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You can read the recommendations in the user guide, the technical guide or the installation guide for BUSINESS OBJECTS DATA INTEGRATOR 11.7.2. You'll find the answers to all your questions on the BUSINESS OBJECTS DATA INTEGRATOR 11.7.2 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

**User manual BUSINESS OBJECTS DATA INTEGRATOR 11.7.2**  
**User guide BUSINESS OBJECTS DATA INTEGRATOR 11.7.2**  
**Operating instructions BUSINESS OBJECTS DATA INTEGRATOR 11.7.2**  
**Instructions for use BUSINESS OBJECTS DATA INTEGRATOR 11.7.2**  
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Data Integrator Management Console:  
Metadata Reports Guide

Data Integrator 11.7.2  
for Windows and UNIX



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Data Integrator Management Console: Metadata Reports Guide Introduction chapter 1 Introduction About this guide About this guide This guide describes  
how to use Data Integrator's metadata reporting tool. Using the web-based metadata reporting tool, you can easily browse, analyze, and produce reports on  
the metadata in your repositories. Metadata Reports provides four modules for exploring your metadata: ··· Impact and Lineage Analysis Reports  
Operational Dashboard Reports Data Validation Dashboard Reports Auto Documentation Reports Who should read this guide This guide is for Data  
Integrator users who want to use metadata reporting. Business Objects information resources Consult the Data Integrator Getting Started Guide for: ··· An  
overview of Data Integrator products and architecture Data Integrator installation and configuration information A list of product documentation and a  
suggested reading path After you install Data Integrator (with associated documentation), you can view the technical documentation from several locations.  
To view documentation in PDF format: · If you accepted the default installation, select Start > Programs > Business Objects > Data Integrator > Data  
Integrator Documentation and select: · Release Notes--Opens this document, which includes known and fixed bugs, migration considerations, and last-minute  
documentation corrections · Release Summary--Opens the Release Summary PDF, which describes the latest Data Integrator features · Technical  
Manuals--Opens a "master" PDF document that has been compiled so you can search across the Data Integrator documentation suite · Tutorial--Opens the  
Data Integrator Tutorial PDF, which you can use for basic stand-alone training purposes 8 Data Integrator Management Console: Metadata Reports Guide

*Introduction Business Objects information resources 1 · Select one of the following from the Designer's Help menu: . . . . . Release Notes Release Summary  
Technical Manuals Tutorial Other links from the Designer's Help menu include: DIZone--Opens a browser window to the DI Zone, an online resource for the  
Data Integrator user community) Knowledge Base--Opens a browser window to Business Objects' Technical Support Knowledge Exchange forum (access  
requires registration) You can also view and download PDF documentation, including Data Integrator documentation for previous releases (including  
Release Summaries and Release Notes), by visiting the Business Objects documentation Web site at <http://support>.*



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[businessobjects.com/documentation/](http://businessobjects.com/documentation/). *Data Integrator Management Console: Metadata Reports Guide 9 1 Introduction Business Objects information resources 10 Data Integrator Management Console: Metadata Reports Guide Data Integrator Management Console: Metadata Reports Guide Viewing Metadata Reports chapter 2 Viewing Metadata Reports Introduction Introduction The Web-based metadata reporting applications provide several convenient graphical options for analyzing dependencies, managing job execution performance, validating source data, and producing documentation for your Data Integrator projects.*

*Metadata reporting applications provide four applications for exploring your metadata:*

- *Impact and Lineage Analysis Reports--Allows you to easily browse, analyze, and produce reports on the metadata for your Data Integrator jobs as well as for other Business Objects applications associated with Data Integrator Operational Dashboard Reports--Provides several standard graphical dashboards that allow you to evaluate your job execution performance at a glance*
- Data Validation Dashboard Reports--Provide feedback that allows business users to quickly review, assess, and identify potential inconsistencies or errors in source data.*
- Auto Documentation Reports--Offers a convenient way to create printed documentation for the objects you create in Data Integrator by capturing critical information so you can see an overview of the entire ETL process.*

*Requirements Adding Metadata Integrator Repository reporting tables and views About the Management Console . . . This chapter discusses: . . . Requirements Use the Data Integrator Administrator to configure repositories for metadata reporting applications to access. See "Connecting repositories to the Administrator" on page 26 of the Data Integb Intelligence documents*

