click the metric, click the **Actions** tab, and then click the action.

2. Click the **Reports** tab.

3. Click the set properties button in the **Actions** column.

4. Change the properties as required.

**Report Parameters**

So that users can browse to related reports in context, you can include parameters in a URL that pass scorecard, metric, and period information from IBM® Cognos® Metric Studio to other applications, such as a report viewer. You can also use the user interface to specify how parameters are passed to a report (p. 87).

The parameters that you can use depend on where you are in Metric Studio. Some parameters apply to metrics, metric types, and scorecards.

You must enclose the parameter name in square brackets.

The parameters in the following table are available on metric, metric type, and scorecard pages.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[year]</td>
<td>Example: 2003</td>
</tr>
<tr>
<td>[period]</td>
<td>Period number</td>
</tr>
<tr>
<td></td>
<td>Examples: 5 for May, 51 for week 51 in a weekly calendar</td>
</tr>
<tr>
<td>[rollup]</td>
<td>Rollup type</td>
</tr>
<tr>
<td></td>
<td>Values: P (Period), Y (ytd), Q (qtd), M (month), W (week)</td>
</tr>
<tr>
<td>[currency]</td>
<td>Example: USD for United States dollars</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>[content_lang]</td>
<td>Example: EN for English</td>
</tr>
<tr>
<td>[prod_lang]</td>
<td>Example: EN for English</td>
</tr>
<tr>
<td>[pageid]</td>
<td>Unique ID for a page so that the content can be modified based on what the user is looking at. Examples: analyze_report for a report page, kpi_details for a metric page</td>
</tr>
<tr>
<td>[user]</td>
<td>User name</td>
</tr>
<tr>
<td>[sid]</td>
<td>Unique ID of the object that owns the URL</td>
</tr>
<tr>
<td>[extid]</td>
<td>External ID of the object that owns the URL. Examples: metric identification code, metric type identification code, scorecard identification code</td>
</tr>
<tr>
<td>[ctx_sid]</td>
<td>Unique ID of the object in the current context</td>
</tr>
<tr>
<td>[ctx_extid]</td>
<td>External ID of the object in the current context</td>
</tr>
</tbody>
</table>

The parameters in the following table are available for reports for metrics.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[metric_sid]</td>
<td>Unique ID of the metric</td>
</tr>
<tr>
<td>[metric_extid]</td>
<td>External ID of the metric</td>
</tr>
<tr>
<td>[sc_sid]</td>
<td>Unique ID of the last scorecard that you navigated to or of the home scorecard if there was no navigation</td>
</tr>
<tr>
<td>[sc_extid]</td>
<td>External ID of the last scorecard that you navigated to or of the home scorecard if there was no navigation</td>
</tr>
<tr>
<td>[type_sid]</td>
<td>Unique ID of the metric type of the metric</td>
</tr>
<tr>
<td>[type_extid]</td>
<td>External ID of the metric type of the metric</td>
</tr>
</tbody>
</table>

The parameters in the following table are available for reports for metric types.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[type_sid]</td>
<td>Unique ID of the metric type</td>
</tr>
</tbody>
</table>
The parameters in the following table are available for reports for scorecards.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[type_extid]</td>
<td>External ID of the metric type</td>
</tr>
<tr>
<td>[sc_sid]</td>
<td>Unique ID of the scorecard</td>
</tr>
<tr>
<td>[sc_extid]</td>
<td>External ID of the scorecard</td>
</tr>
</tbody>
</table>

**Examples**

On a scorecard, you want to create a URL that references an IBM Cognos PowerPlay® report named Strategic Initiative. You type the following:

```
www.company.com/scorecard.docs/[sc_extid].ppt
```

This becomes `www.company.com/scorecard.docs/StrategicInitiative.ppt`.

On a metric, you want to create a URL that references a Web report named EPS for the year 2003. You type the following:

```
www.company.com/[metric_extid][year].html
```

This becomes `www.company.com/EPS2003.html`.

On a scorecard, you want to create a URL that references an IBM Cognos BI report named Sales Details. You type the following:

```
xts&method=execute&cm_obj=/content/package[@name='cmmpackage']/report[@name='Sales
Details']&p_region=[sc_extid]&p_year=[year]&p_month=[period]
```

This becomes `http://hostname/ibmcognos/cgi-bin/cognos.cgi?b_action=xts.run&m=portal/report-
viewer.xts&method=execute&cm_obj=/content/package[@name='cmmpackage']/report[@name='Sales
Details']&p_region=Europe&p_year=2003&p_month=08`

**Custom Parameters**

Use custom parameters to associate your own attributes with a scorecard or metric.

For example, you stage the following parameters. Note that the same parameter name was assigned to different object types.

<table>
<thead>
<tr>
<th>Object_type_cd</th>
<th>Object_ID</th>
<th>Parameter_name</th>
<th>Parameter_value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC</td>
<td>Scorecard1</td>
<td>custom</td>
<td>country</td>
</tr>
<tr>
<td>KPI</td>
<td>Metric1</td>
<td>custom</td>
<td>city</td>
</tr>
</tbody>
</table>
Use the prefixes ctx_ (current context), metric_, sc_ (scorecard), and type_ (metric type) to distinguish them.


Specify How Prompt Values Are Inserted for an IBM Cognos BI Report

Each prompt requires a response. After you add an IBM® Cognos® BI report (p. 81) to scorecards, metric types, metrics, strategies, projects, or actions in IBM Cognos Metric Studio, you can specify how values for report prompts are inserted into the report.

Steps
1. Choose the object to which the report is added:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click Scorecards, Metric types, or Strategies.
   - For a metric, in the bottom left pane, click Scorecards, click the scorecard, click the Metrics tab, and then click the metric.
   - For a project, click the scorecard, click the Projects tab, and click the project.
   - For an action, click the scorecard, click the metric, click the Actions tab, and then click the action.

2. Click the Reports tab.

3. In the Actions column next to the report for which you want to specify prompt values, click the set parameters button.

   The list of prompts in the report appears.

4. For each prompt, choose how to specify prompt values:
   - To use a Metric Studio object, click Use a metric item as the method, and then click one of the available Metric Studio objects.
     The value of the object shown in the report depends on the context of the report. For example, if the report uses Scorecard SID, the Scorecard SID will change depending on the scorecard from which the report was run.
   - To use an explicit value in the report, click Use a value as the method, and then type the value to be used.

     This value is used on all instances of this report. For example, if you set the value for year to 2006, the year 2006 will be used each time the report is run.
To have the user supply the value when running the report, click Use a prompt as the method.

Modify an IBM Cognos BI Report

You can add reports (p. 81) to metrics and scorecards to provide additional information and analysis to users. If the report is an IBM® Cognos® BI report, you can open and modify the report in the studio in which it was created.

To open a report, you must have access to the studio and the appropriate security permissions. For information about security, see the IBM Cognos Administration and Security Guide.

Steps

1. Choose the object to which the report is added:
   - For a scorecard, metric type, or strategy, in the bottom left pane, click Scorecards, Metric types, or Strategies.
   - For a metric, in the bottom left pane, click Scorecards, click the scorecard, click the Metrics tab, and then click the metric.
   - For a project, click the scorecard, click the Projects tab, and then click the project.
   - For an action, click the scorecard, click the metric, click the Actions tab, and then click the action.

2. Click the Reports tab.

3. In the Actions column next to the report that you want to modify, click the button for the studio in which the report was created.

<table>
<thead>
<tr>
<th>Button</th>
<th>Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td>![icon]</td>
<td>IBM Cognos Report Studio</td>
</tr>
<tr>
<td>![icon]</td>
<td>IBM Cognos Query Studio</td>
</tr>
<tr>
<td>![icon]</td>
<td>IBM Cognos Analysis Studio</td>
</tr>
</tbody>
</table>

4. Modify the report as required.

   For more information, see the Report Studio User Guide, the Query Studio User Guide, or the Analysis Studio User Guide.

Organizing Metrics by Strategy

Use strategies to provide users with perspective about the metrics that they monitor. For more information, see "Strategies" (p. 19).
To organize your metrics, perform these actions in the following order:

- Create a strategy (p. 89).
- Create strategy elements (p. 90).
- Add metrics to the strategy elements (p. 91).
- Add comments to the strategy elements (p. 92).
- Add projects to the strategy elements (p. 92).

Create a Strategy

A strategy consists of a collection of strategy elements.

For example, a balanced scorecard includes four perspectives named Financial, Customer, Internal, and Learning and Growth. First, you create a strategy named Perspectives and then you create one strategy element under it for each perspective.

You can specify how strategies appear in the IBM® Cognos® Metric Studio user interface by choosing

- how to show the status for a strategy
  For example, you can choose to show status indicator counts on each strategy element. Strategy element status is calculated from all the metrics included in that strategy element and is based on the calculation method that you select.
- whether to show or hide metrics that are not included in any strategy element
- whether to expand or collapse strategy elements by default when metric views are first opened
- how to show strategy elements on a diagram
  For example, you can choose to show strategy elements as ovals, rectangles, or rounded rectangles. You can also choose to show the status of a strategy element by the background color of the shape.

Steps

1. At the bottom of the left pane, click Strategies, and then click the new strategy button on the toolbar.
2. Click the General tab.
3. Click a language.
4. In the Name box, type a descriptive name for the strategy.
5. If you want, in the Identification code box, type an identification code.
   If you leave this box blank, Metric Studio automatically generates an identification code.
6. Under Display options, select one of the following options.
### Create a Strategy Element

A strategy element organizes metrics strategically. A strategy element is organized under a strategy. For example, in a balanced scorecard environment, you create a strategy named Perspectives and you create four strategy elements under it: Financial, Customer, Internal, and Learning and Growth. You assign metrics and metric types to a strategy element according to the business case that can be made for it. All the metrics that a metric type contains are added to the strategy element.

Each metric can appear under multiple strategy elements. For example, a customer count metric can appear under both the Financial strategy element and the Customer strategy element.

Metric Studio automatically generates a strategy element named Other metrics to hold any metrics that are not assigned to a defined strategy element.

### Steps

1. At the bottom of the left pane, click Strategies, and then click the strategy to which you want to add a strategy element.
2. Click the new strategy element button on the toolbar.

3. Click the General tab.

4. Click a language.

5. In the Name box, type a descriptive name for the strategy element.

6. If you want, type a description and technical description of the strategy element.

7. If you want, in the Identification code box, type an Identification code for this strategy element.
   If you leave this box blank, Metric Studio automatically generates an identification code.

8. Under Status calculation, click the rule to use when calculating the status of the strategy element.

<table>
<thead>
<tr>
<th>Goal</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not calculate the status</td>
<td>No Status</td>
</tr>
<tr>
<td>Use scores and the weights of the impacting metrics.</td>
<td>Weighted average</td>
</tr>
<tr>
<td>The status is calculated for each impacting metric by multiplying its score by its weight, adding the results of each calculation, and dividing that number by the total weight.</td>
<td></td>
</tr>
<tr>
<td>Show the color assigned to the minimum score of the impacting metrics.</td>
<td>Min: bubble up red</td>
</tr>
<tr>
<td>Show the color assigned to the maximum score of the impacting metrics.</td>
<td>Max: bubble up green</td>
</tr>
<tr>
<td>Show the color assigned to the majority of impacting metrics.</td>
<td>Majority rules</td>
</tr>
</tbody>
</table>

9. If you want to set security for the strategy element, click the Permissions tab and click Edit.
   For more information, see "Set Explicit Permissions for a Scorecard, Metric Type, Metric, Strategy, or Strategy Element" (p. 102).

Add Metrics to a Strategy Element

You add metrics to a strategy element to organize the metrics. You add metrics to a strategy element by choosing a metric type. All the metrics within that metric type are added to the strategy element. For example, you create an objective named Grow Customer Base. One of the metric types you want to include is Number of Accounts. When you add this metric type, all the metrics associated with it are included in the objective.
You must first create the metrics (p. 75).

**Steps**
1. At the bottom of the left pane, click **Strategies**, and then click the name of the strategy element to which you want to add metrics.
2. Click the **Metrics** tab.
3. In the right pane, click the specify the metrics and metric types that can be displayed by this strategy element button.
4. Click Add.
5. Click the scorecard or metric type that contains the metrics.
6. Click the metrics.

### Add Comments to a Strategy Element

You can use comments to communicate information about strategy elements.

If multiple comments exist for a strategy element, Metric Studio shows the comment with the highest level of importance.

**Steps**
1. Click the strategy element for which you want to add a comment.
2. Click the add or view a comment button and complete the **Subject** and **Body** boxes.
3. If you want to specify an importance level, click either the Importance: High or Importance: Low button.
4. If you want, in the **Identification code** box, type an identification code.
   If you leave this box blank, Metric Studio automatically generates an identification code.
5. If you want, choose to display the comments from all time periods by selecting the Include all time periods check box.
6. If you want to refresh the comment, click the refresh comments button.

### Add Projects to a Strategy Element

You can use projects to track activities related to strategy elements.

For more information about projects, see "Tracking Projects" (p. 150).

**Steps**
1. At the bottom of the left pane, click **Strategies**.
2. Click the name of the strategy element for which you want to add a project.
3. Click the **Projects** tab.
4. Click the new project button.

5. Specify the scorecard where this project will be located.

6. In the Name box, type a descriptive name for the project.

7. If you want, in the Description box, type a description of the project.

8. Next to Owner, click Change owner and select the user who owns the project.

9. Next to Critical Success Factor, click Change metric to navigate to and select the metric that monitors the success of the project.

10. Under Progress, select a planned start date and a planned finish date.

Diagrams

You can use diagrams to monitor status using a predefined visual representation such as a process diagram or strategy map.

Note: You can create or edit diagrams in the Microsoft® Internet Explorer Web browser only. You can however view them in the Mozilla Firefox Web browser.

Impact Diagrams

Impact diagrams show cause-and-effect relationships between metrics. IBM® Cognos® Metric Studio creates a default impact diagram for each metric and metric type.

Custom Diagrams

Custom diagrams include the following types:

- strategy maps
  Show the metrics that are important to various aspects of your organization, such as Financial, Customer, Internal, and Learning and Growth. A strategy map is usually based on a scorecard.

- geographical maps
  Show different focuses of your organization on fixed regions, such as inventory or cost metrics in North America or Europe. A geographical map is usually based on a metric type.

- process diagrams
  Show metrics in the context of a process flow. A process diagram is usually based on a scorecard.

Inherited Diagrams

Inherited diagrams can appear in multiple contexts, such as different scorecards within a hierarchy. The objects on inherited diagrams are not specific metrics. The objects are classes of objects, such as metric types and scorecards.

An inherited diagram on a scorecard is inherited by all the scorecards that belong to it.

Inherited diagrams for scorecards contain metric types or strategy elements placed on a background as placeholders. When you create an inherited diagram for a scorecard, you specify that it is to be
inherited by all the scorecards in the hierarchy. After you create the scorecard inherited diagram, you link it to the other scorecards in the hierarchy. When the inherited diagram appears for a particular scorecard in the hierarchy, metrics on that scorecard replace the metric type placeholders and strategy elements replace the strategy element placeholders on the diagram.

For example, you have a scorecard named Global with two scorecards that belong to it named Sales - Asia and Sales - Europe. You create a scorecard inherited diagram for the Global scorecard that includes the metric types Revenue - Global and Sales - Global, designate it as inherited, and link it to the Sales - Asia and Sales - Europe scorecards. For the Sales - Asia scorecard, this diagram shows the metrics that belong to Sales - Asia, such as Quantity - Asia. For the Sales - Europe scorecard, this diagram shows the metrics that belong to Sales - Europe, such as Quantity - Europe.

An inherited diagram for a metric type consists of scorecards arranged on a background. When Metric Studio shows the inherited diagram on a particular metric type, metrics of that metric type replace the scorecard placeholders.

You can associate a diagram with an existing scorecard, metric type, metric, diagram, or strategy element.

Metric Studio supports multiple diagrams. If you specify more than one diagram, the one designated as the default appears in the main frame when you click the Diagrams tab. The other diagrams are listed under the main frame. You can click a diagram in the list to show it in the main frame.

Tip: Click the order diagrams button on the toolbar to sort the diagrams so that the most important one appears first in the list and always appears first in the main frame.

For security purposes, each diagram is assigned to a home scorecard, metric type, or metric. You can edit the diagram only if you have appropriate permissions for the home scorecard, metric type, or metric.

Although diagrams do not have security associated with them, your permissions specify what you can see on a diagram.

There are different view permissions:

- **scorecard**
  You can view the scorecard diagram, even if it is inherited from a parent scorecard.

- **metric type**
  You can view the metric type diagram.

- **metric**
  You can view the metric diagram, even if it is inherited from the metric type.

A diagram shows only the metrics that you have the necessary permissions to view. Because a diagram may be shared with items that you do not have permissions to view, the items that appear on a diagram may be only a partial list.

**Modify an Impact Diagram**

The status of one metric may affect one or more other metrics.
For example, the status of the Discount Percentages metric is red, which means that it is outside the acceptable target range. The diagram shows that Order Fulfillment, one of the metrics that affects Discount Percentages, also has a status of red. You now know which area of your business must improve before Discount Percentages can improve.

You can use an impact diagram to show the relationship between metrics. By seeing how one metric affects another, scorecard users can explore the metrics that are having the greatest effect on results. Because you can use only existing metrics on a diagram, create the metrics (p. 75) before you create an impact diagram.

**Steps**

1. For the metric that you want to use, click the **Diagrams** tab.
2. In the **Actions** column, click the edit diagram button.
3. If you want to add metrics that impact the current metric, use the **Search** tab to find the metric, or do the following:
   - Click the add impacting metrics button on the toolbar.
   - Click the **Navigate** tab.
   - Click **Scorecards** or **Metric types**.
   - Click the scorecard or metric type.
   - Click the metrics.
   - Click **OK**.
   
The **Diagram editor** window reappears, showing the items that you chose.
4. If you want to add metrics that are impacted by the current metric, use the **Search** tab to find the metric, or do the following:
   - Click the add impacted metrics button on the toolbar.
   - Click the **Navigate** tab.
   - Click **Scorecards** or **Metric types**.
   - Click the scorecard or metric type.
   - Click the metrics.
   - Click **OK**.
5. When the **Diagram editor** window reappears, do the following:
   - Drag the items to where you want them on the diagram.
   - Use the drawing tools on the toolbar to complete the diagram, and click **OK**.
Create a Custom Diagram

Create a custom diagram to combine layers, such as backgrounds and status lights, into an interactive graphic. A diagram provides information such as which metrics affect other metrics or are affected by them, trends indicated by the metrics, and the current situation in a particular location.

For example, a metric type named Asia Revenue uses a map of the sales territories for the Pacific region. The status of each territory is represented by a separate status metric.

IBM® Cognos® Metric Studio includes backgrounds that you can add to your diagram. Use a graphics package to create customized backgrounds. Before the backgrounds can appear in the printed output, you must install them in `c10_location\webapps\p2pd\WEB-INF\cmm\images\` diagrams.

Steps
1. At the bottom of the left pane, click Scorecards or Metric types, and then click an object.
2. On the Diagrams tab, click the new diagram button.
3. On the General tab, click a language.
4. In the Name box, type a descriptive name for the diagram. If you want, in the Description box, type a description of the diagram.
5. Click a Status indicator style.
6. For a scorecard diagram, select or clear the Show this diagram on lower-level scorecards check box.
   If you select this check box, the diagram appears for every metric associated with the scorecard or metric type that the diagram is based on.
7. Click OK.
   The Diagram editor window appears.
8. If you want a background image, click the background image button and click an image.
9. If you want to add specific metrics, click the add shortcuts to metrics button on the toolbar, and click the metrics.
10. If you want to add metric placeholders, click the add metric placeholder button on the toolbar, and click the metrics.
    On a scorecard diagram, metric placeholders are metric types.
    On a metric type diagram, metric placeholders are scorecards.
11. If you want to add a shortcut to a strategy element, do the following:
    - Click the add shortcuts to strategy element button on the toolbar.
    The Select Strategy Elements window appears.
• On the Navigate tab, click the strategy element, or go to the scorecard that contains the strategy element and click it.

• Click OK.

12. If you want to add a strategy element placeholder, do the following:

• Click the add strategy element placeholder button on the toolbar.

  The Select Strategy Elements window appears.

• On the Navigate tab, click the strategy element, or go to the scorecard that contains the strategy element and click it.

• Click OK.

13. When the Diagram editor window reappears, do the following:

• Drag the items that you chose to where you want them on the diagram.

• Use the drawing tools on the toolbar to complete the diagram.

• If you want to add a link to another diagram, click the add link to diagram button, click the diagram, and click OK twice.

---

Add a Custom Diagram to a Scorecard, Metric Type, or Metric

You can add diagrams to scorecards, metric types, or metrics to reinforce the strategic goals associated with selected metrics.

When you add a diagram, it appears in the lower pane of the main window.

**Steps**

1. Choose the object to which you want to add a custom diagram:

   • To add it to a scorecard, in the bottom left pane, click Scorecards and click the scorecard.

   • To add it to a metric type, in the bottom left pane, click Metric types and click the metric type.

   • To associate an existing diagram with a metric, click the Metrics tab and click the metric.

2. Click the Diagrams tab.

3. Click the associate existing diagram button on the toolbar.

4. Click Diagrams.

5. On the Navigate tab, click the diagram.

  Tip: Click the Search tab, type the name of the diagram, select advanced options if you want, click Search, and then click the item.
Chapter 7: Creating Scorecard Structures in Metric Studio

Add or Delete a Metric from a Diagram

You can add metrics to the default impact diagram or to a custom diagram that you previously created. You can also delete metrics from a diagram.

Note that when you delete metrics from a diagram, you do not delete them from the metric store.

Steps

1. At the bottom of the left pane, click Scorecards, and then click the scorecard that contains the metric.

2. Click the Metrics tab and, from the list, click the metric.

3. Click the Diagrams tab.

4. Click the edit diagram button.

5. If you want to add a metric to an impact diagram use the Search tab to find the metric, or do the following:
   - Click the add impacting metrics button or the add impacted metrics button on the toolbar.
   - Click the Navigate tab.
   - Click Scorecards or Metric types.
   - Click the scorecard or metric type.
   - Click the metrics.
   - Click OK.

6. If you want to add a metric to a custom diagram use the Search tab to find the metric, or do the following:
   - Click the add shortcut to metric button.
   - Click the Navigate tab.
   - Click Scorecards or Metric types.
   - Click the scorecard or metric type.
   - Click the metrics.
   - Click OK.

7. If you want to delete a metric from a diagram, click the icon for the metric, and click the delete button.
Create a Background Image File

You can add to the selection of background images by creating your own. For example, you can create a background map of Milan and use it to identify retail outlets in that city.

Steps

1. Use a graphics application to create a .gif or .jpg file.
   To avoid uneven resizing, we recommend that you use .gif files and 600x600 pixels.
2. Paste the image file into \c10_location\webapps\p2pd\WEB-INF\cmm\images\diagrams.
Chapter 8: Security and Permissions

IBM® Cognos® Metric Studio uses the security model for IBM Cognos BI to authenticate users. For more information, see the IBM Cognos Administration and Security Guide.

You can set security at the application level to control who can load data and who can change the way the application works.

You can also control the permissions that users, groups, or roles have for Metric Studio objects such as scorecards and metrics.

**Application Security**

You set Metric Studio application security in IBM Cognos Connection.

To administer a Metric Studio application, you must be a member of a function that has permissions to assign content permissions or run Metric Maintenance options. By default, the Metric Studio Administration function has these permissions.

Members of the Metric Studio Administration function can

- run importing and exporting options in IBM Cognos Connection
- define data sources
- create and edit diagrams and documents
- have unrestricted access to all scorecards, metric types, and metrics

By default, the Metrics Users role, Metrics Authors role, and the Metrics Administrators role are mapped to the Metric Studio function. The Metrics Authors role and the Metrics Administrators role are also mapped to the Metric Studio/Edit View Administration function. For more information, see the IBM Cognos Administration and Security Guide.

If you want to specify an administrator function other than the Metric Studio Administration function, we recommend that you change the default setting during the initial installation and configuration. If you specify a different administrator function, after you create scorecards, you may change the way objects appear for some users. For more information, see the IBM Cognos Installation and Configuration Guide.

Users must have Read, Execute, and Traverse permissions to open Metric Studio using the link on the Welcome page or in IBM Cognos Connection.

**Permissions for Scorecards, Metric Types, Metrics, Strategies, and Strategy Elements**

You use permissions to secure your organization’s data and give users access to only the information they require to do their jobs. For example, a sales manager may need the ability to update sales target information for each sales representative but each sales representative should only be able to view sales target information. In this case, the sales manager needs Write target permission for the sales target metric and each sales representative needs Read permission.
When you use the Metric Studio user interface to apply permissions to scorecards and objects on scorecards, each security policy is inherited down the scorecard tree until a policy with opposing permissions is reached.

