



Cisco Prime Service Catalog 12.1 Reporting Guide

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CHAPTER

1

Getting Started

This chapter contains the following topics:

- [About Cisco Prime Service Catalog Reporting Solution, page 1](#)
- [Reporting Workflow, page 2](#)
- [Reporting Architecture and Components , page 2](#)
- [Metrics and Attributes, page 5](#)

About Cisco Prime Service Catalog Reporting Solution

Cisco Prime Service Catalog comes with a dedicated reporting environment for business intelligence. Reporting allows you to execute reports, which are presented as tabular or graphical representations of selected data. Cisco Prime Service Catalog Reporting Solution offers two modules for business intelligence:

Reporting

The Reporting module is bundled with a basic Service Catalog license. The Reporting module provides a set of prebuilt reports on service design, organizational entities, and on transactions (requisitions and tasks) processed through Service Catalog. This module also provides a set of Key Performance Indicators (KPIs), charts which can be configured to appear on each user's reporting dashboard. The following sections discuss capabilities provided by the Reporting module:

Reporting allows you to execute reports, which are presented as tabular or graphical representations of selected data. High-level reports now include multiple levels so that you can drill-down into more detailed views.

Advanced Reporting

The Advanced Reporting module may be licensed as an add-on to a basic Service Catalog license. The Advanced Reporting module includes a data mart for Service Catalog, as well as tools for building simple queries and more complex reports based on data in the data mart.

Advanced Reporting provides complete analysis capabilities, user-defined reports, and prebuilt data marts, to allow for greater visibility and control over IT business management. Business value metrics provide in-depth insight into the quality of IT service and financial data.

You can also use Advanced Reporting to define and customize your own reporting content. Business analysts may author simple queries to create Ad-Hoc reports, while report developers may use the Advanced Reporting applications to design more detailed technical reports.

Reporting Workflow

Workflow for Reporting consists of various phases:

- 1 Purchase the licenses for reporting solution. For more information, see [Cisco Prime Service Catalog Ordering Guide](#).
- 2 An administrator installs the Reporting software module and integrates it with Prime Service Catalog application. For more information, see [Cisco Prime Service Catalog Installation and Upgrade Guide](#).
- 3 An administrator creates user roles and capabilities to access the Prime Service Catalog Reporting Solution and configure reporting components.
- 4 A service designer or a report designer ensures that the Ad-Hoc Reporting module allows the extraction to a data mart of requisition (form data) from dictionaries and services which their designers have designated as "Reportable". For more information, see [Designing Reports](#).
- 5 You can now generate reports based /on your requirements. If you are an end user interested in using the Reporting module to access and view reports, see [Using Reports](#).
- 6 Ensure that you perform regular maintenance operations.

Reporting Architecture and Components

Service Catalog comes with a dedicated reporting environment for business intelligence. The environment consists of multiple components, each of which is optimized for a particular task or set of users. These components are listed below. The environment consists of multiple components, each of which is optimized for a particular task or set of users. These components are listed below.

- **Prebuilt reports** are a set of production quality reports which provide an analysis of service, requisition, and task-level performance.
- **Key Performance Indicators (KPIs)** are a set of graphs which can be displayed on the application portal, to allow instant access to data on trends within the system.
- **Ad-Hoc Reports** allows business users to construct queries based not only on data available in the standard reports (regarding task, service, and requisition performance) but also on data from fields in custom-designed dictionaries included in the site's service forms.
- **Report Designer** allows business users to modify standard reports and to create new reports incorporating not only requisition, task, or service-related data but the service-form data (individual dictionaries and fields) that is customized for each service.
- The **Custom Java Provider** allows the Service Catalog person profile information to be used as a Cognos namespace. This provides integrated, Single Sign-On access to all reporting tools for all users registered in Service Catalog, with the reporting privileges assigned to them by the administrator.

These reporting capabilities are seamlessly integrated into the Service Catalog framework, but are implemented using tools from the IBM Cognos Series 10 Business Intelligence (BI) solution toolset. These tools are summarized below.

- **IBM Cognos 10 Connect** allows Service Catalog to display Cognos reports and other reporting objects.
- **IBM Cognos 10** provides production-quality reports to business users and nontechnical users. Such users can use Cognos 10 capabilities to print reports or save output in formats suitable of Office or other applications.
- **IBM Cognos Query Studio** (presented to users as “Ad-Hoc Reports”) allows users to perform ad-hoc queries on the reporting data.
- **IBM Cognos Report Studio** (presented to users as “Report Designer”) allows users to modify existing reports or produce new reports. It is recommended for technical users or power users, who can understand the relationships among different types of data stored in the Service Catalog database.
- **IBM Cognos Data Manager** is the tool used by Cisco engineers to produce the programs that extract data from the transactional database and load it into the dedicated reporting environment.
- **IBM Cognos Framework Manager** is used by Cisco engineers to define the data level and business level views of the information which are available to end users for ad-hoc reports and queries.
- **IBM Cognos Event Studio** defines events, triggered by the value of data in the reporting database. When an event occurs, users can be notified by means such as e-mail or running an exception report. The application does not come with any preconfigured events, but allows Advanced Reporting users to define their own events, based on contents of the data mart.

Reporting Architecture

This section describes the architecture of the Service Catalog reporting solution. It can be read by anyone curious about how the Cognos components are used and the role each plays in the solution. It can safely be skipped by those interested primarily in how to use the Service Catalog reporting solution to run the prebuilt reports supplied in the Standard Package or in generating their own ad-hoc reports or queries.

Data Mart Architecture

In general, it is not best practice to allow users to run reports in the same environment in which a transactional system such as Service Catalog is operating. The resource requirements for running reports, ad-hoc queries, and other in-depth analyses are vastly different from resource requirements for running a transactional system that responds acceptably to online users. Therefore, data that forms the basis for reports and in-depth analyses is typically extracted from the transactional system and loaded into an environment dedicated and optimized for reporting.

The Service Catalog dedicated reporting environment consists of two packages, whose contents and usage are explained in detail in the rest of this chapter.

Standard Reports Data Package

The Standard Reports Package supports the prebuilt reports and KPIs. A variety of output options provide information on task-, service-, and requisition-based measures and trends. In addition, reports on the structure of the Service Catalog data, including persons, organizations, service teams, and service groups, are available.

All data used in the prebuilt reports is also available in the Custom Reports package. Over time this package is merged with the Custom Reports package.

Custom Reports Data Package

The Custom Reports Data Package provides a dimensional model which allows ad-hoc reports on task, service and requisition-related data. In addition to the measures and attributes available in the Standard Reports package, data entered by users into the customized service forms configured at each site is available. This “form data reporting” (FDR) provides visibility into all attributes of all dictionaries and services which the service designers have designated as “Reportable”.

Standard Reports Package

The Standard Reports Package consists of a set prebuilt reports and key performance indicators (KPIs) that are supplied with Service Catalog and the database tables required to support generation of these reporting objects. These prebuilt objects meet many business unit requirements for the reports generated from operational data.

Database Tables

The database which supports the Standard Reports Package contains both detail tables and summary tables.

The detail tables provide a denormalized view of the database. Each table provides all the data that appears on a corresponding report. This means that running each report is optimized, so no report needs to access related data in lookup tables. It also means, however, that these tables *cannot* be combined in a report with other tables, since there are no relationships between the tables: each table is a complete, denormalized view of one type of fact about the OLTP system, to the specified level of detail. Further, no drill-up or drill-down, to different levels of detail, is possible.

The summary tables contain aggregated or summarized data. Presummarizing data eliminates processing delays that would otherwise occur if summary reports needed to aggregate data in real-time, in response to a report request. As for the detail tables, each summary table should be used only for its dedicated reports or KPIs—no summary tables can be joined to other tables to support ad-hoc reporting requirements.

Prebuilt Reports

The prebuilt reports that are included in the Standard Reports Package are created using the Report Studio tool and included in the Reporting module. The default report display format is set to HTML; but this delivery format, as well as other runtime parameters, can be modified when the reports are run. If the reporting solution includes Report Designer, users are able to view the definitions of the prebuilt reports and, if desired, modify the definition or create new reports to better meet corporate requirements.

Service KPIs

The service Key Performance Indicators are generated using JFreechart API's (JFreechart is not part of the Cognos product suite, but is open source software). The charts are generated on demand, by reading from the summary data tables created for each KPI.

Service Catalog Data Mart – Advanced Reporting

The Advanced Reporting module allows users to build custom reports and queries from data in the Service Catalog data mart, capturing data from Service Catalog.

Service Catalog Data Mart

The Service Catalog Data Mart is based on the Custom Reports Data Model package. This package gives users access to a data mart which includes service, task, requisition and effort-related information, such as the task performer or the duration of a task. The custom reports package differs from the standard package in important ways:

- The custom reports package does not include any prebuilt report or KPIs. It is meant strictly for ad-hoc reports and queries.
- The custom reports package allows access to form-based data, data derived from the dictionaries and attributes which are displayed and entered on user-configured service forms.
- The custom reports package is organized as a dimensional model, a flexible data model with the relationships among the different types of data, which encourages building ad-hoc reports and queries. This model is described in detail in [Creating Custom Reports](#).

Metrics and Attributes

A metric is a numeric quantity which can be aggregated. It is a measure which provides data you can use to identify and analyze IT service ordering, delivery trends, and problems.

Metrics enable you to:

- Monitor Service Catalog activity, resource consumption, and service delivery performance
- Perform root cause analysis to understand and resolve service delivery performance issues

Metrics and attributes in the data mart are derived using the computations explained in the table below.

Table 1: Metrics and Attributes Table

Metric	Description
Service Volume	Calculated as the total number of service requests within a defined time period. Depending upon the particular report, this may refer specifically to completed requests, or to requests in a variety of other states, such as ongoing or cancelled.
Service Cost	Derived from the price which is configured for a particular service. Price * Units and which may be dynamically adjusted on a request-by-request basis.

Metric	Description
Service Start Date or Time	STARTEDATE and STARTEDDATETIME for a service are initially set to the time when the customer submits the service request. STARTDATE and STARTEDDATIME values are updated as soon as authorizations are completed and the delivery moment begins. This means that before completion of authorizations STARTEDATE (TIME) refers to the time the request was submitted; after completion of authorizations it refers to the data and time the delivery moment began. All computations regarding standard compliance and task due dates use the actual delivery plan start date.
Task Volume	The total number of Authorization tasks or Delivery Plan tasks. Calculated as the total number of Authorization tasks or Delivery Plan tasks.
On-Time %	<p>A task is determined to be on time by comparing the time it was completed (CompletedDateTime) to the time it was scheduled to be completed (ScheduledDateTime). Duration (actual and default) is not used directly in this computation, although, of course, it was originally used to compute the due date and time.</p> <ul style="list-style-type: none"> • The percent of services or tasks completed on-time, on or before their calculated due date. • When a customer clicks the Order button, Service Catalog calculates the Due Dates for all tasks. • The task Due Date is calculated based on the duration configured for that task. This is the Operating Level Agreement (OLA) for that task. • The service Due Date is the date on which the last task in the delivery plan for that service is due. • This is the Service Level Agreement (SLA) for that service. • A delivery plan can have multiple late tasks, and still achieve its SLA.
Standard Compliance %	The percent of services or tasks completed within their configured duration.

Metric	Description
Task Duration	<p>Elapsed time, in hours, from start to finish, for an Authorization task or a Delivery Plan task.</p> <p>Task or a Delivery Plan task. Task duration is computed in work hours, based on the performer's calendar. Duration in reports is displayed in hours.</p> <p>Three measures of task duration are available in the task-based fact tables:</p> <ul style="list-style-type: none"> • ActualDuration measures the elapsed number of work hours, according to the customer's calendar, that it took for the task to be performed. • PerformerActualDuration measures the elapsed number of work hours, according to the performer's calendar, for the task to be performed. • DefaultDuration is the number specified by the service designer which designates the amount of time a task should take. <p>Assume, for example:</p> <ul style="list-style-type: none"> • The performer's calendar specifies 9-hour work days • The task became active at 9 am on a Monday (a work day) • The performer finished the task at 10 am the following day <p>In this case, the PerformerActualDuration would be 10 hours.</p>
Planned Effort	Derived from the amount of time configured in the Effort field for a particular Plan Task; measured in hours.
Actual Effort	Calculated from the amount of time (Effort Entry) entered by the task performer for a particular task.
Planning Effectiveness	Calculated as the percent of tasks which were completed within the configured amount of effort hours
Task Standard Compliance %	<p>A task is determined to be in compliance with its Operating Level Agreement (OLA) by comparing the performer actual duration (number of work hours between the time it was started and the time it was marked as completed) to the default duration designated for the task. The task is in compliance (the StandardComplianceFlag is 1) if the actual duration is less than the default duration.</p> <p>The percent of services or tasks completed within their configured duration. Standard Compliance % is calculated using either standard duration or task duration.</p> <p>Use for root cause analysis, to isolate on-time performance from elapsed-time performance.</p> <p>Based on the completion dates of previous tasks, it is possible for an individual task to violate its OLA, yet still be performed within its planned duration.</p>

Metric	Description
Service Standard Compliance %	<p>A service is determined to be in compliance with its Service Level Agreement (SLA) by totaling the actual duration of all component tasks and comparing this total to the default duration designated for the service. (Default duration is the Standard Duration which is configured by the service designer on the General Tab for the service). The service is in compliance (the StandardComplianceFlag is 1) if the actual duration is less than the default duration.</p> <p>The service default duration is entered and maintained manually and not validated against the component tasks of the service. Service designers should review the default duration, to ensure that it correctly reflects the default workflow, in terms of tasks completed and their durations, anticipated for the service.</p>
Task Count	<p>On the individual task level, this value is 1 or 0. For example, if the metric is called Completed On-Time Task Count, the count would be 1 for a task that was completed on-time. Tasks that are still ongoing have a value of 0. When you roll up a group of tasks the counts are summed up so you get a total count of the tasks that were completed on-time.</p>
Completed On-Time Percentage or Standard Compliance Percentage	<p>These percentages are provided at the individual task level with a value of 0 or 100. When you roll up a group of tasks, the percentages are averaged to provide an overall on-time or standard compliance percentage of the group of tasks.</p>
Late Open Task Count	<p>This count is assigned at the individual task level. If a task is late and is still in ongoing status it has a value of 1. Otherwise, it has a value of 0. You can roll up the counts from a group of tasks to see how many of them are late and still ongoing. The counts are summed up by default in the report. A high number of Late Open Task Count typically indicates a delivery process problem that leads to customer dissatisfaction.</p>
Rescheduling a task	<p>When a task is rescheduled:</p> <ul style="list-style-type: none"> • The new/rescheduled due date for the task is used for on-time calculations for that task. • There is no effect on the due date/on-time calculation for the service. • The new duration for the task is used in the calculation of standard compliance for the task. • The new duration for the task is not used in the calculation of standard compliance for the service.

Measures of Service Volume: Who is the Customer?

In the way that many customers' services are implemented, the name of the person who is the end customer of a service delivery is stored in the order form for the service. This information is not accessible in the Standard Reports Package and its prebuilt reports. So there are two options for registering the customer of the service delivery:

- Many reports refer to the CUSTOMERFIRSTNAME and CUSTOMERLASTNAME fields. If the end customer of a service is stored on the order form, these fields refer to the person who requested the service, and not necessarily the person for whom the service was performed. However, it is your only option for identifying an individual person as the customer.
- The ORGANIZATIONALUNITNAME field refers to the organizational unit that would be billed for the service delivery, if costs were being allocated. This is another way of thinking about who the customer is.

You can choose a service delivery option based on your customer.

Measures of Task Delivery Performance

This section describes how to measure the performance of individuals.

Measuring the Performance of Individuals

Tasks can be assigned to individuals or assigned to queues from which individuals can draw work. The data that is available in the Standard Reports Package and prebuilt reports (specifically the fields PERFORMERID, PERFORMERFIRSTNAME, PERFORMERLASTNAME, PERFORMEROUID and PERFORMEROUNAME in DM_SERVICETASKDETAIL and DM_AUTHORIZATIONTASKDETAIL) can refer to a person under one of three conditions:

- The task has been assigned directly to that individual, and no other person has ever worked on it.
- The task has been assigned to a queue, and the performer is the only person who has ever worked on it.
- The task has been assigned to a queue, and the performer is the last person who worked on it, but there may have been others. In this case, the performance of the person listed in the report is not their own, but is also affected by all the people who previously touched the task. So it is not a fair measure of the performance of the individual named.

The first condition can be distinguished from the data in the Standard Reports Package. However, the second and third cannot. This means that reports that attempt to measure the performance of individuals will only fairly represent their performance if service teams have very clear and consistent rules about not sharing responsibility for tasks. For this reason, a disclaimer appears on all prebuilt reports that measure the performance of individuals.

Which Duration to Use?

Prebuilt reports about the duration of tasks performed during service delivery use the PERFORMERACTUALDURATION measure. This measure takes the performer's working calendar into account, so that weekends and other nonworking hours are not counted against their time working on the task. Conversely, the CUSTOMERDURATIONOFSERVICE measure makes the calculation taking the customer's calendar into account, making it an inaccurate measure of the performer's work.

When to Use Date vs. Duration-Based Measures

There are two ways to assess whether the delivery team is performing their tasks well. Both are valid, but they have different meanings and uses:

- **Is the task late, relative to the promise (Due Date) made to the customer?** To make this assessment, reports include the TASKONTIMEFLAG, TASKDUEDATE and TASKCOMPLETEDDATE measures. This is good for determining whether a queue or service team is meeting its promises to customers in terms of absolute dates. It is *not*, however, a good measure of the performance of individuals. Assume that performing a service requires three tasks, done by Persons A, B and C. If you are measuring the performance of Person C, their tasks could be late because Person A or B was late. So this measure is used only to assess the customer service of whole teams or queues.
- **Has the task been performed within the standard time we plan for this kind of task?** To make this assessment, standard reports use the TASKSTDCOMPLIANCEFLAG, TASKPROJECTEDDURATION and PERFORMERACTUALDURATION measures. This allows you to compare the actual duration spent on performing the task with the standard planned duration for this kind of task. This measure is more appropriate for assessing the performance of individual team members, because focusing on the duration isolates the task performance from any upstream effects: it is entirely possible for a task to be completed late according to its due dates, but with a duration that is equal to or less than the standard duration. That indicates a person who is performing their own work well, but falling behind due to upstream effects.

A solid, customer-focused measurement regime requires BOTH metrics. If you base everything on task duration, you are in effect saying “Who cares what we promised to the customer, as long as we are meeting our internal standards?” On the other hand, focusing only on the dates provides an inaccurate picture of team members’ performance, which does not allow you to make the effective resourcing decisions you need to improve your performance for customers.

Attributes

The dimensional attributes used in the report packages are derived from the data maintained in the Service Catalog OLTP database. Attributes are summarized below.

Table 2: Attributes from OLTP database

Attributes	Description
Customer*	The person who is the recipient of the service, either when it is ordered directly by the same person or when the service is ordered on behalf of the customer, and the home organizational unit of that customer
Billed*	The organization which is billed for the service. This is the same as the customer for the service unless a different organization is chosen as the Bill To: Customer when the ordered is reviewed (after a request has been saved, but before it has been submitted.) Only an organizational unit that has been designated as Billable can be chosen as the Bill To: Customer.
Performer*	The person (and corresponding home OU) who performed the task. See Measuring the Performance of Individuals , on page 9 for more information.



Configuring Cisco Prime Service Catalog Reporting Solution

This chapter contains the following topics:

- [Defining Roles to Access Reporting Feature Capabilities, page 11](#)
- [Moving Reports from Development to Testing to Production Environments, page 13](#)
- [Configuring the DataMart, page 18](#)
- [Maximum Size of Character Fields, page 21](#)
- [Scripts for Reporting, page 22](#)
- [Modifying Form Data Reporting Configuration, page 23](#)
- [Configuring HTTPS for Cognos, page 29](#)
- [Configuring Key Performance Indicators \(KPIs\), page 32](#)

Defining Roles to Access Reporting Feature Capabilities

The roles listed in the table below are defined in the Organization Designer module, and should be assigned to users who need to access the Reporting and Advanced Reporting modules.

If you assign a user to the predefined role “Service Operations Report User”, the user should be able to run the prebuilt reports. An administrator must enable reporting capabilities to access reporting features based on individual roles.

To enable RBAC:

-
- Step 1** Choose **Organization Designer > Roles > Capabilities**.
 - Step 2** In **Add System Capability** table, Choose **Module** drop-down list, choose **Reporting** module.
 - Step 3** Check **Choose Capability** check box for the capabilities you want to choose. See table below.
 - Step 4** Click **Add**.

Table 3: Reporting Capabilities Table

Roles	Capability	Description
<ul style="list-style-type: none"> • Advanced Reporting- Professional Author • Advanced Reporting Administrator • Site Administrator 	Reports Designer	This capability grants access to all functionality available in the Report Designer section in Advanced Reporting.
<ul style="list-style-type: none"> • Service Operations User • Advanced Reporting- Professional Author • Service Team Manager • Service Team Administrator • Advanced Reporting Administrator • Site Administrator 	KPI Administration	This capability grants all access to the KPI Administration function as well as the capability to manage the KPIs and create/modify KPIs.
<ul style="list-style-type: none"> • Advanced Reporting- Business Author • Advanced Reporting- Professional Author • Advanced Reporting- Administrator • Site Administrator 	Ad-Hoc Reports	This capability grants access to the functionality available in the Ad-Hoc Reports section in Advanced Reporting.
<ul style="list-style-type: none"> • Advanced Reporting- Administrator • Site Administrator 	Reporting - Administration	This capability grants access to all reporting capabilities such as manage Reporting folders, dashboard, IBM Cognos Administration, schedule reports, save reports, permissions administration, and create reports.

Roles	Capability	Description
<ul style="list-style-type: none"> • Service Operations Report User • Advanced Reporting- Business Author • Advanced Reporting- Professional Author • Advanced Reporting- Administrator • Site Administrator • Reporting Administrator • Service Team Manager • Service Team Administrator • Advanced Reporting Administrator • Site Administrator 	View Reports	This capability grants access to the Reporting module and the ability to view the KPI dashboard and run Prime Service Catalog reports.

Moving Reports from Development to Testing to Production Environments

This section describes how to move reports to the production environment.

Catalog Deployer and Configuration Management

A Service Catalog implementation typically consists of multiple sites, each of which plays a different role:

Table 4: Site Implementation Table

Site	Usage
Development	Service definitions are developed and unit tested; customizations are initially applied.
Test	A controlled environment, not interrupted by development activities, where Quality Assurance or other personnel test a Service Catalog.

Site	Usage
Production	The live environment where the user community can request services from the Service Catalog and IT teams can fulfill service requests.

Following the guidelines above will allow you to upgrade Service Catalog software without losing the customizations you have applied to that software. However, these guidelines do not address the need to migrate client-provided content—for example, service definitions and Person profiles—from one site to another. That capability is provided by Catalog Deployer.

The Catalog Deployer module provides configuration management for metadata (service definitions) and organizational data (people, organizations, and related entities) which is stored in the repository. Refer to [Cisco Prime Service Catalog Designer Guide](#) for Catalog Deployer documentation.

You must be a user with the ability to administer the Reporting module to move reports using the Deployment option discussed below. The predefined roles Site Administrator include this capability.

You must have access to the file system of the Cognos servers for both the source and target environments.

Recommended Process for Copying a Database

At certain times during a deployment, it may be desirable to copy the Service Catalog OLTP database from one site to another. For example:

- When initially installing a test or production site, the complete development site may be copied to the new environments.
- After production has been in operation for a time, all of the user activity should be copied to a test environment, to allow realistic performance or volume studies.

Follow the procedures below to copy a Service Catalog OLTP database from one site to another.