*AL\_CMS\_REPORTUSAGE Tables, columns, Business Views, or Universes that a Crystal Report, Desktop Intelligence Document, or Web Intelligence Document uses AL\_CMS\_FOLDER Folder names in which a Crystal Report, Desktop Intelligence Document, or Web Intelligence Document resides Information that uniquely identifies Universes Universe classes and the child objects, with the source column and table Execution statistics about jobs and data flows Index information about imported tables Information about native (.atl) Data Integrator objects AL\_CMS\_UNV AL\_CMS\_UNV\_OBJ AL\_HISTORY AL\_INDEX AL\_LANG 16 Data Integrator Management Console: Metadata Reports Guide Viewing Metadata Reports Repository reporting tables and views 2 Name AL\_LANGXMLTEXT AL\_PCOLUMN AL\_PKEY AL\_QD\_VRULE AL\_QD\_VRULE\_OFLOW AL\_QD\_STATS AL\_QD\_ROW\_DATA AL\_QD\_COLINFO AL\_USAGE ALVW\_COLUMNATTR ALVW\_COLUMNINFO ALVW\_FKREL ALVW\_FLOW\_STAT ALVW\_FUNCINFO ALVW\_MAPPING ALVW\_PARENT\_CHILD AL\_SETOPTIONS ALVW\_TABLEATTR ALVW\_TABLEINFO Contains Information about objects represented in XML format Column information about imported table partitions Primary key information about imported tables Stores the validation rule names Stores the rule name if it cannot fit it into AL\_QD\_VRULE (if there is an overflow) Runtime validation rule statistics Sample row data for which the validation rules have failed All the column information for the failed validation rules All ancestor-descendant relationships between Data Integrator objects Attribute information about imported columns. Information about imported column. Primary-foreign key relationships among imported tables. Execution statistics about individual transforms within data flows. Information about both native functions and functions imported from external systems. Mapping and lineage information for target tables.*

*Direct parent-child relationships between Data Integrator objects. Option settings for all objects Attribute information about imported (external) tables. Information about imported tables Data Integrator automatically creates reporting tables for each new or upgraded repository. Except for AL\_USAGE, Data Integrator automatically updates all reporting tables. Data Integrator Management Console: Metadata Reports Guide 17 2 Viewing Metadata Reports About the Management Console The Metadata Integrator collects metadata for Crystal Reports, Business Views, Universes, Desktop Intelligence document, and Web Intelligence documents from the Central Management Server (CMS) and stores the metadata in the Data Integrator reporting tables that start with AL\_CMS.*

*For more information about installing, configuring, and running the Metadata Integrator, see "Adding Metadata Integrator" on page 13. About the Management Console The Management Console is a collection of Web-based applications for administering Data Integrator jobs and services, viewing object relationships, and evaluating job execution performance and data validity. These applications include:*

- *Administrator--Manage your production environment including batch job execution, real-time services, Web services, adapter instances, server groups, central and profiler repositories, and more. For more information, see the Data Integrator Management Console: Administrator Guide.*
- Impact and Lineage Analysis--Analyze the end-to-end impact and lineage for Data Integrator tables and columns and BusinessObjects Enterprise objects such as universes, business views, and reports.*

*Operational Dashboards--View dashboards of Data Integrator job execution statistics to see at a glance the status and performance of your job executions for one or more repositories over a given time period. Data Validation Dashboards--Evaluate the reliability of your target data based on the validation rules you created in your Data Integrator batch jobs to quickly review, assess, and identify potential inconsistencies or errors in source data. Auto Documentation--View, analyze, and print graphical representations of all objects as depicted in Data Integrator Designer including their relationships, properties, and more. This guide describes the following Management Console applications:*

- *Logging in To access the metadata reporting applications, first log in to the Data Integrator Management Console. The first time you log in to the Management Console, use the default user name and password (admin/admin). Business Objects recommends that you change the defaults thereafter (see "Managing user roles" on page 29).*

*18 Data Integrator Management Console: Metadata Reports Guide Viewing Metadata Reports About the Management Console 2 1. To log in to the Management Console The first step depends on your operating system:*

- *On Windows, click the Start menu and select Programs > Business Objects > Data Integrator > Data Integrator Management Console. If you encounter an error, check to see if the Data Integrator Web Server service is installed and running.*



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If the Web Server service is running but you cannot log in, see "Reinstalling the Web Server service" on page 188.