When you stage permissions using the metrics store staging tables, policies are inherited only until any another policy is found. For example, if one user is granted permissions on a top level scorecard, and a different user is granted permissions on a scorecard two levels down, you must also explicitly grant permissions on the scorecard two levels down.

**Redefine Owner Permissions**

In IBM® Cognos® Metric Studio, you can redefine the owner permissions that were set by IBM Cognos BI so that the permissions have a different meaning in your application. However, for most Metric Studio applications, you are not required to do this.

You can specify whether scorecard, metric type, metric, and strategy element owners automatically have Read, Write, Set policy, or No (deny) permissions for the scorecards, metric types, metrics, and strategy elements they own. By default, users have Read permissions for the items they own.

**Steps**

1. In the Tools list, click **Security**.

2. For **Permissions Granted to Owners**, select the permissions that will be automatically granted to the scorecard or metric owner.

**Set Explicit Permissions for a Scorecard, Metric Type, Metric, Strategy, or Strategy Element**

You can change permissions by granting and denying access to scorecards, metric types, metrics, strategies, and strategy elements.

The permissions that you can set are as follows:

- Read
- Write
- Set policy
- Read comments
- Write comments
- Write projects
- Write actual values
- Write target values
- Write tolerance values
Write user-defined column values

Steps
1. Click the Details tab of the scorecard, metric type, metric, strategy, or strategy element for which you want to set permissions.
2. Click the set properties button.
3. Click the Permissions tab.
4. Click Edit.
5. If you want changes to permissions to apply to all entries below this level, select the Replace policies on lower-level entries with these policies check box.
6. If you want to change permissions for a specific user, group, or role, do the following:
   • Select the check box next to the user, group, or role that you want to change.
   • Select the Grant or Deny check boxes, as required.
   • Click Apply.
7. Repeat step 6 for each user, group, or role whose permissions you want to change.
8. If you want to add a user, group, or role, do the following:
   • Click Add.
     Tip: To search for entries, click Search and in the Search for box, type the phrase you want to search for.
   • Click the appropriate namespace, and then select the check boxes next to the users, groups, or roles that you want.
9. If you want to remove a user, group, or role, select the check box next to the user, group, or role that you want, and click Remove.
   Tip: To select all users, groups, or roles, click Select all.

Specify the Metric Store Administrator

You can specify the user, group, or role that has administrative privileges on the metric store. You can also set which actions each administrator can perform. For example, you may want only some administrators to be able to load data.

Steps
1. In the Tools list, click Security.
2. Under the Metric store administrator heading, click Edit and do the following:
   • If you want to add a user, group or role as an administrator, click Add, click the appropriate namespace, and then select the check boxes next to the users, groups, or roles.
Tip: To search for entries, click **Search** and in the **Search for** box, type the phrase you want to search for.

- If you want to remove a user, group, or role from being an administrator, click **Remove**.
  
  **Tip**: To select all administrators, click **Select all**.

3. Select the administrator that you want to specify.

4. If you want to specify which actions administrators can perform, do the following:

   - Select the check box next to the administrators that you want to modify.
   - Select the **Grant** or **Deny** check boxes, as required.
   - Click **Apply**.
Chapter 9: Customizing the User Experience

In IBM® Cognos® Metric Studio, you can customize the visual presentation of metric information for your users. For example, you can change how the above and below target results appear and how trends are indicated. You can also specify how users explore metric information by customizing the data links attached to items in Metric Studio.

You specify which languages are available in Metric Studio using IBM Cognos Configuration. For information about specifying languages, see the IBM Cognos Installation and Configuration Guide.

You can also translate single (p. 119) and multiple (p. 120) text fields in Metric Studio to serve a multilingual audience.

You specify currency settings using IBM Cognos Configuration. For information about specifying currency settings, see the IBM Cognos Installation and Configuration Guide.

You can customize settings for

- status indicators (p. 105)
- trend calculations (p. 108)
- units of measurement (p. 109)
- default columns (p. 110)
- destination links (p. 111)
- metric title format (p. 112)
- time periods (p. 112)
- user interface strings (p. 118)
- language settings (p. 119)

Metric Studio Portlets
When Metric Studio portlets are deployed to IBM Cognos Connection or another portal, users can view their performance-related information without having to open Metric Studio. For information about deploying the Metric Studio portlets, see the IBM Cognos Administration and Security Guide.

Status Indicators
Status indicators in IBM® Cognos® Metric Studio are graphic representations of the performance of a metric and help users check performance quickly.

The status assigned to a metric is based on the score (p. 36) calculated for that metric. You can choose to calculate the score using the default score calculation (p. 39) or by using threshold settings for targets and user-defined columns (p. 110).
You can use either three- or five-state status indicators to show whether a metric is on or off target. Three-state status indicators are the default and indicate performance as follows.

<table>
<thead>
<tr>
<th>Color</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>One tolerance or more above target</td>
</tr>
<tr>
<td>Yellow</td>
<td>Within one tolerance above or below target</td>
</tr>
<tr>
<td>Red</td>
<td>More than two tolerances below target</td>
</tr>
</tbody>
</table>

A status indicator appears with other values that describe the status of a metric. A user can sort on Status so that all metrics with a red traffic light, for example, appear at the top of the page.

When you select five-state status indicators, users see more detail about how far above or below target the metric is. For example, if you specify check symbols as your status indicator and specify five states, the status indicators range through green, partially green, yellow, partially red, and red. The symbol and color depend on how the metric performs compared to the target and are based on the tolerances you set.

<table>
<thead>
<tr>
<th>Color</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>More than one tolerance above target</td>
</tr>
<tr>
<td>Partially green</td>
<td>Within one tolerance above target</td>
</tr>
<tr>
<td>Yellow</td>
<td>Within one tolerance above or below target</td>
</tr>
<tr>
<td>Partially red</td>
<td>More than one tolerance below target</td>
</tr>
<tr>
<td>Red</td>
<td>More than two tolerances below target</td>
</tr>
</tbody>
</table>

For information about tolerances, see "Change Trend Calculation" (p. 108).

For example, a metric may use the Above target is positive performance pattern. If the metric has an actual value above target (0 or positive score), it has a green status. If the metric has an actual value below target, but is also within one tolerance of the target (score between 0 and -1.0), it has a yellow status. If the metric has an actual value below target by more than one tolerance (score less than -1.0), then it has a red status.

Another example is if a metric has a tolerance of 0 and the actual is above or equal to the target, it has a green status. The metric has a red status when the actual is below target by any amount.

**Set the Number of States for the Status Indicators**

You can use either three- or five-state status indicators to show whether a metric is on or off target. The default setting is three-state indicators. You can choose to display five-state indicators instead.
The setting for number of states applies to all users.

**Steps**
1. In the Tools list, click **Status indicators**.
2. Click 3 state or 5 state.

**Specify the Style of Status Indicators**

The default status indicator graphic set is **Traffic lights**. You can choose to display **Check symbols** or **Symbol traffic lights** instead.

You can also create your own set of status indicators and add it to the list of available status indicator styles (p. 107).

**Steps**
1. In the Tools list, click **Default display settings**.
2. Under **Status indicator style**, select the style of status indicators that you want to use.
3. If you want the style to apply to all users, click **Apply this default setting for all users**.

**Add a New Set of Status Indicators**

You can create your own sets of status indicators. You must add the graphic files to two locations:

- \`installation_location\webcontent\alp\images\`
- \`installation_location\webapps\p2pd\WEB-INF\cmm\images\icons\`

The file format must be .gif.

A complete set consists of images for each of the six possible states (0, 3, 4, 5, 6, and 7) in three sizes: small (16 x 16 pixels), medium (32 x 32 pixels), and large (48 x 48 pixels), for a total of 18 files.

File names must follow the format:

\`[user specified prefix]_[state number]_[image size].gif\`

Example of a filename: star_3_med.gif

Example of a complete set (18 files):

- star_0_lrg.gif, star_0_med.gif, star_0_sm.gif
- star_3_lrg.gif, star_3_med.gif, star_3_sm.gif
- star_4_lrg.gif, star_4_med.gif, star_4_sm.gif
- star_5_lrg.gif, star_5_med.gif, star_5_sm.gif
- star_6_lrg.gif, star_6_med.gif, star_6_sm.gif
Chapter 9: Customizing the User Experience

- star_7_lrg.gif, star_7_med.gif, star_7_sm.gif

**Steps**

1. In the Tools list, click **Status indicators**.
2. Click **New status indicator style**.
3. Under **Language**, select a language.
4. In the **Name** box, type a name for the new status indicator set.
5. In the **File name prefix** box, type the prefix for the set of graphics files that you want to use for this indicator.
6. Click **Update**. The system scans the image locations and displays any images that match this format.

The new status indicator set appears in the list of available status indicator styles under **Tools, Default display settings**. To specify your new set as the default, click **Tools, Default display settings** and select the set from the list.

The new status indicator set also appears in the list of available status indicator styles under **Tools, Status indicators**. To delete a set, click **Tools, Status indicators**, click the check box in front of the set name, and then click **Delete**. The set will no longer be available from **Tools, Default display settings**.

**Set Background Color for Status of Strategy Element**

You can choose to display strategy elements on diagrams as ovals or rectangles (p. 89). You can set the background color of the shapes to represent the status of the strategy element.

**Steps**

1. In the Tools list, click **Status indicators**.
2. Under **Strategy element status colors**, click the select color button for the state you want to change.
3. Click the color you want or click **No Color**.

**Change Trend Calculation**

A trend indicator in IBM® Cognos® Metric Studio shows the direction of change in the performance of a metric, that is, whether it is improving, staying the same, or getting worse. Trends are determined by comparing performance over time.

You can change how the trend indicator is calculated. You can choose to use scores in trend calculations or you can choose to use only actual and target values in trend calculations. The trend tolerance percent lets you set the percentage of change that must occur before the Trend indicator shows an improvement or a decline in performance. The default is 5%.
For example, if the trend tolerance is set to 5 percent and the score changes -6% over time, the trend indicator appears as a down arrow, indicating a decline in performance.

You can use either metric score values or variance percent values to calculate trends. Variance percent values use actual and target values in the calculations. You can also choose if trends are calculated by comparing the current period against the previous period or the same period of the previous year.

For a standard calendar, weeks affect trend calculations. When you set a trend to Calculate trend by comparing to: Previous period, Metric Studio calculates trend arrows by comparing

- the same day of the previous week, at the daily level
- the same week of the previous month, at the weekly level

Metric Studio uses the value set in the calendar wizard to determine the week of the month.

If you make changes to how trends are calculated, you must recalculate metric values using the Recalculate metric store derived values task in IBM Cognos Connection. For more information, see the IBM Cognos Administration and Security Guide.

Steps
1. In the Tools list, click Import and data calculation settings.
2. Click the Import Settings tab.
3. Click the appropriate button for the comparison value.
4. Click the appropriate button for the comparison period.

Specify a Custom Unit of Measurement

You can define custom units, such as currencies, weights, sizes, or any other unit of measure that describes a class of metrics.

You can use custom units when you create user-defined columns. For information about user-defined columns, see "Specify Custom Columns That Will Be Available to Users" (p. 110).

IBM® Cognos® Metric Studio has the following default choices:

- currency
- general
- percent
- text

You can translate the defaults, but you cannot delete them or change the symbols or units that are associated with them.
If you plan to use a custom unit of measure, you must define the custom unit before you load data for that unit.

**Steps**
1. In the **Tools** list, click **Units**.
2. Click the language that applies to the new custom unit.
3. In the **Name** box, type a descriptive name for the custom unit of measurement.
4. If you want, type the symbol that represents the unit.
5. In the **Identification Code** box, type a code for the custom unit of measurement.
6. Click **Add**.
7. If you want to change or remove a custom unit of measurement, click the unit in the **Available units and symbols** box, and then click **Edit** or **Delete**.

**Specify Custom Columns That Will Be Available to Users**

A custom column or user-defined column is a comparative measurement for a metric. For example, revenue per month may be a metric that you monitor. Although this is an important metric, you are also interested in comparing revenue to analysts’ forecasts, industry averages, and your closest competitors’ revenues. You define analysts’ forecasts, industry averages, and competitors’ revenue as user-defined columns.

You can specify the user-defined columns that users can choose to customize their IBM® Cognos® Metric Studio environment. Users can then change these user-defined columns in their display by choosing from any of the available columns. You can also specify how rows appear for user-defined columns.

You can create user-defined columns that use units of measurement that you defined. For information, see "Specify a Custom Unit of Measurement" (p. 109).

For more information about data exploring, see "Change the Destination of a Link" (p. 111).

**Steps to Add Available Columns**
1. In the **Tools** list, click **Default display settings**, and then click the **Columns** tab.
2. Click a column name in the **Standard Columns** or **All User Defined Columns** list.
3. Click the right arrow next to the list box to add the column to the **Available columns** list.

Tip: To add all the columns in a list, click the double right arrow.

**Steps to Modify User-defined Columns**
1. In the **Tools** list, click **Default display settings**, and then click the **Columns** tab.
2. Click a column in the **User-defined columns** list.
3. Click **Edit** to modify the column or **Delete** to remove the column from the list.

**Steps to Create User-defined Columns**
1. In the **Tools** list, click **Default display settings**, and then click the **Columns** tab.
2. Click **New**.
3. In the **Name** box, type a name for the column.
4. Type a description for this column in the **Description** box.
5. Type the concatenated metric name in the **Identification code** box.
6. Under **Category**, choose whether to use a metric type as the unit of the column or a custom unit.

   Metric Studio includes **General**, **Percent**, and **Text** as units. You can also create your own units (p. 109).

   If a user applies a column name to a strategy element, a text-formatted user-defined column is automatically created.

**Steps to Specify How to Order Rows**
1. In the **Tools** list, click **Default display settings**, and then click the **Columns** tab.
2. Under **Row Order**, click **Sorted on column**.
3. Click the column on which to sort.
4. Click **Ascending** or **Descending**.
5. If you want the row display settings to apply to all users, click **Apply this default setting for all users**.

**Change the Destination of a Link**
Users can view additional data by clicking the destination links that are set for specific objects. In some cases, the destination is set and cannot be changed. For example, in a metrics list, clicking the status indicator always takes users to the metric itself. However, you can change the destination for some links to encourage your users to follow a specific path in resolving identified problems.

For any object in IBM® Cognos® Metric Studio, you can specify the tab that users see when they click the object. By default, the current tab is the destination. For some metrics, you can also specify the destination as either the metric, its home scorecard, or the metric type.

**Steps**
1. In the **Tools** list, click **Navigation options**.
2. Open the **Go To** list for the link that you want to change, and click the destination view to appear for this object.
Tip: You can set the destination in impact and custom diagrams only for status indicator and metric name.

3. Open the Tab list for the link that you want to change, and click the tab that you want to appear when this object is clicked.

**Change the Format of Metric Names**

In IBM® Cognos® Metric Studio, metrics names are based on their metric type and home scorecard. By default, a metric is identified by a concatenation of its scorecard name, its metric type, and any assigned qualifier.

You can change the sequence of the components in the name of a metric, and you can specify a different separator for the concatenation.

**Steps**

1. In the Tools list, click **Metric names**.

2. In the Separator box, type the character that you want to use.
   
   **Tip:** The default separator is a space.

3. In the Metric name sequence list, click one of the available options.

4. If you want to show only the relevant components of a metric name, click the Metric name components box.

**Change the Time Span of the Metric Store**

If you have not yet loaded data, you can add time periods to extend the data range.

If you have loaded data and you want to change the calendar, you must remove the calendar, redefine the calendar, and reload the data.

If you are extending a custom calendar, ensure that the periods in the time periods stage file (.cal) (p. 198) continue from the current periods. You cannot omit or overlap periods. In the time language text file (.tlt) (p. 208), the language_text_id values must match existing periods.

**Steps for a Non-custom Calendar**

1. In the Tools list, click **Business calendar**.

2. Click the Data Range tab.

3. If you want to add time periods, in the Extend this calendar box, type the number of additional time periods.

4. Click Add.

**Steps for a Custom Calendar**

1. In the Tools list, click **Business calendar**.
2. Click the **Data Range** tab.

3. If you want to add time periods, do the following:
   - Click **Extend custom calendar from files**.
   - Select the directory where your calendar files are saved.

### Specify the Default Display Settings for History Charts

The history chart is a graph of the actual values for a metric measured against values for any standard columns or user-defined columns that were created for the metric. You can show the values by default as a bar graph or a line graph.

The user-defined columns must have been created previously.

You can specify the range of data to show in the history chart for each business calendar level. For example, you could specify that a user who is viewing data on the history chart at the weekly calendar level will see one quarter’s worth of data. Or you could specify that a user who is viewing data at the quarterly calendar level will see one year’s worth of data. Of course this specification depends on the levels that were specified during the creation of the calendar.

### Steps

1. In the **Tools** list, click **Default display settings**.

2. Click the **Chart Display** tab.

3. Select the **Visible** check box next to the values that you want to show on the history chart.

4. Click either the bar or line button for each value that you want to show.

5. If you want, select the **Apply this default setting to all users** check box.

6. Select the range for each business calendar level.

7. If you want to display the history chart when the pointer hovers over a metric name, select the **History chart thumbnail** check box.

### Specify Calendar Labels

You may want to customize the calendar labels.

For example, when a fiscal year starts in a month other than January it is labeled with the calendar year in which it ends. A calendar beginning in March 2006 would be identified in IBM® Cognos® Metric Studio as belonging to fiscal year 2007. The first period would be labeled March 2006. A history chart of that year would begin at March 2006 and end in February 2007. For clarity, you may want to display FY with the year so that users understand that they are viewing the fiscal year rather than the calendar year.
When you customize these labels, you will delete all existing objects and values in the package. To keep your current data, you must export it before you customize the labels. You then re-import the data after you change the labels.

Before you delete your data, we recommend that you perform a test of the export and import process.

- Export the data.
- Create a new import source.
- Create a new package.
- Create a new calendar.
- Import the exported data.
- Ensure that the objects and values in the package are valid and complete.

To modify calendar strings, you create a cmmstrings_calendar_custom_**.xml file where ** is the language of your user interface.

Time periods are constructed from tokens and are assembled using concatenation into a final pattern. These concatenations mean that translators must adapt syntax rather than translate English strings.

**Steps**

1. Copy cmmstrings_calendar_custom_sample_**.xml to cmmstrings_calendar_custom_**.xml where ** is the 2 letter language code for the language you wish to customize.

   If the file for your language does not exist, copy the _EN file and replace the _EN with the code for your user interface language such as _FR for French.

   **Note:** You can only customize the calendar strings that are in the sample files.

2. Change the string.

   For example, to add FY to the year the string is

   `<string id="Gregorian short year default pattern" usage="Year-level period naming pattern (for Gregorian calendars); e.g. 2005">FY [Y_LONG_PERIOD]</string>`

   Do not change anything between the square brackets.

   You can change anything outside of the square brackets. These changes will appear in the user interface.

   Curly brackets group strings and pattern components which are in square brackets to display strings only when the pattern is resolved.

3. Save the file.

4. Restart the IBM Cognos BI service.

5. Create a new metric package and initialize the new metric store with the new calendar.
Tokens to Create Time Periods

The following tokens create time periods. For example, the two tokens "[W_LONG_LEVEL][W_NUMBER]" create a time period of a week such as "Week1". You must add a space between the two tokens if you want the label for this time period shown as "Week 1".

Tokens ending with ...LEVEL] are combined with tokens ending with ...NUMBER]. An example is Q1. Spacing between the two tokens may vary by language.

<table>
<thead>
<tr>
<th>Token</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>[STARTDATE_MED]</td>
<td>Full date in the user’s locale</td>
</tr>
<tr>
<td>[ENDDATE_MED]</td>
<td>[STARTDATE_MED] is the starting date of a time period</td>
</tr>
<tr>
<td></td>
<td>[ENDDATE_MED] is the end date of a time period</td>
</tr>
<tr>
<td></td>
<td>Example: Dec. 14 2005 14/12/2005</td>
</tr>
<tr>
<td>[Y_LONG_PERIOD]</td>
<td>From the system</td>
</tr>
<tr>
<td></td>
<td>Example: 2005</td>
</tr>
<tr>
<td>[M_LONG_PERIOD]</td>
<td>Variables from the XML file</td>
</tr>
<tr>
<td></td>
<td>From string id=</td>
</tr>
<tr>
<td></td>
<td>&quot;sd.long_month_cd.jan&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;sd.long_month_cd.feb&quot;, and so on</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;January&quot;, &quot;February&quot;, &quot;March&quot;, and so on</td>
</tr>
<tr>
<td>[M_SHORT_PERIOD]</td>
<td>Variables from the XML file</td>
</tr>
<tr>
<td></td>
<td>From string id=</td>
</tr>
<tr>
<td></td>
<td>&quot;sd.short_month_cd.jan&quot;,</td>
</tr>
<tr>
<td></td>
<td>&quot;sd.short_month_cd.feb&quot;, and so on</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;Jan&quot;, &quot;Feb&quot;, &quot;Mar&quot;, and so on</td>
</tr>
<tr>
<td>[Q_LONG_LEVEL]</td>
<td>Constant from the XML file</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;Quarter&quot;</td>
</tr>
<tr>
<td>[Q_SHORT_LEVEL]</td>
<td>Constant from the XML file</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;Q&quot;</td>
</tr>
<tr>
<td>[Q_NUMBER]</td>
<td>Computed</td>
</tr>
<tr>
<td>[W_LONG_LEVEL]</td>
<td>Constant from the XML file</td>
</tr>
<tr>
<td></td>
<td>Example: &quot;Week&quot;</td>
</tr>
<tr>
<td>Token</td>
<td>Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>[W_SHORT_LEVEL]</td>
<td>Constant from the XML file                                                                                          Example: &quot;W&quot;</td>
</tr>
<tr>
<td>[W_NUMBER]</td>
<td>Computed                                                                                                               Example: 1 to n</td>
</tr>
<tr>
<td>[D_LONG_LEVEL]</td>
<td>Constant from the XML file                                                                                           Example: &quot;Day&quot;</td>
</tr>
<tr>
<td>[D_SHORT_LEVEL]</td>
<td>Constant from the XML file                                                                                           Example: &quot;D&quot;</td>
</tr>
<tr>
<td>[D_NUMBER]</td>
<td>Computed                                                                                                               Example: 1 to n</td>
</tr>
<tr>
<td>[D_SHORT_PERIOD]</td>
<td>Variables from the XML file                                                                                           Example: &quot;Mon&quot;, &quot;Tue&quot;, &quot;Wed&quot;, and so on</td>
</tr>
<tr>
<td>[D_LONG_PERIOD]</td>
<td>From string id=                                                                                                       &quot;sd.short_day_cd.mon&quot;, &quot;sd.short_day_cd.tue&quot;, and so on                                             Example: &quot;Mon&quot;, &quot;Tue&quot;, &quot;Wed&quot;, and so on</td>
</tr>
<tr>
<td></td>
<td>From string id=                                                                                                       &quot;sd.long_day_cd.mon&quot;, &quot;sd.long_day_cd.tue&quot;, and so on                                             Example: &quot;Monday&quot;, &quot;Tuesday&quot;, &quot;Wednesday&quot;, and so on</td>
</tr>
<tr>
<td>[D_SHORT_PERIOD_NUMBER]</td>
<td>Displays the calendar day of the month.                                                                             D_SHORT_PERIOD_NUMBER is different from D_NUMBER. D_NUMBER displays the business calendar sequence number which will be different if the business calendar weeks have less than 7 days.</td>
</tr>
<tr>
<td>[TODATESTRING_LONG]</td>
<td>Constant from this file                                                                                              Example: &quot;To-Date&quot; &quot;TD&quot;</td>
</tr>
<tr>
<td>[TODATESTRING_SHORT]</td>
<td>From string id=                                                                                                       &quot;pnp.cust.name.todate.long&quot; and &quot;pnp.cust.name.todate.short&quot;                                      Example: &quot;To-Date&quot; &quot;TD&quot;</td>
</tr>
</tbody>
</table>
Syntax

The syntax for the cmmstrings_calendar_en.xml file includes the following elements.