Export Source

To export the source database:

-
- Step 1** Inform the users of expected downtime.
 - Step 2** Stop the Prime Service Catalog and Service Link services in the source environment.
 - Step 3** Export the source database. Develop a naming convention that allows you to track the source of the data and the date of the export.
 - Step 4** If a system shutdown is not feasible, use the `-consistent` flag for the Oracle export.
 - Step 5** Restart the Prime Service Catalog and Service Link services.
-

Import to Target

To import the data into the target database:

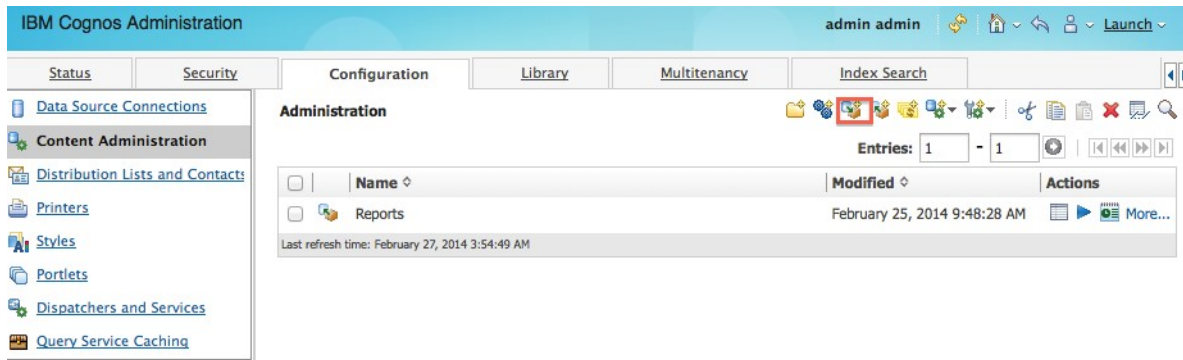
-
- Step 1** Stop the Prime Service Catalog and Service Link services in the target environment.
 - Step 2** Ensure you have a current backup copy of the target database.
 - Step 3** If required, copy the export file from its destination to a file system accessible to the target database server.
 - Step 4** Import data into the target database.
 - Step 5** For SQLServer, ensure that logins and users exist in the newly imported database match the credentials required for this instance of Service Catalog. If required, create a new login or associate an existing login with the database owner and ensure this user has appropriate permissions. For Oracle, ensure appropriate users exist in the newly imported database with privileges as specified in the Service Catalog installer.
 - Step 6** If the two sites are accessing two different Cognos reporting servers, update the entry in the CnfParams table that specifies the name of the “CognosServer” for this site and commit the update.
 - Step 7** Restart the Prime Service Catalog and Service Link services in the target environment.
 - Step 8** Set the **Administration > Entity Homes > SiteProtection** “This Site Is” property to the current site. If Entity Homes are specified differently, or sites have different protection levels, make the changes manually and save your changes.
 - Step 9** If the two sites are connecting to two different LDAP directories, adjust the Directory Integration Data Source definition appropriately.
 - Step 10** Check and modify any connection properties for the Service Link agents as appropriate for the target environment.
 - Step 11** Perform any additional manual operations to adjust the data. For example, you may wish to add permissions to some people, groups, or organizations, or revoke permissions.
 - Step 12** Inform users that maintenance is complete.
-

Creating an Export File

To create an export file:

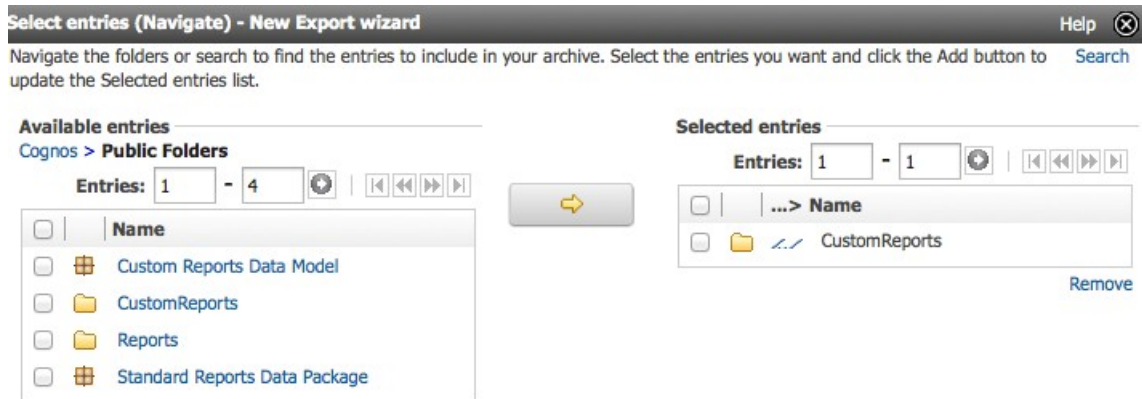
- Step 1** On the development machine, create a folder named **CustomReports** in the **Public Folders** directory of Cognos. The name of the folder may vary, but it must be a public folder.
- Step 2** Copy the new report to the **CustomReports** folder created above.
- Step 3** Log into Service Catalog as a user with the Report Administrator capability.
- Step 4** Go to Launch on the right hand side top corner and click **IBM Cognos Administration**.
- Step 5** Click the **Configuration** tab.
- Step 6** Go to Content Administration, and in the top-right corner of the screen click the **New Export** icon.

Figure 1: Select New Export



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- Step 7** Provide a name (for example, CustomReports) and other details for the export, and then click **Next**.
- Step 8** On the Deployment Method page, choose **Select public folders and directory content**, and then click **Next**.
- Step 9** Click **Add**, and choose the **CustomReports** folder created in Step 1. Choose the Custom reports folders, click **Add**, and then at the bottom, click **OK**.

Figure 2: Choose CustomReport

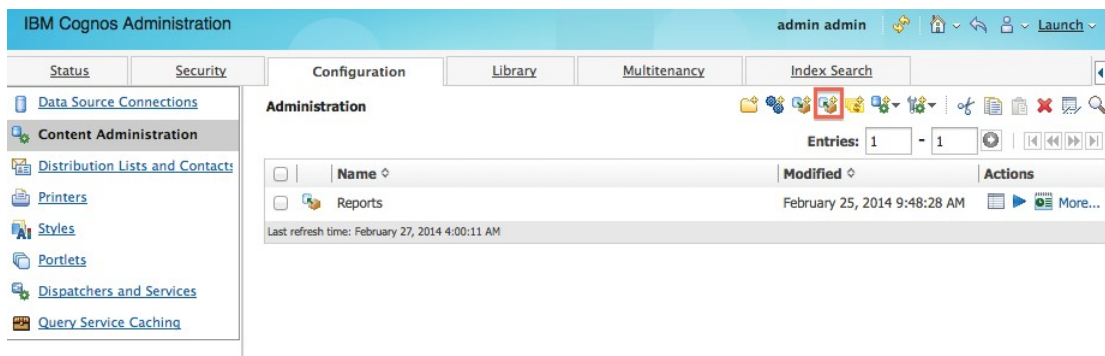
- Step 10** Deselect **Disable after import**, and then click **Next**.
- Step 11** Click **Next**.
- Step 12** In the “Select the directory content” section, choose **Include Cognos groups and roles** and **Replace existing entries**, and click **Next**.
- Step 13** In the “Specify the general options” section, choose **Include access permissions** and **Apply to new and existing entries**.
- Step 14** Under External namespaces, choose **Include references to external namespaces**.
- Step 15** In the “Entry ownership” section, choose **The user performing the import**, and click **Next** in the “Specify the general options” section.
- Step 16** In the “Specify a deployment archive” section, click **Next**.
- Step 17** In the “Review the summary” section, click **Next**.
- Step 18** In the “Select an action” section, click **Finish**.
- Step 19** Choose **Now**, and in “Run with options” section click **Run**.
This process creates **CustomReports.zip** in the <CognosHome>\c10_64\deployment folder of Cognos SOURCE machine.

Importing the Exported File

To import the file:

- Step 1** Copy the exported file **CustomReports.zip** to the <CognosHome>\c10_64\deployment folder on the production machine.
- Step 2** Go to **Launch** on the top-right corner of the screen and click **IBM Cognos Administration**.
- Step 3** Click the **Configuration** tab.
- Step 4** Go to **Content Administration** and then click the **New Import** icon in the top-right corner of the screen.

Figure 3: Choose New Import Icon



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- Step 5** Choose **CustomReports**, and click **Next**.
- Step 6** Choose **CustomReports**, and in the “Select the public folders content” section, click **Next**.
- Step 7** In the “Select the directory content” section, click **Next**.
- Step 8** In the “Specify the general options” section, click **Next**.
- Step 9** In the “Review the summary” section, click **Next**.
- Step 10** In the “Select an action” section, click **Finish**.
- Step 11** The new report folder **CustomReports** appears in the in public folders area of the production machine.

Configuring the DataMart

The Service Catalog data mart can be installed without any customization, usually installed by a Service Designer. However, this “least common denominator” approach is unlikely to meet the reporting requirements of most sites. Therefore, the recommended procedure is to review the best practices presented above, in conjunction with the site’s dictionary and service configuration. Using the following section as a worksheet, analysts can determine the desired data mart configuration for their site. These configuration parameters can then be used to configure Advanced Reporting.

These parameters correspond to many of the properties that must be specified when the data mart is installed. For a detailed explanation of the installation and configuration parameters used to configure the data mart and customize its installation, see [Cisco Prime Service Catalog Installation and Upgrade Guide](#).

Number of Dictionary and Service Tables

When you create the data mart, you specify the maximum number of dictionary and service dimensions the data mart will contain. Each of these dimensions will correspond to a separate table in the data mart. The number of dictionaries or services can be increased after the data mart has been installed. However, to avoid this step, be sure to create the data mart with enough tables to accommodate current requirements and enhancements that are planned for imminent deployment.

There is no “magic bullet” for determining how many tables of each type need to be created. Some guidelines are given in the previous section. Service designers need to review all dictionaries, determine which ones they want to include in the Data Mart, and designate those as Reportable by choosing Yes in the Reportable drop-down menu in the **Service Designer > Dictionaries** component.

Service Catalog tracks the number of service and dictionary tables which have been designated as Reportable and created in the data mart, so that the specified number is not exceeded. If you subsequently decide that a dictionary (or service) should not be reportable, you may change the corresponding Reportable field to **No**. This removes the source dictionary or service from the ETL job which loads the data mart. The query subjects are still available in the reporting framework; the table which holds the dictionary or service data is NOT available for use with another dictionary or service, and still counts as one of the number of tables in use.

Table 5: Service Designing Parameter Table

Parameter	Default Value	SiteValue
NUMBER_OF_SERVICE_TABLES	100	
NUMBER_OF_DICTIONARY_TABLES	100	

Data Type Conversions

All data in the data mart is stored as either a character (text) string; a number; or a date (with time component). Data from internal dictionaries is converted to the appropriate type, as shown in the table below.

Table 6: Internal Dictionaries Data Table

Data Mart Column Data Type	Internal Dictionary Data Types	Database-Specific Implementations
Number (Numeric)	Number Money	Oracle –NUMBER SQL Server - FLOAT
Date	Date Date and Time	Oracle – DATE SQL Server - DATETIME

Data Mart Column Data Type	Internal Dictionary Data Types	Database-Specific Implementations
Character (Varchar – variable length character strings)	Text Person URL Account Phone SSN Boolean	Oracle – VARCHAR2 SQL Server – VARCHAR

A Person data type is represented in the data mart as a combination of the person's first name and last name, as shown in the “Select a Person” window on a service form. A Boolean data type is represented by the strings corresponding to “yes” and “no” as shown in the radio button representation of the data type.

Data from external dictionaries is converted into the appropriate type. For example, all numeric fields, regardless of magnitude or precision, are converted into the Number type of the target database shown in the table above. Graphic and large object (LOB) data types in external dictionary tables are not supported and are ignored when the data mart is created or data is loaded via the ETL process.

Number of Columns in the Dictionary and Service Tables

As part of the data mart configuration, designers specify how many of each type of column (character, numeric, or date) should be created in the dictionary and service tables. All dictionary tables must have an identical composition, in terms of the number of each type of column allowed. The same holds true for service tables.



Note

SQLServer cautions against having tables with a row length greater than 8k (8192) bytes. This would impose a significant constraint on the size of the service dimension tables. Since no such limits are present in Oracle, you can increase the number of columns of each data type and the size of the text column up to a 32k total row size limit.

An option for increasing the number of columns in the dictionary and service tables is to decrease the size of the character (VARCHAR) columns from its default value of 200 characters (specified via the DATA_STRING_MAX_SIZE property described below.) Since the maximum size of character columns applies to all dictionaries (and services), be cautious if you decide to decrease this value. Any textual data longer than the specified size is truncated.

The number of columns of each type cannot be changed after the tables have been created by the Install process.

Table 7: Dictionary Parameter Table

Parameter	Default Value	SiteValue
NUMBER_OF_DICTIONARY_VARCHAR_FIELDS	40	

Parameter	Default Value	SiteValue
NUMBER_OF_DICTIONARY_NUMERIC_FIELDS	10	
NUMBER_OF_DICTIONARY_DATE_FIELDS	10	
NUMBER_OF_SERVICE_VARCHAR_FIELDS	80	
NUMBER_OF_SERVICE_NUMERIC_FIELDS	20	
NUMBER_OF_SERVICE_DATE_FIELDS	20	

Maximum Size of Character Fields

The maximum size of character fields in the data mart dictionary and service tables is set, by default, to 200 characters. This is the size of all character (text) fields in all tables—both dictionaries and services. This property can be changed after the initial data mart installation only by running a script available from Cisco Technical Assistance Center (TAC).

Character fields accommodate data represented on service forms as single-line (text) and multi-line (textarea) fields, as well as radio buttons. One or more selections from check boxes and multi-select drop-down lists are all included in the same data mart character field, with options separated by commas. Care should be taken both when setting the maximum size of character fields. If the size is too small, data may be severely truncated; this typically affects description and comments fields. If the size is too large, performance of both the ETL process and generating reports may be adversely affected.

Table 8: Character Parameter Table

Parameter	Default Value	SiteValue
DATA_STRING_MAX_SIZE	200	

Do the Math

Follow the procedure below to determine how to configure the data mart to support the site's reportable dictionaries and services:

- Review the reporting requirements, to determine how many dictionaries and how many services should be reportable.
- Review the selected dictionaries (and services, if any) to determine the maximum number of each type of field (Character, Numeric, Date) required.

Scripts for Reporting

The Reporting modules require scripts that maintain the Service Catalog data mart and produce the standard reports and KPIs available to users.

Reporting Batch Programs

Service Catalog Extract-Transform-Load (ETL) scripts generated from the Cognos DataManager ETL tool control the population of the database which supports running prebuilt reports provided by Service Catalog and all nonform based data in the data mart.

Additional command files complete the generation of the framework used by Cognos QueryStudio and Report Studio (Ad-Hoc Reports and Report Designer) to permit ad-hoc reporting on the Service Catalog data mart.

These scripts share the same invocation and logging framework. They are available as Windows .cmd files that reside and run on the Cognos server. They can be scheduled to run via any enterprise scheduler. These scripts log their activities in the <ReportingInstalledDirectory>\logs directory of the Cognos server.

The following script is required to support standard reports and Key Performance Indicators (KPIs).

Table 9: Script to Support Reports and KPIs

Program	Description/Usage
update_datamart_std.cmd	Populates database tables which support the prebuilt reports according to ETL rules specified in Data Manager. This is a complete rebuild of the database contents, rather than an incremental refresh. Produces a log file in < Cognos.root >\c10_64\datamanager\log.

The following programs are required to support the data marts.

Table 10: Programs to Support Data Marts

Program	Description/Usage
update_datamart.cmd	<p>Populates the data mart tables which will be used in custom reporting package. It also extracts data for Form Data Reporting tables. This is an incremental refresh of all the tables in custom reporting package. It produces log files in <i>Cognos.root/c10-64</i> as well as in <i>Cognos_installed_dir/logs/Cognos_datamart_update.log</i>.</p> <p>This script can be executed using the following options:</p> <ol style="list-style-type: none"> 1 update_datamart.cmd fdr (Populates data only for Form data Reporting tables) 2 update_datamart.cmd non-fdr (Populates data only for non Form data Reporting tables) 3 update_datamart.cmd fdr-truncate (Wipes out data from Form data Reporting tables)

Program	Description/Usage
create_model.cmd	Creates a Cognos FrameworkManager model that includes dynamically defined reportable objects (dictionaries and services) as well as standard facts and dimensions. The model is rebuilt by merging a statically defined model (the standard facts and dimensions used in the data marts) with dynamically generated metadata describing reportable services and dictionaries.
publish_fdr_pkg.cmd	Publishes the FrameworkManager model to the Cognos BI Server, via the Cognos ScriptPlayer utility. Must be run as part of the Service Catalog data mart refresh, following the program that creates the model (create_model.cmd).

Modifying Form Data Reporting Configuration

As your environment grows, you may need to increase the number of form data reporting (Ad-Hoc reporting) dictionary and service tables; for example, if you bring additional services online or decide that you need to report on the contents of additional dictionaries. You can use the FDR Configurator utility to modify the form data reporting configuration after installing Cisco Prime Service Catalog Reporting (see [DataMart Reference, on page 99](#)).

This section describes how to launch and configure the FDR Configurator.



Note

You must log in as a user with administrative privileges to perform the tasks described in this section.

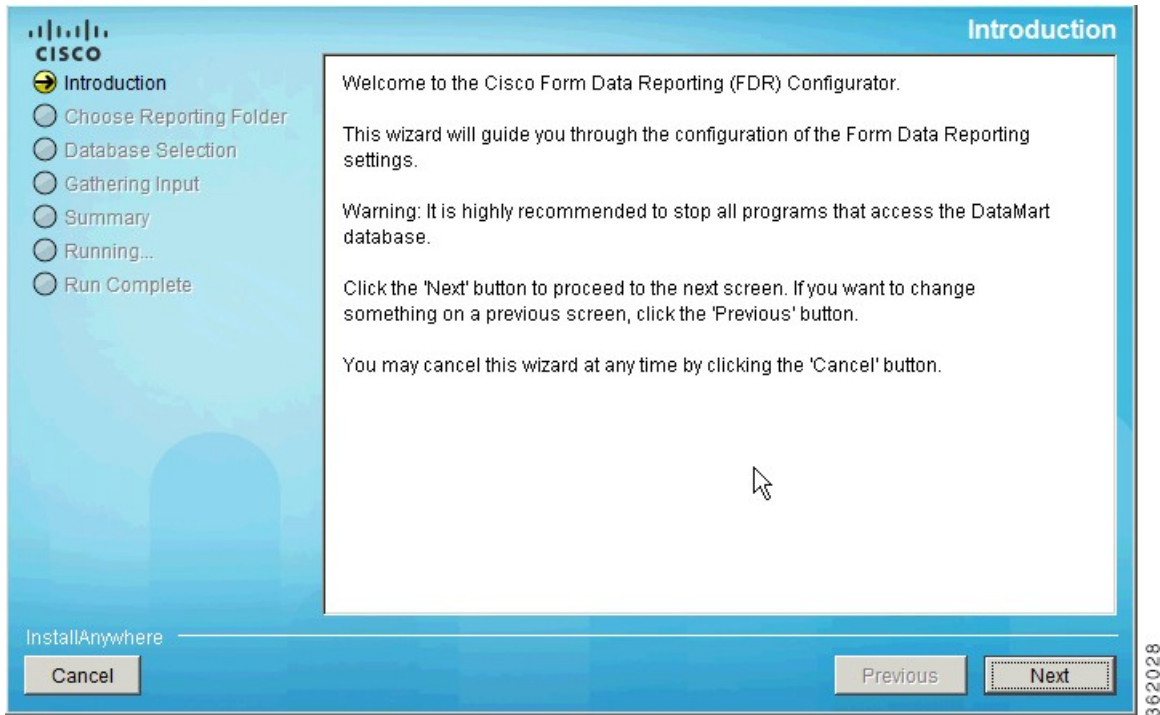
Launching the FDR Configurator

To execute the program:

- Step 1** On the Cognos machine, set the JAVA_HOME environment variable to `<COGNOS_HOME>\bin64\jre\7.0`. Then, add `%JAVA_HOME%\bin` to the beginning of the PATH environment variable.
- Step 2** Stop all programs that access the Data Mart database.
- Step 3** Go to the “`<Reporting_Install_Dir>cognos\bin`” directory.
- Step 4** Double-click `fdrConfigurator.exe` to launch the FDR Configurator.

A progress bar appears. When complete, the first page of the FDR Configurator wizard appears (Introduction), as shown below.

Figure 4: Introduction



Running the FDR Configurator Wizard

The configuration wizard guides you through the configuration by presenting pages of fields to be configured. As each page is completed, click **Next** to advance to the next page, or **Previous** to return to a previous page. At the end of the wizard, click **Install** to begin the configuration. At any time, you may click **Cancel** to exit the wizard without configuring.

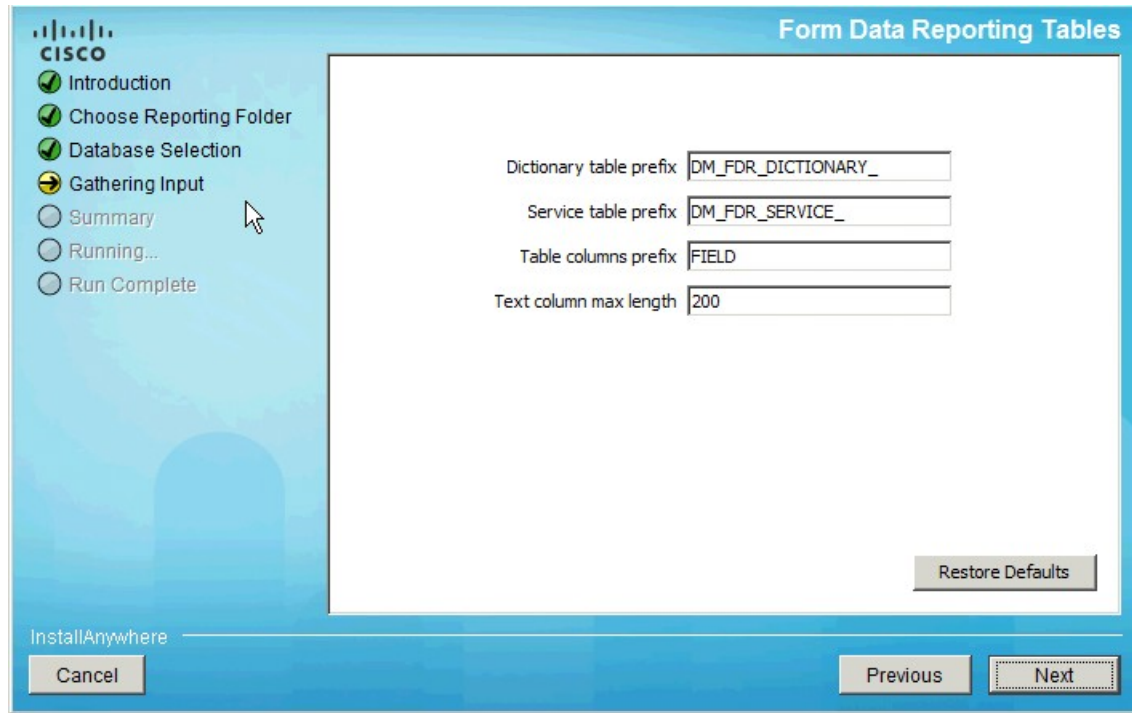
The configuration options are case-sensitive, so ensure that you enter a value, such as a database name, with case sensitivity; otherwise, your configuration may fail.

To execute the FDR Configurator wizard:

- Step 1** Launch the FDR Configurator (see [Launching the FDR Configurator](#), on page 23).
- Step 2** On the first page of the wizard (Introduction, see [Launching the FDR Configurator](#), on page 23), click **Next** to begin.
- Step 3** For the next two pages of the wizard, for the Reporting installation you want to modify, choose your database type and enter the password for your Data Mart database, clicking **Next** after each page.

After clicking Next on the Data Mart Database page, the Form Data Reporting Tables page of the wizard appears, as shown below.

Figure 5: Form Data Reporting Tables



Step 4 Your Form Data Reporting Tables settings are retrieved from your existing Data Mart database. You can modify these settings as described in the table below.

Table 11: Form Data Reporting Tables

Option	Description
Dictionary table prefix	<p>If you must change the prefix, use only alphabetic characters and the underscore character. Do not use any numeric or special characters. A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Scripts like 'update_datamart.cmd' or 'update_datamart fdr.cmd' scripts in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>
Service table prefix	<p>If you must change the prefix, use only alphabetic characters and the underscore character. Do not use any numeric or special characters. A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>

Option	Description
Table columns prefix	<p>The prefix for the field names in each table. This name is used to create tables with field name like FIELD1, FIELD2, ..., FIELDn. A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>
Text column max length	<p>This parameter indicates the maximum size of dictionary and service table object varchar field size.</p> <p>You can only increment the current value. No data will be lost and timestamp is not reset. A modification will alters the Dictionary and Services tables in the Data mart database by changing the size of VARCHAR() columns.</p>

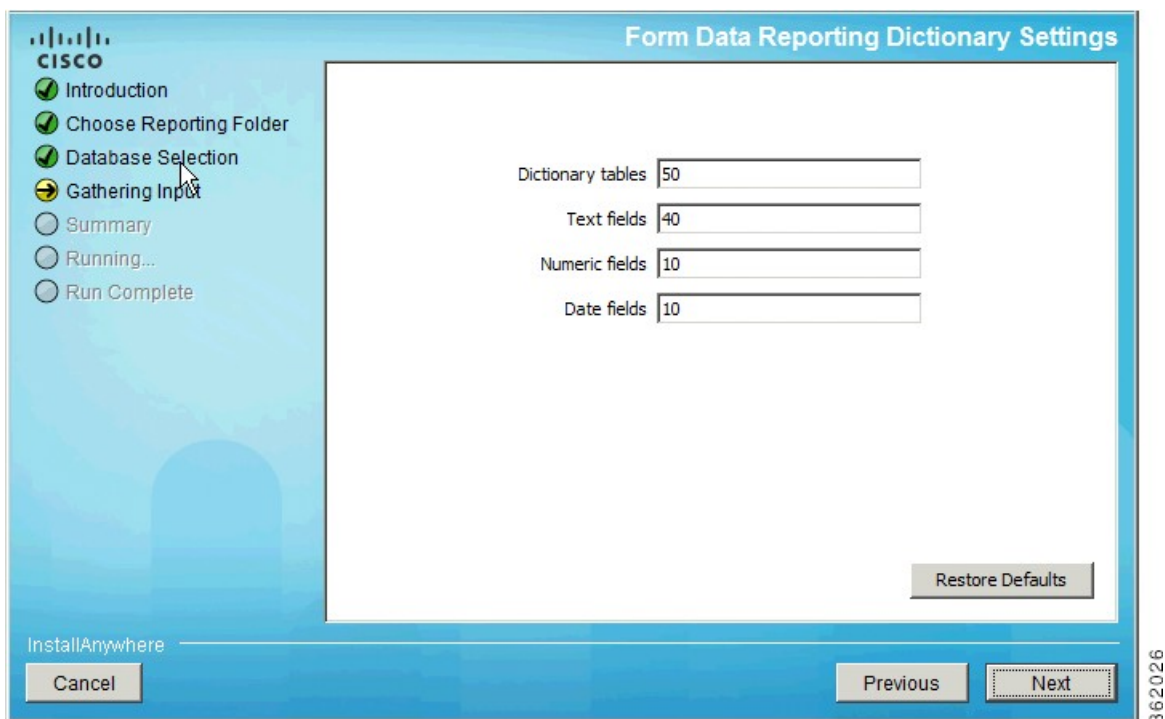
If you click **Restore Defaults**, your edited values are overwritten by the current configuration values from your existing Data Mart database.