· On UNIX (or Windows), open a browser, enter the following casesensitive URL, then press Enter: `http://hostname:28080/diAdmin2`. Enter the default user name (admin) and password (admin) and click Log in. The Management Console home page opens. To launch one of the the metadata reporting applications, click its icon (or name). 3. If you are logged in to the Designer, you can also access the Management Console home page as follows: . . . From the Start page, click Data Integrator Management Console. From the Tools menu, click Data Integrator Management Console. Click the Data Integrator Management Console tool bar icon. Management Console navigation After logging in to the Management Console and launching one of the applications, the application name appears under the Management Console banner. The upper-right side of the main window includes the following links: . . . Home--Click to return to the Management Console home page (for example to select another application).

Settings--Use the Settings control panel for changing a variety of options depending on the application. Logout--Click to exit the application and the Management Console and return to the login page. Data Integrator Management Console: Metadata Reports Guide 19 2 Viewing Metadata Reports About the Management Console As you navigate around the applications, notice the top of the right-hand pane often displays a "breadcrumb" path to indicate where you are in the application. Depending on the page displayed, sometimes you can click on the breadcrumbs to navigate to a different part of the application.

The Administrator, Impact and Lineage Analysis, and Auto Documentation applications also use a navigation tree in the left-hand pane. Data Integrator Management Console sessions time out after 120 minutes (2 hours) of inactivity. 20 Data Integrator Management Console: Metadata Reports Guide Data Integrator Management Console: Metadata Reports Guide Impact and Lineage Analysis Reports chapter 3 Impact and Lineage Analysis Reports Introduction Introduction The Impact and Lineage Analysis application provides a simple, graphical, and intuitive way to view and navigate through various dependencies between objects. Impact and lineage analysis allows you to identify which objects will be affected if you change or remove other connected objects. For example for impact analysis, a typical question might be, "If I drop the source column Region from this table, which targets will be affected?"

For lineage analysis, the question might be, "Where does the data come from that populates the Customer\_ID column in this target?" In addition to the objects in your Data Integrator datastores, impact and lineage analysis allows you to view the connections to other objects including Universes, classes and objects, Business Views, Business Elements and Fields, and reports (Crystal Reports, Desktop Intelligence documents, and Web Intelligence documents). This chapter discusses: . . . Navigation Analysis options Table-level and column-level analysis Impact and Lineage Analysis Settings control panel Navigation

From the Management Console home page, view impact and lineage information by clicking the Impact and Lineage Analysis link.

The Impact and Lineage Analysis page contains two primary panes: . . . The left pane contains a hierarchy (tree) of objects. The top of the tree is the default repository. This pane also includes a search tool. The right pane displays object content and context based on how you navigate in both panes. In general, expand the tree in the left pane by clicking plus signs (+) next to object nodes. Select an object in the tree to learn more about it. Details associated with an object appear in the right pane on one or more tabs. Tabs vary depending on the object you select. 22 Data Integrator Management Console: Metadata Reports Guide Impact and Lineage Analysis Reports Navigation 3 The top level of the navigation tree displays the current repository. (You can change this repository in the Settings control panel; for details, see "Settings tab" on page 29.

) Objects in a repository include: . . . Datastores--Contain Data Integrator tables and columns CMS server(s)--After you configure the Metadata Integrator (see "Adding Metadata Integrator" on page 13), this node contains folders as defined in the Business Objects Central Management Console, Universes, and Business Views. The Universe node displays classes, and each class contains objects. Business Views contain Business Elements, and each Business Element has Business Fields. Any object can contain one or more reports. To narrow the view of objects to display in the navigation tree or to quickly find specific objects in the repository, use the Objects to analyze search feature. You can do one or both of the following: 1. Select a category in the Select an object type drop-down list: . . . . . 2. Table and column Universe Class and object Business view Element and field Report AND/OR Search for a specific object by typing all or part of the object name the search field. The search field is not case sensitive, spaces are allowed, and you can use the percent symbol (%) as a wildcard. Click the search icon (binoculars).