<table>
<thead>
<tr>
<th>Elements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokens</td>
<td>Examples:</td>
</tr>
<tr>
<td></td>
<td>[Y_LONG_PERIOD]</td>
</tr>
<tr>
<td></td>
<td>[ENDDATE_MED]</td>
</tr>
<tr>
<td></td>
<td>[Q_SHORT_LEVEL]</td>
</tr>
<tr>
<td></td>
<td>[Q_NUMBER]</td>
</tr>
<tr>
<td></td>
<td>[ASOFSTRING_LONG]</td>
</tr>
<tr>
<td></td>
<td>Variable that is substituted by another string at run time.</td>
</tr>
<tr>
<td></td>
<td>All tokens are surrounded by square brackets. The tokens and square brackets are considered code and must not be translated, deleted or otherwise modified by the translators.</td>
</tr>
<tr>
<td></td>
<td>Tokens should only be moved around relative to other tokens or to constant text.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brackets</th>
<th>Example:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;{}&quot;</td>
</tr>
<tr>
<td></td>
<td>Curly brackets &quot;{}&quot; are used to group a set of strings (constants) with a token. If the value of a token cannot be found, the related characters inside the curly brackets (like commas, blanks, and so on) will not be displayed. The brackets will not be displayed in the user interface.</td>
</tr>
<tr>
<td></td>
<td>Any token inside curly brackets must not be translated, deleted or otherwise modified.</td>
</tr>
<tr>
<td></td>
<td>Tokens should not be moved outside of the curly brackets.</td>
</tr>
<tr>
<td></td>
<td>Constants inside curly brackets can be deleted. Constants can also be translated or modified but should remain inside the curly brackets.</td>
</tr>
<tr>
<td></td>
<td>Curly brackets must not be deleted.</td>
</tr>
</tbody>
</table>
### Elements

<table>
<thead>
<tr>
<th>Elements</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constants such as blanks, commas, hyphens, parentheses</td>
<td>Examples: &quot; &quot; &quot; , &quot; &quot; &quot; ( )&quot;</td>
</tr>
</tbody>
</table>
| | Any character outside of the square brackets (tokens) and curly brackets (optional part) is taken as is. For example: "[Q_SHORT_LEVEL][Q_NUMBER]" ' "Q4" "[Q_SHORT_LEVEL] [Q_NUMBER]" ' "Q 4"
| | Constants can be translated, deleted or otherwise modified by the translators according to the rules and usage of a language.
| | Constants (any characters) can also be added, if required, for the translation into a particular language.|

### Example

Most translatable strings contain a usage parameter that provides a short description and an example of the syntax. These examples are useful to translators since they give an idea of what the syntax will produce at runtime. Once translated, examples provide the structure that must be recreated using appropriate syntax. All characters between the tokens, except for curly brackets, are displayed in the user interface.

This example generates the date 2005 Q4.

```
<string id="pnp.cust.name--pattern--gregorian--default--period--q--short" cust_id="Gregorian short quarter pattern" usage="Quarter level period naming pattern (for Gregorian calendars); e.g. 2005 Q4" type="PropertyName">[Y_LONG_PERIOD][ [Q_SHORT_LEVEL][Q_NUMBER]]</string>
```

"[Y_LONG_PERIOD][ [Q_SHORT_LEVEL][Q_NUMBER]]" is replaced with

- a year number ([Y_LONG_PERIOD] ' "2005"")
- followed by a blank ([ [Q_SH...] ' " ")
- followed by the abbreviation of the word "Quarter" ([Q_SHORT_LEVEL] ' "Q")
- followed by the quarter number ([Q_NUMBER] ' "4")

### Change User Interface Strings

You can change some of the strings in the user interface to reflect terminology that your company uses. For example, your company may use goal rather than target.

You can only customize the strings in `c10_location/msgsdk/cmmstrings_custom_**.xml` file, where ** is the language of your user interface.
After you change the file, you must delete any packages that use this file and recreate them.

**Steps**

1. Copy `cmmstrings_custom_sample_**.xml` to `cmmstrings_custom_**.xml` where ** is the 2 letter language code for the language you wish to customize.

2. Change the string before the end tag.
   
   For example, to change `target` to `goal`
   
   ```xml
   <string id="Value-Type Target" usage="Label for columns and drop downs. Value Type 'Target'">Goal</string>
   ```

3. Save the file.

4. Recreate the package by deleting the package and then selecting **Create New Metric Package**.
   
   For information about deleting a package, see the IBM® Cognos® Administration and Security Guide.

**Language Translation**

You specify which languages are available in IBM® Cognos® Metric Studio using IBM Cognos Configuration. For information about specifying language settings, see the IBM Cognos Installation and Configuration Guide.

To serve a multilingual audience, you can translate information, such as names and descriptions. Scorecard users can then read this information in their preferred language.

**Translate a Single Text Field**

You can translate single text fields for objects such as scorecards, metric types, metrics, diagrams, reports, strategies, and strategy elements directly in Metric Studio.

The fields that you can translate include name, description, a diagram caption, and a technical description.

Users can then change the language preference setting to view these text fields in their preferred language.

You can also translate multiple text fields (p. 120).

Before any translation can occur, you must have already added the required languages from those which are available in Metric Studio.

**Steps**

1. In the left pane, click the object to translate.

2. Click the **Details** tab.

3. Click the set properties button.

4. Select the language to use for translation.

5. In the **Name** box, type the word to be translated.
Translating Multiple Text Fields

You can translate multiple text fields by exporting the text, having it translated by a translator, and then importing the translated text.

To support the translation of user-defined column names, Metric Studio considers the names as content rather than as user interface text. You can translate the names individually in the user interface, or export them for translation.

You can also translate single text fields in Metric Studio (p. 119).

To translate multiple text fields, do the following:

- In IBM Cognos Connection, export the text that you want to translate into tab-delimited files. The last column in these files contains the text to be translated.
  
  If you are translating into more than one language, you can specify one tab-delimited file for all languages or separate files for each language.

- Deliver the files to the translators.

- In IBM Cognos Connection, import the text.

  For information about import and export processes, see the IBM Cognos Administration and Security Guide.
Chapter 10: Analysis Reports

Reports supplied with IBM® Cognos® Metric Studio provide you with the ability to do additional analyses of the metrics data, analyze audit reports, and customize the presentation of printed output. The IBM Cognos Framework Manager model provided with Metric Studio is the basis for this reporting functionality, and uses the Metric Studio metric store.

There are two types of analysis reports:

- default analysis reports (p. 131)
- custom analysis reports (p. 132)

For an introduction to the Framework Manager model and its star schemas, see "The Framework Manager Model" (p. 121).

For more detailed information about the model and for guidelines to consider when writing reports, see "Working with the Model" (p. 133).

The Framework Manager Model

Reporting in IBM® Cognos® Metric Studio is based on the underlying IBM Cognos Framework Manager model that is built from the Metric Studio metric store. Each metric package has a model. All default and custom reports generated from Metric Studio use this model.

When you create a new metric package, Metric Studio creates a folder at installation_location\temp\cmm\package_name. Metric Studio creates the model files in this folder.

You can modify the model. For example, you can merge it with another model for reports that require multiple model sources, but it is then supported as any other custom Framework Manager model. You publish the model as a report package and not a metric package.

Relational and staging are the two namespaces in the Presentation folder.

The relational folder allows you to build reports on the data in the metrics data store including scorecards, metrics, strategies, and so on. The relational namespace contains the metadata for the metric package. You can use the query subjects and query items in the relational namespace to build performance monitoring reports in IBM Cognos Report Studio or IBM Cognos Query Studio.

The staging folder allows you to build reports on data in the staging area. You can use these reports to debug problems in loading data. The staging namespace contains the metadata for the staging of metric data. You can use the query subjects and query items in the staging namespace to build data loading reports in Report Studio or Query Studio.

For information, see the Report Studio User Guide, the IBM Cognos Business Insight Advanced User Guide, or the Query Studio User Guide.

You can also use the relational or staging namespaces to specify an event condition in IBM Cognos Event Studio. For information, see the Event Studio User Guide.

You can find the Metric Studio 8.2 model in the content namespace under the compatibility folder.
The Metric Studio model contains the following objects.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Success Metric</td>
<td>The metric that measures the success of an action.</td>
</tr>
<tr>
<td>All Metric Types</td>
<td>A metric type is a category of metrics that defines the business rules,</td>
</tr>
<tr>
<td></td>
<td>such as the performance pattern, units, and meaning for that group of metrics.</td>
</tr>
<tr>
<td>Actions</td>
<td>A short-term activity to correct or improve the performance of a metric.</td>
</tr>
<tr>
<td>Metrics</td>
<td>A measurement of performance in key areas of a business that compares current results to planned values. It is the lowest level of a scorecard application.</td>
</tr>
<tr>
<td>Strategies</td>
<td>A strategy is a collection of strategy elements.</td>
</tr>
<tr>
<td>Scorecards</td>
<td>A scorecard is a collection of metrics that represents the performance of one unit or aspect of an organization.</td>
</tr>
<tr>
<td>Projects</td>
<td>A project tracks long-term goals using metrics.</td>
</tr>
<tr>
<td>Action Success</td>
<td>The success or failure status of an action.</td>
</tr>
<tr>
<td>Action Comments</td>
<td>Comments added by the user related to a specific action.</td>
</tr>
<tr>
<td>Metric History</td>
<td>The history of the performance for a metric.</td>
</tr>
<tr>
<td>Element</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Metric Comments</td>
<td>Comments added by the user related to a specific metric.</td>
</tr>
<tr>
<td>Metric Impacted</td>
<td>A metric that is affected by this metric.</td>
</tr>
<tr>
<td>Metric Impacting</td>
<td>A metric that affects this metric.</td>
</tr>
<tr>
<td>Strategy Status</td>
<td>The status of a strategy.</td>
</tr>
<tr>
<td></td>
<td>The status rule can be defined when the strategy is created or changed at a later time.</td>
</tr>
<tr>
<td>Strategy Scorecard Status</td>
<td>The status of a strategy shown on a scorecard.</td>
</tr>
<tr>
<td></td>
<td>A status rule must be defined for a strategy.</td>
</tr>
<tr>
<td></td>
<td>The status rule can be defined when the strategy is created or changed at a later time.</td>
</tr>
<tr>
<td>Project Success</td>
<td>The success or failure status of a project.</td>
</tr>
<tr>
<td>Project Comments</td>
<td>Comments added by the user related to a specific project.</td>
</tr>
<tr>
<td>Relative Time</td>
<td>Contains two query subjects that describe the relative periods of time (YTD, QTD, MTD) created by the <strong>Recalculate metric store derived values</strong> metric maintenance task.</td>
</tr>
<tr>
<td>Time</td>
<td>Time information, such as the time hierarchy, for the calendar that was initialized when the metric package was created.</td>
</tr>
</tbody>
</table>

**Scorecard Star Schema**

The scorecard star schema contains information about relationships among scorecards, projects, and time.

You can use the information in the star schema to develop reports. The scorecard star schema contains the following objects.
## Query Subject

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scorecards</td>
<td>A collection of metrics that represents the performance of one unit or aspect of an organization.</td>
</tr>
<tr>
<td>Projects</td>
<td>A project tracks long-term goals using metrics.</td>
</tr>
<tr>
<td>Strategy Scorecard Status</td>
<td>The status of a strategy shown on a scorecard.</td>
</tr>
<tr>
<td></td>
<td>A status rule must be defined for a strategy.</td>
</tr>
<tr>
<td></td>
<td>The status rule can be defined when the strategy is created or changed at a later time.</td>
</tr>
<tr>
<td>Time</td>
<td>Time information, such as the time hierarchy, for the calendar that was initialized when the metric package was created.</td>
</tr>
<tr>
<td>Relative Time</td>
<td>Contains two query subjects that describe the relative periods of time (YTD, QTD, MTD) created by the Recalculate metric store derived values metric maintenance task.</td>
</tr>
</tbody>
</table>

## Projects Star Schema

The projects star schema contains information about relationships among project elements, scorecards and time.
You can use the information in the star schema to develop reports. The projects star schema contains the following objects.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Success Metric</td>
<td>The metric that measures the success of a project.</td>
</tr>
<tr>
<td>Projects</td>
<td>A project tracks long-term goals using metrics.</td>
</tr>
<tr>
<td>Project Success Factor</td>
<td>The historical data for the project success metric.</td>
</tr>
<tr>
<td>Scorecards</td>
<td>A collection of metrics that represents the performance of one unit or aspect of an organization.</td>
</tr>
<tr>
<td>Time</td>
<td>Time information, such as the time hierarchy, for the calendar that was initialized when the metric package was created.</td>
</tr>
<tr>
<td>Relative Time</td>
<td>Contains two query subjects that describe the relative periods of time (YTD, QTD, MTD) created by the <strong>Recalculate metric store derived values</strong> metric maintenance task.</td>
</tr>
</tbody>
</table>
### Project Success Factor Filter

Contains two filters which allow you to either
- include relative time periods and exclude regular time periods
- exclude relative time periods and include regular time periods

If you do not choose a time period, both relative time periods and regular time periods are included.

### Metrics Star Schema

The metrics star schema contains information about the relationships among metric types, metrics, and metric history. This schema also includes diagram URLs.

You can use the information in the star schema to develop reports. The metrics star schema contains the following objects.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Metric Types</td>
<td>A metric type is a category of metrics that defines the business rules, such as the performance pattern, units, and meaning for that group of metrics.</td>
</tr>
<tr>
<td>Metrics</td>
<td>A measurement of performance in key areas of a business that compares current results to planned values. It is the lowest level of a scorecard application.</td>
</tr>
<tr>
<td>Metric History</td>
<td>The history of the performance for a metric.</td>
</tr>
</tbody>
</table>
**Project Comments Star Schema**

The project comments star schema contains information about the relationship between projects and project comments.

You can use the information in the star schema to develop reports. The project comments star schema contains the following objects.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects</td>
<td>A project tracks long-term goals using metrics.</td>
</tr>
<tr>
<td>Project Comments</td>
<td>Comments added by the user related to a specific project.</td>
</tr>
</tbody>
</table>

**Metric Comments Star Schema**

The metrics star schema contains information about the relationship between metrics and metric comments.

You can use the information in the star schema to develop reports. The metric comments star schema contains the following objects.
Chapter 10: Analysis Reports

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metrics</td>
<td>A measurement of performance in key areas of a business that compares current results to planned values. It is the lowest level of a scorecard application.</td>
</tr>
<tr>
<td>Metric Comments</td>
<td>Comments added by the user related to a specific metric.</td>
</tr>
</tbody>
</table>

**Actions Star Schema**

The actions star schema contains information about the relationships among action elements and metrics.

You can use the information in the star schema to develop reports. The actions star schema contains the following objects.
### Metrics
A measurement of performance in key areas of a business that compares current results to planned values. It is the lowest level of a scorecard application.

### Action Success Metric
The metric that measures the success of an action.

### Actions
A short-term activity to correct or improve the performance of a metric.

### Action Success Factor
The historical data for the action success metric.

---

### Action Comments Star Schema

The action comments star schema contains information about the relationship between actions and action comments.

You can use the information in the star schema to develop reports. The action comments star schema contains the following objects.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>A short-term activity to correct or improve the performance of a metric.</td>
</tr>
<tr>
<td>Action Comments</td>
<td>Comments added by the user related to a specific action.</td>
</tr>
</tbody>
</table>

---

### Impacting Metrics Star Schema

The impacting metrics star schema contains information about the relationships among metrics, the metrics that impact them, and the metrics that are impacted by them.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>A short-term activity to correct or improve the performance of a metric.</td>
</tr>
<tr>
<td>Action Comments</td>
<td>Comments added by the user related to a specific action.</td>
</tr>
</tbody>
</table>
You can use the information in the star schema to develop reports. The impacting metrics star schema contains the following objects.

<table>
<thead>
<tr>
<th>Query Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Metric Types</td>
<td>A metric type is a category of metrics that defines the business rules, such as the performance pattern, units, and meaning for that group of metrics.</td>
</tr>
<tr>
<td>Metrics</td>
<td>A measurement of performance in key areas of a business that compares current results to planned values. It is the lowest level of a scorecard application.</td>
</tr>
<tr>
<td>Metric Impacted</td>
<td>A metric that is affected by this metric.</td>
</tr>
<tr>
<td>Metric Impacting</td>
<td>A metric that affects this metric.</td>
</tr>
</tbody>
</table>

**Strategies Star Schema**

The strategies star schema contains information about the relationship between strategies and the status of the strategies.

You can use the information in the star schema to develop reports. The strategies star schema contains the following objects.
A strategy is a collection of strategy elements.

The status of a strategy.

The status rule can be defined when the strategy is created or changed at a later time.

**Analysis Reports**

There are two types of analysis reports:

- default analysis reports (p. 131)
- custom analysis reports (p. 132)

**Default Analysis Reports**

IBM® Cognos® Metric Studio includes a set of standard reports that analyze the metrics data and provide information about usage and updates.

**Location of Reports**

You can find the reports in IBM Cognos Connection on the Public Folders tab. Click View metric package content -package_name-, Reports, and then click Reports again.

For information about running a report, creating a report view, or scheduling a report, see the IBM Cognos Administration and Security Guide.

The default report set contains the following reports.
<table>
<thead>
<tr>
<th>Report name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric History</td>
<td>A summary of a metric’s performance over time. You can select the start date, end date, and business calendar level that the report uses.</td>
</tr>
<tr>
<td>Metric Performance</td>
<td>A detailed summary of information for a specific metric during a specific time period. The summary information includes actions and comments associated with the metric.</td>
</tr>
<tr>
<td>Metric Type Analysis</td>
<td>An analysis of a whole organization’s performance for one metric type, with an aggregate status history, pie charts, and aggregate summaries for several time periods. The report can be filtered by date and metric type.</td>
</tr>
<tr>
<td>Objective Analysis</td>
<td>A summary of objective (or any strategy element) status, with pie charts of metric and project states, a history chart of object status, and a crosstab of metric types and scorecards related to a selected strategy element.</td>
</tr>
<tr>
<td>Performance Over Time</td>
<td>Detailed information for each metric on a scorecard organized by strategy. Information is provided for the selected time period, as well as year-to-date and quarter-to-date information.</td>
</tr>
<tr>
<td>Performance Summary and Overview</td>
<td>A summary of information organized by strategy. Includes the status and description of the strategy and the performance of the contributing metrics. It also includes the title of any related projects.</td>
</tr>
<tr>
<td>Project Status</td>
<td>An overview of project status, with a count of on-track and off-track projects for each objective. Objectives with no targeted projects are highlighted.</td>
</tr>
<tr>
<td>Scorecard Dashboard</td>
<td>An alternative visualization of metric status, using gauges, suitable for inclusion in a scorecard report tab.</td>
</tr>
<tr>
<td>Scorecard Overview</td>
<td>A summary of scorecard status, with a quadrant chart, a pie chart of current status, and a list.</td>
</tr>
<tr>
<td>Scorecard Performance</td>
<td>A summary of the performance of metrics associated with a specific scorecard. The reports contains a pie chart and stacked bar chart showing the status of the metrics. It also includes a list of the metrics on the scorecard. The list of metrics is organized by strategy.</td>
</tr>
</tbody>
</table>

**Custom Analysis Reports**

Metric Studio is not a reporting tool. However, the Metric Studio model is designed so that you can create custom reports. Use IBM Cognos BI to suit your requirements.
You may want to create a custom report to

- present additional data that is not part of the default visual display
- include multiple graphics with color and shading
- customize reports with company branding, such as logos and corporate color schemes
- provide additional analysis of performance measures

**Working with the Model**

For a better understanding of the components involved when working with the model, see

- the presentation view (p. 133)
- the model view (p. 134)
- the source view (p. 134)
- the metric functions (p. 134)
- the compatibility folder (p. 135)
- the linked reports query subject (p. 135)

For guidelines to consider when writing reports, see "Guidelines for Reporting" (p. 136).

**Presentation View**

This view contains objects that are exposed to report authors.

**Relational Namespace**

This is the namespace that exposes metric objects to the report authors. All the query subjects in this namespace are shortcuts to the query subjects contained in the model namespace. This namespace contains star schema groups, filters, and lists.

**Star Schema Groups**

The relational namespace is a business view containing star schema groups that make the model more intuitive for the users. In a star schema design, numeric transactional data is contained in a central fact query subject with related dimension query subjects radiating out from the fact query subject.

The following star schema groups have been created: Scorecards, Projects, Project Comments, Metrics, Metric Comments, Actions, Action Comments, Impacting Metrics and Strategies. Each star schema group may contain some specific filters.

**Filters**

The relational namespace contains the predefined filters associated to the query subjects it contains, grouped in the following folders:

- Content Filters
These filters can be used to filter the appropriate query subjects based on the object ID (or SID from the database).

- **Time Filters**
  These filters can be used to filter the time dimension based on a selected time period ID (or SID from the database): Select Time Period; a selected fiscal year value: Select Fiscal Year; or a named time level code (for year, quarter, month, week, day): Year Level, Quarter Level, Month Level, Week Level, Day Level. These filters work only if the calendar contains the selected time level.

- **Relative Time Filters**
  These filters can be used to filter the relative time query subject based on a selected time level: Year To Date Level, Quarter To Date Level or a selected rollup grain: Quarter Grain Rollup, Month Grain Rollup, Day Grain Rollup. These filters work only if the calendar contains the selected time level (year, quarter, month) or grain (quarter, month, day).

**Lists**
The relational namespace contains query subjects that have no relationships with other query subjects (and do not belong to a star schema group) in the model, but may be useful for the report authors. These are grouped in two folders. The Status Lists folder contains the Execution Status List, the Metric Status List, and the Trend Status List. The Linked Objects folder contains the Linked Reports.

**Staging Namespace**
The staging namespace contains two folders: Stage and Rejects. The Stage folder contains query subjects that return data from the staging area, therefore access to this folder should be restricted to Metric Administrators. By default, it is just hidden from the user. The Rejects folder is available to all users and exposes the tables containing the rejected data.

**Model View**
Hidden from the user, the Model view encapsulates the business logic. Query subjects from the relational namespace are only shortcuts to the query subjects contained in the Model view. This namespace also contains the relationships between the query subjects and defines the calculations for some of the query items.

**Source View**
Hidden from the user, the Source view contains the metric store import views. It uses the database views to import metric metadata.

The database view names are prefixed with MOD_.

**Metric Functions**
Predefined functions are available to report authors:

- functions that return model versions: getMajorModelVersion, getMinorModelVersion
- functions that return image locations: getBaseImageLocation, getRelativeImageLocation
These are absolute, respective relative paths to the metric images and can be used to construct the image URLs. The values returned by these functions are based on parameters whose values are updated when the metric package is created (based on the location of the webcontent folder).

- functions that return the 'no data' image: getNoDataImage, getNoDataImageURL

These return the image name, that is, the image URL, which can be used for report image objects when the data item associated to that object contains no information (that is, is null or is missing).

**Compatibility Folder**

The Compatibility folder contains the model released in versions 8.1 and 8.2. Views from this folder are exposed to report authors only for compatibility reasons with reports written against those model versions. It also contains the printing namespace which is used by the IBM® Cognos® Metric Studio printing facility. The Compatibility folder is contained in a segment (named Compatibility) of the metric model.

The Compatibility model contains groups, which have been replaced by strategies in version 8.3.

**The Linked Reports Query Subject**

All the reports linked to metric objects are listed in the Linked Reports query subject. This query subject is based on a database-stored procedure and can receive the following parameters:

- time_period_sid int
- recent_data char (1)
- period_start dateTime
- period_end dateTime
- date dateTime
- rollup varchar (5)
- period_nr int
- period_level_cd char (1)
- fiscal_year int
- currency varchar (5)
- scorecard_sid int
- scorecard_extid nvarchar (255)
- metric_sid int
- metric_extid nvarchar (255)
- metric_type_sid int
- metric_type_extid nvarchar (255)
For each parameter that is passed, the calculated report URL appends the parameter name and its value.

One way to use this information while authoring a report is to create a master-detail report where the master contains the metric object information and the detail contains the reports linked to that object. The parent object ID of the linked report is the ID of the object to which that report is linked.

### Setting the Linked Report Parameters

As long as the report parameter names can be found in the above list, a link can be established between the context of the metric object (within the master report) and its associated report and the linked report may be executed without the necessity to prompt for the report’s parameters. However, the user will be prompted for the parameter values if any of the parameters expected by the linked report did not receive one.

Another way to provide values for the linked report parameters is to create report prompts whose parameter names match the names of the linked report parameters.

If the linked report has parameters that are not contained in the list above, its calculated URL value must be changed in IBM Cognos Report Studio by appending (to the value provided in Linked Reports) the following string:

```
'p_' + [other_param_name] + 'z' + [other_param_value]
```

The IBM Cognos Framework Manager metric model has defaults for all the report parameters. It cannot accept null values. The report server will prompt for the parameters with null values.

### Guidelines for Reporting

These are some things to consider when writing reports of the metric model:

- Do not include in the same query data from two facts if they are not supposed to be linked by time, as the generated query will link them by time.
- The query plan starts first with dimensions from within the first star group.
• If possible, use query items from the same star group where the fact data resides.