Step 5

Click **Next** to proceed to the next page of the wizard.

The Form Data Reporting Dictionary Settings page of the wizard appears, as shown below.

Figure 6: Form Data Reporting Dictionary Settings

**Step 6**

Your Form Data Reporting Dictionary settings are retrieved from your existing Data Mart database. You can modify your Form Data Reporting Dictionary Settings as described in the table below.

Table 12: Form Data Reporting Dictionary Settings

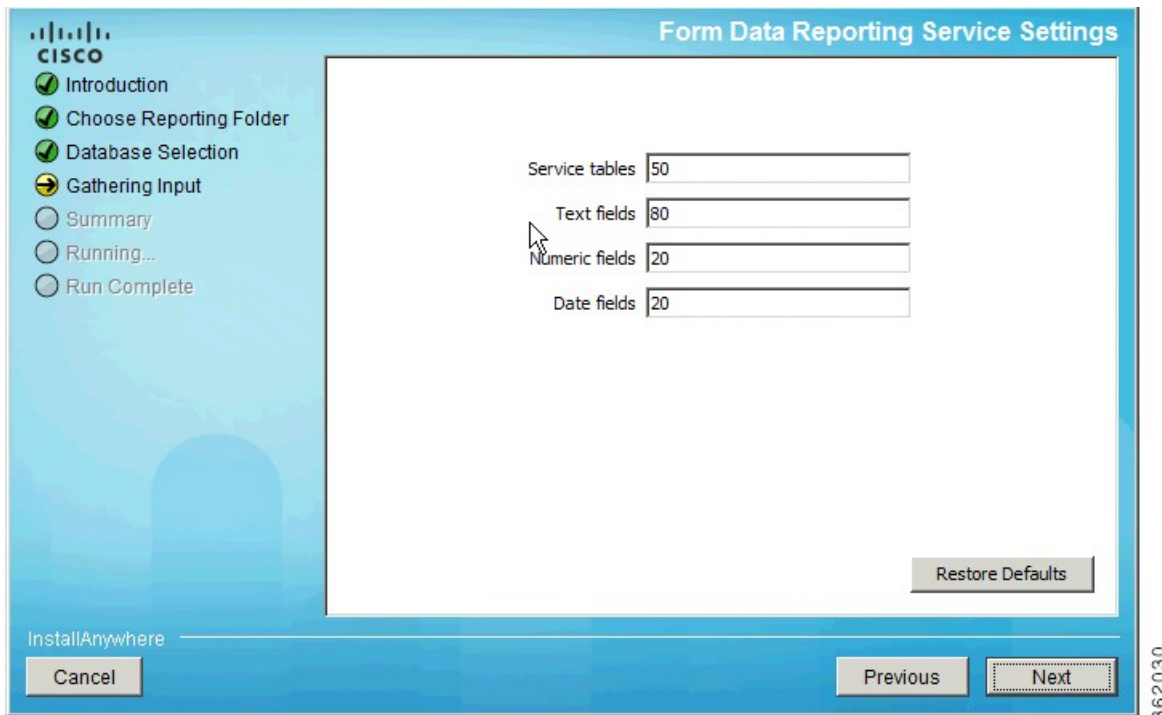
Option	Description
Dictionary tables	<p>Number of tables required in the Data Mart database to store the data for reportable dictionaries. One table is needed per reportable dictionary.</p> <p>You can only increment the current value to maximum of 800. All existing data will be retained and tables are created incrementally.</p>
Text fields	<p>Number of Text type fields that are used in dictionaries based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Scripts like 'update_datamart.cmd' or 'update_datamart fdr.cmd' scripts in full mode (see Modifying Form Data Reporting Configuration, on page 23). You must also restart the “IMB Cognos” service.</p>
Numeric fields	<p>Number of Numeric fields that are used in dictionaries based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>
Date fields	<p>Number of Date fields that are used in dictionaries based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>

If you click **Restore Defaults**, your edited values are overwritten by the current configuration values from your existing Data Mart database.

Step 7 Click **Next** to proceed to the next page of the wizard.

The Form Data Reporting Service Settings page of the wizard appears, as shown below.

Figure 7: Form Data Reporting Service Settings



Step 8 Your Form Data Reporting Service settings are retrieved from your existing Data Mart database. You can modify your Form Data Reporting Service Settings as described in the table below.

Table 13: Form Data Reporting Service Settings

Option	Description
Service tables	<p>Number of tables required in the Data Mart database to store the data for reportable services. One table is needed per reportable service.</p> <p>You can only increment the current value to maximum of 800. All existing data will be retained and tables are created incrementally.</p>
Text fields	<p>Number of Text type fields that are used in services based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>

Option	Description
Numeric fields	<p>Number of Numeric fields that are used in services based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Script 'update_datamart.cmd' in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>
Date fields	<p>Number of Date fields that are used in services based on the customer form reporting analysis.</p> <p>A modification will cause the tables to be deleted and then recreated. It also resets the timestamp in database.</p> <p>Your form reporting data will need to be regenerated by running the ETL Scripts like 'update_datamart.cmd' or 'update_datamart fdr.cmd' scripts in full mode (see DataMart Reference, on page 99). You must also restart the “IMB Cognos” service.</p>

If you click **Restore Defaults**, your edited values are overwritten by the current configuration values from your existing Data Mart database.

Step 9 Click **Next** to proceed to the Summary page of the wizard.

Step 10 The configuration wizard has enough information to start the configuration process. Review the settings that appear on this page. If you need to make any changes, click **Previous** to go back to a page and make the necessary changes. If they are correct, click **Install** to begin the configuration. Do not interrupt the wizard during this process.

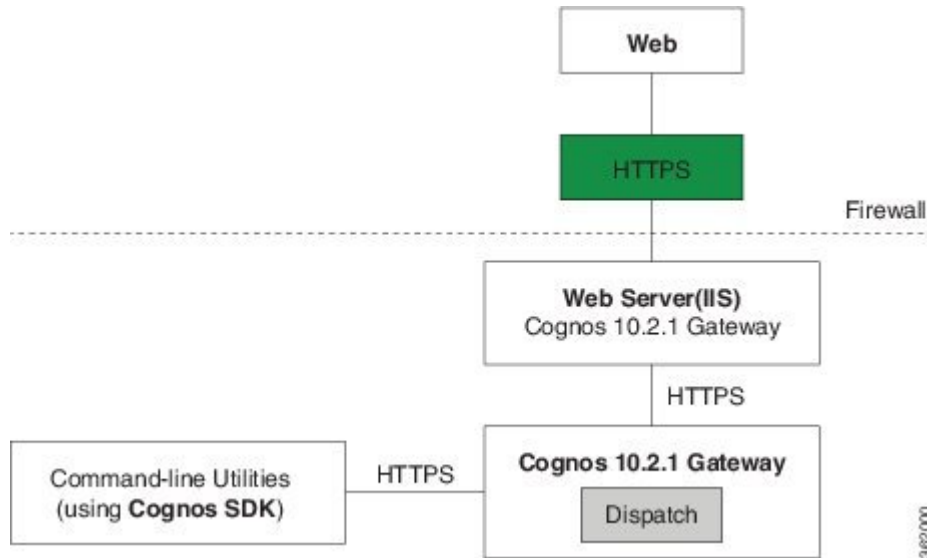
Step 11 If the configuration process completes successfully, click **Done** to exit the configuration wizard. If the configuration process fails, click **Done** to exit the configuration wizard, and then return to Step 1 to retry the FDR Configurator. Logs of the configuration process are located in the “<Reporting_Install_Dir>_CSP_FDRConfigurator\Logs” directory.

Configuring HTTPS for Cognos

This section describes how to configure HTTPS for Cognos.

To enable SSL support on the Cognos Server one has to change the protocol of the Cognos Gateway to HTTPS (assuming that the Web Server like IIS is also setup for HTTPS).

Figure 8: SSL Support Overview



Prerequisites and Assumptions

- 1 Https should be enabled on IIS Server where Cognos Server is installed.
- 2 Remove the TCP port (80) on IIS.



Note

In Windows Server 2008 R2 we can not remove TCP port (80) and hence Firewall should be used to disable the TCP port (80).

- 3 For additional security one can use a Firewall to block all the non-SSL ports on the system where Cognos+IIS is installed (for example, port 80 and 9300).
- 4 All Command-line utilities used for SA/Reporting will still Http protocol as those commands are run on the same system where Cognos Server is installed.
- 5 It is also an overhead and performance concern to enable Https/SSL for the command-line utilities, and hence it remains non-SSL.
- 6 “CognosServername” in the CnfParams table should be manually changed to set the SSL port that is configured on IIS.

Importing IIS Server Certificate to the Cognos Server

To import the IIS certificate to the Cognos server:

- Step 1** The Server Certificate used for IIS should be copied to a secure location on the Cognos 10.2.1 BI server.

Note Ensure that the Server certificate is in Base-64 encoded X.509 format.

- Step 2** Open command prompt and go to the folder “C:\Program Files\cognos\c10_64\bin”.
- Step 3** Set JAVA_HOME=C:\Program Files\cognos\c10_64\bin64\jre\7.0.
- Step 4** Import the IIS Server certificate into Cognos 10.2.1’s JCA Keystore by typing the following command:

Example:

```
ThirdPartyCertificateTool.bat -T -i -r CA_certificate_file -k  
crn_location/configuration/signkeypair/jCAKeystore -p password  
(for example: ThirdPartyCertificateTool.bat -T -i -r "c:\certnew.cer" -k "C:\Program  
Files\Cognos\c10-64\configuration\signkeypair\jCAKeystore" -p NoPassWordSet)
```

Configuring Cognos 10.2.1 for SSL

To configure Cognos 10.2.1 for SSL:

-
- Step 1** Choose **Program Files > IBM Cognos 10-64 > IBM Cognos Configuration**.
- Step 2** Choose **Environment > Gateway URL**. Change http to **https**, and port default 80 to **443**.
- Step 3** Choose **Cryptography > Use mutual authentication?** and change to **True**.
- Step 4** Choose **Cryptography > Cognos > Use third party CA?** and change to **True**.
- Step 5** Save the configuration.
- Step 6** Stop the IBM Cognos Service.
- Step 7** Restart.
-

Changes to newscale.properties for SSL

To change the newscale.properties:

-
- Step 1** In the newscale.properties file, find the cognoswebprotocol parameter, and change http to **https**.
- Step 2** Restart the Prime Service Catalog application server.
-

Verification

To verify the changes:

-
- Step 1** Log on to <https://CognosServername.domain.com/cognos10>, and check whether you can log on to Cognos Connection.
- Step 2** Log on to <https://RequestCenterServername.domain.com/RequestCenter>, and check whether you can navigate to Reporting or Advanced Reporting modules.
-

Configuring Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) provide a quick, handy way to trace trends or statistics that are deemed critical to managing Service Catalog services.

Configuring Dashboards

The Dashboard option is part of the Reporting module. It allows you to configure the portal to display up to four **KPIs**.

Choose **Reporting > Dashboard > Configure Dashboard** button to display a list of available KPIs.

Indicate which KPIs to include by checking the check box to the left of the Report Name in **Select Key Performance Indicators** page. Choose the order (1–4) that the selected **KPIs** will display in your dashboard quadrant by using the **Order** drop-down menu. Click **Reset** to clear your choices and start again, or **Cancel** to exit the popup window without making any changes. Click **Save KPI Selection**. Changes are reflected on your Dashboard.

KPIs that measure Service Catalog performance may be specified. If you choose a KPI for a module that you do not have installed, the legend “No data available” appears rather than a graph.

Registering a New KPI

You can quickly and easily register a new KPI.

-
- Step 1** Choose **Advanced Reporting** from the **Module** drop-down menu.
- Step 2** Click **KPI Administration**.
- Step 3** Click **Register New KPI**.
- Step 4** Enter your KPI parameters.
- Step 5** Click **Register**.
The new KPI appears under the list of KPIs on the KPI Administration page.
-

Modifying an Existing KPI

The KPI Administration option is available on the Advanced Reporting module to users who have the role of “Analytics Administrator”. The KPI Administration option allows the administrator to adjust the appearance or behavior of a KPI. To do so:

Step 1 Choose **Advanced Reporting > KPI Administration**.

Step 2 Select a KPI on the Select Key Performance Indicators Page.

Step 3 Once you choose a KPI, its properties appear on the update KPI page.

Step 4 The only KPI properties that should be changed are those that define the presentation of the KPI. These include:

- Type – the type of chart; options include line; verticalbar; horizontalbar; pie; and bubble
- Data Color Param 1 through Data Color Param 6 – the colors with which the chart is drawn

For a service configured with no reportable grid dictionaries, each request for the service (that is, requisition entry) is captured by the ETL process and inserted into the corresponding DM_FDR_SERVICETABLE as one row of data. However, for a service configured with one or more reportable grid dictionaries, the ETL process inserts multiple rows of data into the DM_FDR_SERVICETABLE table. The number of rows inserted corresponds to the greatest number of rows in any of the reportable grid dictionaries.

For example, consider a service with a reportable nongrid dictionary (Employee) and two reportable grid dictionaries (Contact, Address). Assume a request for this service has three rows of data in Contact, two rows of data in Address, and some data in the Employee dictionary. The form data captured in the service table for this service would look the following:

Table 14: Form data captured in the service table

RequisitionEntryID	Employee. FirstName	Employee. LastName	Contact. Type	Contact. Details	Address. Line	Address. City	Address. State	Address. Country
NNN	John	Smith	Cell	650-123-4567	3333 Third St.	San Mateo	CA	USA
NNN	(NULL)	(NULL)	Work	408-765-4321	1111 First St.	San Jose	CA	USA
NNN	(NULL)	(NULL)	Email	jsmith@company.com	(NULL)	(NULL)	(NULL)	(NULL)



Designing Reports

This chapter contains the following topics:

- [Planning for Reporting in Service Design, page 35](#)
- [Making Service Items Reportable, page 36](#)
- [Updating Previously Deployed Dictionaries and Services, page 37](#)

Planning for Reporting in Service Design

Since each customer site will obviously have a different set of dictionaries and services, there can be no hard-and-fast rules as to how to decide which of these to make reportable. However, the following guidelines may help you decide which objects to include in the data mart. For more information, see [Configuring the DataMart, on page 18](#).

Dictionaries

Dictionaries with dates or numbers in them might be good candidates for inclusion in the data mart.

Dictionaries consisting wholly or partly or very large text fields, designed to hold descriptions or explanations, are not good candidates for inclusion; such fields would be truncated at the maximum character size specified when the data mart is built.

Dictionaries deemed critical to the business need to be included. This would typically include the Customer and Initiator dictionaries since they include information that is not in the corresponding person-based dimensions or is more current than the information that was in Organization Designer.

Services

Including a service essentially provides you a shortcut to reporting on all the dictionaries in a service without having to know identify those dictionaries individually (that is, as separate dimensions/query subjects.) This is especially useful for users particularly interested in one service only, or who are infrequent users of the query tools and need a quick-and-dirty way to report on items of interest.

Making services reportable has the following drawbacks, which may mitigate against having dimensions derived from services in your data mart:

- If the service contains two fields with the same name (from different dictionaries) they appear as Dictionary1_FieldName and Dictionary2_FieldName in the query subject based on the service. Fields which are not ambiguously named simply have the field name.
- Some services contain so many dictionaries, with so many fields, that the service-dimension configuration must be greatly adjusted from the default number of fields allowed. Typically, this means increasing the number of character, date, or numeric fields to be the highest number required for any one service to be made reportable. SQLServer documentation warns that this may adversely affect performance, because it would entail “row chaining”.

Making Service Items Reportable

Any dictionary or service may be designated as reportable.

Configuring Reportable Dictionaries

A reportable dictionary appears as a query subject in the DictionaryData folder of the Service Catalog data mart. Dictionary fields are listed in the dictionary dimension in the order in which they are specified in the dictionary. Any fields exceeding the limits on the number of each type of field (character, date, number) are excluded from the data mart. The names of the data mart query items will match the field names specified when the dictionary is defined.

Making dictionaries reportable provides the maximum flexibility for reporting on dictionaries used in multiple services. You can freely write reports containing data from the dictionaries, the desired fact table and any relevant dimensions.

Follow these guidelines when naming reportable dictionaries and their component fields:

- Standardize dictionary names and field names, since these names are now exposed to more people.
- Develop and adhere to site-wide standards for capitalization and style.
- Field labels for dictionaries used in multiple forms need to be consistent. In fact, the field label should closely resemble the field name. The field name is exposed in the dictionary dimension. The field label would be exposed in the service dimension, if used.

Follow these guidelines when constructing dictionaries to be reportable:

- If a dictionary is reportable, all component fields appear in the data mart, including fields hidden in various services. If a hidden field needs to be kept hidden from users in all contexts, place it in a separate dictionary that is not reportable.
- Be sure to configure the reserved dictionaries (Customer and Initiator) to contain only fields that are used in your services. Any fields included in these dictionaries will appear in the data mart.
- A field name should match its contents. For example, if a field is called "date", it should be a Date data type, with only valid dates or date-times allowed as the field values. Failure to do so could result in a confusing user interface. For example, the presence of any nonvalid date value in the field means that the Cognos reporting and query tools prevent users from applying date calculations.

- Similarly, fields which contain numbers should be stored as a Number data type, and an appropriate size and decimal precision applied. This ensures that numeric calculations can be applied and may eliminate the need to format the field in the reporting or query tool to ensure a user friendly and consistent display.

Once a dictionary has been made reportable, it will initially appear as noneditable in Service Designer. You can change the Reportable value to No in order to edit the dictionary definition. This behavior is a double-check, to ensure you are aware of the consequences of changing the definition of a dictionary that has been made reportable:

- Added fields are added to the dictionary data in the data mart. Any service requests submitted before the field was added will simply have no values for the field.
- Deleted fields will remain in the corresponding query subject in the data mart. Field values are blank for any requests submitted after the date the field was deleted.
- You can freely change the length assigned to any field.
- You cannot change the data type assigned to any field. This will cause the ETL process that loads the data mart to fail. If this must absolutely be done, you will need to recreate the form data component of the data mart and reload all data. Procedures for doing so are available from the Cisco Technical Assistance Center (TAC).

Configuring Reportable Services

Making a service reportable means that the service appears as a query subject in the ServiceData folder. The service record consists of all reportable dictionaries in the service. Any fields exceeding the limits on the number of each type of field (character, date, number) are excluded from the data mart. The names of the data mart query objects are derived from the field labels as specified when the form for the service is designed. When a reportable service includes two fields with identical labels, the ETL process adds the dictionary fields to the data mart with query item names of Dictionary_Label_1, Dictionary_Label_2, and so on.

A service bundle can be designated as reportable. Making a service bundle reportable means that service bundle appears as a query subject in the ServiceData folder. The service bundle record consists of all dictionaries which were associated to the child services as well as the service bundle itself.

If the child services which were attached to the service bundle are also reportable, the child services record consists of the dictionaries which were associated with the respective child services.

In addition to the guidelines for reportable dictionaries, follow these guidelines when constructing services to be reportable:

- Do not assign two fields in different dictionaries in the same service the same label. Since labels are used to name the corresponding query items in the data mart, the labels for fields used in the same service should be unique.

Updating Previously Deployed Dictionaries and Services

The service design methodology must also consider how best to accommodate changes to previously deployed dictionaries and services. These considerations need to include both the effects on the Service Catalog transactional system and effects on the data mart.

Assume that:

- A dictionary is reportable and has been used in a service that has been ordered, and
- The data mart (and its metadata) has already been built and populated for those requests.

What are the effects of changes to the dictionary on the configuration of the data mart? These effects manifest in two ways:

- Changes to the reporting metadata, that is, the dictionary and service-based dimensions, and their component fields, available as query subjects and query objects in Ad-Hoc Reports and Report Designer.
- Changes to the data loaded into the data mart via the Extract-Transform-Load (ETL) process.

Adding a Field to a Reportable Dictionary

The next time the data mart load process is run, the job which builds the reporting model (the metadata) adds the field as a query item to the query subject corresponding to the dictionary. The ETL process will now include that field. The field value is populated for requisitions submitted after the change to the dictionary was made, and blank for all requisitions submitted before the date the change was made.

The only caveat with this scenario is that the field cannot be added if the dictionary now exceeds the maximum number of fields allotted for each data type in a dictionary or service-based dimension. (The number of fields is specified when Advanced Reporting is installed. System administrators may customize default values of 60 character fields, 10 date fields, and 10 numeric fields for each dictionary, and 80 character fields, 20 date fields, and 20 numeric fields for each service. Be sure to check with the system administrator if in doubt.)

In both cases, the current software would add the field as the last query item in the query subject representing the dictionary or service. This will probably not correspond to where the field appears on a service form.

Adding a New Reportable Dictionary

The dictionary becomes a new query subject, and all its fields, query items, as expected. Data is loaded into the dictionary as of the date it was made reportable.

A possible difficulty comes in reporting on requests for an existing service over a time period that spans the addition of the dictionary. If you include fields from the new dictionary in the report, only requisitions that contain that dictionary are included. You would be forced to use the service-based query subject to generate a report including data from the new dictionary and any old dictionaries that spanned the time period of the change. Conversely, if you had added the fields to the existing dictionary, requisitions that predate the change would also appear on the report, with blank values for the new fields.

Deleting a Field from a Reportable Dictionary

The business view of the data mart is unchanged—that is, the field will continue to appear as a query item in the query subject corresponding to the dictionary. However, the ETL process will no longer load data into that field.

The effect on the data mart is the same as the effect of hiding the field: no further data values are supplied in service requests, or appear in the data mart. However, it may be more efficient to delete the field, both from the service design perspective (the field no longer has to be hidden every time the dictionary is included in a new service) and from the data mart perspective (the ETL process no longer has to load data into the field). Of course, before a field is deleted from a dictionary, thorough testing should be done to ensure that no side

effects exist; for example, you must verify that no ISF code refers to that field or no Service Link agent parameters are bound to fields to be deleted.

Deleting a Reportable Dictionary

Results are similar to those seen when a field is deleted from a dictionary. The dictionary continues to appear as a query subject. However, no additional rows are added to the underlying dimension. An attempt to report on data from that dictionary will, logically, include only requisitions ordered when the service definition included the dictionary.

The number of reportable dictionaries cannot exceed the maximum number specified as part of the Advanced Reporting configuration. Though this number is entered when the data mart is created, it can be increased by the System Administrator while the data mart is in operation. However, since deleting a reportable dictionary does not remove the dictionary from the data mart, this dictionary still counts as one of the allowable dictionaries. Once requisitions using a dictionary have been loaded to the data mart, there is no way to remove the dictionary from the data mart.

Changing a Dictionary Name

In general, a dictionary name should not be changed once the dictionary has been designated as reportable. The name of the corresponding query subject in the data mart would be changed. However, any reports or queries saved using fields in the dictionary would become invalid and would no longer run. (The report owner or a user having write permission to a report in a public folder would need to edit the Report Definitions of such reports in order to repair them.)

Changing Field Definitions

This section describes about the field definition parameters.

Changing Field Names

Changing a field name is like changing a dictionary name—it is possible but not recommended once the field has been included in a reportable dictionary or service. The name of the corresponding query item in the data mart would be changed. However, any reports or queries saved using the previous field name would become invalid.

Changing Field Types

The data type of the field (for example, number, date, or character) should not be changed. When the dimension corresponding to the dictionary is first created, all of the dictionary fields are mapped to columns of the appropriate data type. This mapping cannot be changed.

A possible approach is to create a new field in the same dictionary of the appropriate type and potentially delete the old field. Reports needing data from both pre- and post-change would need to include both fields.

There are no restrictions on changing the HTML representation (display type) for a field. For example, a text field initially displayed as a set of check boxes could be displayed as a drop-down list with no effects on the data mart.

Changing Field Lengths

Changing the length of a numeric field is accommodated by the data mart. Any possible side effects are minimal. For example, a format previously assigned to an item in a report may have to be adjusted to accommodate the newly allowed field values.

Changing the length of a text field has minimal effects. If the length were increased to exceed the number of characters allotted to text fields in the data mart (by default, 200), truncation of the data in the field would occur. If a text field were shortened, a possible side effect might be that users abbreviate or otherwise shorten values previously entered in a different format. If a report or query were designed with a group or section heading based on that field, rows might not be grouped as expected.

Specifying Field Captions

When a dictionary is added to an active form component, service designers can specify a caption for each field in a dictionary in the active form component. These captions appear as the field label on the service form. Service Designer does not enforce a uniqueness constraint on the field captions, since this is allowed within Service Catalog service forms. However, the same caption should not be used for more than one field in the same dictionary if the service is to be reportable. This would result in two query items with the same name, which is not supported.