3. Metadata Reports highlights each object that meets your search criteria with a red border. Note: . . . To repopulate the CMS navigation tree with any objects that might have changed (added, deleted, renamed, etc.) in the CMS repository after you display an impact and lineage report, log out and log back in to the Management Console to display the changes. If you receive an error such as the following: This image is scaled to 50% of the original image.

You could avoid scaling the image by allocating more memory to the current java process. . Data Integrator Management Console: Metadata Reports Guide 23 3 Impact and Lineage Analysis Reports Analysis options it means the java process (JVM) does not have enough memory to process the current task. Circumvent this error by allocating more heap memory to the Java process associated with the Data Integrator Web server as described in the following procedures. To increase the java heap memory in Windows In the Windows Services control panel, stop the Data Integrator Web Server. In the Data Integrator installation directory, navigate to `\ext\WebServer\conf`.

Using a text editor, open the `wrapper.properties` file. To allocate a minimum of 256 MB and a maximum of 512 MB to the java process, add the following parameters to `wrapper.cmd_line`: `-Xms256M -Xmx512M` 1. 2. 3. 4. The result will appear as follows: `wrapper`.



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cmd\_line=\$(wrapper.javabin) -Xms256M -Xmx512M -Djava.

endorsed.dirs==\$(ACTAHOME)\ext\webserver\common\endorsed ... 5. Save and close the file. To increase the java heap memory in UNIX Stop the Data Integrator Web Server. In the Data Integrator installation directory, navigate to /ext/WebServer/bin. Using a text editor, open the setclasspath.sh file.

To allocate a minimum of 256 MB and a maximum of 512 MB to the java process, add the following lines to the end of the setclasspath.sh file:

JAVA\_OPTS="-Xms256M -Xmx512M" export JAVA\_OPTS 1. 2. 3. 4.

5. Save and close the file. Analysis options The following table lists the types of objects that can appear in the navigation tree and provides a summary of what information appears in the right pane when you select that object type. To view or hide a pane in the display such as an attributes pane, click the up/ down arrow in its header bar. 24 Data Integrator Management Console: Metadata Reports Guide Impact and Lineage Analysis Reports Analysis options 3 Moving the cursor over an object displays a pop-up window with more information about that object; for example: . . . Table--Data flow (if applicable), datastore, and owner Business Objects report--Depending on the report type, the pop-up window displays the CMS server name, the Business View name, or the Universe name, for example.

Universe objects--CMS server, universe, and class The following table lists the objects in the navigation tree, the corresponding tabs, and the content of each.

Object Repository Tab Overview Associated content Repository name Repository type--The database type Repository version--The repository version number

Overview information varies depending on the datastore type. The following entries apply to a datastore on Microsoft SQL Server. Application

type--Database Database type--Microsoft\_SQL\_Server User--(Database user name) Case sensitive--Whether or not the database is case sensitive

Configuration--(The configuration selected in the datastore editor) SQL\_Server version--Microsoft SQL Server 2000 Database name--(Database name)

Server name--(The host computer name) Table name--Table name Datastore--Datastore to which this table belongs Owner name--The table owner name in

the database. Business name--Business-use name of the table if defined Table type--Table or template table Last update date--When Data Integrator last

updated the table Graphically shows the end-to-end impact of the selected source table and the targets it affects. Clicking a table in the Impact diagram

displays the object's attributes, which are the same as on the Overview tab. See "Table-level and column-level analysis" on page 28. Datastore Overview

Table Overview Impact Data Integrator Management Console: Metadata Reports Guide 25 3 Impact and Lineage Analysis Reports Analysis options Object

Tab Lineage Mapping tree Associated content The Lineage tab contains the same information as on the Impact tab except it describes the flow from target to

source. Displays the overall mapping information for each column in the table. Select between Group by data flow or Group by column.

Column name--Column name Table name--Parent table of the column Data type--The data type for the column Nullable--yes/no Primary key--yes/no Foreign

key--yes/no Graphically shows the end-to-end impact of the selected source column and the targets it affects. Clicking a column in the Impact diagram

displays the object's attributes, which are the same as on the Overview tab. See "Table-level and column-level analysis" on page 28. The Lineage tab contains

the same information as on the Impact tab except it describes the flow from target to source. It also displays any data flow objects associated with the column.