• A query containing data from two facts will produce a stitched query.

• Use the Actions star schema grouping when reporting on actions. If only metrics related to existing actions are required, then use metrics from the Metrics group.

• Use the Scorecard Groups star schema grouping for queries that contain metric, scorecard and strategy query items. Use the Scorecards star schema grouping for queries that contain metric and scorecard query items only (no strategy information).
Chapter 11: Monitoring Performance

You use IBM® Cognos® Metric Studio to monitor the performance of business areas that are important to you and your organization.

To begin monitoring metrics, you should access Metric Studio (p. 139), customize the user interface to suit your needs (p. 140), and add metrics to your watch list (p. 140).

As you work with scorecards and metrics, you can choose the calendar level (p. 142) that gives you the most relevant and useful data.

You can analyze metric performance using metric lists (p. 144), reports (p. 148), the performance history of the metric (p. 145), and metric impacts (p. 146).

You can use comments (p. 149), actions (p. 149), and projects (p. 150) to track initiatives and corrective activities that ensure your metrics are performing well.

Strategy maps and other diagrams (p. 146) provide a visual representation of the way the organization views metrics and metric relationships.

You can view metrics on home scorecards to focus your analysis on one part of the organization. You can use the accountability scorecard to monitor, in one place, the metrics and projects that you own.

Accessing Metric Studio and Metrics

Depending on how your company installed and configured Metric Studio, you can access Metric Studio using

- the IBM Cognos Connection portal
  
  This portal to IBM Cognos BI provides a single access point to available corporate data.
  
  From the Public Folders tab, you can click available metric packages.

- the IBM Cognos Connection toolbar
  
  If you are in IBM Cognos Connection, you can click the Metric Studio link under Launch.

- a Metric Studio bookmark
  
  You can create a bookmark for a Metric Studio Web page that you use frequently.
  
  You must click the prepare bookmark button before you create a bookmark.

- the Metric Studio default view
  
  Your system administrator may have configured Metric Studio so that the URL links directly to Metric Studio without accessing the IBM Cognos Connection portal.

- the Metric Studio portlets
  
  If implemented, you can use the portlets to monitor metrics from an existing enterprise portal or from IBM Cognos Connection.
Set the Home Page for Metric Studio

You can set any IBM® Cognos® Metric Studio page as your home page. For example, if you have a scorecard that you monitor closely, you may want to set that page as your home page.

Step
- On the page that you want to set as your home page, click the down arrow next to the home button and click Set View as Home.

Determine the Identifier of a Diagram or History Chart

If you want to include the history chart or a scorecard diagram in an IBM® Cognos® BI report, you must know the identifier of the chart or diagram. For more information, see the IBM Cognos Report Studio User Guide.

Steps
1. At the bottom of the left pane, click Scorecards.
2. Click the scorecard that you want.
3. To locate the identifier for a history chart, do the following:
   - On the Metrics tab, click the metric that you want to change.
   - Click the History tab.
   - Click Chart.
   - Click the view the diagram identifier button.
4. To locate the identifier for a scorecard diagram, do the following:
   - Click the Diagram tab and click the diagram that you want.
   - In the Actions column next to the diagram that you want, click the view the diagram identifier button.

Watch List

Use the watch list to monitor metrics you do not own and to set email notification options for metrics you do own. The watch list is located in the left pane under My Folders.

If you want to check a metric that is not on your watch list, you can use the search tool to find it.

Add a Metric to the Watch List

You can add metrics you do not own but would like to monitor to the watch list, under My Folders.
You must also add metrics you do own to the watch list if you want to receive email notification when the status of the metric changes.

**Steps**
1. Click the metric that you want to monitor.
2. Above the *Last updated* heading, click the add to watch list button.

**Add Email Notification for a Metric**

By default, email notification about changes to a metric in the watch list is not selected when you add a metric to the watch list. However, you can override the default. You must be logged on to the namespace to add email notification.

**Steps**
1. At the bottom of the left pane, click *My Folders*.
   Your watch list and accountability scorecard appear in the left pane.
2. Click *Watch List*.
3. In the right pane, click the click to turn on email alerts for this metric button beside the metric.

**Delete a Metric from the Watch List**

You can delete metrics that you are no longer interested in from the watch list. The metrics still exist on the scorecards.

**Steps**
1. At the bottom of the left pane, click *My Folders*.
   Your watch list and accountability scorecard appear in the left pane.
2. Click *Watch List*.
3. In the right pane, click the check box for each metric that you no longer want to monitor.
4. Click the delete metrics button.

**Specify Email Notification Conditions for the Watch List**

You can specify when and how often you receive email notification about changes to metrics in the watch list.

**Steps**
1. At the bottom of the left pane, click *My Folders*.
   Your watch list and accountability scorecard appear in the left pane.
2. Click *Watch List*.
3. Under the **Metrics** tab, click the email alerts properties button.

4. Click the conditions under which you want to receive emails about all metrics in the watch list.

**Choose the Period to Monitor**

You can select the period to monitor using the calendar control. For example, if your business calendar supports years, quarters, months, and weeks, you can choose to view metric values at the monthly level. IBM® Cognos® Metric Studio shows the metric values for the chosen month. Weekly values, if available, are displayed as the rollup values for monthly level. No quarterly or yearly values are shown.

**Latest Data View**

If you select the latest data, Metric Studio shows the most recent metric values that it can. For example, you can have some metric values shown as of the last quarter and some metric values shown for last month.

The latest period is always the period for which there is a score. For example, you have a metric value for the last month and a score for the last quarter. Metric Studio shows the score, even though it is older, because it is more meaningful than a value. If no period has a score then the latest actual value is used. If a metric has no score or actual value, then Metric Studio shows the period based on the last time a score was successfully generated for other metrics. If the metric store has never had scores calculated, then Metric Studio displays **No data**.

You can set the calendar level for a history chart, a history list, and a metric list on a scorecard, metric type, strategy element, or objective.

**To-date Status**

If you select the **Show the to-date status and values for open periods as of date** option, you can make more precise comparisons between actual data and target data. This option changes the target value to reflect the target up to the current open period from one calendar level below rather than to the end of the current period. It also changes all user-defined columns. The to-date target values are the aggregation of lower calendar level values up to the current open period and cannot be loaded.

For example, assume that the sales target for the quarter is to sell 1000 radios, and by mid-quarter 500 radios are sold. If you do not select this option, your status is red because you are comparing the 500 radios sold to the target for the end of the quarter, which is 1000 radios. If you select this option, the status is green because you are comparing the 500 radios sold to the sales target up to this mid-quarter date, which is 500 radios.

If you select the **Show the to-date status and values for open periods as of date** option, Metric Studio uses the most recently loaded actuals date as the date to which all targets are calculated. Any date after the current system date is reset to today’s date.

If the results are not as you expect, it may be because of one of the following:

- To-date status does not exist for the lowest level in the time hierarchy.
  
  For example, there is no monthly to-date status when the minimum grain is month.
The time level of the metric used for actual calculation is at a higher level than the target data for the metric that you are monitoring.

For example, the metric that you are monitoring has target values at the month level but no actuals for the month level. The metric that Metric Studio uses to calculate the to-date status has quarters as its lowest time level. Therefore, Metric Studio displays the to-date status at the year level.

In the most recent data view, there is no to-date data that matches the latest period. That could be because the most recent data is a future date.

Actual data is entered at the year level, in which case no to-date values are available.

Data was staged for all calendar levels of a metric type.

The data is being viewed at a calendar level that is lower than the calendar level at which data was entered.

In the history chart and metric history list, you are viewing future dates.

**Steps**

1. Click the business calendar options button next to Business calendar period.
2. Click
   
   • Select a period to view
     
     To view values at a specific calendar level, click View values at specified business calendar level and calendar period and click the calendar level that you want.
     
   • View most recent values
3. If you want to compare actual data against target data up to the current open period, select the check box next to Show the to-date status and values for open periods as of date.

**Metric Analysis**

You can analyze metrics from multiple perspectives to gain an understanding of past and present performance and to forecast future performance.

You can analyze metrics by using

• a metrics list (p. 144)

• a metric history (p. 145)

• metric impacts (p. 146)

• diagrams (p. 146)

• reports (p. 148)
Metrics on a Scorecard

The metrics on a scorecard reveal how well objectives are being met by comparing planned values to actual results. By analyzing the metrics list, you can quickly evaluate performance.

The status of a metric, shown using status indicators such as traffic lights, indicates its current performance and is based on its score. The status can be on target, above target, or below target. A target is the level of expected performance for the metric. Whether a metric is above target or below target depends on the tolerance value set for the metric. Tolerance is the acceptable range of deviation from the target.

A trend shows whether the performance of a metric is improving, staying the same, or getting worse. Trends are determined by comparing status over time. For example, the status of a metric is yellow but the trend is downward and red because the performance of the metric has declined over the past few time periods.

You can use sorting and filtering to focus on specific metrics.

Reorder Metrics on a Scorecard

You can sort a list of metrics on a scorecard so that the metrics are listed in a useful order.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.
2. Click the scorecard that you want to monitor.
3. On the **Metrics** tab, click the order metrics button.
4. Select a metric and, at the bottom of the window, click **Up**, **Down**, **To Top**, or **To Bottom**.
5. Repeat step 4 for each metric that you want to move.

Limit the Metrics Monitored on a Metrics List

You can filter the metrics list on a scorecard to limit the metrics based on a specific status or trend. You can then focus on the metrics that interest you.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.
2. Click the scorecard that you want to monitor.
3. On the **Metrics** tab, in the filter box, click the status or trend that you want.

View the Metrics on a Scorecard by Strategy Element

On a scorecard, you can choose to show only the metrics that belong to a particular metric owner or strategy.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.
2. Click the scorecard that you want to monitor.

3. On the Metrics tab, in the group box, click Owner or the strategy that you want to show.

4. Click the down arrow to expand the list of metrics and to provide more detail.

**History Charts**

A history chart is a graph that appears for each metric. You can use the history chart to analyze the relationships between target values and actual values.

The history chart shows target values, actual values, target tolerance, and any specified user-defined columns. Tolerance is the acceptable range that a result can deviate from the target. In the history chart, a green diamond represents the target value, and yellow lines represent the tolerance.

- Target with the tolerance set to above target is positive
- Target with the tolerance set to below target is positive
- Target with the tolerance set to on target is positive

A user-defined column is a comparative measurement for a metric. For example, revenue per month is a metric that you monitor. Although this is an important metric, you are also interested in comparing revenue to analyst forecasts. To compare revenue to analyst forecasts, you create a user-defined column for analyst forecasts, and then adds the column to the Revenue metric type.

You can choose to view actual values and user-defined columns as line graphs or bar graphs. For more information, see "Customize the History Chart" (p. 145).

A history chart shows the business calendar level that you selected. For information about calendar levels, see "Choose the Period to Monitor" (p. 142).

The previous arrow shifts the graph one business calendar level left. The next arrow shifts the graph one business calendar level right. For example, if months and quarters are shown along the bottom of the graph, the previous arrow shifts the graph left by one month. The fast-previous arrow shifts the graph one quarter to the left. The fast-next arrow shifts the graph one quarter to the right.

**Customize the History Chart**

The history chart is a graph of metric actual values measured against values for any standard columns or user-defined columns that were created for the metric. You can show the values as a bar graph or a line graph.

You can make a chart more meaningful to you by adding columns to or removing columns from those columns that are graphed.

**Steps**

1. At the bottom of the left pane, click Scorecards.
2. Click the scorecard that you want to monitor.
3. On the **Metrics** tab, click the metric that you want to change.
4. Click the **History** tab.
5. Click **Chart**.
6. Click **Edit chart display**.
7. Select the **Visible** check box next to the values that you want to show on the history chart.
8. Click either the bar or line button for each value that you want to show.

**Metric Impacts**

To analyze metric impacts, you must understand your business and the metrics that you are monitoring. You should be able to identify whether a metric has impacts on other metrics and, if so, which metrics. You should also be able to identify if a metric is impacted by other metrics and, if so, which metrics. For example, if the customer satisfaction metric has a downward trend, what impact does this have on the revenue metric? If the number of returns is increasing, is the customer satisfaction metric declining?

To help you investigate metric impacts, you can

- use the metric history chart to view a graphical representation of the performance of the metric
  
  To view the metric history chart, place your pointer over the name of the metric.

- view information about the status or trend of a metric
  
  Pause your pointer over the status or trend icon.

- link to related scorecards or strategies from a metric (p. 146)

**Link to a Related Scorecard or Strategy**

From a metric, you can link to a related scorecard or strategy to investigate causes and consequences of metric performance.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.
2. Click the scorecard that you want to monitor.
3. On the **Metrics** tab, click the name of a metric.
4. Click the **Details** tab.
5. Click the name of a scorecard or strategy that uses this metric.

**Diagrams**

A scorecard, metric type, or metric can have one or more diagrams associated with it. A diagram provides a quick, visual representation of how your organization is performing from various per-
perspectives. You can easily see trends, determine how well your organization is doing, see whether you are meeting your objectives, and identify problem areas that need attention.

If more than one diagram is specified for a scorecard, metric type, or metric, the first one appears in the main frame when you click the **Diagrams** tab. The other diagrams are listed under the main frame. You can click any other diagram in the list to show it in the main frame.

The following diagrams are available in IBM® Cognos® Metric Studio:

- custom diagrams (p. 147)
- inherited diagrams (p. 147)
- impact diagrams (p. 147)

**Custom Diagrams**

Custom diagrams include the following types:

- strategy maps
  
  Show the metrics that are important to various aspects of your organization, such as financial, customer, internal, and learning and growth. A strategy map is typically based on a scorecard.

- geographical maps
  
  Show different focuses of your organization on fixed regions, such as inventory or cost metrics in North America or Europe. A geographical map is typically based on a metric type.

- process diagrams
  
  Show metrics in the context of a process flow. A process diagram is typically based on a scorecard.

**Inherited Diagrams**

Inherited diagrams contain placeholders for metric types, strategy elements, and scorecards. When you deploy an inherited diagram, the relevant data for each placeholder is filled in on each diagram.

**Impact Diagrams**

Impact diagrams show cause-and-effect relationships between metrics. Metric Studio creates an impact diagram only for a metric or a metric type. There is only one impact diagram per metric or metric type.

When you define impact relationships in an impact diagram for a metric type, you can add only metric types and not specific metrics. When you define impact relationships in an impact diagram for a metric, you can add only metrics and not metric types.

You can choose to view an impact diagram by functional impact or summary impact.

Functional impact shows you the metrics that affect the metric and the metrics that are affected by the metric. This is also true for metric types.

Summary impact shows you impact relationships based on the scorecard hierarchy. For example, if the Global scorecard contains a Europe scorecard, an America scorecard, and an Asia-Pacific
scorecard, then the summary view for the metric Revenue on the Global scorecard shows impact by Europe Revenue, America Revenue, and Asia-Pacific Revenue.

**Show Actions on Impact Diagrams**

You can choose to show or hide actions of impacting or impacted metrics. When you choose to show actions, the status of the action is shown.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Status of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>Not started</td>
</tr>
<tr>
<td>🔴</td>
<td>On target</td>
</tr>
<tr>
<td>🔴</td>
<td>Late</td>
</tr>
<tr>
<td>✔️</td>
<td>Complete</td>
</tr>
</tbody>
</table>

**Steps**

1. Click the metric that you want.
2. Click the **Diagrams** tab.
3. With the impact diagram showing, select **Show actions**.
4. Click the refresh button 🔄.

Actions associated with any metrics on the diagram appear.

**Reports**

Reports found on the **Reports** tab add information about the strategic value of a scorecard or metric.

You can link a report to several scorecards or metrics. You can also link several reports to one scorecard or metric. Scorecard users can also use URLs on the **Reports** tab to link to additional information.

If more than one report is specified for a scorecard or metric, the first report appears in the main frame when you click the **Reports** tab. The other reports are listed under the main frame. You can click any other report in the list to show it in the main frame.

**Printing Metric Information**

Using the print button produces a PDF report of the information on the current tab. You can save or print the report.

**Note:** You can only print the first 30 columns of a report.
Improving the Performance of a Metric

You use an action, which is a short-term activity associated with a metric, to correct or improve the performance of the metric. For example, you can have a metric named Defective Products with a red status and an upward trend. After some investigation, you discover that one part used in manufacturing the product is consistently failing. You can now create, monitor, and update an action to replace the supplier of the failing part.

To improve the performance of a metric, you can do the following:

- Add a comment (p. 149).
- Create an action (p. 149).
- Update an action (p. 150).

Add a Comment

You can use comments to communicate information about metrics. For example, an owner of a metric with a worsening trend wants to let other users know that the trend is noted and what action the owner is taking.

If multiple comments exist for a metric, IBM® Cognos® Metric Studio shows the comment with the highest level of importance.

Steps
1. Click the metric for which you want to add a comment.
2. Click the add or view a comment button and complete the Subject and Body boxes.
3. If you want to specify an importance level, click either the Importance: High or Importance: Low button.
4. If you want, in the Identification code box, type an identification code.
   If you leave this box blank, Metric Studio automatically generates an identification code.
5. If you want, choose to display the comments from all time periods by selecting the Include all time periods check box.
6. If you want to refresh the comment, click the refresh comments button.

Create an Action

You create an action to monitor the steps needed to correct or improve the performance of a metric.

Steps
1. Click the metric for which you want to create an action.
2. Click the Actions tab.
3. Click the new action button.
4. Click the General tab.

5. In the Name box, type a descriptive name for the action.

6. If you want, in the Description box, type a description of the action.

7. Next to Owner, click Change owner and select the user who owns the action.

8. Next to Critical Success Factor, click Change metric to navigate to and select the metrics that monitor the success of the action.

**Update an Action**

You can update the progress of an action to see if the action to improve the performance of a metric is on schedule.

**Steps**

1. Click the metric for which you want to update an action.

2. Click the Actions tab.

3. Click the name of the action that you want to update.

4. Click the set properties button.

5. Update the fields as required.

**Tracking Projects**

Use an IBM® Cognos® Metric Studio project to track a long-term activity using metrics on a scorecard.

You can track the progress of a project by changing the actual start, completed, and percent complete statuses.

To track a project, you can do the following:

- Create a project on a scorecard (p. 150).
- Update the project status (p. 152).
- Add a task to a project (p. 152).
- Update the task status (p. 154).

You can also add a project to a strategy element (p. 92)

**Create a Project**

You can use projects to track long-term goals using metrics. For example, you can create a project to track your goal to improve customer satisfaction. You can use metrics such as sales, number of returned goods, and product defects to track the project.
When you create a project, you can specify the owner of the project, the metrics that reflect the project status, the strategy elements which contain the relevant metrics for the project, and the planned start, the planned finish, and the forecast finish dates. The planned finish date is when the project should be finished. The forecast finish date is when you think the project will likely be finished.

**Steps**

1. At the bottom of the left pane, click **Scorecards**, and then click the name of the scorecard for which you want to create a project.

2. Click the **Projects** tab, and then click the new project button.

3. In the **Language** box, select the language in which the project name and description will be displayed.

4. In the **Name** box, type a descriptive name for the project. If you want, in the **Description** box, type a description of the project.

5. Next to **Owner**, click **Change owner** and select the user who owns the project.

6. If you want, in the **Identification code** box, type a code for this project. If you leave this box blank, Metric Studio automatically generates an identification code.

7. Next to **Critical Success Factor**, click **Change metric** to navigate to and select the metric that monitors the success of the project.

8. Under **Progress**, select dates for the following:
   - **planned start**
     The date that the project should begin.
   - **actual start**
     The date that the project started.
   - **planned finish**
     The date that the project should be complete.
   - **actual finish**
     The date that the project was completed.
   - **forecast finish**
     The date when the project will likely be completed.

     If the forecasted finish date is later than the planned finish date, then the project is behind schedule.

9. If you want, in the **Percent Complete** box, type a percentage to represent how much of the project is finished.
10. Under **Date Rollup**, indicate whether you want project dates and percentage complete to be updated when task values change.

11. If you want, in the **Default Task Weight** box, type a default weight for the tasks associated with this project.

**Update the Project Status**

The status of a project is based on a comparison between planned, expected, and completed dates. You must update the status of the project so that you can see if the project is on schedule and meeting its objectives. For example, if the forecast finish date is later than the planned finish date, the project is late and you should update the project status.

If you want to base the dates and status of the project on the dates and status of its tasks, do not modify the dates at the project level.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.
2. Click the name of the scorecard for which you want to update the project.
3. Click the **Projects** tab.
4. Click the name of the project that you want to update.
5. Click the **Details** tab.
6. Click the set properties button.
7. Update the progress fields as required.

**Add a Task to a Project**

You can use a task to track a specific portion of a longer term project. For example, you have a project to increase revenue. A task of that project is to decrease the cost of raw materials.

When you create a task, you can specify the owner, the metrics that reflect the status of the task, and the planned start, the planned finish, and the forecast finish dates. The planned finish date is when the task should be finished. The forecast finish date is when you think the task will likely be finished. If the forecast finish date is later than the planned finish date, the task is behind schedule.

If a project has tasks, the planned start, the planned finish, and the forecast finish dates for the project are automatically updated using date information from the tasks.

When a project has tasks, the progress of the project is automatically determined as follows:

- The planned start date is the earliest planned start date of all the tasks.
- The actual start date is the earliest actual start date of all the tasks.
- The planned finish date is the latest planned finish date of all the tasks.
- The forecast finish date is the latest forecast finish date of all the tasks.
- The actual finish date is updated when all of the tasks have set an actual finish date.
The percent complete of the project is also automatically set to 100.

If you manually enter an actual finish date for the project before all of the tasks are completed, Metric Studio will display the manually entered date.

Manually entered dates for projects may be overwritten by task dates.

**Steps**

1. At the bottom of the left pane, click **Scorecards**, and then click the name of the scorecard that has the project for which you want to create a task.

2. Click the **Projects** tab, click the name of the project for which you want to add a task, and then click the new task button.

3. In the **Language** box, select the language in which the task name and description will be displayed.

4. In the **Name** box, type a descriptive name for the task. If you want, in the **Description** box, type a description of the task.

5. Next to **Owner**, click **Change owner** and select the user who owns the task.

6. If you want, in the **Identification code** box, type a code for this task.
   If you leave this box blank, Metric Studio automatically generates an identification code.

7. Under **Critical Success Factor**, click **Change metric** to navigate to and select the metric that monitors the success of the task.

8. Under **Progress**, select dates for the following:
   - **planned start**
     The date that the task should begin.
   - **actual start**
     The date that the task started.
   - **planned finish**
     The date that the task should be complete.
   - **actual finish**
     The date that the task was completed.
   - **forecast finish**
     The date when the task will likely be completed.
     If the forecasted finish date is later than the planned finish date, then the task is behind schedule.

9. If you want, in the **Percent Complete** box, type a percentage to represent how much of the task is finished.
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10. If you want, in the Task Weight box, type a weight for this task.

Update the Task Status

You must update the status of a task so that you can see if the task is on schedule and meeting its objectives.

If a project has tasks (p. 152), the planned start, the planned finish, and the forecast finish dates for the project are automatically updated using date information from the tasks.

When a project has tasks, the progress of the project is automatically determined as follows:

- The planned start date is the earliest planned start date of all the tasks.
- The actual start date is the earliest actual start date of all the tasks.
- The planned finish date is the latest planned finish date of all the tasks.
- The forecast finish date is the latest forecast finish date of all the tasks.
- The actual finish date is updated when all of the tasks have set an actual finish date.
  The percent complete of the project is also automatically set to 100.
  If you manually enter an actual finish date for the project before all of the tasks are completed, Metric Studio will display the manually entered date.

Manually entered dates for projects may be overwritten by task dates.

Steps
1. At the bottom of the left pane, click Scorecards.
2. Click the name of the scorecard which has the project and task that you want to update.
3. Click the Projects tab.
4. Click the name of the project.
5. Click the name of the task that you want to update.
6. Click the set properties button.
7. Update the fields as required.

Reorder Projects on a Scorecard

You can sort the list of projects on a scorecard so that the projects are listed in a useful order.

Tip: You can also sort projects by clicking on the on time status, critical success factor, comments, name, owner, planned start, actual start, planned finish, forecast finish, or actual finish column headings.

Steps
1. At the bottom of the left pane, click Scorecards.
2. Click the scorecard.
3. On the **Projects** tab, click the order projects button.

4. Select a project and, at the bottom of the window, click **Up**, **Down**, **To Top**, or **To Bottom**.

5. Repeat step 4 for each project that you want to move.

### Reorder Tasks for a Project

You can sort the list of tasks for a project so that the tasks are listed in a useful order.