Deleting a Child Service from a Service Bundle

The business view of the data mart is unchanged—that is, the fields of child service will continue to appear as query items in the query subject corresponding to the Service Bundle. However, the ETL process will no longer load data into the fields which correspond to the deleted child service.



Generating Reports

This chapter contains the following topics:

- [Configuring Client Browsers to View a Report in Excel Format, page 41](#)
- [Modifying User Preferences to View Reports, page 42](#)
- [Creating Reports and Queries, page 45](#)
- [Using Standard Reports, page 46](#)
- [Creating Custom Reports, page 50](#)
- [Accessing Custom Reports and Queries, page 72](#)

Configuring Client Browsers to View a Report in Excel Format

Some users may report an issue with attempting to view a report in Excel format. The Excel screen pops up briefly and then disappears. To address this issue, add the Cognos Server URL to the Local Intranet zone of the client browser:

Step 1 Open the client browser window.

Step 2 Choose **Tools > Internet Options**.

Step 3 Click **Security**.

Step 4 Choose the **Local Intranet** zone.

Step 5 Click **Sites**.

Step 6 Click **Advanced**.

Step 7 Enter the Cognos Server URL.

Note To determine the Cognos server URL, try one of the View as Excel features in the Reporting module and look for the URL that appears in the title bar of the window that appears briefly before closing itself. This is the URL you need to enter. You may want to load a screen capture application and snap the screen if it disappears too quickly to read in real time.

Step 8 Click **Add**.

Modifying User Preferences to View Reports

Cognos offers two ways of viewing the reports and folders, represented by icons at the top right of each page. The selected view is highlighted.



	<p>The “Details View” includes a brief description of each report.</p>
	<p>The “List View” is the default view. Once you become familiar with the reports, folders, and their contents, you may want to switch to this view, which simply lists the contents of the current folder, as shown below.</p>

Figure 9: List View

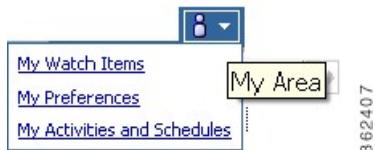
Previous 1 - 3 Next

	Name	Modified	Actions
<input type="checkbox"/>	Authorization: On-time % by Customer	January 8, 2007 3:43:11 AM	More...
<input type="checkbox"/>	Authorization: On-time % by Performer	January 8, 2007 3:43:16 AM	More...
<input type="checkbox"/>	Authorization: On-time % by Queue	January 8, 2007 3:43:22 AM	More...

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Rather than setting this view manually, the Preferences page allows you to set preferences that are used whenever you use the Reporting module. To set preferences, click the My Area link to the top-right of the menu bar, then My Preferences.

Figure 10: My Area



The General tab of the Set Preferences page appears.

Entries at the top of the page allow you to change the default view (List or Details) and to further customize that view.

Figure 11: My Preferences General Tab

Entries at the bottom of the page pertain to the user's location/locale. The time zone is used when scheduling reports. The default time zone is the time zone where the reporting server is located. In a distributed implementation, users need to set the time zone to their current location in order to easily schedule reports to be run.

Figure 12: My Preferences General Tab Regional Options

There is no support for rendering of non-English form data or facts table content at this time. The product and content languages should be set to the default language which is English.

Prebuilt Reports Inventory

Service Catalog reports (available in the top-level public folder Service Performance Reports), and the folder in which each is located, are summarized in the table below.

The Service Authorization and the Service Delivery reports include any ad-hoc tasks that were initiated in the authorization and service delivery moments, respectively. They do not include any tasks that were part of requests that were cancelled, either by the user or by a service team manager cancelling delivery of the request.

Table 15: Service Catalog Reports Table

Report Title	Folder	Description
Aging of Requests by Performer	Daily Request Management	Effective for investigating or reporting on the number of open and late tasks for an individual
Aging of Requests by Queue	Daily Request Management	Effective for investigating or reporting on the number of open and late tasks for a queue
Authorization: On-time % by Customer	Service Authorization Performance	Effective for investigating or reporting on the authorization on-time performance by a customer (OU)
Authorization: On-time % by Performer	Service Authorization Performance	Effective for investigating or reporting on the authorization on-time performance by individuals
Authorization: On-time % by Queue	Service Authorization Performance	Effective for investigating or reporting on the Authorization on-time performance by queues
Services by Dictionary	Service Design Details	Administrative report for managing the use of dictionaries
Functional Positions	People, Roles & Groups	Administrative report which lists all functional positions
Groups by Organizational Unit	People, Roles & Groups	Administrative report which lists groups and shows their Organizational Unit
Groups by People	People, Roles & Groups	Administrative report which lists People and shows their groups
Organizational Units by Group	People, Roles & Groups	Administrative report on groups and their organizational units
Organizational Units by People	People, Roles & Groups	Administrative report on people and their organizational units
Organizational Units by Queues	People, Roles & Groups	Administrative report on queues and their organizational units

Report Title	Folder	Description
People by Groups	People, Roles & Groups	Administrative report listing people and their groups
People by Organizational Unit	People, Roles & Groups	Administrative report listing people and their organizational units
Queues by Organizational Unit	People, Roles & Groups	Administrative report listing queues by organizational unit
Service Delivery: On-time % by Performer	Service Delivery Performance	Effective for evaluating or comparing the performance of individuals in performing their work
Service Delivery: On-time % by Queue	Service Delivery Performance	Effective for evaluating or comparing the performance of queues in performing their work
Service Delivery: On-time % by Service	Service Delivery Performance	Effective for evaluating the on-time performance for services and their related tasks
Service Pricing Details	Service Design Details	Administrative report for managing the pricing information for services
Service Volume: Request Activity by Service	Service Volumes & Activity	Effective for measuring and monitoring total service request activity within service groups
Service Volume: Request Activity Details	Service Volumes & Activity	Effective for investigating or reporting on the status of individual service delivery transactions
Service Volume: Request Activity Summary	Service Volumes & Activity	Effective for measuring and monitoring total service request activity within specific reporting periods
Service Volume: Request Trend by Service	Service Volumes & Activity	Effective for measuring and monitoring service request activity trends by service group and calendar quarter
Services by Service Team	Service Design Details	Effective for managing expenditures for services against an established budget

Creating Reports and Queries

Detailed instructions on using Query Studio and Report Studio are in the User Guides supplied by IBM/Cognos, which are available from the vendor's web site. This section addresses concerns specific to the Service Catalog data mart and the framework that allows query and report builders access to that data mart.

Both tools allow equivalent access to the query subjects and query items exposed in the custom package. Reports or queries are created simply by dragging items from the Insertable Objects pane at the left of the

page to the Reporting pane. As each item is added to the report, Cognos automatically adjusts the underlying SQL that is used to retrieve data for the report. To do so, Cognos relies on the relationships defined in the custom package through which the data mart is exposed. This package includes relationships between the dynamically defined dictionary-based dimensions and all fact tables. These relationships rely on database inner joins; information on a task or requisition (from the corresponding fact query subject) will appear in a report containing dictionary-based information only if the dictionary was used in the service to which the requisition or task applies.

Because Query Studio is an easier tool to use than Report Studio, especially for new users, We recommend that users start with Query Studio. If they are unable to implement the functionality for the required report, they may save the query and subsequently edit and enhance it in Report Studio; all queries created in Query Studio are upward compatible with Report Studio.

In particular, the following types of requirements should be implemented using Report Studio:

- Reports that need to display a percent of total, for example, percentage of tasks of a particular type that were on time or late.
- Reports that need to list requisitions with dictionary data, but have the dictionary data blank for services in which the dictionary was not used; this can be implemented via master-detail reports in Report Designer.
- Reports with complex filters, for example, in which either one or the other of a condition may apply for data to be included in the report. (In Query Studio, all filters are logically AND'ed, so that all conditions must be satisfied for a row to be included in the report.)

Using Standard Reports

The Standard Reports Package contains denormalized base data tables. These tables are used as the basis for the prebuilt reports as well as providing summary data tables for populating the KPIs.

Each of these tables is a standalone entity—it is not possible to join a table to any other in order to create a new report or modify an existing report. If you need to make modifications to a standard report, your best bet is to construct the desired report from scratch, using the Service Catalog data mart and the Custom Reports package. This section gives some hints on how to do this for some of the reports, using Ad-Hoc Queries (Query Studio) to construct the query.

People, Roles, and Groups

The reports in the People, Roles, and Groups folder can be duplicated by using the query subjects in the Organizations folder (Person, Group, and Organizational Unit) and the Queue dimension. The reports are fairly straightforward and can be generated by inserting the appropriate items on the report and grouping as desired.

For example, the Organizational Units by People report might look like this:

Figure 13: Sample Report

Organizational Units by People

Person	Organizational Unit	Organizational Unit Type
Bernard Castaldo	Architectural and Functional Coatings	Business Unit
Bruce Madison	Global Internet Sales	Service Team
	Global Customer Implementation	Service Team
	Global Customer Specialists	Service Team
	Information Technology	Business Unit
Cheryl Tower	ER Credit Cards	Service Team
	Global Order To Cash	Service Team
	Information Technology	Business Unit
Christina Holzner	APR Product Integrity	Service Team
	Discretionary Work	Service Team
	EM Product Integrity	Service Team
	Global Solution Planning	Service Team

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The report definition (viewable under Manage File in Query Studio) to build this report would look like the following figure (with a group specified on the Person Full Name, and the filter defined as a “Search and Select” filter).

Figure 14: Report Definition with Standard Filter Option

Report Definition ✕

Provides the expression for each report item. [Query Information](#)

Report Item	Expression
Person Full Name	[FormETL].[Person].[Person Full Name]
Person Full Name	[FormETL].[Person].[Person Full Name] in (<selected people go here>
Organizational Unit Name	[FormETL].[Organizational Unit].[Organizational Unit Name]
Organizational Unit Type	[FormETL].[Organizational Unit].[Organizational Unit Type]

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The same query items, with a different set of filters, are used in the “People by Organizational Unit” report:

Figure 15: Report Definition with Changed Filter Option

Report Definition	
Provides the expression for each report item.	
	Query Information
Report Item	Expression
Organizational Unit Name	[FormETL].[Organizational Unit].[Organizational Unit Name]
Organizational Unit Name	[FormETL].[Organizational Unit].[Organizational Unit Name] in
Organizational Unit Type	[FormETL].[Organizational Unit].[Organizational Unit Type]
Organizational Unit Type	[FormETL].[Organizational Unit].[Organizational Unit Type] in (?Organizational Unit Type?)
Person Full Name	[FormETL].[Person].[Person Full Name]

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Service Design Details

Like the reports in the People, Roles, and Groups folder, those in the Service Design Details folder are fairly easy to produce. Simply choose the desired items from the Dictionary and Service dimensions and group as desired.

For example, the “Services by Dictionary” report as produced by Ad-Hoc Query could look like this:

Figure 16: Sample Dictionary



Services by Dictionary

Dictionary	Service	Status	Service Group
ACCESS_CONFIRMATION	Shared Folder - Access Request	Active	Security_Administration_Services
	NT Group - Access Request	Active	Security_Administration_Services
ACCESS_INDIVIDUAL_ACCOUNT_INFO	Access to Individual's Personal Accounts	Active	Security_Administration_Services
ACCOUNT_DISABLE	Disable NT and Lotus Notes Account	Active	Security_Administration_Services
ACCOUNT_EXPIRED	Windows (AD) Account - Expired - Extend	Active	Security_Administration_Services

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To exactly duplicate the appearance and behavior of the standard report, the following activities are required in Report Designer:

- Modify the report title so it is left-justified.
- Include a Search-and-Select Filter for the dictionary on a prompt page.

Request Management

The Request Management folder includes two aging reports, which break down tasks into buckets, based on the number of days late the task is. The buckets are defined as 1–3 days late, 3–7 days late, 1–2 weeks late, and over 2 weeks late. The reports group the late tasks either by queue or by performer.

Figure 17: Aging Report

Aging of Tasks by Queue

Org. Unit	Performer	Task	1-3 days	3-7 days	1-2 weeks	>2 weeks	Total Open	Total Late	Late %
Delhi IT	Delhi IT Queue	Deliver/Install PC	0	0	0	1	1	1	100%
		Setup Phone/Voicemail	0	0	1	0	1	1	100%
	Delhi IT Queue		0	0	1	1	2	2	100%
Delhi IT			0	0	1	1	2	2	100%
Bangaluru IT	Bangaluru IT Queue	Call-Center Review	2	0	0	0	2	0	100%
		Follow-up Resolved Issue with Customer	2	0	0	0	2	0	100%
	Bangaluru IT Queue		4	0	0	0	4	0	100%
Bangaluru IT			4	0	0	0	4	0	100%

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This report is essentially a pivot report. The metric that is pivoted is the age of the open task. To produce this report:

- Place the appropriate attributes/dimensions on the report work area—the queue organization; the queue name; and the task name for the Delivery Tasks fact.
- Compute the age of the task by taking the difference (in days) between the current date and the task due date.
- Set up a custom group for the four aging buckets.
- Pivot the report using the custom group (Age) as the metric.

Service Volumes and Activity

The Service Volumes and Activity reports give summary information on the number of services requests started within a particular time frame, and the current status of those requests. For example, the Service Volume: Request Activity by Service looks like this:

Figure 18: Sample Request Activity by Service

Service Volume: Request Activity by Service

This report covers the period from Jan 1 2007 to Jun 30 2007

Service Group	Service Name	New Requests	Ongoing	Completed	Cancelled	Delivery Cancelled	Rejected
Ariba_Services	Ariba - Access Request	65	0	40	16	1	0
	Ariba - Problem	355	12	320	2	0	0
Business_Intelligence_BI	Business Intelligence (BI)/Business Warehouse (BW) Reporting - Production Support Service	311	14	233	4	0	0
Call_Center_Services	Customer Information Service	49	1	43	1	1	0
	General Request	1,015	40	888	12	4	0
	Password Reset - Any Application	1,997	3	1,970	16	1	0
	Software Issues	847	22	748	5	1	0
Grand Totals:		4,639	92	4,242	56	8	0

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Because of the complexity of the computations (tallying up the counts based on the status of the request), this report needs to be implemented in Report Designer.

Creating Custom Reports

The Advanced Reporting module provides the ability to write ad-hoc queries and reports. The module includes three options:

- The Home page provides shortcuts for running the Standard reports, without having to choose the Reporting module from the Service Catalog drop-down menu.
- The Ad-Hoc Reports tab provides access to IBM Cognos Query Studio, for writing queries against the data mart.
- The Report Designer tab provides access to IBM Cognos Report Studio, for writing professional quality reports against data mart.

Users must be granted appropriate permissions to access the Ad-Hoc Reports and Report Designer options.

This section offers instructions on how to access the Advanced Reporting Module and detailed information on the contents and structure of the Service Catalog data mart.

Accessing the Advanced Reporting Module

To use the advanced reporting capabilities, from the Service Catalog drop-down menu, choose the **Advanced Reporting** module.

The Home Page of the Advanced Reporting option displays the three predefined public folders.

- The Reports folder offers an alternate path to the prebuilt reports accessible as part of the Reporting module. Custom-designed report views and any new reports created via Ad-hoc Reports or Report Designer will also typically be stored on subfolders of the Reports folder.
- The remaining folders (Custom Reports Data Model, Standard Reports Data Package) are packages which are used by Report Designer and Ad-Hoc Reporting, allowing you to build queries and reports against the Service Catalog data mart.

Typically, you will click a tab corresponding to the Ad-Hoc Reports or Report Designer option. These options start the Cognos Query Studio and Report Studio components respectively. You will then be asked to choose which of the two reporting package you want to use.

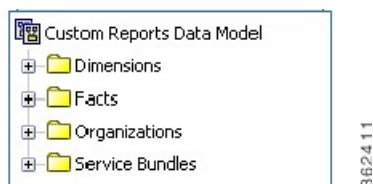
To access the data mart, choose the **Custom Reports Data Model** by clicking on the name. If you are using Report Designer, you will then be asked to specify the type of report you would like to create. Specify a list (it is the easiest). If you are using Ad-Hoc Reports, Query Studio automatically opens for a list report. The Custom Reports package appears in the left-hand pane, labeled “Insertable Objects”.


The data mart is configured as a dimensional model.

- The basic transactional data in a dimensional model is called a **fact**. Facts in the data mart include the tasks, requisitions, and effort entry. Each fact may include several measures—numeric quantities. For example, the estimated duration of a requisition is a measure, as is the actual duration.
- Each fact has relationships to one or more **dimensions** – descriptive attributes that can be used to choose or filter the rows in the related fact. For example, dimensions that describe the task-based facts include the task performer as well as the date the task was closed. Dimensions, in turn, are usually shared across multiple facts. For example, the service dimension may describe both a task and a requisition.
- Each fact, together with its related dimensions constitutes a **star schema**.
- In addition to star schemas, the Custom Reports Package includes other tables to provide complete coverage for potential reports and queries users might need to formulate about form, dictionary and service-based data, as well as the organizational structure at the site.

The dimensions and facts are grouped within the corresponding folders. In addition, the Organizations folder holds data on the organizations, groups, and people in use at the site. The Service Bundles folder holds data on the service bundles and child service which were associated to the parent service to form the bundle.

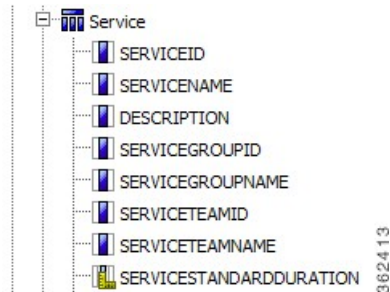
Figure 19: Custom Reports Data Model Tree View



As you expand the folders, all of the dimensions and facts become visible. Each object designated by the  icon is a query subject which groups a related set of fields or query items. Expanding the query subject will show its query items.

A query item can be a unique identifier, an attribute or a measure/metric, as indicated by the icon to the left of the item name:

Figure 20: Service Tree View



	Attribute
	Metric

Metrics are numbers which can be used in arithmetic expressions. By virtue of an item being defined as a metric, its value can be aggregated (for example, averaged, totaled or counted) to provide report totals or subtotals when the report or query has several levels or groups. In addition, metrics can be used in a wide variety of arithmetic, analytic, and percentage calculations, as specified by the report designer and provided by the Cognos tools.

A list of all query subjects and the query items which comprise each subject, with a description of each query item, is given in the tables at the end of this section.

Dimensions

The Custom Reports Package includes the following types of dimensions:

- Static dimensions are available in all installations, and are listed directly under the Dimensions folder. These dimensions describe customers, performers, dates, and other information related to tasks and requisitions.
- The DictionaryData folder lists all dimensions based on dictionaries which were specified as Reportable, and were therefore loaded into the data mart. Each reportable dictionary is available in the DictionaryData folder. Each dictionary query subject includes all fields in the dictionary, whether they were hidden or not in any or all services. One or more dictionary dimension can be joined with any fact, providing a flexible reporting and filtering mechanism.
- The ServiceData folder contains all services which were specified as Reportable, and were therefore loaded into the data mart. Each service query subject contains all fields in all dictionaries used in the service, provided that the number of fields allowed per service is not exceeded; if so, the dictionaries and fields are omitted from the service. The service query subjects are not, strictly speaking, dimensions;

they should not be combined with a fact for reporting purposes. Instead, using a service query subject as your report object provides a shortcut to reporting on all dictionaries and fields in the service.

- The Service Bundles folder contains all the service bundles and the child services which were associated to service bundles. These dimensions cannot be joined with any facts or dimensions which are available in the package.

You generally use the dimensions in conjunction with a fact table, to include additional data about the fact in your query or report, or to filter the output of the query or report by detailed criteria.

Facts and Star Schemas

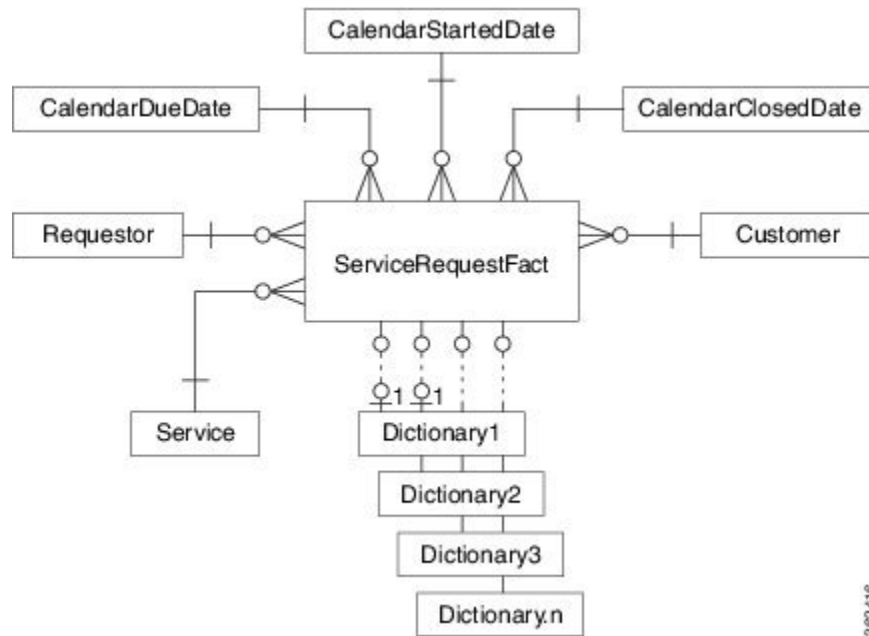
This section describes the facts and star schemas.

Requisitions – ServiceRequestFact

The ServiceRequest fact holds data related to requisition and the requested services. The date and duration attributes that are included in the fact are for the service request and not for the requisition (a shopping cart that can contain multiple requests). This fact includes metrics about the performance—whether the request was in compliance with its SLA, for example, or its actual or estimated duration, as well as links to all dimensional information about the request, including its initiator, the customer and any reportable dictionaries included in the service ordered.

A star schema diagram showing the ServiceRequest fact and related dimensions is shown below.

Figure 21: Service Request Star Schema Diagram



3/02/16

Task-Based Facts

The Service Catalog data mart provides five views of the task-based facts. Two of these views (RequisitionTaskFact and ServiceTaskFact) are provided primarily for backward compatibility with previous versions of Advanced Reporting. They may freely be used; however, they do not contain some metrics and counts which may be useful for many reports.

Each view is optimized by grouping certain sets of tasks. Reports and queries which need to interrogate tasks will perform best if they are based on the task-based fact which best meets the report's requirements.

Task-based facts are summarized below.

Table 16: Task-based Facts

Fact	Usage/Description
All Tasks	All tasks performed during fulfillment of a service request.
Authorization Tasks	All authorization and review tasks.
Delivery Tasks	All delivery tasks, including ad-hoc tasks.
RequisitionTask Fact	All tasks which are performed at the requisition level and not at each service task level. These include financial authorizations, departmental authorizations, and departmental reviews. If sites do not use any of these authorization types, this fact table is empty. This query subject is provided primarily for backward compatibility with previous versions of the Service Catalog data mart.
ServiceTask Fact	Data related to service-level tasks. These include service group authorizations and reviews; service delivery tasks; and ad hoc tasks. This query subject is provided primarily for backward compatibility with previous versions of the Service Catalog data mart.

When creating a report or query, always use the Fact table whose contents best match the type of tasks to be included in the report. Fact table contents are summarized in the table below.

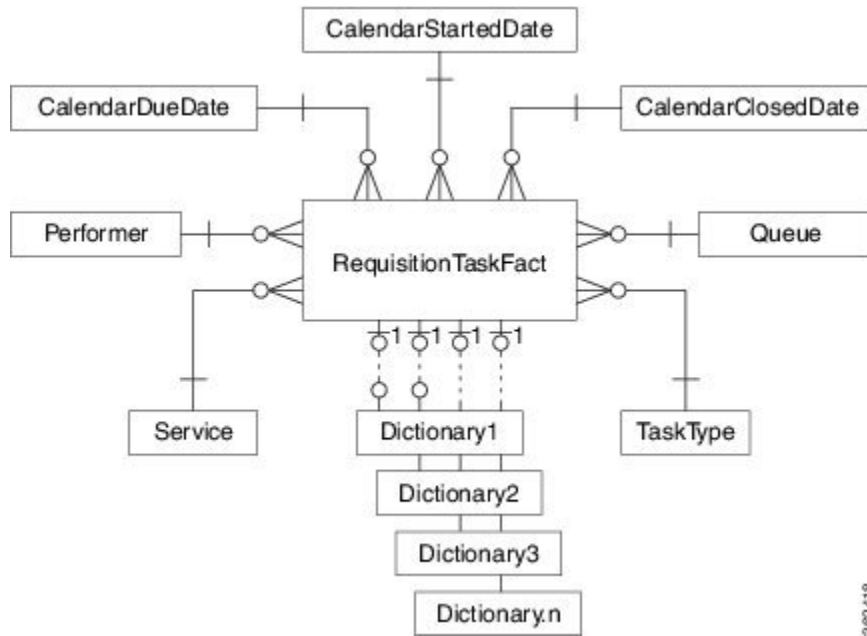
Table 17: Fact Table

	Financial Authorization	Department Authorization	Department Review	Service Group Authorization	Service Group Review	Delivery Tasks	Ad-Hoc Tasks
All Tasks	✓	✓	✓	✓	✓	✓	✓
Authorization Tasks	✓	✓	✓	✓	✓		
Delivery Tasks						✓	✓

	Financial Authorization	Department Authorization	Department Review	Service Group Authorization	Service Group Review	Delivery Tasks	Ad-Hoc Tasks
ServiceTask Fact				✓	✓	✓	✓
RequisitionTask Fact	✓	✓	✓				

The same dimensions are related all task-based facts with the exception of the “Service”, which is not relevant to RequisitionTask facts. A star schema diagram showing the relationships is shown below.