Move the cursor over a data flow icon to display a popup window with the mapping information. Click on a data flow icon to open another pop-up window

that displays the Auto Documentation information including mapping (see also Chapter 6: Auto Documentation Reports). Notice that in the auto

documentation window, any objects that are not part of the lineage for this column are dimmed. Universe name Folder--The folder name on the CMS server

to where the Universe has been exported CMS server--The name of the CMS server for this Universe Description--The description created for the Universe in

BusinessObjects Designer Column Overview Impact Lineage Universe Overview 26 Data Integrator Management Console: Metadata Reports Guide Impact

and Lineage Analysis Reports Analysis options 3 Object Tab Associated content Business View name Folder--The folder name on the CMS server to where the

Business View has been exported Last update date--When the Business View was last updated in the Business View Manger CMS server--The name of the

CMS server for this Business View Class name Universe--Universe to which this class belongs CMS server--The name of the CMS server for this class Object

name Class--The class to which this object belongs Universe--Universe to which this object belongs CMS Server--The name of the CMS server for this object

Source column--The name of the source column for this object followed by the owner.table name Shows all the reports that use the selected object.

Shows column-level lineage for the selected object. Business element name Business view--The Business View to which this business element belongs CMS

server--The name of the CMS server for this object Business field name Business element--The Business Element to which this Business Field belongs

Business view--The Business View to which this Business Field belongs CMS server--The name of the CMS server for this object Shows all the reports that use

the field. Shows column-level lineage for the selected Business Field. Business View Overview Class Overview Object Overview Impact Lineage Business

Element Overview Business Field Overview Impact Lineage Data Integrator Management Console: Metadata Reports Guide 27 3 Impact and Lineage

Analysis Reports Table-level and column-level analysis Object Reports: Crystal and Web Intelligence/ Desktop Intelligence Tab Overview Associated content

Report name Folder--The folder on the CMS server where the report is stored CMS server--The name of the CMS server for this report Last update

date---When the report was last updated Lineage Shows the lineage to the Universe objects or Business View fields on which the report is based (if any) and

the column-level lineage in the Data Integrator datastore. Table-level and column-level analysis Impact and lineage analysis at the table level shows

datastores, tables, and reports/documents as shown in the following graphic.

28 Data Integrator Management Console: Metadata Reports Guide Impact and Lineage Analysis Reports Impact and Lineage Analysis Settings control panel

3 Impact and lineage analysis at the column level shows datastores, objects, fields, and reports/documents as shown in the following graphic.



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*Note: If a report includes conditions predefined in a Universe, the columns used by those conditions will not appear on the Impact and Lineage Analysis report because the metadata collected for Universes is limited to the tables and columns referenced directly by Universe objects. Impact and Lineage Analysis Settings control panel The Impact and Lineage Analysis Settings control panel allows you to change the options for your reports. To open it, click Settings in the upper-right corner of the application window. Settings tab The Settings tab allows you to change repositories.*

*Select a repository from the drop-down list box and click Apply. Refresh Usage Data tab You can calculate column mappings from the Impact and Lineage Analysis application (or from the Designer) at any time. Data Integrator Management Console: Metadata Reports Guide 29 3 Impact and Lineage Analysis Reports Impact and Lineage Analysis Settings control panel The Calculate Column Mappings option populates the internal ALVW\_MAPPING view and the AL\_COLMAP\_NAMES table. The ALVW\_MAPPING view provides current data to Metadata Reports. If you need to generate a report about a data flow that processes nested (NRDM) data, query the AL\_COLMAP\_NAMES table using a custom report. For more information, see "Storing nested column-mapping data" on page 628 of the Data Integrator Reference Guide. Data Integrator calculates column mappings automatically when you save data flows in the Designer. (To change the default, clear the check box under Tools > Options > Designer > General > Calculate column mapping while saving data flow.)*

*Note: If you do not select Calculate column mappings when saving data flows, you must select Calculate Column Mappings manually before generating reports to ensure that Data Integrator returns accurate mapping information. For example, assume you do not have Calculate column mappings when saving data flows selected.*

*You click the Calculate Column Mappings button and you are able to view your column mappings. So far, everything is fine. Now, you unintentionally move an object in a data flow. When you try to execute the job, Data Integrator prompts you to save the changes to the data flow. You comply. The next time you attempt to view mapping information for the data flow, the information is gone because the saved data flow is a new object in the repository. It does not have column mapping information until you manually calculate it. To calculate column mappings in the Impact and Lineage Analysis application 1. In the Impact and Lineage Settings control panel, click the Refresh Usage Data tab. 2.*