**Tip:** You can also sort tasks by clicking on the on time status, critical success factor, comments, name, owner, planned start, actual start, planned finish, forecast finish, actual finish, or actions column headings.

**Steps**

1. At the bottom of the left pane, click **Scorecards**.

2. Click the scorecard.

3. On the **Projects** tab, click the project.

4. Click the order tasks button.

5. Select a task and, at the bottom of the window, click **Up**, **Down**, **To Top**, or **To Bottom**.

6. Repeat step 5 for each task that you want to move.

### Updating Metric Values

If you have appropriate permissions, you can manually update metric values.

You can update the values for a single metric over multiple time periods.

You can also update, for a single time period, the values for multiple metrics on the same scorecard.

You cannot manually update derived metrics (p. 139) because the values for these metrics are calculated from data from other metrics.

You cannot manually update metric values if you have chosen to view the to-date status (p. 142) under **Business Calendar Options**. Clear this option if you need to manually enter metric data.

#### Update a Metric Value

You can use the metric history list to analyze the status, trends, and values for a metric. The list shows the standard columns, such as actuals, and the user-defined columns that apply to the metric.

You can select the granularity of the time period shown in the history list (p. 142).

Authors with appropriate permissions can manually update column values.
If you manually add or update metric data, you must recalculate the data store derived values in IBM® Cognos® Connection. For more information, see the IBM Cognos Administration and Security Guide.

**Steps**
1. On the metric that you want to update, click the **History** tab.
2. Click **List**.
3. Click the enter values button.
4. For a calendar level, click the column that you want to update and type a value.

**Update Multiple Metric Values on a Scorecard**

You can manually update the values for multiple metrics on one scorecard. You can update the values for standard columns, such as actuals and user-defined columns.

If you manually add or update metric data, you must run the recalculate the data store derived values in IBM Cognos Connection. For more information, see the IBM Cognos Administration and Security Guide.

To update metric values, you must select a calendar level view other than latest data view.

**Steps**
1. On the scorecard that you want to update, click the enter values button.
2. Type a value for each column that you want to update.
Appendix A: Troubleshooting

This chapter describes some common problems you may encounter and possible ways to solve them.

Metric Studio Log Files

Operations performed in IBM® Cognos® Metric Studio are recorded in various log files for tracking purposes. For example, if you experienced problems loading data into Metric Studio, consult the debug_info.log file to learn what activities were performed during the load.

You can find the log files at the following locations:

- `installation_location/logs/MetricMaintenance/databasename-timestamp/Metaloader`

  The metaloader log file contains information about
  - when the load started
  - how many and what types of objects were loaded
  - the amount of time taken to apply the business rules
  - steps in the loading process
  - how long the load took to run

The load_summary.log file contains the number of loading and the associated error codes.

The sql_history.log file is useful when tuning performance. It is a tab-delimited file that you can open using Microsoft® Excel spreadsheet software. It contains SQL commands, the rows affected, and the time elapsed for each SQL statement.

The debug_info.log file is a tab-delimited file and contains debugging information. The amount of information in this file depends on the level of logging detail selected. For information about setting the level of logging, see "Logging Settings" in the Metric Studio User Guide.

- `installation_location/logs/MetricStoreInstall/databasename-timestamp`
- `installation_location/logs/MetricStoreUpgrade/databasename-timestamp`
- `installation_location/logs/MetricNewPackage`
- `installation_location/logs/MetricUpgradePackage`

Metric Studio Support Bundle

If you must contact customer support for assistance with an IBM® Cognos® Metric Studio issue, attaching the support bundle will help expedite your case.

This support bundle is a zip file generated by a tool called cmm_support_bundle.
The command is located in `installation_location/bin` and is invoked as follows:

```
cmm_support_bundle databaseServer databaseName databaseUser databasePassword databaseType output_filename
```

where

- `databaseServer` is the hostname of the database server (default: localhost)
  
  For Oracle, you can add an optional port by appending `:port` to the hostname (default: 1521). For example, localhost:1234.
  
  The `databaseServer` parameter is ignored for database type 'db2'.

- `databaseName` is the name of the database (default: cmm)
  
  This is the 'database file' entry for database type 'db2'.

- `databaseUser` is the database user name (default: sa)

- `databasePassword` is the database password (default: cmm)

- `databaseType` is the database type (default: sqlserver; values can include sqlserver, oracle, db2)

- `output_filename` is the fully qualified name of the zip file to create (defaults to the `_SUPPORT_FILES` directory)

For example, if a SQL Server database contains your metric store, issue a command such as

```
cmm_support_bundle dbserver1 prod_db sa topsecret sqlserver
```

or on a UNIX® operating system

```
sh cmm_support_bundle.sh dbserver1 prod_db sa topsecret sqlserver
```

By default, this will create output in the `installation location/_SUPPORT_FILES` directory.

**Metric Studio Reports Fail Because of an Oracle Internal Error**

Some reports that are included with IBM® Cognos® Metric Studio fail to run because of an Oracle internal error. This occurs when you are using 10.2.0.x releases of Oracle.

The reference bug for Oracle is 5864217.

If you encounter this error, you can resolve it by installing Oracle 10.2.0.3, Patch 5, which is officially named 5946186. You can obtain this patch from the Oracle Support's Metalink site which is available through your existing support agreement.

Apply the patch as directed by the instructions included with the download from Oracle Support.

**Metric Studio Errors Occur When Loading Data into an Oracle Database**

The application is disconnected from Oracle with ORA-07445 and ORA-3113 errors. You can see these errors in the database alert log. The database errors then cause errors in IBM® Cognos® Metric Studio.
This is a known issue with Oracle (Bug 5026836 - Ora-7445 \[Kxccres()+3052\] Updating View With Instead Of Trigger).

The workaround is for the database administrator to run the following command while logged in as SYS:

If an SPFILE is in use, ALTER SYSTEM SET optimizer_features_enable='10.1.0' SCOPE=BOTH.

If an SPFILE is not in use, ALTER SYSTEM SET optimizer_features_enable='10.1.0'.

If an SPFILE is not in use, the database administrator should also add this setting to the init.ora file for the database instance.

### Error When Attempting to Run Metric Studio on SQL Server 2005

When clicking a scorecard, a SQL Server error appears:

Msg 169, Level 15, State 1, Line 3 - A column has been specified more than once in the order by list. Columns in the order by list must be unique.

This has been identified by Microsoft® as bug #484681 and occurs in Microsoft SQL Server 2005 RTM (Build 9.00.1399). The problem was resolved by Microsoft in Microsoft SQL Server SP1.

If you encounter this error, you can resolve it by installing Service Pack 1 for SQL Server 2005 (or later).

### Data from a Relational Database Source or a Flat File Data Source Does Not Appear

You use IBM® Cognos® Connection to load data into the metric store.

If IBM Cognos Connection encounters a problem while loading data from a relational database source or a flat file import source, the data will not appear. Typical problems include

- text fields that are too long
- required fields are missing
- duplicate rows
- references to non-existent objects

To find the error, run the batch file or shell script from the command line and check the status of each step. Alternatively, you can repeat the loading process in two stages through the user interface and check the success of each stage.

### Steps to Separate the Loading Process into Stages

1. In IBM Cognos Connection, under the Metric Maintenance folder for your package, click **Import data from files into staging area**.

2. Use an SQL query tool to check whether the data was loaded.
If not, ensure that you have
- defined the data source correctly and that the files are in the correct location
- formatted the flat file with tab-delimited columns
- included the correct number of columns
- used the correct data formats, such as yyyy-mm-dd for dates and a period for the decimal separator

The logs from the attempt to load each tab-delimited file can be found at installation_location/logs/Metric Maintenance/databasename-timestamp/BulkLoad, and may contain more descriptive error messages than are available from the user interface.

3. If you find errors, correct them and repeat steps 1 and 2.

4. After the data appears in the staging tables, in IBM Cognos Connection, under the Metric Maintenance folder for your package, click Transfer data from the staging area into the metric store.

5. Check whether the data appears in IBM CognosMetric Studio.
   If it does not, check the last three columns of the kpi_value_stage_rejects table for error information.

A Metric Maintenance Task Fails to Run

If you manually run a metric maintenance task and it fails, IBM Cognos® Metric Studio displays an error message. If you run a scheduled metric maintenance task, you should check the run history to verify if the task was successful or not. For more information, see the IBM Cognos Administration and Security Guide.

To determine the cause of a failed task, check the logs located in installation_location/logs/DIS/package_date_time. The logs for each metric maintenance task are kept in a folder named with the task’s package name, date, and time.

You Do Not Have Permission to Access This Metric Package. Contact Your System Administrator

You must have Read, Execute, and Traverse permissions to open IBM® Cognos® Metric Studio using the link on the Welcome page or in IBM Cognos Connection.

Ask your system administrator to check your access permissions. For more information, see the IBM Cognos Administration and Security Guide.
Failed to Check the Metrics Store Install Status Error When Using DB2 8.2.3

When you try to create a metric package using DB2® 8.2.3 as the data source, you may receive the following error message:

Failed to check the metrics store install status.

If the version of the DB2 client on the IBM Cognos Metric Studio computer is not the same version as the DB2 server, or you upgraded your DB2 instance, you must run commands to bind the DB2 client to the database. Run the commands on the Metric Studio computer.

On the Microsoft® Windows® operating system, run the commands in a db2cmd window from DB2InstallDir\sqlib\bnd.

On the UNIX® operating system, run the commands from DB2InstanceDir/sqlib/bnd.

Type the following commands:

```plaintext
db2 connect to database user userName
db2 bind @db2ubind.lst blocking all grant public
db2 bind @db2cli.lst blocking all grant public
db2 bind db2schema.bnd blocking all grant public sqlerror continue
db2 terminate
```

Errors Occur When Importing Tab-delimited Files into a DB2 Metric Store

When IBM® Cognos® Metric Studio is installed on the Microsoft® Windows® operating system, and the DB2® metric store is installed on the UNIX® operating system, errors occur when you run metric maintenance tasks to import tab-delimited files into the staging tables or into the metric store.

There are two possible situations:

- The run history indicates that there were problems loading some of the tab-delimited files. The individual log files for the tab-delimited files indicate that the last column of the tab-delimited file data was truncated because it exceeded the target column width.

- The Transfer data into metric store task fails when the data to load includes a flat file of type .ccq and the error in the log file indicates DB2 SQL error: SQLCODE: -180, SQLSTATE: 22007.

The solution in both cases is to ensure that the tab-delimited files use end-of-line characters that are suitable for UNIX, such as a linefeed character and not the carriage return and linefeed character combination that is typically used by Windows.
Required User Permissions for the Metric Store Database (MS SQL Server)

The user account for the metric store database must be the database owner. You must use the owner user-account to log on to the IBM® Cognos® Business Intelligence data source used in the metric package.

For information about setting user permissions, see the Microsoft® SQL Server documentation for the sp_changedbowner utility.

Oracle 9.2 Package Initialization Error if NLS_LANG Environment Variable is Not Set Appropriately Before Starting Up IBM Cognos BI Tomcat Server

You will encounter an exception error when trying to initialize an IBM® Cognos® Metric Studio package if the Oracle specific environment variable NLS_LANG is not set correctly.

Workaround: IBM Cognos Business Intelligence requires that the Oracle specific environment variable NLS_LANG be set appropriately before starting up IBM Cognos BI Tomcat server. Please ensure that the character set portion of this variable is set to UTF8. For example, in the United States, this may be something like AMERICAN_AMERICA.UTF8.

IBM Cognos Business Insight Users Cannot Expand Metrics

IBM® Cognos® Business Insight users will not be able to expand the Metrics folder when viewing a strategy in Business Insight if you do not choose the option to expand all elements for your strategy.

In IBM Cognos Metric Studio, select the Expand Elements check box in the strategy details.
Appendix B: Tab-delimited Files

You can use specially formatted tab-delimited files to load data into the IBM® Cognos® Metric Studio staging tables (p. 48) and then into the metric store (p. 51). You can also use these files to export a Metric Studio application from the metric store (p. 51).

You usually create these tab-delimited files using an extraction, transformation, and loading (ETL) tool that extracts data from an existing system, or by exporting from another Metric Studio application.

You can build the following tab-delimited files:

- object stage (.cmo) (p. 164)
- metric type stage (.cmm) (p. 172)
- object link stage (.cml) (p. 181)
- value stage (.cmv) (p. 184)
- stage diagram (.cdo) (p. 188)
- stage object note (.cmn) (p. 194)
- stage custom parameters (.cmp) (p. 197)
- time periods stage (.cal) (p. 198)
- stage policy (.cms) (p. 199)
- import source currency stage (.ccm) (p. 203)
- import source reportlet stage (.crm) (p. 203)
- import source time levels stage (.ctl) (p. 204)
- import source time periods stage (.ctp) (p. 204)
- stage project (.pro) (p. 205)
- time language text stage (.tlt) (p. 208)
- time levels stage (.lvl) (p. 209)
- stage unit (.unt) (p. 211)
- cube query stage (.ccq) (p. 212)
- stage watchlist (.cwl) (p. 214)
- equations (.equ) (p. 215)
- equation items (.eqi) (p. 216)
Object Stage File (.cmo)

The object stage file (.cmo) imports metrics, scorecards, documents, import sources, user-defined columns, strategies, and diagrams into the staging tables. Use this file to set up your scorecarding environment when this information is already stored in another system.

You can have more than one .cmo file, such as one for each import source or one for each object type.

The object_id column is required so that you can later modify the home scorecard or qualifier of the metric using the .cmo file.

After you create a diagram in the object stage file, you must then specify information about every object in the stage diagram file (p. 188).

IBM® Cognos® Metric Studio versions 8.1 and later use qualifiers. If you are upgrading from Metric Studio version 2.2, Metric Studio creates qualifiers for existing metrics. If you create more than one metric of the same type on a scorecard, you must use a qualifier to distinguish them (p. 80).

The object stage file loads the object_stage table. The columns in the object stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>object_id</td>
<td>The unique identifier for the object. For a user, this is the IBM Cognos BI name. The name appears in the Metric Studio user interface and is not case sensitive. Maximum length: 255 Required</td>
</tr>
<tr>
<td>2</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing. Values: EN (English), FR (French), JA (Japanese), and so on Default: The language of the user running the task</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>object_type_cd</td>
<td>The code indicating the type of object (object_id). Values: KPI (metric), SC (scorecard), URL (report), DS (import source), UDC (user-defined column), DGM (diagram), DGMT (caption), QUAL (qualifier), GRP (strategy element), GTYPE (strategy), STELM (strategy element), STRAT (strategy), STLVL (strategy level)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GRP (strategy element) and GTYPE (strategy) are used for importing files with all file formats except version 8.3.1 or later. STELM (strategy element) and STRAT (strategy) are used for importing files with file format version 8.3.1 or later.</td>
</tr>
<tr>
<td>4</td>
<td>default_sort_order</td>
<td>A number indicating the ordering of the object in relation to other objects of the same type in the system. This is the default order and can be overridden by a user. For example, the default_sort_order for metrics controls the order in which the metrics appear in the metric type list.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tip: To control the order in which metrics appear in the scorecard list, use the sort_order column in the .cml file.</td>
</tr>
<tr>
<td>5</td>
<td>object_nm</td>
<td>The name of the object. Maximum length: 255 Required but not for metrics</td>
</tr>
<tr>
<td>6</td>
<td>object_desc</td>
<td>The description of the object. Maximum length: 1000</td>
</tr>
<tr>
<td>7</td>
<td>object_technical_desc</td>
<td>The technical description of the object. Maximum length: 1000</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8</td>
<td>url</td>
<td>(1) For an object_type_cd of URL, specifies the URL for that document. You can add the URL using the .cml file. Corresponds to the URL on the General tab of a report. Required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) For an object_type_cd of KPI, specifies the URL for the custom report that appears on the Reports tab. Optional.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 2100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The URL is for backward compatibility with version 2.2. The URL object is imported through the .cmo file (object_type_cd URL). The URL association with other objects is imported through the .cml file.</td>
</tr>
<tr>
<td>9</td>
<td>parent_object_id</td>
<td>The unique identifier of the parent object. For example, if the object being loaded is a metric, then the parent_object_id is the unique identifier of the scorecard to which the metric belongs. If the object being loaded is a strategy element, then the parent_object_id is the unique identifier of the strategy to which the strategy element belongs.</td>
</tr>
<tr>
<td>10</td>
<td>owner_user_ns_id</td>
<td>The identifier of an IBM Cognos BI authentication namespace used to resolve the reference in the owner_user_id column. Used to differentiate the value in the owner_user_id when more than one IBM Cognos BI authentication namespace is configured. Optional</td>
</tr>
<tr>
<td>11</td>
<td>owner_user_id</td>
<td>The unique identifier for the owner of the object. The name of the user, the identification of the user, or the search-path field in IBM Cognos BI. Value: owner ID</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12</td>
<td>diagram_object_nm</td>
<td>The name of the diagram associated with the object. Valid for metrics and scorecards. Name or object_id of a diagram is permitted. Maximum length: 255. This column is used for backward compatibility with version 2.2. You can import the diagram association with the object by using the .cml file for file formats other than version 2.2.</td>
</tr>
<tr>
<td>13</td>
<td>kpi_indicator_type_id</td>
<td>The unique identifier of the metric type for the metric. Value: metric type ID. Required for a metric.</td>
</tr>
<tr>
<td>14</td>
<td>kpi_home_sc_id</td>
<td>The unique identifier of the home scorecard for the metric. Value: home scorecard ID. Required for a metric.</td>
</tr>
<tr>
<td>15</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier to distinguish this metric from other metrics of the same type on the same home scorecard. Corresponds to Qualifier Name and the object_id in the .cmo file. Required if there is more than one metric of this type on the same home scorecard.</td>
</tr>
<tr>
<td>16</td>
<td>kpi_actuals_ds_id</td>
<td>The unique identifier of the import source that provides the actual values for the metric. Value: import source ID.</td>
</tr>
<tr>
<td>17</td>
<td>kpi_target_ds_id</td>
<td>The unique identifier of the import source that provides the target values for the metric. Value: import source ID.</td>
</tr>
<tr>
<td>18</td>
<td>kpi_tolerance_ds_id</td>
<td>The unique identifier of the import source that provides the tolerance values for the metric. Value: import source ID.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19</td>
<td>kpi_benchmark_ds_id</td>
<td>The unique identifier of the import source that provides the user-defined column values for the metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corresponds to the user-defined column import source.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: import source ID</td>
</tr>
<tr>
<td>20</td>
<td>kpi_rollup_cd</td>
<td>The rollup code specifying how the metric is calculated as a derived index or how the strategy element is calculated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: MAX (maximum: bubble up green), MIN (minimum: bubble up red), MODE (majority rules), WA (weighted average), NO (no status) for the strategy element, blank for the metric that is not a derived index</td>
</tr>
<tr>
<td>21</td>
<td>ds_filename</td>
<td>The file name or directory name of the import source.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used only when the object_type_cd is DS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td>22</td>
<td>include_subfolders_ind</td>
<td>The flag indicating whether to load the sub-folders from the import source.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used only when the object_type_cd is DS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>23</td>
<td>delete_flag</td>
<td>The flag indicating whether the object is to be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Setting the flag to Y deletes metric custom titles (alias).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>24</td>
<td>supports_cube_kpi_def</td>
<td>Identifies the import source type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: R (relational database loaded directly using Metric Studio), T (tab-delimited file loaded directly using Metric Studio), C (cube administered by IBM Cognos Metric Designer), P (relational database administered by Metric Designer)</td>
</tr>
<tr>
<td>25</td>
<td>package_path</td>
<td>Identifies the path for cube import sources.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The value is null if a cube is not the import source.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>26</td>
<td>default_group_view_id</td>
<td>The identifier of the strategy to be used for the object’s default grouping.</td>
</tr>
<tr>
<td>27</td>
<td>show_group_status_counts</td>
<td>The flag indicating whether the strategy element has counters shown in the user interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>28</td>
<td>all_metrics</td>
<td>The flag indicating whether this strategy applies to all metrics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>29</td>
<td>data_format_cd</td>
<td>The Metric Studio version of the files that the import source supplies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for import sources only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 3 (2.2), 4 (8.1.1), 5 (8.1.2 MR1), 6 (8.1.2 MR2), 7 (8.2.1), 8 (8.3.1), 9 (8.4.2)</td>
</tr>
<tr>
<td>30</td>
<td>db_character_set</td>
<td>The collation to use to import the data for the import source.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for import sources only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Example: Latin1_General_CI_AS for SQL Server</td>
</tr>
<tr>
<td>31</td>
<td>enabled_for_load</td>
<td>The value that enables or disables the import source.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used for import sources only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>32</td>
<td>expand_groups</td>
<td>The flag indicating whether strategy elements are expanded when first displayed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>33</td>
<td>diagram_ind_style_cd</td>
<td>The identifier of how strategy elements appear on a diagram.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: icon, circle, circle icon, rect, rect icon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: icon</td>
</tr>
<tr>
<td>34</td>
<td>primary_group_type_id</td>
<td>Not used.</td>
</tr>
<tr>
<td>35</td>
<td>secondary_group_type_id</td>
<td>Not used.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>36</td>
<td>default_diagram_id</td>
<td>The identifier of the default diagram for this object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>37</td>
<td>default_report_id</td>
<td>The identifier of the default report for this object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>38</td>
<td>decimal_char</td>
<td>The character to be used for the decimal character.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: . or ,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: .</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>39</td>
<td>unit_cd</td>
<td>The unique unit code.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>40</td>
<td>show_others</td>
<td>The flag indicating whether the Other Metrics strategy is displayed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>41</td>
<td>show_icon</td>
<td>The flag indicating whether the icon for strategy elements is displayed on diagrams.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: Y</td>
</tr>
<tr>
<td>42</td>
<td>default_weight</td>
<td>The default weight for metrics and metric types associated with the strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The weight determines how much influence the contributing metrics will have when calculating the status of the strategy element using the weighted average rollup rule. The weight can be overridden when metric and metric types are associated with the strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only numerical values are allowed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 10</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>43</td>
<td>inherit</td>
<td>If the object is a URL and it belongs to a scorecard, inherit is the flag that shows this report on lower-level scorecards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the object is a URL and it belongs to a metric type, inherit is the flag that shows this report on all metrics of this type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the object is a diagram and it belongs to a scorecard, inherit is the flag that shows the diagram on lower-level scorecards.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If the object is a diagram and it belongs to a metric type, inherit is not applied. The user interface does not have this setting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>44</td>
<td>auto_map_cube_periods</td>
<td>Automatically updates the time mappings when new times are added to the cube and the Metric Designer time mappings check box with the same label is selected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No) for the import source object; NULL for other objects</td>
</tr>
<tr>
<td>45</td>
<td>parent_object_type_cd</td>
<td>The parent object type code for a report, a diagram, or a strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values for a report: SC (scorecard), KPI CL (metric type), KPI (metric), PRO (project), STRAT (strategy), STELM (strategy element)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values for a diagram: SC (scorecard), KPI CL (metric type), KPI (metric)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values for a strategy element: STRAT (strategy), STELM (strategy element)</td>
</tr>
<tr>
<td>46</td>
<td>unit_display_ind</td>
<td>The flag indicating whether the unit for the user-defined column is shown.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>47</td>
<td>decimal_places</td>
<td>The number of decimal places used when showing metric values in the user-defined column. The number can be changed in the user interface.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 0 to 5</td>
</tr>
</tbody>
</table>
Metric Type Stage File (.cmm)

The metric type stage file (.cmm) imports metric types into the staging tables. Use this file when you set up metric types for your IBM® Cognos® Metric Studio scorecarding environment.

Information about derived index metric types is included in the metric type stage file, the object link stage file (p. 181) and, optionally, the equations stage file (p. 215). When you create a new derived index metric type by import, the required information must be present in at least the metric type stage file and the object link stage file.