Figure 22: Task-BASED Star Schema Diagram



The ServiceTaskFact and RequisitionTaskFact facts have been deprecated. It is recommended that report designers use other facts to build all custom reports.

Effort Expenditure – TaskEffortEntry Fact

The TaskEffortEntry Fact holds data related the effort expended for each task. Effort entry is available by category, such as labor or material. Since some implementations have opted to not require effort entry, there may be no data available for this fact.

Organizations

The Organizations folder contains information on the groups, organizations, and people configured at the site. Query subjects in this folder cannot be joined with dimensional or fact data, but only with each other. Corresponding query items can be found in query subjects within the Dimensions and Facts folders.

Data Mart Dimensions

All query items (attributes of both facts and dimensions) available in the Dimensions folder of Custom Reports package are summarized in the tables in this section. This list does not include any dictionary or service-based form data, which, of course, will vary from site to site.

Customer

The customer dimension describes the person who is the recipient of the service which was ordered.

The semantics of the query items which comprise this query subject may be modified if custom mappings to Person attributes have been applied as part of directory integration. The descriptions given below are the defaults that are expected by Organization Designer. Some of these fields may be blank, if they are not used at a particular site.

Table 18: Customer Query Table

Query Item	Description
CustomerID	Customer ID
Customer Full Name	Full name of the customer, in First Name Last Name format
CustomerFirstName	First name of the customer
CustomerLastName	Last name of the customer
CustomerOUID	Organizational Unit ID of the customer's home OU
CustomerOUName	Name of the customer's home organizational unit
CustomerBuilding	Building in which the customer is located
CustomerBuildingLevel	Building level/floor on which the customer is located
CustomerOffice	Office of the customer
CustomerCubic	Customer cubicle number
CustomerStreet1	First line of the street address of the customer
CustomerStreet2	Second line of the street address of the customer

Query Item	Description
CustomerCity	City in which the customer is located
CustomerStateProvince	State in which the customer is located
CustomerZip	Zip code of the customer
CustomerCountry	Country in which the customer is located
CustomerLoginName	Login name of the customer
CustomerEmailAddress	Email address of the customer
Work Phone	The work phone of the customer
Cust_SupervisorID	ID of the customer's supervisor
Supervisor Full Name	Full name of the customer's supervisor, in First Name Last Name format
Cust_SupervisorFirstName	First name of the customer's supervisor
Cust_SupervisorLastName	Last name of the customer's supervisor
Cust_SupervisorEmail	Email address of the customer's supervisor
Cust_SupervisorLoginName	Login name of the customer's supervisor
Customer Status	Customer status; valid values are "Active" and "Inactive"

Dictionary

The dictionary dimension may be used to describe the dictionary in which a form field was entered.

Table 19: Dictionary Query Table

Query Item	Description
DictionaryID	Dictionary ID
DictionaryName	Name of the dictionary
DictionaryGroupID	ID for the dictionary group to which this dictionary belongs
DictionaryGroupName	Name of the dictionary group
DictionaryServiceItemFamily	Service Item family name for a particular dictionary

Query Item	Description
Is Reportable	Flag that indicates whether the dictionary is designated as reportable (1) or not (0). Reportable dictionaries will have corresponding query subjects under the "DictionaryData" folder.

Keyword

The keyword dimension may be used to list keywords associated with a particular service.

Table 20: Keywords Query Table

Query Item	Description
KeywordID	Unique identifier for the keyword
Keyword	The word or words by which catalog users can search for services to order

Performer

The performer dimension describes the person who performs a task. This includes delivery, ad-hoc, and authorization/review tasks.

The semantics of the query items which comprise this query subject may be modified if custom mappings to Person attributes have been applied as part of the directory integration process. The descriptions given below are the defaults that are expected by Organization Designer.

Queue

The queue dimension describes the queue to which a task was assigned.

Table 21: Queue Query Table

Query Item	Description
QueueID	ID of the queue to which the task was assigned
QueueName	Name of the queue
Queue Status	Status of the queue – "Active" or "Inactive"
QueueOUID	Identifier of the organizational unit which services the queue
QueueOUName	Name of the organizational unit of the queue
Work Phone	Work phone of the queue
Email Address	Email address of the queue

Requestor

The requestor dimension describes the person who ordered the service.

The semantics of the query items which comprise this query subject may be modified if custom mappings to Person attributes have been applied as part of directory integration. The descriptions given below are the defaults that are expected.

Table 22: Requestor Query Table

Query Item	Description
RequestorID	ID of the person who requested the service
Requestor Full Name	Full name of the requestor, in First Name Last Name format
RequestorFirstName	First name of the requestor
RequestorLastName	Last name of the requestor
Requestor Status	Status of the requestor – “Active” or “Inactive”
Work Phone	The work phone of the requestor
RequestorOUID	Organizational Unit ID of the requestor's home OU
RequestorOUName	Name of the requestor's home OU
RequestorBuilding	Building number/name in which the requestor is located
RequestorBuildingLevel	Building level/floor of the requestor
RequestorOffice	Office of the requestor
RequestorCubic	Requestor cubicle number
RequestorStreet1	First line of the street address of the requestor
RequestorStreet2	Second line of the street address of the requestor
RequestorCity	City in which the requestor is located
RequestorStateProvince	State in which the requestor is located
RequestorZip	Zip code of the requestor
RequestorCountry	Country in which the requestor is located
RequestorLoginName	Login name of the requestor
RequestorEmailAddress	Email address of the requestor

Query Item	Description
Req_SupervisorID	ID of the supervisor of the requestor
Supervisor Full Name	Full name of the supervisor, in First Name Last Name format
Req_SupervisorFirstName	First name of the supervisor
Req_SupervisorLastName	Last name of the requestor's supervisor
Req_SupervisorEmail	Email address of the requestor's supervisor
Req_SupervisorLoginName	Login name of the requestor's supervisor

Service

The service dimension includes a hierarchy (service team, service group, service) for organizing data relating to the service for which a requisition was ordered or a task was performed. Service attributes can be used in conjunction with any fact table to qualify or filter the fact data.

Table 23: Service Item Query Table

Query Item	Description
ServiceID	Service ID
ServiceName	Name of the service
Description	Brief description for the service
ServiceGroupID	ID of the service group to which the service belongs
ServiceGroupName	Name of the service group to which the service belongs
ServiceTeamID	ID for the service team responsible for the service
ServiceTeamName	Name of the service team responsible for the service
ServiceStandardDuration	Standard duration specified in the service definition
ServiceDurationUnits	Units in which the standard duration is displayed
ServiceHoursPerBusDay	Number of hours per business day
EstimatedCost	Estimated cost for the service
PublicationDate	Publication date for the service
ExpirationDate	Expiration date for the service

Query Item	Description
IsInactive	Flag that indicates whether the service is active (0) or inactive (1)
Is Reportable	Flag that indicates whether the service is designated as reportable (1) or not (0). Reportable services will have corresponding query subjects under the "ServiceData" folder
Is Orderable	Flag that indicates whether the service is designated as orderable (1) or not (0)
Price	Service Summary Price

Service Bundles

The Service Bundles query subject provides access to all Service Bundles in the application repository.

Table 24: Service Bundles Query Table

Query Item	Description
Service Bundle ID	Unique identifier for the service bundle
Service Bundle Name	Name of the service bundle
Description	Brief description of service bundle
Service Group Name	Name of the service group to which the service bundle belongs
Service Team Name	Name of the service team responsible for the service bundle
Standard Duration	Standard duration specified in the service bundle definition
Durations Units	Units in which the standard duration is displayed
Hours per Business Day	Number of hours per business day
Price	Service bundle price
Service Bundle Status	Status of the service bundle
Is Reportable	Flag that indicates whether the service bundle is designated as reportable (1) or not (0). Reportable services will have corresponding query subjects under the "ServiceData" folder
Is Orderable	Flag that indicates whether the service bundle is designated as orderable (1) or not (0)

TaskType

The task type dimension may be used to provide the description of a task type.

Table 25: TaskType Table

Query Item	Description
TaskTypeID	Task Type ID
TaskTypeName	Description of the task type

Task types are listed below.

ID	Task Type
0	Delivery Task
1	Financial Authorization
2	Departmental Review
3	Departmental Authorization
4	Service Group Authorization
5	Service Group Review
6	Ad-hoc Task for Delivery
7	Ad-hoc Task for Authorization
8	Ad-hoc Task for Review

CalendarClosedDate

The CalendarClosedDate dimension provides a hierarchy for structuring queries about the date a requisition or task was closed. Using query items in this dimension provides an easier way to filter or group by dates, rather than having to choose a complete date and use an expression to extract, for example, just the month or week you are interested in.

Table 26: CalendarClosedDate Query Table

Query Item	Description
ClosedDateID	Date a task or requisition was closed, in the format YYYYMMDD; for example, 20081225

Query Item	Description
Full Date	Complete date in the format dd-Mon-yyyy; for example, 25-Dec-2008
Day Month Name	The month and day of the month; for example, Dec-25
Week of Year	Week of the year, in the format Weekn-yy; for example Week1-08
Calendar Year Month	Month of the calendar year in yyyy-nn format, where yyyy is a four-digit year and nn is a number between 1 and 12; for example, 2008-12
Calendar Year Quarter	Quarter of the calendar year in yyyy-Qn format, where yyyy is a four-digit year and n is a number between 1 and 4; for example, 2008-Q4
ClosedWeekDay	Day of the week on which the item was closed, where 1=Sunday and 7=Saturday
Day of Week Name	Day of the week (Sunday-Saturday) on which the item was closed
ClosedDateWeekStartDate	Starting date (Sunday) of the week in which the item was closed
ClosedDateWeekEndDate	Ending date (Sunday) of the week in which the item was closed
ClosedDateMonth	Month in which the item was closed
ClosedDateMonthName	Name of the month in which the item was closed
ClosedDateQuarter	Calendar quarter in which the item was closed
ClosedDateYear	Calendar year (YYYY) in which the item was closed

CalendarDueDate

The CalendarDueDate dimension provides a hierarchy for structuring queries about the date a requisition or task was due. The same date formats are available as for the CalendarClosedDate dimension.

CalendarScheduledDate

The CalendarScheduledDate dimension provides a hierarchy for structuring queries about the date on which a task which was allowed a scheduled start date was actually scheduled to start. If no explicit scheduled start date was specified, the scheduled date is the same as the start date.

The same date formats are available as for the CalendarClosedDate dimension.

CalendarStartedDate

The CalendarStartedDate dimension provides a hierarchy for structuring queries about the date a requisition or task was started. This is the actual start date.

The same date formats are available as for the CalendarClosedDate dimension.

Data Mart Facts

The query subjects in the Facts folder provide information about the tasks and service requests logged via the application service catalog.

ServiceRequestFact (Requisitions)

The ServiceRequestFact provides information about services ordered. Folders group metrics for On-Time and Request Status Counts.

Table 27: ServiceRequestFact Query Table

Query Item	Description
RequisitionEntryID	Unique ID for the service request
RequisitionID	Unique ID for the requisition (shopping cart) in which the service was requested
ServiceID	Service ID for the service
Service Bundle ID	Service ID of the service bundle
Requestor ID	Unique ID for the service requestor (initiator of the service request)
Customer ID	Unique ID for the customer (recipient) of the request
Status	Current status of the service request
Quantity	Service quantity that was requested
Price	Price of the service
Started Date	Date the service request was started
Due Date	Date the service request is/was due
Closed Date	Date the service request was closed
Started DateTime	Date and time when the service was requested
Due DateTime	Date and time when the service delivery is due
Closed DateTime	Date and time when the service request was closed
Default Duration	The configured duration required to deliver the service; specified in hours

Query Item	Description
ActualDuration	The actual duration taken to deliver the service
ServiceOnTimeFlag	Flag that indicates whether the service request was completed on time (1) or late (0)
ServiceStandardComplianceFlag	Flag that indicates standard compliance for the service request
Completed On-Time Request Count	1 if the current request was completed on time, zero (0) otherwise; count is automatically totaled when requests are grouped on a report
Completed On-Time Percentage	Percentage of requests that were completed on time
Standard Compliance Percentage	Percentage of requests that were completed in compliance with their SLAs
Submitted Count	Number of requests submitted; since requests are not added to the data mart until they are submitted, this will always equal the number of requests
Cancelled Count	Number of requests that were cancelled by the user
Completed Count	Number of requests whose delivery plan has been completed
Ongoing Count	Number of requests submitted but not yet closed
Rejected Count	Number of requests rejected by an approver
Delivery Cancelled Count	Number of requests whose delivery was cancelled by a service manager
Service Request Status	Current status of the service request
Billed Organizational Unit	Organizational unit to be billed for the service
Submitted Date	Date the request was submitted

Task-Based Query Subjects

The All Tasks, Authorizations Tasks, and Delivery Tasks Facts have the same component query items.

- All Tasks provides information about all tasks, including all delivery tasks, reviews and authorizations, performed to complete a service requisition.
- Delivery Tasks provides information about delivery tasks, including ad-hoc tasks.
- Authorization Tasks provides information about reviews and authorizations.

Table 28: Task-Based Query Table

Query Item	Description
Task ID	Service Task ID
Task Name	Name of the service task
Display Order in Service	The order in which the task is executed within the service's workflow
Task Type ID	Type ID of the task
Requisition ID	Corresponding Requisition ID of the task
Requisition Entry ID	Corresponding Requisition Entry ID of the task
Service Bundle ID	Unique ID for the service bundle in which this task is performed, if it was executed as part of a child service
Service ID	Unique ID for the service for which the task is performed; null (blank) for requisition-level approvals, which do not pertain to a particular service.
Performer ID	Unique ID of the performer who performed the task
Queue ID	ID of the queue to which the task is assigned
Status	Current status of the task
Started Date Time	Date and time when the task will be/was started
Due Date Time	Date and time when the task is/was due
Completed Date Time	Date and time when the task is/was completed
Scheduled Date Time	Date and time when the task is/was scheduled to be completed
Planned Effort (Hours)	Planned effort specified for the task in the service definition
Planned Duration (Hours)	Configured duration for the task to be performed, in hours, as specified by the service designer
Actual Duration (Hours)	Actual duration taken for the task as performed, in hours, as calculated by the system, based on the customer's calendar
Performer's Actual Duration (Hours)	Actual duration taken for the task as performed, in hours, as calculated by the system, based on the performer's calendar
Completed Task Count	Indication of whether a task has been completed; 1 if the task has been completed, 0 if it has not

Query Item	Description
Completed On-Time Task Count	Indication of whether a task was completed on time; 1 if the task was completed before its scheduled completion date, 0 if it was not
Completed On-Time Percentage	Percentage of tasks completed on time; for each individual completed task, this is either 100% or 0%; the computation applies as tasks are summarized
Late Open Task Count	Number of tasks still open that are late
Standard Compliance Percentage	Percentage of tasks that were completed within their specified duration

RequisitionTaskFact

The RequisitionTaskFact provides information about requisition-level authorization and review tasks performed to complete a service requisition. This query subject is provided for upward compatibility with legacy systems only; the All Tasks, Service Delivery Tasks, or Authorizations Tasks query subject should be used, as appropriate.

ServiceTaskFact

The ServiceTaskFact provides information about delivery tasks, ad-hoc tasks, service group authorizations and service group reviews performed to complete a service requisition. This query subject is provided for upward compatibility with legacy systems only; the All Tasks, Service Delivery Tasks, or Authorizations Tasks query subject should be used, as appropriate.

TaskEffortEntryFact

The TaskEffortEntryFact provides information about effort expended in the performance of a task.

Table 29: TaskType Table

Query Item	Description
EffortEntryID	Unique ID for the effort entry
ServiceTaskID	Unique ID identifying the task on which this effort was expended
EnteredDate	Date the effort was logged
Description	Description of the effort
Category	The category in which the effort was expended
ContributorID	Person ID of the person who performed the task for which effort entry was required

Query Item	Description
Contributor Full Name	Full name of the contributor in First Name Last Name format
ContributorFirstName	First name of the person who performed the task for which effort entry was required
ContributorLastName	Last name of the person who performed the task for which effort entry was required
EffortQuantity	Number of units of effort expended
EffortCost	Total (extended) cost of the effort entry – unit cost multiplied by quantity
EffortUnitCost	Unit cost of each unit of effort
UnitType	The unit of measure for the effort entry

Organizations Folder

The Organizations folder contains query subjects which allow you to report on organizations, groups, people, and the relationships among these entities. These query subjects cannot be joined to the transactional (fact) data. Instead, you should use the organization or person information in the appropriate dimension—Customer, Performer, or Requestor—to include such items in reports that also include data on tasks or service requests.

Group

Groups provide a container for disparate sets of people or organizations, allowing you to assign permissions or tasks to a single group rather than to the individual group members. To view members of a group, or see the groups with which a person was affiliated, a report could contain items from the Group and Person query subjects.

Table 30: Group Query Table

Query Item	Description
Group Name	Name of the group
Group Status	Status of the group – Active or Inactive
Parent Group Name	Parent of the group
Description	Description of the group

Person

The Person query subjects provides access to all people in the repository, regardless of the role (Customer, Performer, Requestor) they have played in the processing of service requests.

Table 31: Person Query Table

Query Item	Description
Person ID	ID of the person who requested the service
Person Full Name	Full name of the person, in First Name Last Name format
First Name	First name of the person
Last Name	Last name of the person
Home Organization Unit Name	Name of the person's home OU
Building	Building number/name in which the person is located
BuildingLevel	Building level/floor of the person
Office Number	Office of the person
Cubicle Number	Person cubicle number
Street Address1	First line of the street address of the person
Street Address2	Second line of the street address of the person
City	City in which the person is located
State or Province	State or province in which the person is located
Zip or Postal Code	Zip or postal code of the person
Country	Country in which the person is located
Login Name	Login name of the person
Email Address	Email address of the person
Supervisor ID	ID of the supervisor of the person
Supervisor Full Name	Full name of the supervisor, in First Name Last Name format
Supervisor First Name	First name of the person's supervisor

Query Item	Description
Supervisor Last Name	Last name of the person's supervisor
Supervisor Email	Email address of the person's supervisor
Supervisor LoginName	Login name of the person's supervisor

Organizational Unit

The Organizational Unit query subjects provides access to all organizations in the repository.

Table 32: Organizational Unit Query Table

Query Item	Description
Organizational Unit Name	Name of the organizational unit (OU)
Description	Description of the OU
Organizational Unit Type	Type of OU – Service Team or Business Unit
Organizational Unit Status	Status of the OU – Active or Inactive
Parent Organizational Unit	Parent of the OU, if an organizational unit hierarchy has been set up

Service Bundle Folder

The Service Bundle folder contains query subjects which allow you to report on service bundles, associated child service and the relationship among these entities. A service bundle consists of one parent and one or more child services.

Service Bundles

The Service Bundles query subject provides access to all Service Bundles in the application repository.

Table 33: Service Bundles Query Table

Query Item	Description
Service Bundle ID	Unique identifier for the service bundle
Service Bundle Name	Name of the service bundle
Description	Brief description of service bundle

Query Item	Description
Service Group Name	Name of the service group to which the service bundle belongs
Service Team Name	Name of the service team responsible for the service bundle
Standard Duration	Standard duration specified in the service bundle definition
Durations Units	Units in which the standard duration is displayed
Hours per Business Day	Number of hours per business day
Price	Service bundle price
Service Bundle Status	Status of the service bundle
Is Reportable	Flag that indicates whether the service bundle is designated as reportable (1) or not (0). Reportable services will have corresponding query subjects under the "ServiceData" folder
Is Orderable	Flag that indicates whether the service bundle is designated as orderable (1) or not (0)

Service

The Service query subject provides access to all child services which are part of a service bundle.

Table 34: Service Query Table

Query Item	Description
Service Bundle ID	Unique identifier of the service bundle
Service ID	Unique identifier of the parent service of the service bundle
Service Name	Name of the service
Description	Brief description of the service
Service Group Name	Name of the service group to which the service belongs
Service Team Name	Name of the service team responsible for the service
Standard Duration	Standard duration specified in the service definition
Durations Units	Units in which the standard duration is displayed
Hours per Business Day	Number of hours per business day

Query Item	Description
Price	Service price
Display order in Bundle	Display order in the service bundle
Service Status	Status of the service
Is Reportable	Flag that indicates whether the service is designated as reportable (1) or not (0). Reportable services will have corresponding query subjects under the "ServiceData" folder.
Is Orderable	Flag that indicates whether the service is designated as orderable (1) or not (0)

Accessing Custom Reports and Queries

When report designers create custom reports or queries, they may save them either to the Public folders (the Reports folder is the root public folder) or to their private folder ("My Folder"). Reports saved to the private folders are runnable/accessible only by the person who developed them.

Reports saved to the public folders are accessible/runable by any person who has a role that allows access to the reports. These inherited permissions can be overridden Cognos Administration options, which allow the Report Administrator to remove permissions to execute a report from the standard roles and assign that permission to any person or custom role that has access to run reports.

In addition to being run from the Reporting module folders, reports are also accessible via hyperlinks. Service designers may embed appropriate links in service descriptions, e-mail notifications or other areas of the application. The format of the link is:

```
http://<CognosServer Name>/crn/cgi-bin/cognos.cgi?CAMNamespace=TrustedSignOn&b_action=xts.run
&m=portal/report-viewer.xts&method=execute &m_obj=/content//report[@name='<ReportName>']
```

For more information, see [Using Reports](#), on page 79.



Monitoring and Operating Cisco Prime Service Catalog Reports

This chapter contains the following topics:

- [Configuring Cognos Memory Usage, page 73](#)
- [Refreshing the Standard Reports Package, page 74](#)
- [Refreshing the Data Mart, page 74](#)
- [Understanding the Process Flow for Custom Reports Package, page 75](#)
- [Migrating Custom Reports, page 77](#)
- [Customizing the Cognos Framework Manager Data Model, page 77](#)

Configuring Cognos Memory Usage

You configure Cognos memory usage by modifying the heap size for Cognos. To modify the heap size for the Cognos server:

-
- Step 1** Stop the IBM Cognos service.
- Step 2** Open the **startup.bat** located under the C:\Program Files\cognos\c10_64\bin64 directory.
- Step 3** In the startup.bat file, you can see different heap size settings recommended by Cognos, based on the RAM size of your Cognos machine:
- ```
rem "for machines with 1GB RAM"
set CATALINA_OPTS=-Xmx768m -XX:MaxNewSize=384m -XX:NewSize=192m -XX:MaxPermSize=128m
%DEBUG_OPTS%

rem "for machines with 2GB RAM"
rem set CATALINA_OPTS=-Xmx1152m -XX:MaxNewSize=576m -XX:NewSize=288m -XX:MaxPermSize=128m
%DEBUG_OPTS%

rem "for machines with 3GB RAM"
```

```
rem set CATALINA_OPTS=-Xmx1536m -XX:MaxNewSize=768m -XX:NewSize=384m -XX:MaxPermSize=128m
%DEBUG_OPTS%
```

Based on your system RAM size, you can use any one the above heap size settings or modify the heap size settings, and comment the rest of the heap size settings by prefixing the line with **rem**.

**Step 4** Restart the IBM Cognos service.

---

## Setting the Timeout Interval on IBM Cognos Server

The IBM Cognos session timeout setting should match that of Service Catalog to allow Single Sign-On to work seamlessly.

To set the timeout interval:

---

- Step 1** Choose **Start > All Programs > IBM Cognos 10-64 > IBM Cognos Configuration**.
  - Step 2** Choose **Environment > IBM Cognos service**.
  - Step 3** Click **IBM Cognos**.
  - Step 4** Under Resource Properties, choose **Ping timeout in seconds**. Enter **960** as the timeout interval in seconds. 960 is the maximum possible value.
  - Step 5** Save the configuration (by clicking the **Save** icon).
  - Step 6** Restart the IBM Cognos service.
- 

## Refreshing the Standard Reports Package

All tables in the reporting database that support the Standard Reports Package are truncated and completely refreshed in every ETL cycle. Report contents are refreshed and available for viewing as soon as the ETL cycle has completed. The prebuilt reports cannot be run while the ETL is in process.

## Refreshing the Data Mart

Several Cognos and Service Catalog components are required to refresh the database contents of the Custom Reports Package, which provides the business view of the data mart. The data mart must be loaded with data from the transactional systems on a regular basis in an Extract-Transform-Load (ETL) process. That is, data is extracted from the transactional system; transformed into a format that is optimized for reporting (rather than for online transactions); and then loaded into the data mart.

The ETL process is incremental. Only the data that has been changed or created since the last time the data mart was refreshed are processed in the next ETL cycle. Users can continue to access the data mart and run reports while the refresh process is running. However, the response time for some reports may be adversely

affected. Running the ETL process has no or very limited impact on the response times in the transactional database.

The refresh process is typically scheduled to run automatically at regular intervals. We recommend that the data mart be refreshed every 24 hours, ideally at a period of limited user activity.