*3. Select the Job Server that is associated with the repository you want to use. Click Calculate Column Mappings. To calculate column mappings from the Designer Right-click the object library and select Repository > Calculate column mappings. Business Objects Connections tab Use the Business Objects Connections tab to create a connection to a BusinessObjects Enterprise 6.5 repository. 30 Data Integrator Management Console: Metadata Reports Guide Impact and Lineage Analysis Reports Impact and Lineage Analysis Settings control panel 3 1. 2. Option Repository name Connection type Database type To add a connection to a BusinessObjects Enterprise 6.5 repository Click Add. The Enter database connection information window appears. Enter the following information for the repository. Description Logical name for the repository. Select a Business Objects or Auditor repository. The type of database storing your repository. Select one of the following database types: · DB2 · · · · Host name Database port Service Name/SID, Database name, Server name, or Data source User name Password 3. Microsoft SQL Server ODBC Oracle Sybase ASE MySQL Host name where the repository resides. Port number of the repository or data source. This field requires additional information based on the Database Type you select. The user or owner name for the repository or data source.*

*The user's account password for the repository or data source. (Optional) To test the database information you have specified for the repository, click Test. If there are no Business Objects repository tables in the database, you will receive a notice that you can connect to the database but that there are no repository tables. Click Apply. 4. When you return to Metadata Reports, the navigation tree will display the pertinent objects with respect to your selected repository. To remove a connection, on the Business Objects Connections tab select the check box for the connection and click Remove. About tab This tab provides Data Integrator version information. Data Integrator Management Console: Metadata Reports Guide 31 3 Impact and Lineage Analysis Reports Impact and Lineage Analysis Settings control panel 32 Data Integrator Management Console: Metadata Reports Guide Data Integrator Management Console: Metadata Reports Guide Operational Dashboard Reports chapter 4 Operational Dashboard Reports Introduction Introduction Operational dashboard reports provide graphical depictions of Data Integrator job execution statistics. This feedback allows you to view at a glance the status and performance of your job executions for one or more repositories over a given time period.*

*You can then use this information to streamline and monitor your job scheduling and management for maximizing overall efficiency and performance. For more information about how to use these reports to answer performance questions, see Chapter 3, Measuring and Tuning Data Integrator Performance," in the Data Integrator Performance Optimization Guide. This chapter describes: · · · Dashboards home page Job execution statistics Job execution duration Dashboards home page To view operational dashboards, on the Management Console home page, click Operational Dashboards. The upper-right corner identifies the repository for the reports you are viewing. You can change the repository to view in the dashboards settings control panel.*

*You can drill into these dashboards for more details. The navigation path at the top of the window indicates where you are in the operational dashboard reports hierarchy. Click the hyperlinks to navigate to different levels. Click the Operational tab to return to the dashboards home page. There are two categories of dashboards: Job Execution Statistics and Job Execution Duration.*

*Each category contains a current (snapshot) report and a historical (trend) report. Hence, the dashboards in the top row provide a snapshot for the last 24 hours, and the dashboards on the bottom row display trends over the last 7 days. · Job execution statistics-- Left side of dashboards home page. These reports depict job execution statistics--in general, how many jobs succeeded or had errors: · Current (snapshot) pie chart · Historical (trend) bar chart 34 Data Integrator Management Console: Metadata Reports Guide Operational Dashboard Reports Dashboards home page 4 · Job execution duration--Right side of page.*



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These reports depict how long it took the jobs to run and whether those run times were within acceptable limits: · Current (snapshot) speedometer · Historical (trend) line chart Job statistics Job duration Current Historical The following sections describe the contents of these reports and their subreports. Data Integrator Management Console: Metadata Reports Guide 35 4 Operational Dashboard Reports Job execution statistics Job execution statistics Job execution statistics display in two formats on the left side of the page: · · · · · Current (snapshot) pie chart Historical (trend) bar chart Succeeded (green) One or more warnings (orange) One or more errors (red) Still running (blue) The color codes on these two charts apply to the status of the job's execution: Current (snapshot) pie chart The pie chart displays status information for jobs that ran in the time period displayed. You can change the start time and execution time window in the dashboard Settings control panel (see "Configuring the Job Execution Duration dashboard" on page 38). The chart identifies the number and ratio of jobs that succeeded, had one or more warnings, had one or more errors, or are still currently running. Click on the pie "slices" to drill into the report, which displays a tabular list of jobs within that status group. From there you can click on the status tabs to view the list of jobs in each group.