The metric type stage file loads the metric_type_stage table. The columns in the metric type stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>metric_type_id</td>
<td>The unique identifier for the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>2</td>
<td>metric_type_nm</td>
<td>The name of the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>3</td>
<td>metric_type_desc</td>
<td>The description of the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 1000</td>
</tr>
<tr>
<td>4</td>
<td>metric_type_technical_desc</td>
<td>The technical description of the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 1000</td>
</tr>
<tr>
<td>5</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: EN (English), FR (French), JA (Japanese), and so on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This code follows the ISO standard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: EN (English)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>default_from_metric_type_id</td>
<td>Not used.</td>
</tr>
<tr>
<td>7</td>
<td>sort_order</td>
<td>The number indicating the ordering of a metric type in relation to other metric types.</td>
</tr>
<tr>
<td>8</td>
<td>diagram_object_nm</td>
<td>The name of the diagram associated with this metric type. Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This column is used for backward compatibility with version 2.2. You can import the diagram association with the object by using the .cml file for file formats other than version 2.2.</td>
</tr>
<tr>
<td>9</td>
<td>kpi_pattern_cd</td>
<td>The code for the performance pattern for the metric type. Values: GYR (below target is positive), RYG (above target is positive), RYGYR (on target or within a user-defined range of target is positive)</td>
</tr>
<tr>
<td>10</td>
<td>tolerance_type_cd</td>
<td>The code for the tolerance type for the metric type. Values: A (absolute: tolerance values are based on the raw value provided), P (percentage: tolerance values are based on a percentage of the target value)</td>
</tr>
<tr>
<td>11</td>
<td>unit_cd</td>
<td>The code for the type of unit defined for the metric type. Can also be a custom unit. Values: currency, general, percent</td>
</tr>
<tr>
<td>12</td>
<td>unit_display_ind</td>
<td>The flag indicating whether the unit for the metrics in a metric type is shown. Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>13</td>
<td>decimal_places</td>
<td>The number of decimal places used when showing metric values in the metric type. The number can be changed in the user interface. Values: 0 to 5</td>
</tr>
<tr>
<td>14</td>
<td>benchmark_authority_nm</td>
<td>Not used.</td>
</tr>
</tbody>
</table>

Appendix B: Tab-delimited Files
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>actuals_rollup_type_cd</td>
<td>The code for the rollup type for actual quarter and year values for the metrics in the metric type. Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values), STAGED (supplied externally and input to Metric Studio) Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>16</td>
<td>target_rollup_type_cd</td>
<td>The code for the rollup type for target values. Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values) Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>17</td>
<td>tolerance_rollup_type_cd</td>
<td>The code for the rollup type for tolerance values. Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values) Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>18</td>
<td>benchmark_rollup_type_cd</td>
<td>The code for the rollup type for the values in the first user-defined column. It only applies when the metric type is not a derived index. Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values) Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 19  | actuals_entry_level_time_id     | The level in the business calendar where actual data is entered.  
For example, if the standard Year, Quarter, and Month calendar is used, M means the data is supplied at the monthly level. The Quarterly and Yearly results are then calculated.  
If a custom calendar is used, then the ID corresponds to a level ID in the custom calendar. |                                                                                                                                                                                                                                                                                                                                                       |
| 20  | target_entry_level_time_id      | The level in the business calendar at which target data is entered.  
For example, Q means the data is supplied at the quarterly level. The Monthly and Yearly results are calculated. The Monthly level is an even portion of the quarters or 1/3 of the quarterly amount. |                                                                                                                                                                                                                                                                                                                                                       |
| 21  | tolerance_entry_level_time_id   | The level in the business calendar where Tolerance data is entered.  
For example, Y means the data is supplied for the year level. The Monthly and Yearly results are calculated. The Monthly level would be an even portion of the quarters or 1/12 of the year amount. |                                                                                                                                                                                                                                                                                                                                                       |
| 22  | benchmark_entry_level_time_id   | The level in the business calendar at which the first user-defined column data is entered. It only applies when the metric type is not a derived index. |                                                                                                                                                                                                                                                                                                                                                       |
| 23  | udc1_object_id                  | The identifier for the first user-defined column for the metric type. It only applies when the metric type is not a derived index.  
Maximum length: 255  
Maximum number of user-defined columns: 5  
Optional |                                                                                                                                                                                                                                                                                                                                                       |
| 24  | udc2_object_id                  | The identifier for the second user-defined column for the metric type. It only applies when the metric type is not a derived index.  
Maximum length: 255  
Maximum number of user-defined columns: 5  
Optional |                                                                                                                                                                                                                                                                                                                                                       |
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>udc3_object_id</td>
<td>The identifier for the third user-defined column for the metric type. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum number of user-defined columns: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>26</td>
<td>udc4_object_id</td>
<td>The identifier for the fourth user-defined column for the metric type. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum number of user-defined columns: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>27</td>
<td>udc5_object_id</td>
<td>The identifier for the fifth user-defined column for the metric type. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum number of user-defined columns: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>28</td>
<td>url</td>
<td>The definition of what appears on the <strong>Reports</strong> tab.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corresponds to the URL on the <strong>General</strong> tab for a report.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for a custom report</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The URL is for backward compatibility with version 2.2. The URL object is imported through the .cmo file (object_type_cd URL). The URL association with other objects is imported through the .cml file.</td>
</tr>
<tr>
<td>29</td>
<td>leaf_level_id</td>
<td>The lowest level in the calendar to track data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, Q means only store data for years and quarters, if the standard Year, Quarter, and Month calendar is used.</td>
</tr>
<tr>
<td>30</td>
<td>latest_time_level_id</td>
<td>The calendar level to show when the <strong>Most recent values</strong> is selected.</td>
</tr>
</tbody>
</table>

---

Appendix B: Tab-delimited Files
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>delete_flag</td>
<td>The flag indicating whether the metric type is to be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No), C (Column)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When you set the value to C, udcn_object_id objects are deleted from the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>32</td>
<td>default_group_view_id</td>
<td>The default grouping to show when this metric type is selected.</td>
</tr>
<tr>
<td>33</td>
<td>hc_yaxis_min</td>
<td>The minimum value from which bar or line graphs originate. This is used to ensure all graphs have the same scale.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If a value is not provided, the graphs will scale automatically.</td>
</tr>
<tr>
<td>34</td>
<td>hc_yaxis_max</td>
<td>The maximum setting for the vertical axis of history charts.</td>
</tr>
<tr>
<td>35</td>
<td>hc_include_zero</td>
<td>The flag indicating whether the graphs show zero.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Different from hc_yaxis_min in that if all values are negative, the minimum can be set below zero and then zero will be at the top of the scale.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: Not shown</td>
</tr>
<tr>
<td>36</td>
<td>default_diagram_id</td>
<td>The identifier of the default diagram for this metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>37</td>
<td>default_report_id</td>
<td>The identifier of the default report for this metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>38</td>
<td>score_type</td>
<td>The setting to determine how the score is calculated for the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (global score calculation setting), T (threshold method using targets or user-defined columns)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>39</td>
<td>target_threshold1</td>
<td>The value from which to take the threshold value. Values: T, B, B2, B3, B4, B5</td>
</tr>
<tr>
<td>40</td>
<td>target_threshold1_incl</td>
<td>The setting to determine if the range above (A) the threshold or below (B) the threshold is included. Values: A, B</td>
</tr>
<tr>
<td>41</td>
<td>target_threshold2</td>
<td>The value from which to take the threshold value. Values: T, B, B2, B3, B4, B5</td>
</tr>
<tr>
<td>42</td>
<td>target_threshold2_incl</td>
<td>The setting to determine if the range above (A) the threshold or below (B) the threshold is included. Values: A, B</td>
</tr>
<tr>
<td>43</td>
<td>target_threshold3</td>
<td>The value from which to take the threshold value. Values: T, B, B2, B3, B4, B5</td>
</tr>
<tr>
<td>44</td>
<td>target_threshold3_incl</td>
<td>The setting to determine if the range above (A) the threshold or below (B) the threshold is included. Values: A, B</td>
</tr>
<tr>
<td>45</td>
<td>target_threshold4</td>
<td>The value from which to take the threshold value. Values: T, B, B2, B3, B4, B5</td>
</tr>
<tr>
<td>46</td>
<td>target_threshold4_incl</td>
<td>The setting to determine if the range above (A) the threshold or below (B) the threshold is included. Values: A, B</td>
</tr>
<tr>
<td>47</td>
<td>owner_user_ns_id</td>
<td>The identifier of an IBM Cognos BI authentication namespace used to resolve the reference in the owner_user_id column.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used to differentiate the value in the owner_user_id when more than one IBM Cognos BI authentication namespace is configured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>48</td>
<td>owner_user_id</td>
<td>The unique identifier for the owner of the metric type.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The name of the user, the identification of the user, or the search-path field in IBM Cognos BI.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: owner ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 2000</td>
</tr>
<tr>
<td>49</td>
<td>default_weight</td>
<td>The default weight for metrics and metric types associated with the strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The weight determines how much influence the contributing metrics will have when calculating the status of the strategy element using the weighted average rollup rule. The weight can be overridden when metric and metric types are associated with the strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only numerical values are allowed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 10</td>
</tr>
<tr>
<td>50</td>
<td>kpicl_rollup_cd</td>
<td>The rollup code specifying how the actual, target, and tolerance values are calculated. It applies only when the metric type is a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for derived index metric types</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: WA (weighted average), MIN (min: bubble up red), MAX (max: bubble up green), MODE (majority rules)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: WA (weighted average)</td>
</tr>
<tr>
<td>51</td>
<td>benchmark2_rollup_type_cd</td>
<td>The code for the rollup type for the values in the second user-defined column. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>52</td>
<td>benchmark3_rollup_type_cd</td>
<td>The code for the rollup type for the values in the third user-defined column. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>53</td>
<td>benchmark4_rollup_type_cd</td>
<td>The code for the rollup type for the values in the fourth user-defined column. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>54</td>
<td>benchmark5_rollup_type_cd</td>
<td>The code for the rollup type for the values in the fifth user-defined column. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: AVG (average of individual values), FRST (first of individual values), LAST (last of individual values), MAX (maximum of individual values), MIN (minimum of individual values), SUM (sum of individual values)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: AVG (if the value of unit_cd is PERCENT), SUM (if the value of unit_cd is not PERCENT)</td>
</tr>
<tr>
<td>55</td>
<td>benchmark2_entry_level_time_id</td>
<td>The level in the business calendar at which the second user-defined column data is entered. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td>56</td>
<td>benchmark3_entry_level_time_id</td>
<td>The level in the business calendar at which the third user-defined column data is entered. It only applies when the metric type is not a derived index.</td>
</tr>
</tbody>
</table>
### Object Link Stage File (.cml)

The object link stage file (.cml) imports links or relationships between IBM® Cognos® Metric Studio objects, such as between

- a metric and a scorecard other than its home scorecard
- a document URL and a metric, metric type, or scorecard
- a metric or metric type and a strategy element
- a metric and another metric, to define the impact of one metric on the other or to create derived metrics
- a diagram and a metric, metric type, or scorecard

Use this file to set up your scorecarding environment. You can have more than one .cml file, such as one for mapping strategy elements and one for links.

Unlike previous versions of Metric Studio, you no longer use the object link stage file to assign permissions to view or edit an object. For information about transforming permissions in the object link stage file to the stage policy file (.cms), see the IBM Cognos Installation and Configuration Guide.

You can also create links manually.

The object link stage file loads the object_link_stage table. The columns in the object link stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>benchmark4_entry_level_time_id</td>
<td>The level in the business calendar at which the fourth user-defined column data is entered. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td>58</td>
<td>benchmark5_entry_level_time_id</td>
<td>The level in the business calendar at which the fifth user-defined column data is entered. It only applies when the metric type is not a derived index.</td>
</tr>
<tr>
<td>59</td>
<td>created_dt</td>
<td>The date the object was created. Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
</tbody>
</table>

hh:mm:ss values are optional. Required
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>object_id</td>
<td>The unique identifier for the object. Must be the same as object_id in the .cmo file. Maximum length: 255</td>
</tr>
<tr>
<td>2</td>
<td>object_type_cd</td>
<td>The code indicating the type of object. Values: KPI (metric), KPICL (metric type), SC (scorecard), URL (report), GRP (strategy element), DGM (diagram), PRO (project) Maximum length: 50 Required</td>
</tr>
<tr>
<td>3</td>
<td>kpi_indicator_type_id</td>
<td>The metric type identifier for the first metric. This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface. Required</td>
</tr>
<tr>
<td>4</td>
<td>kpi_home_sc_id</td>
<td>The home scorecard identifier of the first metric. This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>5</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier used to distinguish the first metric from other metrics of the same type on the same home scorecard. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>6</td>
<td>linked_object_id</td>
<td>The unique identifier for the object to which you are linking. Maximum length: 255 Required</td>
</tr>
<tr>
<td>7</td>
<td>linked_object_type_cd</td>
<td>The object type of the object to which you are linking. Values: KPI (metric), KPICL (metric type), SC (scorecard), URL (report), GRP (strategy element), DGM (diagram), PRO (project) Required</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8</td>
<td>linked_kpi_indicator_type_id</td>
<td>The metric type identifier for the second metric. This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>9</td>
<td>linked_kpi_home_sc_id</td>
<td>The home scorecard identifier of the second metric. This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>10</td>
<td>linked_kpi_qualifier_id</td>
<td>The unique identifier of the qualifier used to distinguish the second metric from other metrics of the same type on the same home scorecard. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>11</td>
<td>link_qualifier</td>
<td>When linking two metrics, the specification of the first metric as the one that drives or is driven by the second metric. The linked_object_type_cd must be KPI. Values: DRIVES, DRIVEN_BY These values are not case sensitive.</td>
</tr>
<tr>
<td>12</td>
<td>weight</td>
<td>The number representing the weighting of the link used when defining derived metrics. Corresponds to the weight shown for a derived index. Applies only to metric-to-metric links.</td>
</tr>
<tr>
<td>13</td>
<td>include_in_calc</td>
<td>For a derived index, the flag indicating whether to include this link as part of the calculation. Values: Y (Yes), N (No: usually used when you link two metrics in a diagram) Applies to metric-to-metric links.</td>
</tr>
<tr>
<td>14</td>
<td>include_descendants</td>
<td>The flag indicating whether descendants of this object should be linked. Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>sort_order</td>
<td>A number indicating the ordering of the link in relation to other links to the same object. This number controls the order in which metrics appear in the scorecard list. Metrics in a scorecard cannot be sorted on user-defined columns. <strong>Tip:</strong> To control the order in which metrics appear in the metrics types list, use the default_sort_order column in the .cmo file.</td>
</tr>
<tr>
<td>16</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing. Values: EN (English), FR (French), JA (Japanese), and so on. Links are language independent, but some link types are identified using language dependent strings, such as a strategy name or a permission level. If you are not using English, ensure that the string you are using matches the language code. Default: EN (English)</td>
</tr>
<tr>
<td>17</td>
<td>delete_flag</td>
<td>The flag indicating whether the link is to be deleted. Values: Y (Yes), N (No) Default: N</td>
</tr>
<tr>
<td>18</td>
<td>created_dt</td>
<td>The date the link was created. Format: yyyy-mm-dd hh:mm:ss (24-hour clock) (hh:mm:ss values are optional) Required</td>
</tr>
</tbody>
</table>

**Value Stage File (.cmv)**

We strongly recommend that you use the .cmo file (p. 164) to create metrics.

The value stage file (.cmv) imports metric values. Once you set up the scorecards and metric types, you can use this file to periodically update the metric values or to add new metrics to existing metric types. You can have more than one .cmv file.

Each row of information in the file contains a single value for a single period. For example, a metric named Web Sales has a target value of 200000 and an actual value of 210000 for the month of
July. The value stage file needs two rows of information, one for the July actual, and one for the July target.

Ensure that the value stage file contains all columns even if they are null.

The .cmv file does not have a delete_flag column. To delete a value, set the value to null. When reloading the metric store, the value will be updated. This applies to all value types.

To load new non-text values in the kpi_value column or new text values in the kpi_text column, you must specify values that are not null.

The value stage file loads the kpi_value_stage table. The columns in the value stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>year_nr</td>
<td>The year. Format: yyyy. This column is provided for backward compatibility with previous versions of IBM® Cognos® Metric Studio. Use only if the start_time_cd and level_id columns are both empty.</td>
</tr>
<tr>
<td>2</td>
<td>time_period_cd</td>
<td>The time period. Values: P (periodic), D (daily; if this value is used, you must enter a value for column 4, day_nr), Q (quarterly), Y (yearly) This column is provided for backward compatibility with previous versions of Metric Studio. Use only if the start_time_cd and level_id columns are both empty.</td>
</tr>
<tr>
<td>3</td>
<td>period_nr</td>
<td>The period to which the metric data applies, such as period 1 for the first month of the fiscal year. Default: 1 This column is provided for backward compatibility with previous versions of Metric Studio. Use only if the start_time_cd and level_id columns are both empty.</td>
</tr>
<tr>
<td>4</td>
<td>day_nr</td>
<td>The number of the day within the period. It is null for periodic data. Default: 1 This column is provided for backward compatibility with previous versions of Metric Studio. Use only if the start_time_cd and level_id columns are both empty.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>kpi_id</td>
<td>A unique identifier for the metric. Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>6</td>
<td>value_type_cd</td>
<td>One of these metric value types: A (actual), T (target), O (tolerance), B (default user-defined column), or object_id (identifier for a user-defined column if the default user-defined column is not used; corresponds to the object_id in the .cmo file).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>7</td>
<td>kpi_value</td>
<td>The metric value defined by value_type_cd.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>8</td>
<td>currency_cd</td>
<td>An ISO currency code.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required if the metric type is currency; must be null if the metric type is not currency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: null</td>
</tr>
<tr>
<td>9</td>
<td>last_updated_dt</td>
<td>The date the metric was updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only used when value_type_cd is set to actual.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: system date</td>
</tr>
<tr>
<td>10</td>
<td>kpi_nm</td>
<td>A name for the metric. We strongly recommend that you use object_nm in the .cmo file to define it. Maximum length: 255</td>
</tr>
<tr>
<td>11</td>
<td>scorecard_id</td>
<td>The unique identifier for the home scorecard. We strongly recommend that you use object_id in the .cmo file to define it. If the object_id does not exist, Metric Studio creates it based on the information entered in this column.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required if the metric is created in this file</td>
</tr>
<tr>
<td>12</td>
<td>scorecard_nm</td>
<td>The name for the scorecard. We strongly recommend that you use object_nm in the .cmo file to define it. Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required if the scorecard is created in this file</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>13</td>
<td>kpi_class_id</td>
<td>The unique identifier for the metric type. We strongly recommend that you use kpi_indicator_type_id in the .cmo file to define it. Maximum length: 255 Required if the metric is created in this file.</td>
</tr>
<tr>
<td>14</td>
<td>data_source_id</td>
<td>The unique identifier for the import source. We strongly recommend that you use object_id in the .cmo file to define it. Maximum length: 255 Required if the import source is new; if it does not exist, Metric Studio creates it.</td>
</tr>
<tr>
<td>15</td>
<td>data_source_nm</td>
<td>A name for the import source. We strongly recommend that you use ds_filename in the .cmo file to define it. Maximum length: 255 Required for a new import source.</td>
</tr>
<tr>
<td>16</td>
<td>parent_scorecard_id</td>
<td>The unique identifier for the parent scorecard of the scorecard specified by scorecard_id. Specifies a value when the home scorecard is nested in another scorecard. We strongly recommend that you use parent_object_id in the .cmo file to define it. Maximum length: 255</td>
</tr>
<tr>
<td>17</td>
<td>qualifier_id</td>
<td>The unique identifier of the qualifier to distinguish this metric from other metrics of the same type on the same home scorecard. We strongly recommend that you use object_id in the .cmo file to define it. Not required to load data.</td>
</tr>
<tr>
<td>18</td>
<td>qualifier_nm</td>
<td>The name of the qualifier. We strongly recommend that you use qualifier_nm in the .cmo file to define it. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>19</td>
<td>start_time_cd</td>
<td>The calendar date that identifies the period for the current data row.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>20</td>
<td>level_id</td>
<td>The calendar level that identifies the period for the current data row.</td>
</tr>
<tr>
<td>21</td>
<td>kpi_text</td>
<td>The metric text value. Only applied when value_type_cd is specified as a user-defined column.</td>
</tr>
<tr>
<td>22</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing. Values: EN (English), FR (French), JA (Japanese), and so on. Default: EN (English)</td>
</tr>
<tr>
<td>23</td>
<td>created_dt</td>
<td>The date and time the metric was created. Format: yyyy-mm-dd hh:mm:ss (24-hour clock) (hh:mm:ss values are optional) Required</td>
</tr>
</tbody>
</table>

**Stage Diagram File (.cdo)**

The stage diagram file (.cdo) contains the data required to create a specific diagram. First, you create a diagram object and caption in the .cmo file (p. 164). Then, in the stage diagram file, you specify where each object, such as a metric or an arrow, is to be placed on the diagram. You need one row in the stage diagram file for each object on the diagram.

The stage diagram file loads the stage_diagram table. The columns in the stage diagram file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>diagram_id</td>
<td>The unique identifier for the diagram. The value is the object_id value in the .cmo file. Maximum length: 255 Required</td>
</tr>
<tr>
<td>2</td>
<td>image</td>
<td>The .gif or .jpg file for the background image. Maximum length: 255</td>
</tr>
<tr>
<td>3</td>
<td>palette</td>
<td>The ID of the palette. Corresponds to the palette on the diagram property sheet. Maximum length: 60</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>symbol_id</td>
<td>The type of graphical object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values (case sensitive):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_KPI for metric shortcut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_KPX for metric placeholder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_grp for strategy element shortcut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_grx for strategy element placeholder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_Title for title text</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_Oval for elliptical shape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_Rect for rectangular shape</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_Line for free line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_VertLine for vertical line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_HorizLine for horizontal line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_Arrow for graphical free arrow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sym_DGM for diagram</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 60</td>
</tr>
<tr>
<td>5</td>
<td>object_id</td>
<td>A unique identifier for the diagram object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td>6</td>
<td>object_type_cd</td>
<td>The code indicating the type of object. The value is the object_type_cd in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the .cmo file.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If you are linking objects, this is the code for the linked from object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The linked to code is identified by the linked_object_type_cd.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: DGMT (diagram), KPI (metric), DGM (caption)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 50</td>
</tr>
<tr>
<td>7</td>
<td>kpi_indicator_type_id</td>
<td>The metric type identifier of the first metric in a diagram.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the metric type in the .cmm file</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or metric_type_stage table, or the identifier that was entered in the user</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interface.</td>
</tr>
</tbody>
</table>

Appendix B: Tab-delimited Files
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>kpi_home_sc_id</td>
<td>The home scorecard identifier of the first metric in a diagram. This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>9</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier of the first metric in a diagram. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>10</td>
<td>xpos</td>
<td>The x axis on the diagram. Range in pixels: 0, 600</td>
</tr>
<tr>
<td>11</td>
<td>ypos</td>
<td>The y axis on the diagram. Range in pixels: 0, 600</td>
</tr>
<tr>
<td>12</td>
<td>object_visible_flag</td>
<td>The flag indicating whether a caption is shown in the diagram. Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: Y</td>
</tr>
<tr>
<td>13</td>
<td>linked_object_id</td>
<td>The unique identifier of the object to which you are linking in a diagram. The object from which you are linking is identified by the object_id. Maximum length: 255</td>
</tr>
<tr>
<td>14</td>
<td>linked_object_type_cd</td>
<td>The unique code of the object to which you are linking in a diagram. The object from which you are linking is identified by the object_type_cd. Value: KPI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>linked_kpi_indicator_type_id</td>
<td>The metric type identifier for the second metric in a diagram. This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>16</td>
<td>linked_kpi_home_sc_id</td>
<td>The home scorecard identifier of the second metric in a diagram. This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>17</td>
<td>linked_kpi_qualifier_id</td>
<td>The unique identifier of the qualifier of the second metric in a diagram. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>18</td>
<td>diagram_type</td>
<td>Reserved for future applications. Value: 0</td>
</tr>
<tr>
<td>19</td>
<td>symbol_type</td>
<td>The type of status indicator symbols to display. Values: traffic, checks, symbol</td>
</tr>
<tr>
<td>20</td>
<td>symbol_size</td>
<td>The size of the status indicator symbols. Values: 16, 32, 48 Required</td>
</tr>
<tr>
<td>21</td>
<td>symbol_text</td>
<td>The flag indicating whether the metric name is displayed beside each status indicator. Optional Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>22</td>
<td>xend</td>
<td>The coordinates of the second endpoint (lines) or opposite corners of a bounding rectangle. Required for ovals and rectangles</td>
</tr>
<tr>
<td>23</td>
<td>yend</td>
<td>The coordinates of the second endpoint (lines) or opposite corners of a bounding rectangle. Required for ovals and rectangles</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>24</td>
<td>object_color</td>
<td>The color of an object. Format: #RRGGBB (HTML format) where RR is the hexadecimal value for red, GG for green, and BB for Blue Default: Black</td>
</tr>
<tr>
<td>25</td>
<td>object_fill_color</td>
<td>The fill color for ovals and rectangles. Can be different than the outline color. Format: #RRGGBB (HTML format) where RR is the hexadecimal value for red, GG for green, and BB for Blue Default: Black Optional</td>
</tr>
<tr>
<td>26</td>
<td>object_stroke</td>
<td>The line width for line-based shapes. Values: an integer between 8 and 48 Required for line-based objects</td>
</tr>
<tr>
<td>27</td>
<td>object_font</td>
<td>The font name for text objects. Values: Arial, Andale WT, Tahoma, Verdana, Times New Roman, Courier New Required for text objects</td>
</tr>
<tr>
<td>28</td>
<td>object_bold</td>
<td>The flag indicating whether a sym_TitleText object should be displayed in bold. Optional Values: Y (Yes), N (No) Default: N</td>
</tr>
<tr>
<td>29</td>
<td>object_italics</td>
<td>The flag indicating whether a sym_TitleText object should be displayed in italics. Italics do not apply to the Andale WT font. Optional Values: Y (Yes), N (No) Default: N</td>
</tr>
<tr>
<td>30</td>
<td>strategy_elem1_id</td>
<td>The identifier of the primary strategy element. Applies only to strategy objects.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>31</td>
<td>strategy_elem2_id</td>
<td>The identifier of the secondary strategy element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to strategy objects.</td>
</tr>
<tr>
<td>32</td>
<td>strategy_id</td>
<td>The identifier of the strategy.</td>
</tr>
<tr>
<td>33</td>
<td>x3</td>
<td>The x coordinate of the control point of a bezier curved line drawn between x1,y1 and x2,y2.</td>
</tr>
<tr>
<td>34</td>
<td>y3</td>
<td>The y coordinate of the control point of a bezier curved line drawn between x1,y1 and x2,y2.</td>
</tr>
<tr>
<td>35</td>
<td>z_index</td>
<td>When objects are stacked, the layer to which this object belongs.</td>
</tr>
<tr>
<td>36</td>
<td>angle</td>
<td>The angle at which to draw text and images.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For future use.</td>
</tr>
<tr>
<td>37</td>
<td>image_source</td>
<td>The file name of an image.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td>38</td>
<td>arrow_from_obj-id</td>
<td>The external identifier (object_id) of where the tail of the arrow starts.</td>
</tr>
<tr>
<td>39</td>
<td>arrow_to_obj-id</td>
<td>The external identifier (object_id) of where the head of the arrow ends.</td>
</tr>
<tr>
<td>40</td>
<td>font_underline</td>
<td>The flag indicating whether the text is underlined.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>41</td>
<td>font_size</td>
<td>The font size of the text.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: an integer between 8 and 48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 14</td>
</tr>
<tr>
<td>42</td>
<td>show_name</td>
<td>The flag indicating whether to display the metric name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: Y</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>43</td>
<td>name_position</td>
<td>The position of the metric name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 0 (right of indicator), 1 (above indicator), 2 (below indicator), 3 (left of indicator)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 0</td>
</tr>
<tr>
<td>44</td>
<td>show_trend</td>
<td>The flag indicating whether to display the metric trend icon.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 0 (do not show), 1 (show trend), 2 (show actual trend), 3 (use default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option 3 (use default) uses the default set under Tools, Default Display Settings.</td>
</tr>
<tr>
<td>45</td>
<td>icon_size</td>
<td>The size of the metric trend icon.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 16, 32, 48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 32</td>
</tr>
<tr>
<td>46</td>
<td>object_group_number</td>
<td>For future use.</td>
</tr>
<tr>
<td>47</td>
<td>created_dt</td>
<td>The date the diagram was created.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hh:mm:ss values are optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>

**Stage Object Note File (.cmn)**

The stage object note file (.cmn) contains comments about metrics, projects, and strategy elements. These comments are shown in a separate frame below the metrics. For example, the owner of a metric that is trending downwards can use comments to let other users know that action is being taken.