The Service Catalog ETL processes for all packages use Cognos **Data Manager Runtime** components to generate executables that are deployed into the reporting server as part of the application installation procedure. These scripts use **Cognos SQL** to read the data from the OLTP source, allowing for greater degree of portability of the catalog between heterogeneous database environments. Oracle or SQL Server specific code is abstracted to views that are created in the OLTP source. The Data Manager scripts also include User Defined Functions (UDF) to handle the transformation of specially formatted strings stored within the Service Catalog database (which support the internationalization of the software). The UDF also cleanses html tags from the data, if they have been included in dictionary captions or field labels.

A custom program is required to extract service form field-level data from the Service Catalog requisition record (such data is stored in a proprietary and compressed format, to optimize OLTP performance) into a standard relational format. This program runs on the Service Catalog application server.

Another custom program is required to create and maintain the Custom Reports Data Project. This script uses the Cognos Framework Manager SDK to dynamically create the Custom Reports Project, based on the services and dictionaries each customer site has chosen as Reportable. This dynamic structure and content is added to standard data mart facts and dimensions to produce the data mart available in the Custom Reports Project.

The generated executables should be collated in a job stream for batch execution. The exact structure of the job stream will vary depending on which Reporting components are installed and configured: prebuilt reports and KPIs; and the custom reports data mart.

We recommend starting a reporting installation with a once daily refresh of the data mart, typically scheduled during slow times for transactional processing. However, The refresh of the data mart may be scheduled concurrently with online usage of Service Catalog or multiple times per day. Performance for online transactional users would be affected only insofar as the database server load is affected. Some reporting users may report a blip in performance as indexes are rebuilt; however, the effects are generally transient.

## Custom Reports Package

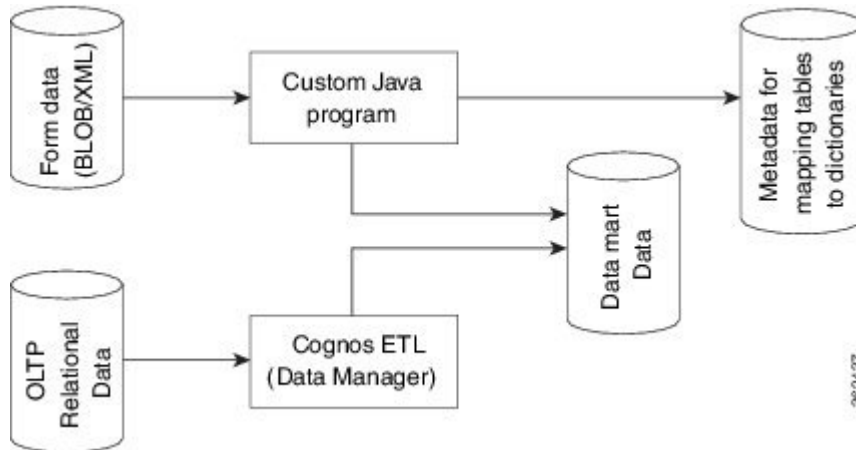
All tables that support the data mart available for Advanced Reporting are incrementally refreshed in every ETL cycle. Therefore, in principle, the data mart remains online during the ETL cycle. However, because of the increased database activity in the database and because indexes on the tables are temporarily unavailable, performance may be adversely affected.

## Understanding the Process Flow for Custom Reports Package

The process flow used to produce the Custom Reports Package uses the components described above. The most substantive difference is the use of additional Cognos components and custom Cisco-provided code to handle the inclusion of dynamically defined form data (in the form of reportable services and dictionaries) in the data mart.

Data is loaded into the custom reports package by means of both a Cognos (Data Manager) ETL script, and a custom Java program, as shown in the diagram below.

**Figure 23: CUSTOM Reports Package Process Flow – Part 1**



## Form Data Custom ETL

The custom Java program not only loads form data from reportable dictionaries and services into corresponding dimensions in the data mart, it also tracks which dictionaries and services have been loaded. On its initial run this program loads all data in the transactional database into the analytical database which supports the data mart. On subsequent cycles it loads data incrementally, that is, only new or modified data in the transactional database is inserted or updated in the data mart.

In addition to actually loading the data, this program also checks for new reportable dictionaries and services and, updates the list of such objects. This information, labeled as “Metadata for mapping...” in the diagram above, is then used by another custom program. This program uses the Framework Manager API to construct the business view of the data that is available to users in Report Designer and Ad-Hoc Reporting, so that the names assigned to reportable dictionaries and their attributes are accurately displayed in the reporting tools.

## Data Manager ETL

The DataManager ETL loads statically defined (dimension/fact) data from OLTP database into the corresponding dimensions and facts in the data mart. The load process is incremental. When this process is run for the first time, it loads all available data from the transactional database. On subsequent runs it loads only data which have been inserted or modified after the last run of ETL.

All source tables in the OLTP database have time stamp columns (CreatedOn/ModifiedOn). These columns are updated whenever a new record is inserted or an existing record is modified. The ETL process captures new/modified data by comparing the time stamp columns in the source tables against the date and time the ETL process was last run.

The ETL process has been optimized to handle both inserting new rows and updating existing rows in the data mart. For example, when a service request is submitted, the request and all its tasks would be created in the data mart. When the tasks are subsequently updated, the existing task fact is updated to reflect the new information.

The ETL process runs as follows:

### Select Data from the Transactional Database

Select new or changed data from the OLTP database, based on extraction views which include the columns required in the data mart and which filter by comparing the time stamps in the source data to the date and time the ETL process was last run.

### Insert Incremental Data into Staging Area Tables

Staging tables in the OLAP database (indicated by the prefix STG) temporarily hold the new/changed data from the OLTP database. Staging tables have one to one correspondence with OLTP tables. These tables are truncated on every run of ETL so they contain only new/ modified data.

### Construct Work Area Tables

Work area tables in the OLAP database (indicated by the prefix WRK) hold data extracted and consolidate it from previous ETL runs. Work area tables are used only for transforming data for dimensions whose data is derived from multiple tables in the transactional database. The mapping of source to target tables is given in the [Modifying Form Data Reporting Configuration](#).

### Load Data in to the Dimension/Fact Tables

The ETL uses both staging and work tables to insert new/modified data into the appropriate dimensions/fact tables in the datamart. Business views are created on top these tables and these views are exposed as query subjects in the package.

## Migrating Custom Reports

When you upgrade Prime Service Catalog Reporting solution from Cognos 8.4.0/ 8.4.1 to Cognos version 10.2.1, the system migrates all existing report specification and customized reports in My Folders and Public Folders automatically.

Also, if you have administrative privileges and choose to perform the upgrade manually you can use the reporting solution wizard to migrate all reports.

In either case, we recommend that you take a backup of all existing reports during upgrade.

For more information about performing upgrade, see [Cisco Prime Service Catalog Installation and Upgrade Guide](#) .

## Customizing the Cognos Framework Manager Data Model

Service Catalog includes only runtime licenses for the Framework Manager and Data Manager tools used to populate the data mart. Service Catalog users who have Cognos enterprise development licenses may wish to customize the data mart contents, including additional client-specific data.

The key to a successful customization is taking into account that the business view of the data, configured via Framework Manager, includes both a static and dynamic component. The static component, specifying the universal facts and dimension, is stored in the file

<App\_Home>\cognos\Reports\CustomReportsDataModel\ CustomReportsDataModel.cpf

on the reporting server. The ETL uses that file as the basis for the business view, then generates additional DictionaryData and ServiceData dimensions, depending on which objects have been marked as reportable. Client customizations to the static component may be applied using IBM Cognos Framework Manager. Any such customizations are incorporated into the new business view, generated via the next ETL cycle. Such customizations will have to be reapplied after any application upgrade.



## Using Reports

---

This chapter contains the following topics:

- [Accessing Reporting Options, page 79](#)
- [Set Access Permissions for a Report or Other Entry, page 80](#)
- [Accessing Prebuilt Reports , page 81](#)
- [Managing Reports, page 83](#)
- [Saving Reports, page 86](#)
- [Viewing Reports, page 87](#)
- [Emailing Report Output, page 92](#)
- [Scheduling Reports, page 94](#)

## Accessing Reporting Options

All reporting options are integrated into the Service Catalog menus. The Reporting and Advanced Reporting options appear on a user's drop-down menu, provided that a permission which grants rights to execute these options has been granted to the user. Details on role-based access are given in the [Defining Roles to Access Reporting Feature Capabilities](#).

Reporting options are accessible from the Service Catalog menu:

The Reporting menu option provides the following options:

- Reports – the ability to run all prebuilt reports and to modify or copy reports (as appropriate to each user's privileges)
- Dashboards – the ability to configure the dashboard displayed by each user's portal to include specified KPIs

## Set Access Permissions for a Report or Other Entry

Setting access permissions for an entry includes creating new permissions, or updating existing permissions. You can specify access permissions for all entries in Cognos 8. Some examples of such entries are reports, shortcuts, and report views. You can reference entries from different namespaces.

You must log on to the namespaces before you start your task. Otherwise, you will not have full administrative rights for the entries you want to modify.

To administer security, you must have set policy permissions. These are granted as part of the Site Administrator role.

To Set Access Permissions for a Report or Other Entry:

- 
- Step 1** In the portal, locate the entry for which you want to set access permissions.
- Step 2** In the **Actions** column, click **Set properties** for the entry.
- Step 3** In the **Set properties** page, click the **Permissions** tab.
- Step 4** Choose whether to use the permissions of the parent entry or specify different permissions:
- To use the permissions of the parent entry, uncheck the Override the access permissions acquired from the parent entry check box, and then proceed to the last step.
  - To set access permissions explicitly for the entry, check the Override the access permissions acquired from the parent entry check box, and then perform the remaining steps.
- Step 5** If you want to remove an entry from the list, check its check box and click **Remove**.
- Step 6** If you want to select or deselect all entries in a page, click **Select All** or **Deselect All** at the bottom of the list.
- Step 7** To specify the entries for which you want to grant or deny access to this entry, click **Add** and then choose a method:
- Tip** To make the user entries visible, check the **Show users** in the list check box.
- To add entries by choosing the names from the list, on the **Navigate** tab, click the appropriate namespace, and then check the check boxes next to the users, groups, or roles, and click **Add**. When the entries appear in the "Entries to be added" box, click **OK**.
  - To search for users, groups, or roles in a namespace you are currently using, on the **Search** tab, type the text in the Search string box. If needed, specify additional search criteria, and click **Search**. When the entry appears in the "Search results" box, click **Add**, and then, when the entry appears in the "Entries to be added" box, click **OK**.
  - To add entries by typing the names, on the **Type** tab, in the "Type the names" box, type the names of namespaces, groups, roles, or users in the following format, and then click **Add**.
- namespace\_name;namespace\_name/group\_name;namespace\_name/role\_name;namespace\_name/user\_name;
- Here is an example: LDAP;Cognos/Authors;LDAP/scarter;
- Separate each entry using a semicolon (;).
- When the entries appear in the "Entries to be added" box, click **OK**.
- The entries you added appear in the list.



- Step 8** For each entry in the list, in the box next to the list, check or uncheck check boxes to specify what type of access you want to grant or deny.
- Step 9** Click **Apply**.  
In the Permissions column, an icon appears next to the user, group, or role. This icon represents the type of access granted or denied to the entry.
- Step 10** If you want to replace the existing permissions of the child entries with the permissions you set for this entry, in the Option section, check the Delete the access permissions of all child entries check box.  
This option appears only with entries that are containers.
- Step 11** Click **OK**.

## Accessing Prebuilt Reports

Service Catalog reports (available in the top-level public folder Service Performance Reports), and the folder in which each is located, are summarized in the table below.

The Service Authorization and the Service Delivery reports include any ad-hoc tasks that were initiated in the authorization and service delivery moments, respectively. They do not include any tasks that were part of requests that were cancelled, either by the user or by a service team manager cancelling delivery of the request.

**Table 35: Prebuilt Reports Inventory**

| Report Title                          | Folder                            | Description                                                                                          |
|---------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------|
| Aging of Requests by Performer        | Daily Request Management          | Effective for investigating or reporting on the number of open and late tasks for an individual      |
| Aging of Requests by Queue            | Daily Request Management          | Effective for investigating or reporting on the number of open and late tasks for a queue            |
| Authorization: On-time % by Customer  | Service Authorization Performance | Effective for investigating or reporting on the authorization on-time performance by a customer (OU) |
| Authorization: On-time % by Performer | Service Authorization Performance | Effective for investigating or reporting on the authorization on-time performance by individuals     |
| Authorization: On-time % by Queue     | Service Authorization Performance | Effective for investigating or reporting on the Authorization on-time performance by queues          |
| Services by Dictionary                | Service Design Details            | Administrative report for managing the use of dictionaries                                           |
| Functional Positions                  | People, Roles & Groups            | Administrative report which lists all functional positions                                           |

| Report Title                                | Folder                       | Description                                                                                             |
|---------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------|
| Groups by Organizational Unit               | People, Roles & Groups       | Administrative report which lists groups and shows their Organizational Unit                            |
| Groups by People                            | People, Roles & Groups       | Administrative report which lists People and shows their groups                                         |
| Organizational Units by Group               | People, Roles & Groups       | Administrative report on groups and their organizational units                                          |
| Organizational Units by People              | People, Roles & Groups       | Administrative report on people and their organizational units                                          |
| Organizational Units by Queues              | People, Roles & Groups       | Administrative report on queues and their organizational units                                          |
| People by Groups                            | People, Roles & Groups       | Administrative report listing people and their groups                                                   |
| People by Organizational Unit               | People, Roles & Groups       | Administrative report listing people and their organizational units                                     |
| Queues by Organizational Unit               | People, Roles & Groups       | Administrative report listing queues by organizational unit                                             |
| Service Delivery: On-time % by Performer    | Service Delivery Performance | Effective for evaluating or comparing the performance of individuals in performing their work           |
| Service Delivery: On-time % by Queue        | Service Delivery Performance | Effective for evaluating or comparing the performance of queues in performing their work                |
| Service Delivery: On-time % by Service      | Service Delivery Performance | Effective for evaluating the on-time performance for services and their related tasks                   |
| Service Pricing Details                     | Service Design Details       | Administrative report for managing the pricing information for services                                 |
| Service Volume: Request Activity by Service | Service Volumes & Activity   | Effective for measuring and monitoring total service request activity within service groups             |
| Service Volume: Request Activity Details    | Service Volumes & Activity   | Effective for investigating or reporting on the status of individual service delivery transactions      |
| Service Volume: Request Activity Summary    | Service Volumes & Activity   | Effective for measuring and monitoring total service request activity within specific reporting periods |

| Report Title                             | Folder                     | Description                                                                                                  |
|------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------|
| Service Volume: Request Trend by Service | Service Volumes & Activity | Effective for measuring and monitoring service request activity trends by service group and calendar quarter |
| Services by Service Team                 | Service Design Details     | Effective for managing expenditures for services against an established budget                               |

## Managing Reports

Report Designer can be used to define and publish a new report, or to modify an existing report and save the changes, using the ReportNet Professional Author tool. This functionality accommodates users who may need to query data within the application that is not covered by the out-of-the-box reports, but allows for the creation of more complex and sophisticated queries than the Ad-Hoc Report function.

The Report Designer is intended for users with some knowledge of report building. See Ad-Hoc Reports if you have no experience with advanced Reporting concepts.

## Building a New Report

Follow these steps to create a new report:

- 
- Step 1** Choose Advanced Reporting from the Module drop-down menu.
- Step 2** Click **Report Designer**.
- Step 3** Choose which package to use to create a new report:
- **Custom Reports Data Model:** Use this data model to create reports that are based on Prime Service Catalog operational data such as requisitions, services, and tasks. The Custom Reports Data Model also includes a form data from services and dictionaries that have been made reportable.
  - **Standard Reports Data Package:** Do not use this data model because Cisco will deprecate it in a future release.
- Step 4** Cognos Report Studio opens in a new window. Use this application to build your report.
-

## Modifying an Existing Report

Navigate back to your saved report to make modifications.

- 
- Step 1** Choose **Advanced Reporting > Report Designer > Public Folders**. Click **Reports**.
  - Step 2** Find the report you wish to edit and select it.
  - Step 3** Cognos Report Studio opens in a new window. Use this application to modify your report.
- 

## Generating Reports

All reports options are available in the “Public Folders” folder. The home page shows the top-level report folder: Service Performance Reports.













The page initially appears in “List” view—only the folder title is shown, with a “More...” link providing access to reporting options. Especially for new users, it might be more useful to display Reporting pages in “Details” view, to see a brief description of each folder or report, and to have handy some of the more common options. To switch the view, simply click the “Details View” icon—the second from the left in the icon bar at the top right of the page. (Viewing and other preferences may be saved, as explained in the section on Preferences.)

Each folder name is presented as a hyperlink; clicking on that link shows the folder contents, which may include both folders and reports themselves. As you click through the folders to find the report of interest, the “bread crumbs” (directly under the “Public Folders” tab) are updated to reflect the navigation path. For example, the “Authorization: On-time % by Customer” report is in the “Service Authorization Performance” folder.

To run reports:

- 
- Step 1** Choose **Reporting > Reports**.
  - Step 2** Browse to the folder categories to find a report that contains the type of data you wish to view.
  - Step 3** Choose a report.
  - Step 4** Use the **Report Viewer Prompt** pages to enter your report criteria and date ranges.
  - Step 5** Click **Next** to continue choosing report criteria or **Finish** to run your report.
  - Step 6** The report appears in your browser window. Use the icons in the top right corner to save, email, or rerun the same report using different parameters. You can also elect to view or save the report in the following formats: HTML, PDF, Excel, CSV or XML. You can print the report from your browser or within the application in which you save the report. In addition, the following reporting options may be available via the icons directly underneath the report name and the More link.

Table 36: Reporting Options Table

| Reporting Option                                                                                                                                                                                                                                                                                                                         | Explanation                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <a href="#">Set properties</a>                                                                                                                                                                                                                         | Change properties of the report. Available only to report administrators (for Public Folders) or for owners of report views on My Folders.                                                                 |
|  <a href="#">Run with options...</a>                                                                                                                                                                                                                    | Present an option page before running the report. The option page allows adjustment of the print output format.                                                                                            |
|  <a href="#">View report output versions</a>                                                                                                                                                                                                            | View the output of a report that was previously saved. Available only if the report has saved output.                                                                                                      |
|  <a href="#">View most recent report</a>                                                                                                                                                                                                                | View the most recent output of a saved report. Available on the More... page only if the report has saved output.                                                                                          |
|  <a href="#">Open with Report Studio</a>                                                                                                                                                                                                              | Open the report in Report Studio (Report Designer), to modify or review the report definition. Available only to Report Administrators or owners of the report who have permission to run Report Designer. |
|  <a href="#">New schedule...</a>                                                                                                                                                                                                                      | Schedule the report to be run automatically. Available only to Report Administrators or owners of the report. Other users are able to view the schedule.                                                   |
|  <a href="#">Create a shortcut to this entry...</a>                                                                                                                                                                                                   | Available only via the More... option. Create a shortcut to the report on any folder to which you have write permission.                                                                                   |
|  <a href="#">Create a report view of this report...</a>                                                                                                                                                                                               | Create a view of the report, saving it to your private folders. This allows you to modify the properties of the report, to schedule it, or to save output versions.                                        |
|  <a href="#">Move...</a><br> <a href="#">Copy...</a><br> <a href="#">Delete</a> | Only Report administrators can modify public reports or folders. However, report users may copy reports to their private folders or create private views of the reports, and manipulate these.             |
|  <a href="#">Add to bookmarks...</a>                                                                                                                                                                                                                  | Available only via the More... option. Add a bookmark to the current report to browser favorites.                                                                                                          |

---

## Working with Interactive Workspaces and Advanced Data Exploration

You can now create interactive workspaces and reports as per your requirements and tag them as favorites. You can also view and modify content in the workspaces and email them to intended audience.

To create workspaces:

- 
- Step 1** Choose **Reporting > Reports > Launch > Cognos Workspace** or **Choose Advanced Reporting > Report Designer > Launch > Cognos Workspace**.
- Step 2** For more information about configuring workspaces, see [IBM Cognos Business Intelligence Guide](#).
- 

Is a report designer tool to author reports and analyze the data. You can now perform advanced data exploration such as:

- Specifying additional measures
- Adding conditional formatting
- Using Advanced Calculations

### Generating Advanced Reports

You can also create reports with dimensional or relational datasources that display your data in lists, cross-tabs and charts. To generate advanced reports:

- 
- Step 1** Choose **Reporting > Reports > Launch > Cognos Workspace**.
- Step 2** For more information about creating Cognos workspace advanced reports, see [IBM Cognos Workspace Advanced version 10.2.1 User Guide](#).
- 

**Note**

To access Cognos Workspace and Cognos Workspace Advanced, you must have the Report Designer capabilities previously defined.

---

## Saving Reports

A “Report View” is a copy of a report. Customizations can only be applied to a report for which the user has edit permission. By default, only Report Administrators have edit permission to the prebuilt reports. Therefore,

a primary reason for creating a report view is to create a private copy of the report to which a user's customizations can be applied. Typical customizations include the ability to save the report filter criteria (parameters) previously entered; to schedule the report, either one time or on a recurring basis; to save previously run versions of the report output; and to change the report properties such as the default output format.

You can share a report with others by saving the report in a location that is accessible to other users, such as in the public folders. Public folders typically contain reports that are of interest to many users.

If you want to share a report that is currently located in your personal folders, you can copy the report, move the report, or create a shortcut to the report and save it in the public folders.

For more information about saving reports, see the *Query Studio User Guide* or *Cognos Report Studio User Guide*.

To save a report:

- 
- Step 1** Choose **Advanced Reporting > Public Folders** or **My Folders**, click **Run** next to the report you want to run. The "Run with options" dialog box appears.
  - Step 2** Under **Delivery**, check the check box next to "**Save the report**".
  - Step 3** Click **Run**.
- 

## Saving Reports as a Report View

To save the report as a report view:

- 
- Step 1** Choose **Advanced Reporting > Public Folders** or **My Folders**, click **Run** next to the report you want to run. The "Run with options" dialog box appears.
  - Step 2** Click **Advanced options**.
  - Step 3** Under **Delivery**, click the button next to "**Save the report**", "**print it**", or "**send an email**".
  - Step 4** Check the check box next to "**Save the report as a report view**".
  - Step 5** If you want to change the name or destination folder of the report view, click **Edit the save as options**, make the changes and click **OK**.
  - Step 6** Click **Run**.
- 



## Viewing Reports

Reporting opens to a page of Public Folders. These folders contain all the out-of-the-box reports available to system users. The My Folders link provides access to folders and reports that you have already run and saved.

A report displays in a series of pages. Hyperlinks at the bottom of each page allow you to navigate through these pages. The number of rows displayed on a page may be modified by setting the corresponding report property. An icon bar at the top of the report page displays available options:

These options are summarized in the table below and explained in detail in the following sections.

**Table 37: Reporting Options to view a Report**

| Reporting Option                                                                                                         | Explanation                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <a href="#">Keep this version</a> ▼    | Save the report output, by emailing the report or saving its output, or create a view of the report.                                                                                       |
|                                         | Run the report again.                                                                                                                                                                      |
|                                         | Drill down/drill up; these links are not enabled.                                                                                                                                          |
|  ▼                                      | Go to any related links that have been defined for this report. Report administrators or owners may add links; by default, none are defined.                                               |
|  ▼                                    | Indicates the current output format for the report and allows you to rerun the report in an alternate format. Default format is HTML; PDF, XML, and Excel formats are also available.      |
|  <a href="#">Add this report</a> ▼    | Add a shortcut to this report to your private pages or create a bookmark to the report in your browser.                                                                                    |
|  <a href="#">Watch new versions</a> ▼ | Allows you to designate that an e-mail alert should be sent to you (the report owner) whenever output for this report is saved; available only if you have previously saved report output. |
|                                       | Return to the Reports home page.                                                                                                                                                           |
|                                       | Return to the page from which you invoked this report.                                                                                                                                     |



**Table 38: Folders Description Table**

| <b>Public Folders</b>             | <b>Description</b>                                                                                                                                                                                             | <b>Contains</b>                                                                                                                                                                                                                                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| People, Roles, and Groups         | Public Folders are grouped into the following categories: Use these reports to gain visibility into the structure of an organization. The results will help to optimize the way an organization is structured. | Functional Positions<br>Groups by Organizational Unit<br>Groups by People<br>Organizational Unit by Groups<br>Organizational Unit by People<br>Organizational Unit by Queues<br>People by Groups<br>People by Organizational Unit<br>Queues by Organizational Unit |
| Service Authorization Performance | Use these reports to view the percentage of on-time performance for Authorization tasks. The results will help to identify any bottlenecks in the authorization and approval process.                          | Authorization: Ontime% by Customer<br>Authorization: Ontime% by Performer<br>Authorization: Ontime% by Queue                                                                                                                                                       |
| Service Design Details            | Use these reports to gain visibility into the structure of the Service Catalog. The results will help to optimize the design of the Service Catalog for a better user experience.                              | Services by Service Team<br>Dictionaries by Service<br>Service Pricing Details                                                                                                                                                                                     |
| Request Management                | Use these reports to monitor how Requests and Tasks have progressed over a period of time. The results will help to identify which Tasks and Requests are impacting Service Levels.                            | Aging of Requests by Performer<br>Aging of Requests by Queue                                                                                                                                                                                                       |
| Service Delivery Performance      | Use these reports to view the percentage of on-time service delivery. The results will help to identify any bottlenecks in the service fulfillment process.                                                    | Service Delivery: Ontime% by Customer<br>Service Delivery: Ontime% by Queue<br>Service Delivery: Ontime% by Service                                                                                                                                                |

| Public Folders               | Description                                                                                                                                                                                     | Contains                                                                                                                                                                                    |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Service Volumes and Activity | Use these reports to gain visibility into the transaction volume of Service Requests.<br><br>The results will help to identify any trends in the Service Request activity across your user base | Service Volume: Request Activity by Service<br><br>Service Volume: Request Activity Details<br><br>Service Volume: Request Activity Summary<br><br>Service Volume: Request Trend by Service |



To return to the page from which you selected the report, click **Return** at the top right of the page. To run the report again, click the **Run** icon.

**Tip**

Tips for using the Report Viewer:

- Fields marked by a red asterisk are mandatory.
- Use the Keyword field if you need to search for, or narrow down, the items you are running a report on.
- The Report Viewer allows a wildcard search in the prompts using the % symbol.
- Once you have the search results, which returns all values if you use the % symbol, you can select all the search results by clicking the Select All link below that search box.
- The system runs the report based on the data in the Choices field, and when applicable, over a specified period of time

Cognos offers two ways of viewing the reports and folders, represented by icons at the top right of each page. The selected view is highlighted.

|                                                                                     |                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | The “Details View” includes a brief description of each report.                                                                                                                                                          |
|  | The “List View” is the default view. Once you become familiar with the reports, folders, and their contents, you may want to switch to this view, which simply lists the contents of the current folder, as shown below. |

**Figure 24: List View**

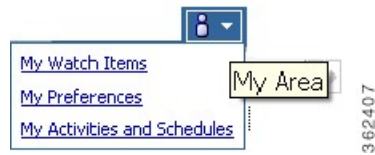
Previous 1 - 3 Next

|                          | Name                                                  | Modified                   | Actions |
|--------------------------|-------------------------------------------------------|----------------------------|---------|
| <input type="checkbox"/> | <a href="#">Authorization: On-time % by Customer</a>  | January 8, 2007 3:43:11 AM | More... |
| <input type="checkbox"/> | <a href="#">Authorization: On-time % by Performer</a> | January 8, 2007 3:43:16 AM | More... |
| <input type="checkbox"/> | <a href="#">Authorization: On-time % by Queue</a>     | January 8, 2007 3:43:22 AM | More... |

362406

Rather than setting this view manually, the Preferences page allows you to set preferences that are used whenever you use the Reporting module. To set preferences, click the **My Area** link to the top-right of the menu bar, then **My Preferences**.

**Figure 25: My Area**



The General tab of the Set Preferences page appears.

Entries at the top of the page allow you to change the default view (List or Details) and to further customize that view.

**Figure 26: My Preferences General Tab**

General Personal Portal Tabs

Specify your settings.

**Number of entries in list view:**

**Report format:**

**Separators in list view:**

Show the Welcome page at startup

Show a summary of the run options

**Style:**  
 [Preview](#)

Show hidden entries

**Portal**

**Default view:**  
 List  
 Details

**Number of columns in details view:**

362408

Entries at the bottom of the page pertain to the user's location/locale. The time zone is used when scheduling reports. The default time zone is the time zone where the reporting server is located. In a distributed

implementation, users need to set the time zone to their current location in order to easily schedule reports to be run.

**Figure 27: My Preferences General Tab Regional Options**

**Regional options**

**Product language:**

Use the default language

Use the following language:

English

**Content language:**

Use the default language

Use the following language:

English

**Time zone:**

Use the default time zone

Use the following time zone:

(GMT-08:00) Pacific Time: Los Angeles, Tijuana, Vancouver

362409

There is no support for rendering of non-English form data or facts table content at this time. The product and content languages should be set to the default language which is English.

## Emailing Report Output

Two e-mail delivery options available are:

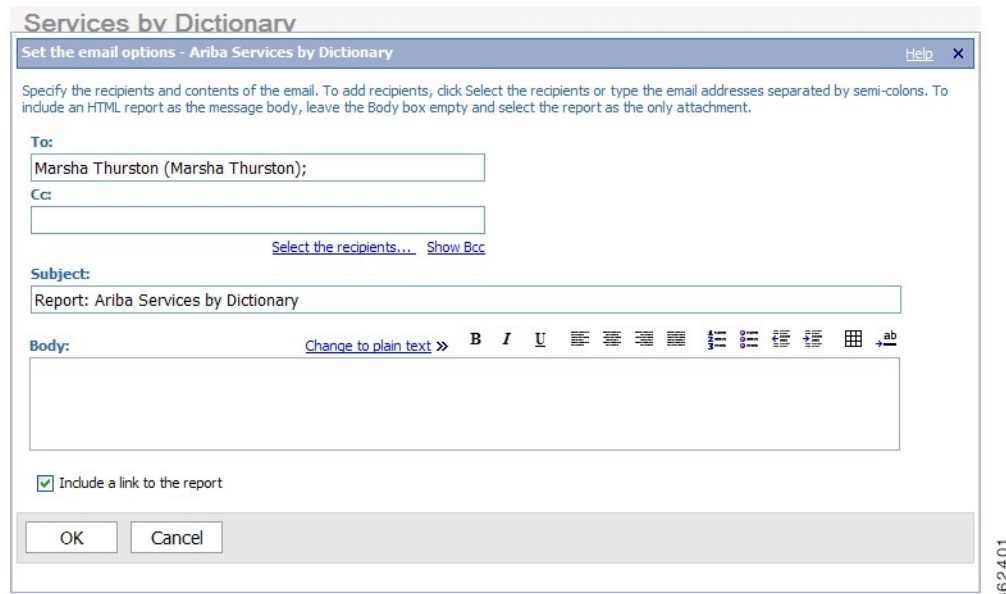
- Include the report (as an attachment) in the e-mail. This is the default behavior when the report properties are set to “Send the report to me”, so the option is not available.
- Include a link to the report in the e-mail—the recipient must be Service Catalog users with permission to run reports.

There are several ways to e-mail report output to both the person who runs the report and additional participants.

- Click **Run with options** and choose **Send me the report by email**. To specify additional recipients, click **Advanced options** and, under the **Delivery options**, click edit the options for the “**Send the report by e-mail**” option.

- Run the report, and click **Keep this version > Email this report**.

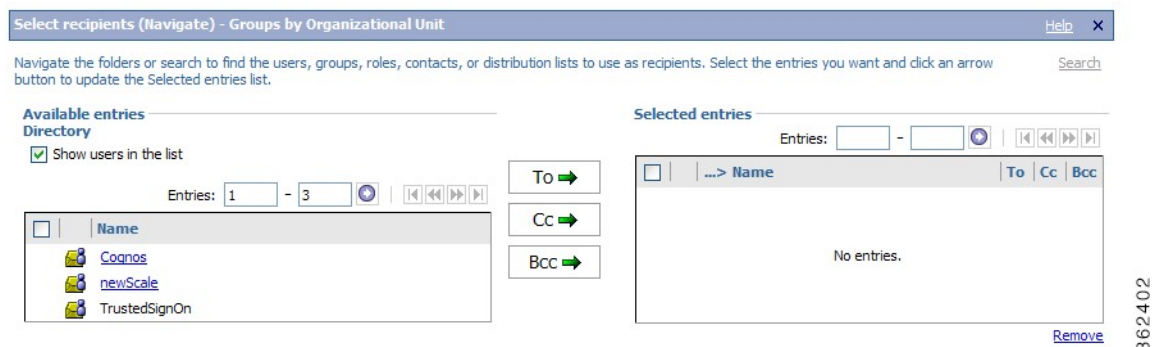
**Figure 28: Set the Email Option**



The recipients may either be typed directly, separated by semicolons, or chosen from the list of reporting users. When choosing recipients:

- Click **Select the recipients**. The "Select recipients (Navigate)" page appears.

**Figure 29: Select Recipients**



- Check **Show users** in the list then click on the **Service Catalog namespace** (directory) in the list of Available entries on the left side of the page.
- A list of roles (which have an associated reporting capability) and individual users (who have been granted one of those roles) appears in the Available entries column. You can browse through that list, choosing the recipients for the e-mail, then click To, Cc, or Bcc to choose those entries as recipients.



## Prompts in Scheduled Reports

If a report that contains prompts is scheduled, you must save the prompt values or specify default values to ensure that values exist when the report runs according to the schedule.

In a job, you can specify prompt values for job steps. When a report runs as part of a job, the prompt values saved in the job definition are used instead of the values saved with the report. If no values are specified in the job definition, Cognos 10 uses the values saved in the report.

You schedule a report to run it at a later time or at a recurring date and time.

If you no longer need a schedule, you can delete it. You can also disable it without losing any of the scheduling details. You can then enable the schedule at a later time.

Cognos keeps history information and report outputs each time a report runs according to a schedule. You can specify how many occurrences to keep or for how long to keep them. For example, you can keep the history and report outputs for the ten latest occurrences or for schedules that ran in the last two months. Use the report history to see the times at which the reports ran and whether the reports ran successfully.

To schedule a report or report view, you must have read, write, execute, and traverse permissions for it. You also require the following access permissions to any data sources used by the report.

- dataSource Execute and Traverse
- dataSourceConnection Execute and Traverse
- (With only Execute access, you are prompted to log on to the database.)
- dataSourceSignon Execute

To schedule a report or report view:

- 
- Step 1** Choose **Reporting > Public Folders** or **My Folders**, click the **schedule** button for the report you want to schedule.
- Step 2** Under **Frequency**, choose how often you want the schedule to run.  
The Frequency section is dynamic and changes with your selection. Wait until the page is updated before choosing the frequency.
- Step 3** Under **Start**, choose the date and time when you want the schedule to start.
- Step 4** Under **End**, choose when you want the schedule to end.  
**Tip** If you want to create the schedule but not apply it right away, check the **Disable the schedule** check box. To later enable the schedule, uncheck the check box.
- Step 5** Under **Formats**, choose the format you want for the report output.
- Step 6** Under **Languages**, click **Select the languages** to choose a different or additional language for the report.  
**Tip**
- To choose multiple languages, press and hold the Ctrl key and click each language.
  - To choose consecutive languages, click the first language, press and hold the Shift key, and then click the last language.
- Step 7** Under **Delivery**, choose to save the report, print the report, or send the report by email.  
You must choose at least one delivery method.
- Step 8** If you want to be prompted when you leave the Schedule page, under Prompt values, check the **Prompt for values** check box.

The values that you specify will be used when the report runs.

**Note** You will be prompted for values only if the report specification or model includes prompts or if you have access to more than one sign-on, even if the "**Prompt for values**" check box was checked.

**Step 9**

Click **OK**.

A schedule is created and the report will run at the next scheduled time.

---

## Scheduling Multiple Reports at Once

You can set the same schedule for multiple reports by creating a job. A job identifies a collection of reports, report views, and other jobs that are scheduled together and share the same schedule settings. When a scheduled job runs, all the reports in the job run.

Jobs contain job steps, which are references to individual reports, jobs, and report views. You can specify whether to run the steps all at once or in sequence.

When the steps are run all at once, all the steps are submitted at the same time. The job is successful when all the steps run successfully. If a step fails, the other steps in the job are unaffected and still run, and the job has a Failed status.

When the steps are run in sequence, you can specify the order in which the steps run. A step is submitted only after the preceding step runs successfully.

The individual reports, jobs, and report views in steps can also have individual schedules.

To schedule a report or report view, you must have read, write, execute, and traverse permissions for it. You also require the following access permissions to all data sources used by the report.

- dataSource Execute and Traverse
- dataSourceConnection Execute and Traverse
- (With only Execute access, you are prompted to log on to the database.)
- dataSourceSignon Execute

To schedule multiple reports at once:

---

- Step 1** Choose **Reporting > Public Folders or My Folders**, click new job.
- Step 2** Type a name and, if you want, a description and screen tip for the job, choose the destination folder in which to save the job, and then click **Next**.  
The "Select the steps" page appears.
- Step 3** If you want to specify run options for all the steps and set them at the job level, under **Job Options**, click **Set**. Choose the format, language, and bursting options, and then click **OK**.
- Step 4** Choose the job steps.
- Step 5** Below the steps list, click **Add**.
- Step 6** Check the check box next to the reports you want to run.
- Step 7** Click **Add** and click **OK**.



**Tip** Click **Select all** to choose all the reports in the current folder.

**Step 8** If you want to specify run options for the individual steps, under **Step options**, click **Set**. Choose the format, language, prompt and burst options and then click **OK**.

**Step 9** Under "Submission of steps", choose whether to submit the steps All at once or In sequence. If you choose "In sequence", the steps are executed in the order they appear in the Steps list.

**Tip** To change the order, click **Modify the sequence**, make the changes, and click **OK**.

**Step 10** Click **Next**.

**Step 11** Choose whether you want to save, print, or send the report by email. You must choose at least one delivery method.

**Step 12** Click **Next**.

**Step 13** Under Frequency, choose how often you want the schedule to run. The Frequency section is dynamic and changes with your selection. Wait until the page is updated before choosing the frequency.

**Step 14** Under Start, choose the date and time when you want the schedule to start.

**Step 15** Under End, choose when you want the schedule to end.

**Tip** If you want to create the schedule but not apply it right away, check the Disable the schedule check box. To enable the schedule, uncheck the check box.

**Step 16** Click **Finish**.  
A job is created and will run at the next scheduled time.

## Scheduling a Report Based on an Event

You can schedule a report based on an event, such as a database refresh. You specify an event to act as a trigger. When that event occurs the report runs.

The trigger event is specific to your implementation and must already be defined using the Cognos 8 Software Development Kit (SDK). For information about the trigger events defined in your organization, contact your developer.

You can also schedule a report to run at a specific time.



### Note

To schedule a report or report view, you must have read, write, execute, and traverse permissions for it. You also require the following access permissions to all data sources used by the report.

- dataSource Execute and Traverse
- dataSourceConnection Execute and Traverse
- (With only Execute access, you are prompted to log on to the database.)
- dataSourceSignon Execute

To schedule a report based on an event:

- 
- Step 1** Choose **Reporting > Public Folders** or **My Folders**, click **Set properties** next to the report you want to schedule.
  - Step 2** Click **Run** options.
  - Step 3** Under **Formats**, choose the format you want for the report output.
  - Step 4** Under **Language**, specify the language for the report.
  - Step 5** If you want to filter the items, under **Prompt values**, specify specific values to filter the data that appears in the report.
  - Step 6** Under **Run as the owner**, choose whether to run the report as yourself or as Anonymous.
  - Step 7** Under **Event name**, specify the name of the event.
  - Step 8** Under **Event description**, type a short description of the event.
  - Step 9** Click **OK**.
-



## DataMart Reference

---

This appendix contains the following topics:

- [Custom Reporting Data Model, page 99](#)
- [Data Mart Administration, page 105](#)

## Custom Reporting Data Model

This section describes the various schema designs for data mart.

### Data Mart Schema Design and the Business View

The data mart schema was designed to be used with IBM Cognos Framework Manager and the business view used by the IBM Cognos reporting tools (Query Studio and Report Studio, represented as Ad-Hoc Reports and Report Designer in the Service Catalog Advanced Reporting module). As such, technical documentation in the Data Mart chapter outlines the contents and relationships of the query subjects, but does not cover the underlying data model, which is not exposed to reporting users or designers.

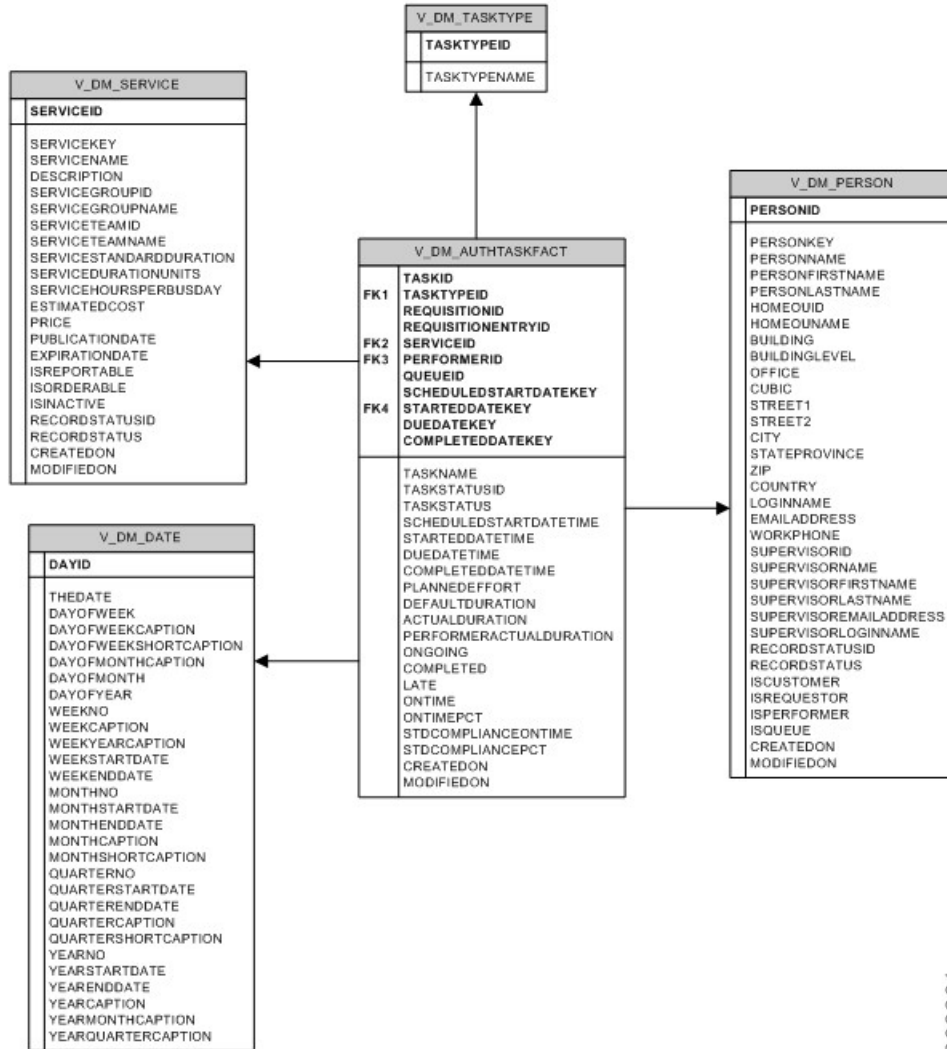
This chapter is meant for technical personnel who wish to investigate the physical data model underlying the business view exposed via the Cognos tools. In particular, it may be useful to map the names for the database objects in the diagrams that follow to corresponding names of query subjects. In the following diagrams:

- The Queue query subject is based on the V\_DM\_PERSON database view, and is joined to Task views via the QUEUEID column.
- The Performer query subject is also based on the V\_DM\_PERSON.PERSONID business view and is joined with Task views via the PERFORMERID column.
- The Customer and Requestor query subjects (dimensions) are also based on the V\_DM\_PERSON database view, and are joined to the Requisition views via the CUSTOMERID and REQUESTORID, respectively
- All date dimensions (CalendarStartDate, CalendarDueDate, CalendarClosedDate and CalendarScheduledDate) are based on the V\_DM\_DATE business view. They in turn are joined with the Task and Requisition views by the STARTEDDATEKEY, DUE DATEKEY, COMPLETEDDATEKEY and SCHEDULEDSTARTDATEKEY respectively.



# Star Schema Design for AuthTaskFact (Authorization Tasks)

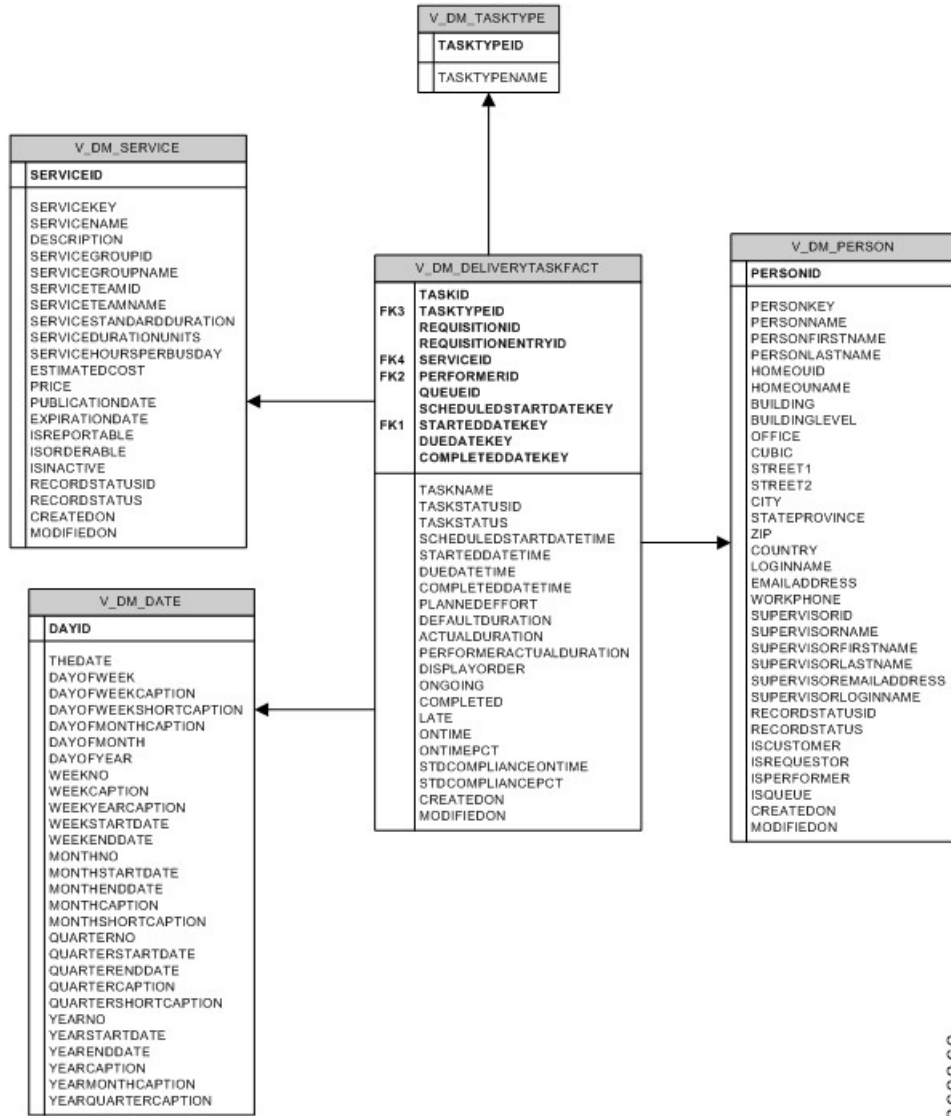
Figure 32: Schema Design for AuthTaskFact



362361

# Star Schema Design for DeliveryTaskFact (Delivery Tasks)

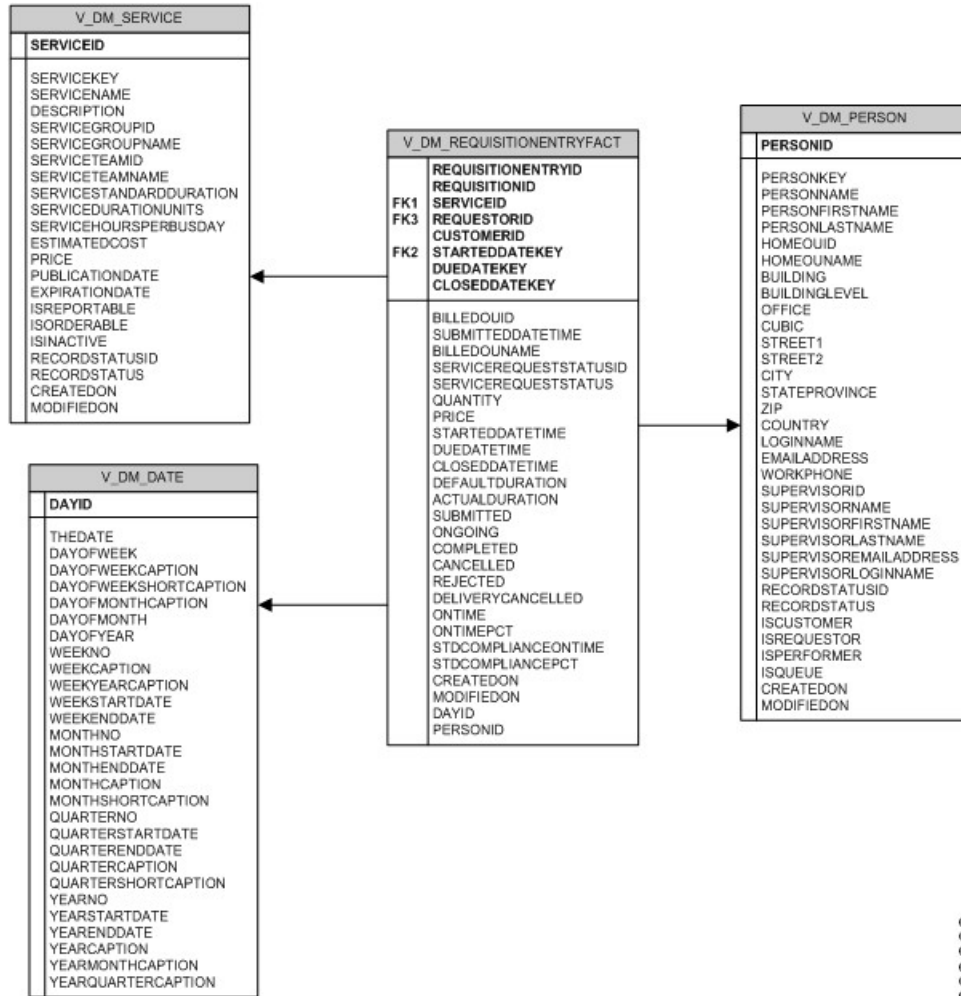
Figure 33: Schema Design for DeliveryTaskFact



362362

# Star Schema Design for ServiceRequestFact (Requisitions)

Figure 34: Schema Design for ServiceRequestFact



362393

## Dictionary and Service-Based Dimensions

The above diagrams are incomplete. All fact tables actually have one-to-many relationships to dictionary- and service-based dimension tables. For services that do not contain any grid dictionaries, the relationships are always one-to-one (see the DM\_FDR\_SERVICETABLE\_n XREF for more information). These relationships are implemented via the column REQUISITIONENTRYID, which is present in all fact and dimension tables, but is not exposed in the business view's dimensions.