Comments can also be associated with tasks and actions.

Notes in IBM® Cognos® Metrics Manager 2.2 or earlier did not have subject fields. IBM Cognos Metric Studio does have subject fields. If you import notes from earlier versions, the import process populates the subject field with up to 255 characters from the body of the note. These characters are also imported into the body of the comment.

Metric Studio uniquely identifies each comment by the unique identifier comment_id.

The stage object note file loads the stage_object_note table. The columns in the stage object note file are as follows.
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>object_id</td>
<td>A unique identifier for the metric, project, or strategy element that has the associated comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>2</td>
<td>kpi_indicator_type_id</td>
<td>The metric type identifier for the metric to which you are attaching a comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>3</td>
<td>kpi_home_sc_id</td>
<td>The identifier of the home scorecard of the metric to which you are attaching a comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>4</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier used to distinguish the metric to which you are attaching a comment from other metrics of the same type on the same home scorecard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>5</td>
<td>user_namespace_id</td>
<td>The identifier of an IBM Cognos BI authentication namespace used to resolve the reference in the owner_user_id column.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used to differentiate the value in the owner_user_id when more than one IBM Cognos BI authentication namespace is configured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>6</td>
<td>user_id</td>
<td>The unique identifier for the owner of the object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The name of the user, the identification of the user, or the search-path field in IBM Cognos BI.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: owner ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 2000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>7</td>
<td>note</td>
<td>The text of the comment.</td>
</tr>
<tr>
<td>8</td>
<td>start_time_cd</td>
<td>The start date and time of the time period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for a comment added to a metric; not required for a comment added to a project or strategy element</td>
</tr>
<tr>
<td>9</td>
<td>level_id</td>
<td>The unique identifier for the time level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for a comment added to a metric; not required for a comment added to a project or strategy element</td>
</tr>
<tr>
<td>10</td>
<td>priority</td>
<td>The level of importance of the comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: 1 (low), 2 (normal), 3 (high)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>11</td>
<td>delete_flag</td>
<td>The flag indicating whether the comment is to be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes: the user, date, and time still show under action history); N (No: do not delete)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>12</td>
<td>subject</td>
<td>The title for the comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>13</td>
<td>comment_id</td>
<td>The unique identifier of the comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>14</td>
<td>object_type_cd</td>
<td>The object type code for the parent of the comment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: KPI (metric), PRO (project), STELM (strategy element)</td>
</tr>
<tr>
<td>15</td>
<td>created_dt</td>
<td>The date the comment was created.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hh:mm:ss values are optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>
Stage Custom Parameters File (.cmp)

You can create custom parameters and associate them with IBM® Cognos® Metric Studio metrics, metric types, and scorecards. Use custom parameters to pass information in a URL that is not normally stored in Metric Studio, such as an object identifier for another system.

The stage custom parameters file loads the stage_custom_params table. The columns in the stage custom parameters file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>object_type_cd</td>
<td>The code indicating the type of object with which this parameter is associated. Values: KPI (metric), KPICL (metric type), SC (scorecard)</td>
</tr>
<tr>
<td>2</td>
<td>object_id</td>
<td>The external ID of the object with which this parameter is associated.</td>
</tr>
<tr>
<td>3</td>
<td>kpi_indicator_type</td>
<td>The metric type identifier for the first metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>4</td>
<td>kpi_home_sc_id</td>
<td>The home scorecard identifier of the first metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>5</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier that distinguishes the first metric from other metrics of the same type on the same home scorecard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface.</td>
</tr>
<tr>
<td>6</td>
<td>parameter_name</td>
<td>The parameter name to be used in URLs.</td>
</tr>
<tr>
<td>7</td>
<td>parameter_value</td>
<td>The value of this parameter for this object.</td>
</tr>
<tr>
<td>8</td>
<td>delete_flag</td>
<td>The flag indicating whether the parameter is to be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
</tbody>
</table>
The time_periods_stage file is used to load time periods into your custom calendar.

Ensure that your custom calendar includes only complete years because you cannot add periods to a partial fiscal year.

Time periods cannot overlap. Ranges defined by the start_time_cd and end_time_cd must be unique by level and mutually exclusive. However, gaps between time periods are allowed.

The summarization of time periods in one level to time periods in a higher level is expressed as a set of parent-child relationships. These relationships are defined by including the start_time_cd of the child in the start_time_cd to end_time_cd range of the parent.

Level_id and start_time_cd uniquely identify each period.

The time periods stage file loads the time_period_stage table. The columns in the time periods stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>level_id</td>
<td>The code corresponding to the time granularity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Must match the level_id defined in the time_levels (.lvl) file.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>2</td>
<td>start_time_cd</td>
<td>The calendar-based started date for the specified period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>3</td>
<td>end_time_cd</td>
<td>The calendar-based end date for the specified period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The end_time_cd value must be specified as the last minute of a time period. For example, 2005-01-01 23:59:00.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>
### Stage Policy File (.cms)

The stage policy file loads permissions associated with the IBM® Cognos® BI security model.

When staging permissions using the metric store staging tables, policies are inherited only until another policy is found. For example, if one user is granted permissions to a top level scorecard and a different user is granted permissions to a scorecard two levels down, you must also explicitly grant permissions to the scorecard two levels down.

The stage policy file loads the stage_policy table. The columns in the stage policy file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>object_id</td>
<td>The unique identifier for the object.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>object_type_cd</td>
<td>The code indicating the type of object with which this parameter is associated. Values: KPI (metric), SC (scorecard), ASC (root of all scorecards), KPICL (metric type), AKC (root of all metric types), STELM (strategy element), AST (root of all strategy elements), STRAT (strategy)</td>
</tr>
<tr>
<td>3</td>
<td>kpi_indicator_type_id</td>
<td>The metric type identifier for the first metric. This is the identifier that was staged for the metric type in the .cmm file or metric_type_stage table, or that was entered in the user interface. Value: metric type ID Required for a metric</td>
</tr>
<tr>
<td>4</td>
<td>kpi_home_sc_id</td>
<td>The home scorecard identifier of the first metric. This is the identifier that was staged for the scorecard in the .cmo file or object_stage table, or that was entered in the user interface. Value: home scorecard ID Required for a metric</td>
</tr>
<tr>
<td>5</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier used to distinguish the first metric from other metrics of the same type on the same home scorecard. This is the identifier that was staged for the qualifier in the .cmo file or object_stage table, or that was entered in the user interface. Required if more than one type of this metric exists on the same home scorecard</td>
</tr>
<tr>
<td>6</td>
<td>security_namespace_id</td>
<td>The identifier of an IBM Cognos BI authentication namespace used to resolve the reference in the security_reference_id column. Used to differentiate the value in the security_reference_id when more than one IBM Cognos BI authentication namespace is configured. This value can be blank if the security_reference_id is in the form of a CAMID.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 7   | security_reference_id | The unique identifier of the security entity (user, group, or role) to which this policy applies.  
Values: The name of the security entity, identifier of the user, or the search-path field in IBM Cognos BI |
| 8   | delete_policy         | The flag indicating whether or not to delete the corresponding policy from the database.  
If the security_reference_id is blank, all policies associated with the object are deleted.  
Values: Y (Yes), N (No)  
Default: N |
| 9   | read_perm             | The state of the Read permission.  
Values: D (deny), G (grant), U (unset)  
Default: U |
| 10  | write_perm            | The state of the Write permission.  
Values: D (deny), G (grant), U (unset)  
Default: U |
| 11  | setpolicy_perm        | The state of the Set policy permission.  
Values: D (deny), G (grant), U (unset)  
Default: U |
| 12  | readannotations_perm  | The state of the Read comments permission.  
Applies only to objects of type KPI, SC, ASC, and STELM.  
Values: D (deny), G (grant), U (unset)  
Default: U |
| 13  | annotate_perm         | The state of the Write comments permission.  
Applies only to objects of type KPI, SC, ASC, and STELM.  
Values: D (deny), G (grant), U (unset)  
Default: U |
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>writeproject_perm</td>
<td>The state of the Write project permission.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to objects of type KPI, SC, ASC, and STELM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (deny), G (grant), U (unset)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: U</td>
</tr>
<tr>
<td>15</td>
<td>writeactual_perm</td>
<td>The state of the Write actual permission.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to objects of type KPI, SC, and ASC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (deny), G (grant), U (unset)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: U</td>
</tr>
<tr>
<td>16</td>
<td>writetarget_perm</td>
<td>The state of the Write target permission.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to objects of type KPI, SC, and ASC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (deny), G (grant), U (unset)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: U</td>
</tr>
<tr>
<td>17</td>
<td>writetolerance_perm</td>
<td>The state of the Write tolerance permission.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to objects of type KPI, SC, and ASC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (deny), G (grant), U (unset)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: U</td>
</tr>
<tr>
<td>18</td>
<td>writeudc_perm</td>
<td>The state of the Write UDC permission.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applies only to objects of type KPI, SC, and ASC.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: D (deny), G (grant), U (unset)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: U</td>
</tr>
<tr>
<td>19</td>
<td>security_reference_type</td>
<td>The type of security entity being referenced in the security_reference_id column.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional: can be used to resolve ambiguities if the security reference resolves to more than one security entity of different types</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: A (account), G (group), R (role)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: none</td>
</tr>
</tbody>
</table>
Import Source Currency Stage File (.ccm)

The import source currency stage file specifies the currency expressions from the cube import source and the corresponding currency codes in IBM® Cognos® Metric Studio. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import source currency stage file loads the import_source_currency_stage table. The columns in the import source currency stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>import_source_id</td>
<td>The unique identifier of the cube import source.</td>
</tr>
<tr>
<td>2</td>
<td>currency_cd</td>
<td>The currency code used by Metric Studio.</td>
</tr>
<tr>
<td>3</td>
<td>currency_cube_exp</td>
<td>The currency expressions used in the cube.</td>
</tr>
<tr>
<td>4</td>
<td>iso_country_cd</td>
<td>The ISO country code used in the cube.</td>
</tr>
<tr>
<td>5</td>
<td>created_dt</td>
<td>The date the comment was created.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hh:mm:ss values are optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>

Import Source Reportlet Stage File (.crm)

The import source reportlet stage file defines which reports are available for the cube import source. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import source reportlet stage file loads the import_source_reportlet_stage table. The columns in the import source reportlet stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>import_source_id</td>
<td>The unique identifier of the cube import source.</td>
</tr>
<tr>
<td>2</td>
<td>reportlet_nm</td>
<td>The unique identifier of the report.</td>
</tr>
<tr>
<td>3</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: EN (English), FR (French), JA (Japanese), and so on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: EN (English)</td>
</tr>
<tr>
<td>4</td>
<td>category_exp</td>
<td>An expression that defines the x-axis on a report.</td>
</tr>
</tbody>
</table>
The import source time levels stage file specifies the time levels from the import source and the corresponding time level in IBM® Cognos® Metric Studio. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import source time levels stage file loads the import_source_tl_stage table. The columns in the import source time levels stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>level_id</td>
<td>The unique identifier for the time level.</td>
</tr>
<tr>
<td>2</td>
<td>import_source_id</td>
<td>The unique identifier of the cube import source.</td>
</tr>
<tr>
<td>3</td>
<td>time_level_exp</td>
<td>The IBM Cognos BI expression for a time level in a cube.</td>
</tr>
<tr>
<td>4</td>
<td>time_level_path</td>
<td>The time level path in a cube.</td>
</tr>
<tr>
<td>5</td>
<td>created_dt</td>
<td>The date the import was created.</td>
</tr>
</tbody>
</table>

Format: yyyy-mm-dd hh:mm:ss (24-hour clock)

(hh:mm:ss values are optional)

Required

The import source time periods stage file identifies time period information in the cube import source. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import source time periods stage file loads the import_source_tp_stage table. The columns in the import source time periods stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>level_id</td>
<td>The unique identifier for the time level.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2</td>
<td>start_time_cd</td>
<td>The calendar date that identifies the period for the current data row.</td>
</tr>
<tr>
<td>3</td>
<td>end_time_cd</td>
<td>The calendar-based end date for the specified period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The end_time_cd value must be specified as the last minute of a time period.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For example, 2005-01-01 23:59:00.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>4</td>
<td>import_source_id</td>
<td>The unique identifier of the cube import source.</td>
</tr>
<tr>
<td>5</td>
<td>time_period_exp</td>
<td>The IBM® Cognos® BI expression for the time period used in the cube.</td>
</tr>
<tr>
<td>6</td>
<td>created_dt</td>
<td>The date the import was created.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hh:mm:ss values are optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>

**Stage Project File (.pro)**

The stage project file loads projects, actions, and tasks.

The stage project file loads the stage_project table. The columns in the stage project file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>project_id</td>
<td>The external object identifier for a project, action, or task.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>2</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: EN (English), FR (French), JA (Japanese), and so on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: EN (English)</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>default_sort_order</td>
<td>A number indicating the ordering of the object in relation to other objects of the same type in the system. This is the default order and can be overridden by a user. For example, the default_sort_order for projects, actions, or tasks controls the order in which the projects, actions, or tasks appear in the projects list. <strong>Tip:</strong> To control the order in which projects, actions, or tasks appear in the projects list, use the sort_order column in the .cml file.</td>
</tr>
<tr>
<td>4</td>
<td>owner_user_ns_id</td>
<td>The identifier of an IBM® Cognos® BI authentication namespace used to resolve the reference in the owner_user_id column. Used to differentiate the value in the owner_user_id when more than one IBM Cognos BI authentication namespace is configured. Optional</td>
</tr>
<tr>
<td>5</td>
<td>owner_user_id</td>
<td>The unique identifier for the owner of the object. The name of the user, the identification of the user, or the search-path field in IBM Cognos BI. Value: owner ID</td>
</tr>
<tr>
<td>6</td>
<td>project_nm</td>
<td>The name of the project, action, or task. Maximum: 255 Required</td>
</tr>
<tr>
<td>7</td>
<td>project_desc</td>
<td>The description of the project, action, or task. Maximum: 1000</td>
</tr>
<tr>
<td>8</td>
<td>parent_object_id</td>
<td>The external_object_id of the parent of the project, task, or action. This refers to a scorecard in the case of a project, a project in the case of a task, or a metric in the case of an action. Required Maximum: 255</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>kpi_indicator_type_id</td>
<td>The unique identifier of the metric type for the metric. Required if you do not use the parent_object_id column Value: metric type ID</td>
</tr>
<tr>
<td>10</td>
<td>kpi_home_sc_id</td>
<td>The unique identifier of the home scorecard for the metric. Required if you do not use the parent_object_id column Value: home scorecard ID</td>
</tr>
<tr>
<td>11</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier to distinguish this metric from other metrics of the same type on the same home scorecard. Required if you do not use the parent_object_id column Corresponds to the object_id in the .cmo file.</td>
</tr>
<tr>
<td>12</td>
<td>on_budget_metric_id</td>
<td>The external_object_id of the metric that monitors the budget of a project. Optional Maximum: 255</td>
</tr>
<tr>
<td>13</td>
<td>planned_start_dt</td>
<td>The planned start date of the project.</td>
</tr>
<tr>
<td>14</td>
<td>actual_start_dt</td>
<td>The actual start date of the project.</td>
</tr>
<tr>
<td>15</td>
<td>planned_completion_dt</td>
<td>The planned finish date of the project. The planned finish date is when the project should be finished.</td>
</tr>
<tr>
<td>16</td>
<td>forecast_completion_dt</td>
<td>The forecasted completion date of the project. The forecasted completion date is when the project will likely be completed. If the forecasted completion date is later than the planned completion date, then the project is behind schedule.</td>
</tr>
<tr>
<td>17</td>
<td>actual_completion_dt</td>
<td>The actual completion date of the project.</td>
</tr>
<tr>
<td>18</td>
<td>percent_complete</td>
<td>The percentage of the project that is complete.</td>
</tr>
<tr>
<td>19</td>
<td>default_report_id</td>
<td>The identifier of the default report for this project. Optional</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>20</td>
<td>delete_flag</td>
<td>The flag indicating whether the project is to be deleted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: N</td>
</tr>
<tr>
<td>21</td>
<td>parent_object_type_cd</td>
<td>The code for the parent object type of the project, task, or action.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: SC (scorecard), PRO (project), KPI (metric)</td>
</tr>
<tr>
<td>22</td>
<td>rollup_dates</td>
<td>The flag indicating whether project dates and percentage complete are updated when task values change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Values: Y (Yes), N (No) . NULL is converted to Y.</td>
</tr>
<tr>
<td>23</td>
<td>task_weight</td>
<td>The default weight for the tasks associated with a project, or the weight of a given task.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only numerical values are allowed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default: 10</td>
</tr>
<tr>
<td>24</td>
<td>created_dt</td>
<td>The date the project was created.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Format: yyyy-mm-dd hh:mm:ss (24-hour clock)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(hh:mm:ss values are optional)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
</tbody>
</table>

**Time Language Text Stage File (.tlt)**

The time language text stage file loads localized time period names.

The time language text stage file loads the time_language_text_stage table. The columns in the time language text stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>language_text_id</td>
<td>The external object identifier for a period name.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 2   | language_cd         | The two-character identification code for the language of the data you are importing.  
Values: EN (English), FR (French), JA (Japanese), and so on  
Default: EN (English)  
Required |
| 3   | short_object_name   | The short version of the level or period name that will be used in the user interface in most situations.  
Optional |
| 4   | long_object_name    | The long version of the level or period name that will be used in mouse hovering, property pages, and so on.  
Optional |
| 5   | description         | The name for reporting and documentation.  
Optional |
| 6   | default_row         | For future use.  
For future use. |
| 7   | created_dt          | The date the object was created.  
Format: yyyy-mm-dd hh:mm:ss (24-hour clock)  
(hh:mm:ss values are optional)  
Required |

**Time Levels Stage File (.lvl)**

The time levels stage file loads the levels in your custom calendar.

The number of levels is unrestricted.

The lowest grain level contains periods that are defined to the seconds level of granularity.

Business users frequently require more detail for recent time periods and less detail for more distant time periods. For example, users might require daily numbers for recent time periods, monthly values for the previous year, and yearly totals for prior years. Currently, IBM® Cognos® Metric Studio does not support ragged hierarchies for the time levels file.

The periods of a level may not have time boundaries greater than that of its parent.

The time levels stage file loads the time_levels_stage table. The columns in the time levels stage file are as follows.
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>level_id</td>
<td>The code corresponding to the time granularity. The level_id must be a single upper case alphabetic character, A-Z. Values: any value except Y, which is reserved for the year level, and D, which is reserved for the day level. The letter used should provide an indication of the level type, such as Y (year), Q (quarter), M (month), W (week), D (day), P (manufacturing period or pay period) Maximum: 1 Required</td>
</tr>
<tr>
<td>2</td>
<td>level_number</td>
<td>The ordinal value of the level. Values: the top level of the hierarchy must be assigned a level_number of 1; descending levels in the hierarchy must be numbered sequentially Optional</td>
</tr>
<tr>
<td>3</td>
<td>language_text_id</td>
<td>The external object identifier for a period name. The language_text_id is used as the default period name if no period is provided in the time language text file. Optional</td>
</tr>
<tr>
<td>4</td>
<td>reference_display_level_id</td>
<td>The time level that is used as the parent in a history chart. Optional</td>
</tr>
</tbody>
</table>
The rule used to assign a time period to a parent time period when the time period start and end dates don’t fall within the parent time period start and end dates. If null, the dates must be contained within the parent’s dates. Metric Studio will allow only one time level row to contain a non-null value for parent_link_rule.

As parent_link_rule is typically used to define calendars containing weeks, the week example is used in the descriptions of the values.

Values: FIRST_DAY_IN_PARENT (the week will be contained in the month where the week begins), LAST_DAY_IN_PARENT (the week will be contained in the month where the week ends), MOST_DAYS_IN_PARENT (the week will be contained in the month where most of the week’s days fall)

Optional

The date the object was created.
Format: yyyy-mm-dd hh:mm:ss (24-hour clock)
(hh:mm:ss values are optional)
Required

---

**Stage Unit File (.unt)**

The stage unit file loads custom units. For information about custom units, see "Specify a Custom Unit of Measurement" (p. 109).

The stage unit file loads the stage_unit table. The columns in the stage unit file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>unit_cd</td>
<td>The unique unit code. Maximum length: 50 Required</td>
</tr>
<tr>
<td>2</td>
<td>language_cd</td>
<td>The two-character identification code for the language of the data you are importing. Values: EN (English), FR (French), JA (Japanese), and so on Default: The language of the user running the task.</td>
</tr>
<tr>
<td>No.</td>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>unit_type_cd</td>
<td>The unit type code. Values: C (Currency), G (General), P (Percent), T (Text) For pre-defined units, use C, G, P, or T. Pre-defined units cannot be created or deleted through importing the .unt file. Their names and symbols can be updated through importing the .unt file. For custom units, use G. If you do not use G for custom units, the value will be converted when imported into the metric store and a warning will be logged in the rejects table for custom units.</td>
</tr>
<tr>
<td>4</td>
<td>default_unit</td>
<td>The flag of default unit. Values: Y (Yes), N (No) Default: N</td>
</tr>
<tr>
<td>5</td>
<td>unit_nm</td>
<td>The unit name. Maximum: 250 Required</td>
</tr>
<tr>
<td>6</td>
<td>unit_symbol</td>
<td>The unit symbol. Maximum: 50</td>
</tr>
<tr>
<td>7</td>
<td>delete_flag</td>
<td>The flag indicating whether the unit is to be deleted. Values: Y (Yes), N (No) Default: N</td>
</tr>
<tr>
<td>8</td>
<td>created_dt</td>
<td>The date the object was created. Format: yyyy-mm-dd hh:mm:ss (24-hour clock) (hh:mm:ss values are optional) Required</td>
</tr>
</tbody>
</table>

**Cube Query Stage File (.ccq)**

The cube query stage file contains information for creating the dimensions to be displayed as a report. This file can be generated only from IBM® Cognos® Metric Designer for OLAP sources such as IBM Cognos PowerCube and Microsoft® analysis services. The information contained in this file is sourced from the Select dimension page of the Time and Currency Mappings portlet wizard in Metric Designer.
The cube query stage file loads the cube_query_stage table. The columns in the cube query stage file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>external_object_id</td>
<td>The external ID of the metric. Maximum length: 60</td>
</tr>
<tr>
<td>2</td>
<td>kpi_indicator_type_id</td>
<td>The unique identifier of the metric type for the metric. Value: metric type ID Required for a metric</td>
</tr>
<tr>
<td>3</td>
<td>kpi_home_sc_id</td>
<td>The unique identifier of the home scorecard for the metric. Value: home scorecard ID Required for a metric</td>
</tr>
<tr>
<td>4</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier to distinguish this metric from other metrics of the same type on the same home scorecard. Corresponds to Qualifier Name and the object_id in the .cmo file. Required if there is more than one metric of this type on the same home scorecard</td>
</tr>
<tr>
<td>5</td>
<td>data_source_id</td>
<td>The unique identifier for the import source. We strongly recommend that you use object_id in the .cmo file to define it. Maximum length: 255 Required if the import source is new; if it does not exist, Metric Studio creates it</td>
</tr>
<tr>
<td>6</td>
<td>sc_exp</td>
<td>Filter on kpi_qualifier. Maximum length: 512</td>
</tr>
<tr>
<td>7</td>
<td>measure_exp</td>
<td>Value (fact) expression. Maximum length: 512</td>
</tr>
<tr>
<td>8</td>
<td>filter_exp</td>
<td>Filter to restrict query. Maximum length: 1024</td>
</tr>
<tr>
<td>9</td>
<td>url_id</td>
<td>The external ID for the autoreport URL.</td>
</tr>
</tbody>
</table>
Stage Watchlist File (.cwl)

The stage watchlist file contains information for adding a portlet.

The stage watchlist file loads the stage_watchlist table. The columns in the stage watchlist file are as follows.

<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>kpi_id</td>
<td>A unique identifier for the metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum length: 255</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required</td>
</tr>
<tr>
<td>2</td>
<td>kpi_indicator_type_id</td>
<td>The unique identifier of the metric type for the metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: metric type ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for a metric</td>
</tr>
<tr>
<td>3</td>
<td>kpi_home_sc_id</td>
<td>The unique identifier of the home scorecard for the metric.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Value: home scorecard ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required for a metric</td>
</tr>
<tr>
<td>4</td>
<td>kpi_qualifier_id</td>
<td>The unique identifier of the qualifier to distinguish this metric from other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>metrics of the same type on the same home scorecard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Corresponds to <strong>Qualifier Name</strong> and the object_id in the .cmo file.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Required if there is more than one metric of this type on the same home</td>
</tr>
<tr>
<td></td>
<td></td>
<td>scorecard</td>
</tr>
</tbody>
</table>

---

**Note:** This document is from **IBM Cognos Metric Studio**.
<table>
<thead>
<tr>
<th>No.</th>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>user_namespace_id</td>
<td>The identifier of an IBM® Cognos® BI authentication namespace used to resolve the reference in the owner_user_id column. Used to differentiate the value in the owner_user_id when more than one IBM Cognos BI authentication namespace is configured. Maximum length: 255 Required</td>
</tr>
<tr>
<td>6</td>
<td>user_id</td>
<td>The unique identifier for the owner of the object. The name of the user, the identification of the user, or the search-path field in IBM Cognos BI. Value: owner ID Maximum length: 2000 Required</td>
</tr>
<tr>
<td>7</td>
<td>email_alert</td>
<td>The flag indicating if the email alert is on or off. Values: Y (Yes), N (No)</td>
</tr>
<tr>
<td>8</td>
<td>alert_start_dt</td>
<td>The start date and time of the email alert.</td>
</tr>
<tr>
<td>9</td>
<td>delete_flag</td>
<td>The flag indicating whether the object is to be deleted. Values: Y (Yes), N (No) Setting the flag to Y deletes metric custom titles (alias). Default: N</td>
</tr>
<tr>
<td>10</td>
<td>created_dt</td>
<td>The date the value was set in the source system. Format: yyyy-mm-dd hh:mm:ss (24-hour clock) hh:mm:ss values are optional. Required</td>
</tr>
</tbody>
</table>

**Equations (.equ)**

The .equ file contains the components for formula-based equations for metric types. This file is for internal use during data export and data import. You must import the equation items (.eqi) file when you import the equations (.equ) file.
Exception: In version 8.3.1, you can import the .equ file without the .eqi file if there are no calculations for the metric types, a metric type is defined as derived index, and a KPICL_DRIVEN_BY_KPICL link is defined in the .cml file.

Do not manually modify the .equ file. Changes to this file are not supported.

Equation Items (.eqi)

The .eqi file contains the components for formula-based equations for metric types. This file is for internal use during data export and data import. You must import the equation items (.eqi) file when you import the equations (.equ) file.

Do not manually modify the .eqi file. Changes to this file are not supported.
Appendix C: Staging Tables

You can use an extraction, transformation, and loading (ETL) process to populate the IBM® Cognos® Metric Studio staging tables, and then use the Transfer data from staging area into metric store metric maintenance task in IBM Cognos Connection to populate the metric store. For information about the metric maintenance tasks, see the IBM Cognos Administration and Security Guide.

You must understand the structure of the staging tables to create an ETL process. For more information about loading data into the staging tables, see "Loading Data into Staging Tables" (p. 48).

The staging area contains the following staging tables:

- object_stage table (p. 218)
- metric_type_stage table (p. 219)
- object_link_stage table (p. 222)
- kpi_value_stage table (p. 223)
- stage_diagram table (p. 224)
- stage_object_note table (p. 226)
- stage_custom_params table (p. 227)
- time_periods_stage table (p. 227)
- stage_policy table (p. 228)
- import_source_cu_stage table (p. 228)
- import_source_rp_stage table (p. 229)
- import_source_tl_stage table (p. 229)
- import_source_tp_stage table (p. 230)
- stage_project table (p. 230)
- time_language_text_stage table (p. 231)
- time_levels_stage table (p. 231)
- stage_unit table (p. 232)
- cube_query_stage table (p. 232)
- stage_watchlist table (p. 233)
## Object_stage Table

The object_stage table stores metrics, scorecards, documents, data sources, user-defined columns, strategies, strategy elements, user-defined names of diagrams, and captions.

The object_stage table contains the following columns.

**Note:** Column names in **bold** are no longer used but are retained for backward compatibility. For column descriptions, see "Object Stage File (.cmo)" (p. 164).

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>object_id</td>
<td></td>
</tr>
<tr>
<td>language_cd</td>
<td></td>
</tr>
<tr>
<td>object_type_cd</td>
<td></td>
</tr>
<tr>
<td>default_sort_order</td>
<td></td>
</tr>
<tr>
<td>object_nm</td>
<td></td>
</tr>
<tr>
<td>object_desc</td>
<td></td>
</tr>
<tr>
<td>object_technical_desc</td>
<td></td>
</tr>
<tr>
<td>url</td>
<td></td>
</tr>
<tr>
<td>parent_object_id</td>
<td></td>
</tr>
<tr>
<td>owner_user_ns_id</td>
<td></td>
</tr>
<tr>
<td>owner_user_id</td>
<td></td>
</tr>
<tr>
<td>diagram_object_nm</td>
<td></td>
</tr>
<tr>
<td>kpi_indicator_type_id</td>
<td></td>
</tr>
<tr>
<td>kpi_home_sc_id</td>
<td></td>
</tr>
<tr>
<td>kpi_qualifier_id</td>
<td></td>
</tr>
<tr>
<td>kpi_actuals_ds_id</td>
<td></td>
</tr>
<tr>
<td>kpi_target_ds_id</td>
<td></td>
</tr>
<tr>
<td>kpi_tolerance_ds_id</td>
<td></td>
</tr>
<tr>
<td>kpi_benchmark_ds_id</td>
<td></td>
</tr>
<tr>
<td>kpi_rollup_cd</td>
<td></td>
</tr>
<tr>
<td>ds_filename</td>
<td></td>
</tr>
<tr>
<td>include_subfolders_ind</td>
<td></td>
</tr>
<tr>
<td>user_email_address</td>
<td></td>
</tr>
<tr>
<td>user_telephone_nr</td>
<td></td>
</tr>
<tr>
<td>user_job_title</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>26.</td>
<td>delete_flag</td>
</tr>
<tr>
<td>27.</td>
<td>supports_cube_kpi_def</td>
</tr>
<tr>
<td>28.</td>
<td>package_path</td>
</tr>
<tr>
<td>29.</td>
<td>default_group_view_id</td>
</tr>
<tr>
<td>30.</td>
<td>show_group_status_counts</td>
</tr>
<tr>
<td>31.</td>
<td>all_metrics</td>
</tr>
<tr>
<td>32.</td>
<td>data_format_cd</td>
</tr>
<tr>
<td>33.</td>
<td>db_character_set</td>
</tr>
<tr>
<td>34.</td>
<td>enabled_for_load</td>
</tr>
<tr>
<td>35.</td>
<td>expand_groups</td>
</tr>
<tr>
<td>36.</td>
<td>diagram_ind_style_cd</td>
</tr>
<tr>
<td>37.</td>
<td>primary_group_type_id</td>
</tr>
<tr>
<td>38.</td>
<td>secondary_group_type_id</td>
</tr>
<tr>
<td>39.</td>
<td>default_diagram_id</td>
</tr>
<tr>
<td>40.</td>
<td>default_report_id</td>
</tr>
<tr>
<td>41.</td>
<td>decimal_char</td>
</tr>
<tr>
<td>42.</td>
<td>unit_cd</td>
</tr>
<tr>
<td>43.</td>
<td>show_others</td>
</tr>
<tr>
<td>44.</td>
<td>show_icon</td>
</tr>
<tr>
<td>45.</td>
<td>default_weight</td>
</tr>
<tr>
<td>46.</td>
<td>inherit</td>
</tr>
<tr>
<td>47.</td>
<td>auto_map_cube_periods</td>
</tr>
<tr>
<td>48.</td>
<td>parent_object_type_cd</td>
</tr>
<tr>
<td>49.</td>
<td>unit_display_ind</td>
</tr>
<tr>
<td>50.</td>
<td>decimal_places</td>
</tr>
<tr>
<td>51.</td>
<td>created_dt</td>
</tr>
</tbody>
</table>

**Metric_type_stage Table**

The `Metric_type_stage` table stores metric-type data. The `Metric_type_stage` table contains the following columns.
Note: Column names in **bold** are no longer used but are retained for backward compatibility. For column descriptions, see "Metric Type Stage File (.cmm)" (p. 172).

1. metric_type_id
2. metric_type_nm
3. metric_type_desc
4. metric_type_technical_desc
5. language_cd
6. default_from_metric_type_id
7. sort_order
8. diagram_object_nm
9. time_grain_cd
10. kpi_pattern_cd
11. tolerance_type_cd
12. prorate_target
13. unit_cd
14. unit_display_ind
15. decimal_places
16. default_weight
17. benchmark_authority_nm
18. actuals_rollup_type_cd
19. actuals_period_init_rule_cd
20. actuals_prorate_type_cd
21. target_rollup_type_cd
22. target_period_init_rule_cd
23. target_prorate_type_cd
24. tolerance_rollup_type_cd
25. tolerance_period_init_rule_cd
26. tolerance_prorate_type_cd
27. benchmark_rollup_type_cd
28. benchmark_period_init_rule_cd
29. `benchmark_prorate_type_cd`
30. `udc1_object_id`
31. `udc2_object_id`
32. `udc3_object_id`
33. `udc4_object_id`
34. `udc5_object_id`
35. `url`
36. `delete_flag`
37. `created_dt`
38. `actuals_entry_level_time_id`
39. `target_entry_level_time_id`
40. `tolerance_entry_level_time_id`
41. `benchmark_entry_level_time_id`
42. `leaf_level_id`
43. `latest_time_level_id`
44. `default_group_view_id`
45. `hc_yaxis_min`
46. `hc_yaxis_max`
47. `hc_include_zero`
48. `default_diagram_id`
49. `default_report_id`
50. `score_type`
51. `target_threshold1`
52. `target_threshold1_incl`
53. `target_threshold2`
54. `target_threshold2_incl`
55. `target_threshold3`
56. `target_threshold3_incl`
57. `target_threshold4`
58. `target_threshold4_incl`
Object_link_stage Table

The object_link_stage table stores links or relationships between IBM® Cognos® Metric Studio objects. For example, relationships could be between:

- a metric and a scorecard other than its home scorecard
- a metric and another metric that it affects
- a document URL and a metric, metric type, or scorecard
- a metric or metric type and a group
- a metric and another metric, to define the impact of one metric on the other or to create derived metrics
- a group view and the primary and secondary group types and the related scorecards and metrics on which the group view appears

You can also create links manually.

The object_link_stage table contains the following columns.

Note: For column descriptions, see "Object Link Stage File (.cml)" (p. 181).

1. object_id
2. object_type_cd
3. kpi_indicator_type_id
4. kpi_home_sc_id
5. kpi_qualifier_id
6. linked_object_id
7. linked_object_type_cd
8. linked_kpi_indicator_type_id
9. linked_kpi_home_sc_id
10. linked_kpi_qualifier_id
11. link_qualifier
12. weight
13. include_in_calc
14. include_descendants
15. sort_order
16. language_cd
17. delete_flag
18. created_dt

**Kpi_value_stage Table**

The kpi_value_stage table stores metric values. The kpi_value_stage table contains the following columns.

*Note:* Column names in **bold** are no longer used but are retained for backward compatibility. For column descriptions, see "Value Stage File (.cmv)" (p. 184).

1. year_nr
2. time_period_cd
3. period_nr
4. day_nr
5. kpi_id
6. value_type_cd
7. kpi_value
8. currency_cd
9. valid_as_at_dt
10. kpi_nm
11. scorecard_id
12. scorecard_nm
13. kpi_class_id
Stage_diagram Table

The stage_diagram table stores diagram data.

The stage_diagram table contains the following columns.

Note: Column names in bold are no longer used but are retained for backward compatibility. For column descriptions, see "Stage Diagram File (.cdo)" (p. 188).

1. diagram_id
2. image
3. palette
4. symbol_id
5. object_id
6. object_type_cd
7. kpi_indicator_type_id
8. kpi_home_sc_id
9. kpi_qualifier_id
10. xpos
11. ypos
12. xend
13. yend
14. x3
15. y3
16. z_index
17. angle
18. image_source
19. object_visible_flag
20. linked_object_id
21. linked_object_type_cd
22. linked_kpi_indicator_type_id
23. linked_kpi_home_sc_id
24. linked_kpi_qualifier_id
25. diagram_type
26. inherit
27. symbol_type
28. symbol_size
29. symbol_text
30. object_color
31. object_fill_color
32. object_stroke
33. object_font
34. object_bold
35. object_italics
36. arrow_from_obj_id
37. arrow_to_obj_id
38. font_underline
39. font_size
40. show_name
41. name_position
42. show_trend
43. icon_size
44. object_group_number
The stage_object_note table stores comments about metrics, projects, and strategy elements. IBM® Cognos® Metric Studio uniquely identifies each comment by the unique identifier comment_id. The stage_object_note table contains the following columns.

Note: Column names in bold are no longer used but are retained for backward compatibility. For column descriptions, see "Stage Object Note File (.cmn)" (p. 194).

1. object_id
2. kpi_indicator_type_id
3. kpi_home_sc_id
4. kpi_qualifier_id
5. user_id
6. note
7. year
8. period_nr
9. action_cd
10. delete_flag
11. created_dt
12. priority
13. start_time_cd
14. level_id
15. subject
16. user_namespace_id
17. user_sid
18. comment_id
19. object_type_cd
**Stage_custom_params Table**

The stage_custom_params table stores parameters associated with metrics, metric types, and scorecards. You use custom parameters to pass information in a URL that is not normally stored in IBM® Cognos® Metric Studio, such as an object identifier for another system.

The stage_custom_params table contains the following columns.

Note: For column descriptions, see "Stage Custom Parameters File (.cmp)" (p. 197).

1. object_type_cd
2. object_id
3. kpi_indicator_type_id
4. kpi_home_sc_id
5. kpi_qualifier_id
6. parameter_name
7. parameter_value
8. delete_flag
9. created_dt

**Time_periods_stage Table**

The time_periods_stage table stores the time periods of your custom calendar.

Ensure that your custom calendar includes only complete years because you cannot add periods to a partial fiscal year.

Time periods cannot overlap. Ranges defined by the start_time_cd and end_time_cd must be unique by level and mutually exclusive. However, gaps between time periods are allowed.

The summarization of time periods in one level to time periods in a higher level is expressed as a set of parent-child relationships. These relationships are defined by including the start_time_cd of the child in the start_time_cd to end_time_cd range of the parent.

Level_id and start_time_cd uniquely identify each period.

The time_periods_stage table contains the following columns.

Note: For column descriptions, see "Time Periods Stage File (.cal)" (p. 198).

1. level_id
2. start_time_cd
3. end_time_cd
4. fiscal_year_value
5. period_number
Appendix C: Staging Tables

6. language_text_id
7. created_dt

**Stage_policy Table**

The stage_policy table stores permissions associated with the IBM® Cognos® BI security model.

The stage_policy table contains the following columns.

**Note:** For column descriptions, see "Stage Policy File (.cms)" (p. 199).

1. object_id
2. object_type_cd
3. kpi_indicator_type_id
4. kpi_home_sc_id
5. kpi_qualifier_id
6. security_namespace_id
7. security_reference_id
8. delete_policy
9. read_perm
10. write_perm
11. setpolicy_perm
12. readannotations_perm
13. annotate_perm
14. writeproject_perm
15. writeactual_perm
16. writetarget_perm
17. writetolerance_perm
18. writeudc_perm
19. security_reference_type

**Import_source_cu_stage Table**

The import_source_cu table stores the currency expressions from the cube import source and the corresponding currency codes. For more information, see "Importing Data from a Cube Import Source" (p. 58).
The import_source_cu_stage table contains the following columns.

Note: For column descriptions, see "Import Source Currency Stage File (.ccm)" (p. 203).

1. import_source_id
2. currency_cd
3. currency_cube_exp
4. iso_country_cd
5. created_dt

Import_source_rp_stage Table

The import_source_rp_stage table stores the reports that are available for the cube import source. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import_source_rp_stage table contains the following columns.

Note: For column descriptions, see "Import Source Reportlet Stage File (.crm)" (p. 203).

1. import_source_id
2. reportlet_nm
3. language_cd
4. category_exp
5. created_dt

Import_source_tl_stage Table

The import_source_tl_stage table stores the time levels from the import source and the corresponding time level in IBM® Cognos® Metric Studio. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import_source_tl_stage table contains the following columns.

Note: For column descriptions, see "Import Source Time Levels Stage File (.ctl)" (p. 204).

1. level_id
2. import_source_id
3. time_level_exp
4. time_level_path
5. created_dt
Appendix C: Staging Tables

**Import_source_tp_stage Table**

The import source time periods file stores time period information in the cube import source. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The import_source_tp_stage table contains the following columns.

**Note:** For column descriptions, see "Import Source Time Periods Stage File (.ctp)" (p. 204).

1. level_id
2. start_time_cd
3. end_time_cd
4. import_source_id
5. time_period_exp
6. created_dt

**Stage_project Table**

The stage_project table stores project, action, and task data.

The stage_project table contains the following columns.

**Note:** Column names in **bold** are no longer used but are retained for backward compatibility. For column descriptions, see "Stage Project File (.pro)" (p. 205).

1. project_id
2. language_cd
3. default_sort_order
4. owner_user_ns_id
5. owner_user_id
6. project_nm
7. project_desc
8. parent_object_id
9. kpi_indicator_type_id
10. kpi_home_sc_id
11. kpi_qualifier_id
12. on_budget_metric_id
13. planned_start_dt
14. actual_start_dt
15. planned_completion_dt
16. forecast_completion_dt
17. actual_completion_dt
18. percent_complete
19. default_report_id
20. owner_user_sid
21. delete_flag
22. parent_object_type_cd
23. rollup_dates
24. task_weight
25. created_dt

**Time_language_text_stage Table**

The time_language_text_stage table stores localized time period names.

The time_language_text_stage table contains the following columns.

**Note:** For column descriptions, see "Time Language Text Stage File (.tlt)" (p. 208).

1. language_text_id
2. language_cd
3. short_object_name
4. long_object_name
5. description
6. default_row
7. created_dt

**Time_levels_stage Table**

The time_levels_stage table stores the time levels of your custom calendar.

The number of levels is unrestricted.

The lowest grain level contains periods that are defined to the seconds level of granularity.

Business users frequently require more detail for recent time periods and less detail for more distant time periods. For example, users might require daily numbers for recent time periods, monthly values for the previous year, and yearly totals for prior years. Currently, IBM® Cognos® Metric Studio does not support ragged hierarchies for the time levels file.
The periods of a level may not have time boundaries greater than that of its parent. The time_levels_stage table contains the following columns.

Note: For column descriptions, see "Time Levels Stage File (.lvl)" (p. 209).

1. level_id
2. level_number
3. language_text_id
4. reference_display_level_id
5. parent_link_rule
6. created_dt

**Stage_unit Table**

The stage_unit table stores your custom units (p. 109). The stage_unit table contains the following columns.

Note: For column descriptions, see "Stage Unit File (.unt)" (p. 211).

1. unit_cd
2. language_cd
3. unit_type_cd
4. default_unit
5. unit_nm
6. unit_symbol
7. delete_flag
8. created_dt

**Cube_query_stage Table**

The cube_query_stage table stores information for mapping metrics to cube cells from the cube import source. For more information, see "Importing Data from a Cube Import Source" (p. 58).

The cube_query_stage table contains the following columns.

Note: For column descriptions, see "Cube Query Stage File (.ccq)" (p. 212).

1. external_object_id
2. kpi_indicator_type_id
3. kpi_home_sc_id
4. kpi_qualifier_id
The stage_watchlist table contains the following columns.

**Stage_watchlist Table**

The stage_watchlist table contains the following columns.

*Note: For column descriptions, see "Stage Watchlist File (.cwl)" (p. 214).*

1. kpi_id
2. kpi_indicator_type_id
3. kpi_home_sc_id
4. kpi_qualifier_id
5. user_namespace_id
6. user_id
7. email_alert
8. alert_start_dt
9. user_sid (used internally)
10. delete_flag
11. created_dt
Appendix C: Staging Tables
accountability scorecard
A scorecard that Metric Studio automatically builds for each user which contains the metrics and projects they own.

data source
The source of data itself, such as a database or XML file, and the connection information necessary for accessing the data.

In TM1®, the file or data used as the source for the TurboIntegrator import process.

derived index
A calculated metric that provides a status and a score based on other metrics.

initiative
A task developed to achieve objectives or close the gap between performance and targets. Initiatives are associated with individual objectives and often known as projects, actions, or activities.

metric
A measure to assess performance in a key area of a business.

metric package
In Cognos Connection, a representation of a Metric Studio application. A metric package contains connection information, reports, and metric management tasks for that application.

metric store
A database that contains content for metric packages. A metric store also contains Metric Studio settings, such as user preferences.

metric type
A category of metrics that defines the business rules such as performance pattern, units, and meaning of a group of metrics. For example, Revenue can be a metric type, and European Revenue and North American Revenue would be metrics of this type.

score
A number or ranking that expresses applicability in relation to a standard.

scorecard
A collection of metrics representing the performance of one unit or aspect of an organization.
strategy map
In Metric Studio, a visual representation of the strategy and the objectives of that strategy for an organization. For example, a strategy map may show employees how their jobs are aligned to the overall objectives of the organization.

user-defined column
In metric management, a column used to represent a value other than the actual or target. It may be an industry benchmark or any other useful additional numerical information for a period, including a calculation based on the other values of the metric. User-defined columns may be different for each metric type.

watch list
A list of metrics that each user has chosen to monitor closely. If notification is enabled in Metric Studio, the user will receive e-mail notification of changes to these metrics. Users can also choose to display their watch list as a portlet within Cognos Connection.
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