When you create reports using Query Studio or Report Designer with service and task fact tables joined, the task data may appear to be repetitive due to the one-to-many relationships among these tables. You may use the grouping feature in the reporting tool to collapse the identical information.

The dictionary- and service-based query subjects which appear in the data mart under the Dictionaries and Services folders correspond to tables in the physical database named DM\_FDR\_DICTIONARYTABLE\_n and DM\_FDR\_SERVICETABLE\_n, respectively, where

- n is a sequential number starting with 1, and
- the number of tables of each type is determined by the number specified when the Advanced Reporting option is configured.

The mapping between the physical tables and the reportable objects is maintained in the tables DM\_FDR\_DICTIONARYMETADATA and DM\_FDR\_SERVICEMETADATA. These tables are populated when an object is designated as reportable, and used by the ETL processes to dynamically adjust the business view of the data mart to include the reportable objects.

If you wish to supplement the use of the IBM Cognos Business Intelligence tools, bypassing the business view offered by the Ad-Hoc Reports and Report Designer modules of Advanced Reporting, you can do so by interrogating those METADATA tables and constructing database VIEWS which match the dictionary- or service-based query subjects. A sample (SQLServer-specific) SQL statement for building a database view of the MemoryDetails dictionary is shown below. This is (obviously) just a starting point for such an effort.

```
SELECT distinct 'CREATE VIEW ' + dictionaryname + ' (' AS SQLColumn,
 'A 0' AS DestinationColumnName
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
UNION
SELECT ' ' + dictionaryattributename, 'A ' + DestinationColumnName
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
 AND DestinationColumnName = 'FIELD1'
UNION
SELECT ', ' + dictionaryattributename, 'A ' + DestinationColumnName
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
 AND DestinationColumnName <> 'FIELD1'
UNION
SELECT ', REQUISITIONENTRYID, REQUISITIONID, SERVICEID', 'A Y'
UNION
SELECT ') AS SELECT' , 'A Z'
UNION
SELECT ' ' + DestinationColumnname, 'B ' + DestinationColumnName
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
 AND DestinationColumnName = 'FIELD1'
UNION
SELECT ', ' + DestinationColumnname, 'B ' + DestinationColumnName
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
 AND DestinationColumnName <> 'FIELD1'
UNION
SELECT ', REQUISITIONENTRYID, REQUISITIONID, SERVICEID', 'B Y'
UNION
SELECT distinct 'FROM ' + DestinationTableName, 'B Z'
 FROM dm_fdr_dictionarymetadata
 WHERE dictionaryname = 'MemoryDetails'
ORDER BY DestinationColumnName
```

Executing that SQL Statement yields a SQL Command like:

```
CREATE VIEW MemoryDetails (
 CurrentMemorySize
 , MemoryType
 , MemorySizeNeeded
 , Reason
 , REQUISITIONENTRYID, REQUISITIONID, SERVICEID
) AS SELECT
 FIELD1
```



```

, FIELD2
, FIELD3
, FIELD4
, REQUISITIONENTRYID, REQUISITIONID , SERVICEID
FROM DM_FDR_DICTIONARYTABLE_18

```

## Data Mart Administration

This section is intended for use by people who need to know technical implementation details of the Service Catalog reporting solution. These include report administrators, responsible for the reporting environment; support personnel who may need to report issues to Cisco TAC; and analysts and designers who want to investigate the options of customizing or enhancing components of the reporting options.

## Data Mart Source Data

The accuracy and completeness of the data in the data mart is critical. In order to gauge these qualities, it is critical for the source of the data in the data mart to be documented. The table below shows the tables in the OLTP database which contributed to data found in the query subjects available in the Custom Data Mart.

**Table 39: DataMart Source Data Table**

| <b>Data Mart Query Subject</b>                          | <b>OLTP Database Tables</b>                                                                                      |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Dictionary Data (user-specific reportable dictionaries) | DefDataDictionary<br>DefObjectDictionaries<br>TxRequisitionEntry                                                 |
| Service form Data (user-specific reportable services)   | DefService<br>DefServiceExtension<br>DefDataDictionary<br>DefObjectDictionaries<br>DefData<br>TxRequisitionEntry |
| Service                                                 | DefService<br>DefArea<br>DirOrganizationalUnit                                                                   |
| Dictionary                                              | DefDataDictionary<br>DefDictionaryGroup                                                                          |
| Keyword                                                 | DefKeyword                                                                                                       |
| Group                                                   | DirGroup                                                                                                         |
| Organization                                            | DirOrganizationalUnit                                                                                            |

| Data Mart Query Subject | OLTP Database Tables                                                                                    |
|-------------------------|---------------------------------------------------------------------------------------------------------|
| Customer                | DirPerson                                                                                               |
| Requestor               | DirOrganizationalUnit                                                                                   |
| Performer               | DirNetworkInfo                                                                                          |
| Person                  | DirLocation                                                                                             |
| Queue                   | DirAddress                                                                                              |
| ServiceRequestFact      | TxRequisitionEntry<br>TxRequisition                                                                     |
| ServiceTaskFact         | TxRequisitionEntry<br>TxActivity                                                                        |
| RequisitionTaskFact     | TxRequisition<br>TxActivity                                                                             |
| TaskEffortEntryFact     | TxBilling<br>DefExpenditureType<br>DefBillingClass<br>DefUnitType<br>DirOrganizationalUnit<br>DirPerson |

## Service-Form Reporting Metadata

The data mart ETL processes use a set of tables in the data mart database to configure the ServiceData and DictionaryData dimensions that are exposed to users in the Ad-Hoc Reports and Report Designer options. These tables are created when the Custom Reports Package is installed and populated when data is loaded into the data mart.

These metadata tables are not exposed in the Cognos framework. The contents of these tables are used to specify the dynamically defined dictionary and service-based dimensions which appear as the business view of the data in the Custom Reports Project.

These tables are described below. The description for each column uses an abstract data type; the actual data types will vary, depending on the database (Oracle or SQLServer) in which the data mart resides.

### DM\_FDR\_ETLDICTIONARYMETADATA

The DM\_FDR\_ETLDICTIONARYMETADATA table maps a particular reportable dictionary (identified by its DictionaryID) to the DM\_FDR\_DICTIONARY\_n table in which dictionary data is stored (DictionaryTableName). It also tracks how many date, numeric, and varchar fields are used within that dictionary and consequently, within the corresponding data mart table.

**Table 40: DM\_FDR\_ETLDICTIONARYMETADATA Table**

| Column Name                | Data Type   | Description                                                     |
|----------------------------|-------------|-----------------------------------------------------------------|
| DictionaryID               | Integer     | Unique identifier for the dictionary                            |
| DictionaryTableName        | Varchar(50) | Name of the data mart table where the dictionary data is stored |
| LastDictionaryDateField    | Integer     | Last datetime type field used in the dictionary table           |
| LastDictionaryNumericField | Integer     | Last numeric type field used in the dictionary table            |
| LastDictionaryVarcharField | Integer     | Last character type field used in the dictionary table          |

## DM\_FDR\_DICTIONARYMETADATA

The DM\_FDR\_DICTIONARYMETADATA table maps individual dictionary fields (attributes) (identified by DictionaryID and DictionaryAttributeName) to specific columns of the dictionary tables. For example, the attribute "LastName" in the dictionary RC\_REQUESTEDBY may be mapped to (that is, actually stored in) the data mart table DM\_FDR\_DICTIONARYTABLE\_10, in the field "Field2".

**Table 41: DM\_FDR\_DICTIONARYMETADATA Table**

| Column Name             | Data Type    | Description                                             |
|-------------------------|--------------|---------------------------------------------------------|
| DestinationColumnName   | Varchar(100) | Column name of the table where this attribute is stored |
| DestinationTableName    | Varchar(200) | Table name where the dictionary information is stored   |
| DictionaryAttributeName | Varchar(100) | Name of the attribute in the dictionary                 |
| DictionaryAttributeType | Varchar(100) | Data type of the attribute in the dictionary            |
| DictionaryID            | Integer      | Dictionary ID                                           |
| DictionaryName          | Varchar(200) | Dictionary name                                         |
| DictionaryAttributeID   | Integer      | Dictionary attribute ID                                 |

## DM\_FDR\_ETLMETADATA

The DM\_FDR\_ETLMETADATA table holds information on configuring the Custom Reports Package that was specified when the Reporting options was installed, as well as data about the data extraction process (ETL) and last update information to for scheduled run of the ETL Process.

Table 42: DM\_FDR\_ETLMETADATATable

| Column Name                 | Data Type   | Description                                                                                                                                                                                       |
|-----------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DictionaryTablePattern      | Varchar(50) | Pattern for the name of the dictionary tables; by default DM_FDR_DICTIONARY_; specified via Advanced Reporting installation. Dictionary tables will have the specified name followed by a number. |
| Field Pattern               | Varchar(50) | Field pattern for both dictionary and service tables; by default FIELD_.                                                                                                                          |
| LastDictionaryTableSequence | Integer     | Sequence number of the last dictionary table currently used in the data mart.                                                                                                                     |
| LastDictRequisitionID       | Integer     | Last requisition ID for which data was written to the dictionary table.                                                                                                                           |
| LastProcessedTime           | Datetime    | Date and time when the ETL to load the custom Reports Package was most recently run.                                                                                                              |
| LastServiceTableSequence    | Integer     | Sequence number of the last service table used in the data mart.                                                                                                                                  |
| LastSvcRequisitionID        | Integer     | Last requisition ID of the service data.                                                                                                                                                          |
| ServiceTablePattern         | Varchar(50) | Pattern for the name of the service tables; by default DM_FDR_SERVICE_; specified via Advanced Reporting installation.                                                                            |
| DictionaryTotalDateField    | Integer     | The total number of date fields used for dictionary and service tables.                                                                                                                           |
| DictionaryTotalNumericField | Integer     | The total number of numeric fields used for dictionary and service tables.                                                                                                                        |
| DictionaryTotalVarcharField | Integer     | The total number of character fields used for dictionary and service tables.                                                                                                                      |
| ServiceTotalDateField       | Integer     | The total number of date fields used for service tables.                                                                                                                                          |
| ServiceTotalNumericField    | Integer     | The total number of numeric fields used for service tables.                                                                                                                                       |
| ServiceTotalVarcharField    | Integer     | The total number of character fields used for service tables.                                                                                                                                     |

## DM\_FDR\_ETLSERVICEMETADATA

The DM\_FDR\_ETLSERVICEMETADATA table holds the information about the tables that are used to store information about each reportable service.

**Table 43: DM\_FDR\_ETLSERVICEMETADATA Table**

| Column Name             | Data Type | Description                                                           |
|-------------------------|-----------|-----------------------------------------------------------------------|
| LastServiceDateField    | Integer   | Last datetime type field used in the service table                    |
| LastServiceNumericField | Integer   | Last numeric type field used in the service table                     |
| LastServiceVarcharField | Integer   | Last character type field used in the service table                   |
| ServiceID               | Integer   | Unique Identifier assigned to the service                             |
| ServiceTableName        | Varchar   | Name of the data mart database table where the service data is stored |

## DM\_FDR\_SERVICEMETADATA

The DM\_FDR\_SERVICEMETADATA table holds the Metadata information about which service attributes are populated in which columns of the service tables and, also the usage name of each of the columns.

**Table 44: DM\_FDR\_SERVICEMETADATA Table**

| Column Name           | Data Type    | Description                                             |
|-----------------------|--------------|---------------------------------------------------------|
| DestinationColumnName | Varchar(100) | Column name of the table where this attribute is stored |
| DestinationTableName  | Varchar(200) | Table name where the service information is stored      |
| ServiceAttributeName  | Varchar(100) | Name of the attribute in the service                    |
| ServiceAttributeLabel | Varchar(200) | Caption of the attribute in the service                 |
| ServiceAttributeType  | Varchar(100) | Attribute type                                          |
| ServiceAttributeID    | Integer      | Identifier for the attribute of the service             |
| ServiceID             | Integer      | Service ID                                              |
| ServiceName           | Varchar(200) | Name of the service                                     |

## Dynamically Defined Dimensions

The nature and number of the dictionaries and their attributes which are added to the Custom Reports Package is dynamically determined and may differ greatly at each Service Catalog installation. To support the required flexibility, the database which supports the Custom Reports Package includes a set of abstract data structures, which hold the dimensional data corresponding to the dictionaries, their attributes, and service configuration using dictionary (form) data. Dictionary contents are mapped to these tables via the DM\_FDR metadata tables explained above.

### DM\_FDR\_DICTIONARYTABLE\_n

A set of tables captures attributes (fields) for each reportable dictionary in the application. The number of these tables is configurable as part of the application installation, as well as the number of columns of each data type (character, numeric, or datetime).

Each table has the name DM\_FDR\_DICTIONARYTABLE (or alternate pattern supplied via the installation procedure), followed by a numeric suffix, \_n. Each table is numbered sequentially, starting with 1. Each instance of this table represents a reportable dictionary.

The DM\_FDR\_DICTIONARYTABLEs appear in the reporting tools as a set of dimensions within the DictionaryData folder. The name of each dimension is the caption of the corresponding dictionary. (For dictionaries with no caption, the dictionary name is used.) The attributes of the dimension are the fields which comprise the dictionary. The fields are numbered sequentially, starting with 1. The number of each type of field (character, numeric, or datetime) is specified via the application installation procedure.

**Table 45: DM\_FDR\_DICTIONARYTABLE\_n Table**

| Column Name           | Data Type    | Description                             |
|-----------------------|--------------|-----------------------------------------|
| DictionaryID          | Integer      | Dictionary ID                           |
| RequisitionID         | Integer      | Requisition ID                          |
| RequisitionEntryID    | Integer      | Requisition Entry ID                    |
| Field1 through Fieldn | Varchar(200) | Varchar fields to hold dictionary data  |
| Fieldn+1 through n+m  | Numeric      | Numeric fields to hold dictionary data  |
| Fieldn+m+1 through..  | Datetime     | Datetime fields to hold dictionary data |

### DM\_FDR\_SERVICETABLE\_n

A set of tables captures data for each service which has been designated as reportable. The tables contain all fields in all dictionaries used in the service. The number of these tables is configurable as part of the application

installation, as well as the number of columns of each data type (character, numeric, or datetime). Each table is numbered sequentially, starting with 1.

Each table has the name DM\_FDR\_SERVICETABLE (or alternate pattern, as designated via the installation procedure), followed by a numeric suffix, *\_n*. Each instance of this table represents a reportable service.

The DM\_FDR\_SERVICETABLEs appear in the reporting tools as a set of dimensions within the ServiceData folder. The name of each dimension is the name of the corresponding service. The attributes of the dimension are the fields which comprise all dictionaries in the service. Fields are added to this table in the order in which their dictionary occurs in the service. Since the number of fields that may be accommodated in each table is limited (specified via the installation procedure, but physically limited by database constraints), the service table may not be complete—some fields, indeed some dictionaries, may be truncated. Therefore, DM\_FDR\_SERVICETABLEs should be used with care, especially if dictionaries with large numbers of fields are designated as reported, or if a great number of dictionaries are used in the same service.

**Table 46: DM\_FDR\_SERVICETABLE\_n Table**

| Column Name                         | Data Type    | Description                          |
|-------------------------------------|--------------|--------------------------------------|
| ServiceID                           | Integer      | Service ID                           |
| RequisitionID                       | Integer      | Requisition ID                       |
| RequisitionEntryID                  | Integer      | Requisition Entry ID                 |
| Field1 through Field <i>n</i>       | Varchar(200) | Varchar fields to hold service data  |
| Field <i>n+1</i> through <i>n+m</i> | Numeric      | Numeric fields to hold service data  |
| Field <i>n+m+1</i> through..        | Datetime     | Datetime fields to hold service data |

For a service configured with no reportable grid dictionaries, each request for the service (that is, requisition entry) is captured by the ETL process and inserted into the corresponding DM\_FDR\_SERVICETABLE as one row of data. However, for a service configured with one or more reportable grid dictionaries, the ETL process inserts multiple rows of data into the DM\_FDR\_SERVICETABLE table. The number of rows inserted corresponds to the greatest number of rows in any of the reportable grid dictionaries.

For example, consider a service with a reportable nongrid dictionary (Employee) and two reportable grid dictionaries (Contact, Address). Assume a request for this service has three rows of data in Contact, two rows of data in Address, and some data in the Employee dictionary. The form data captured in the service table for this service would look the following:

**Table 47: Form Data in Service Table**

| RequisitionEntryID | Employee. FirstName | Employee. LastName | Contact. Type | Contact. Details | Address. Line  | Address. City | Address. State | Address. Country |
|--------------------|---------------------|--------------------|---------------|------------------|----------------|---------------|----------------|------------------|
| NNN                | John                | Smith              | Cell          | 650-123-4567     | 3333 Third St. | San Mateo     | CA             | USA              |
| NNN                | (NULL)              | (NULL)             | Work          | 408-765-4321     | 1111 First St. | San Jose      | CA             | USA              |

| RequisitionEntryID | Employee.<br>FirstName | Employee.<br>LastName | Contact.<br>Type | Contact. Details   | Address.<br>Line | Address.<br>City | Address.<br>State | Address.<br>Country |
|--------------------|------------------------|-----------------------|------------------|--------------------|------------------|------------------|-------------------|---------------------|
| NNN                | (NULL)                 | (NULL)                | Email            | jsmith@company.com | (NULL)           | (NULL)           | (NULL)            | (NULL)              |

## Data Mart Database Objects

The following table lists the database tables and views used for the Service Catalog data mart and exposed to users via the Custom Reports package. The tables/views are mapped directly to corresponding query subjects.

**Table 48: Data Mart Database Objects Table**

| Data Mart Table/View     | Primary Key        | Query Subject/Description                                                                                                                     |
|--------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| DM_DEFSERVICE            | ServiceID          | Service information (which includes Service Group and Service Team information)                                                               |
| DM_DEFDICTIONARY         | DictionaryID       | Dictionary information                                                                                                                        |
| DM_PERSON                | PersonID           | Person information                                                                                                                            |
| DM_DATE                  | DateID             | Calendar information                                                                                                                          |
| VIEW_CUSTOMER            | CustomerID         | Customer information                                                                                                                          |
| VIEW_REQUESTOR           | RequestorID        | Requestor (initiator) information                                                                                                             |
| VIEW_PERFORMER           | PerformerID        | Information about the person who performs a task                                                                                              |
| VIEW_QUEUE               | QueueID            | The queue to which a task is assigned                                                                                                         |
| VIEW_CALENDARCLOSEDDATE  | ClosedDateID       | The date a task or requisition was closed and the accompanying date hierarchy                                                                 |
| VIEW_CALENDARDUEDATE     | DueDateID          | The date a task or requisition was due and the accompanying date hierarchy                                                                    |
| VIEW_CALENARSCHEDULEDATE | ScheduledDateID    | The date a task or requisition was scheduled to start and the accompanying date hierarchy                                                     |
| VIEW_CALENDARSTARTEDDATE | StartedDateID      | The date a task or requisition was started and the accompanying date hierarchy                                                                |
| DM_REQUISITIONENTRYFACT  | RequisitionEntryID | Individual requisition entries (services) ordered                                                                                             |
| DM_SERVICETASKFACT       | ServiceTaskID      | Tasks performed at the service (requisition entry) level, including delivery tasks, ad-hoc tasks and service group authorizations and reviews |



| Data Mart Table/View                    | Primary Key        | Query Subject/Description                                                                                                       |
|-----------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------|
| DM_REQUISITONTASKFACT                   | RequisitionTaskID  | Tasks performed at the requisition level, including financial authorizations and organizational unit authorizations and reviews |
| DM_TASKEFFORTENTRYFACT                  | EffortEntryID      | Effort expended in the performance of a delivery task                                                                           |
| DM_FDR_DICTIONARY_n<br>(n=1, 2, 3, ...) | RequisitionEntryID | Corresponding dictionary attribute information                                                                                  |
| DM_FDR_SERVICE_n<br>(n=1, 2, 3, ...)    | RequisitionEntryID | Corresponding service form data attribute information                                                                           |

The tables which comprise the data mart have been indexed to optimize the performance of queries and reports that retrieve data from multiple query subjects. Because of the dynamic nature of the dictionary and service-based dimensions, no additional indexes have been added to these tables.

The indexes provided in the statically defined fact and dimension tables are summarized below.

**Table 49: Index in fact and Dimensions Table**

| Data Mart Table/View    | Primary Key        | Additional Indexes                                                              |
|-------------------------|--------------------|---------------------------------------------------------------------------------|
| DM_DEFSERVICE           | ServiceID          | SERVICENAME                                                                     |
| DM_DEFDICTIONARY        | DictionaryID       | DICTIONARYNAME                                                                  |
| DM_PERSON               | PersonID           | PERSONFIRSTNAMEPERSONLASTNAME<br>ISQUEUE                                        |
| DM_DATE                 | DateID             | (none)                                                                          |
| DM_REQUISITIONENTRYFACT | RequisitionEntryID | SERVICEID<br>REQUESTORID<br>CUSTOMERID<br>STARTEDDATE<br>CLOSEDDATE<br>DUE DATE |

| Data Mart Table/View  | Primary Key       | Additional Indexes                                                                                   |
|-----------------------|-------------------|------------------------------------------------------------------------------------------------------|
| DM_SERVICETASKFACT    | ServiceTaskID     | REQUISITIONENTRYID<br>PERFORMERID<br>SERVICEID<br>STARTEDDATE<br>COMPLETEDDATE<br>DUEDATE<br>QUEUEID |
| DM_REQUISITONTASKFACT | RequisitionTaskID | PERFORMERID<br>STARTEDDATE<br>COMPLETEDDATE<br>DUEDATE<br>QUEUEID                                    |

## Relationships between the Facts and Dimensions

Requisitions (ServiceRequestFact) are joined to all relevant dimensions (shown in the star schema previously included) via “inner joins”. That means that any attempt to use query items from both the requisition and a dimension will show only those requisitions which have a corresponding row in the dimension. This is generally not a factor for all of the statically defined dimensions, since these are always required for all requisitions. For example, by definition a requisition must have a customer and initiator as well as a requested service and all dates associated with the delivery of that requisition.

This does have implications for writing reports. For example, if you start defining a report by choosing a set of customers, then add requisition data filtered for a particular period, those customers who did not order a service in that period will vanish from the report.

It is critically important for the dynamically defined, dictionary-based dimensions. If a dictionary was not used in a particular service, any requisitions for that service will not appear on a report that includes query items from that dictionary-based dimension.

Similarly, for delivery tasks (ServiceTaskFact) and service-level authorizations (RequisitionTaskFact), inner joins relate the fact to all dimension tables except the queue. These facts are joined to the Queue dimension via an “outer join”, which supports optional relationships. This allows the service designer to assign the task to a specific person or functional position, rather than to a queue. If a task was not assigned to a queue, it still appears on the report, but the queue will be blank.

For request-level authorizations (AuthTaskFact), too, the queue is optional. In addition, the service is not relevant, since the authorization is performed at the request level, rather than for any individual services which comprise the request.

## Relationships in Organizational Data

The Organizations folder allows you to compose reports on people, organizations, and groups. Service Catalog supports many-to-many relationships between these entities. For example, a person may be a member of many

organizations (a business unit and multiple service teams); an organization comprises many people. These relationships are reflected in the data mart design, so you can combine two of these entities on a report and group by either entity. For example, you could report on all organizations, listing their members; or you could choose a person, and list all the organizations to which that person belongs.

## Fact to Fact Relationships

*Table 50: Fact to Fact Relationships Table*

| Fact-1             | Fact-2              | Type of Relationship |
|--------------------|---------------------|----------------------|
| ServiceRequestFact | ServiceTaskFact     | Left Outer Join      |
| ServiceRequestFact | DeliveryTaskFact    | Inner Join           |
| ServiceRequestFact | AuthTaskFact        | Left Outer Join      |
| ServiceRequestFact | AllTaskFact         | Left Outer Join      |
| AllTaskFact        | TaskEffortEntryFact | Left Outer Join      |
| DeliveryTaskFact   | TaskEffortEntryFact | Left Outer Join      |
| ServiceTaskFact    | TaskEffortEntryFact | Left Outer Join      |