36 Data Integrator Management Console: Metadata Reports Guide Operational Dashboard Reports Job execution statistics 4 Each Job Execution Statistics table includes: · · · · · Repository name--The repository associated to this job Job name--The name of the job in the Designer Start time and End time--The start and end timestamps in the format hh:mm:ss. Execution time--The elapsed time to execute the job (how long it took to run) System configuration--The name of the system configuration that applies to that job. For details on system configurations, see "Creating and managing multiple datastore configurations" on page 113 of the Data Integrator Designer Guide . Historical (trend) bar chart The Job Execution Statistics History bar chart depicts how many jobs succeeded, had warnings, failed, or are still currently running on each of the last 7 days. Data Integrator Management Console: Metadata Reports Guide 37 4 Operational Dashboard Reports Job execution duration As with the Job Execution Statistics pie chart, you can click on the individual bars to drill into the report to display the Job Execution Statistics status tables (succeeded, warning, error, etc.) for a particular day. See "Current (snapshot) pie chart" on page 36 for details on the Job Execution Statistics tables. Job execution duration Job execution duration reports display in two dashboards on the right side of the dashboards home page: · · Current (snapshot) pie chart Historical (trend) line chart These two charts describe whether all jobs in the selected repository(ies) executed within the acceptable time frame that you established using the dashboard Settings control panel. This window is the amount of time that you allot to run your jobs so your target data warehouse is available to applications and users during business hours, for example. Configuring the Job Execution Duration dashboard The recommended process for setting up the Job execution duration dashboards is as follows.

1. To configure the Job execution duration dashboards In the Administrator, schedule your jobs for when you want them to run. For details on scheduling jobs, see "Scheduling jobs" on page 53 of the Data Integrator Management Console: Administrator Guide. Example: Schedule all jobs to start executing at 1:00 AM. 38 Data Integrator Management Console: Metadata Reports Guide Operational Dashboard Reports Job execution duration 4 2.
3. 4. In the Operational Dashboards application, click Settings to open the control panel. Select the repository to configure. For the View data starting at value, enter the beginning of the time frame in which you want to view job execution as a whole on the speedometer dashboard (in the format HH:MM, from 00:00 to 23:59).

For example, if all of your jobs begin to execute at 1:00 AM, it would be logical to set the View data starting at value to 1:00. 5. Enter a value for Job execution time window in number of hours (from 0 to 24) that you have available to run your ETL jobs. For example, if you want all of your jobs to finish executing by 5 AM, enter 4 hours, which would be the time window between 1 AM and 5 AM. 6. Optionally, add a value for the Job execution time window tolerance in increments of 1 hour. Note: The total of the Job execution time window value and the and Job execution time window tolerance value cannot exceed 24. For example, suppose you determine that in some circumstances it is ok if some jobs finish executing by 6 AM. In this case, set the Job execution time window tolerance to 1 (extending the window from 5 AM to 6 AM). Data Integrator Management Console: Metadata Reports Guide 39 4 Operational Dashboard Reports Job execution duration Current (snapshot) speedometer The speedometer graphic displays the current window of time allotted for your jobs to complete their executions and whether or not the jobs as a whole finished within the selected job execution time window.

Note: This dashboard does not indicate whether a job succeeded or had errors; it only displays execution duration. Drill into the speedometer dashboard to see a Gantt chart that displays whether or not the job succeeded and if and where it finished executing within the job execution time window. Continuing with the example described in the preceding process, the following morning, after running your jobs overnight, you want to verify they executed within the time window of 1 AM to 5 AM. Open the Operational Dashboards application and view the Job Execution Duration speedometer dashboard. Viewing period presented in speedometer dashboard Green area represents Job execution time window setting period Yellow area represents Job execution time window tolerance setting period The time the last job finished executing The time the first job began executing with respect to the viewing period The speedometer needle points in the green zone, which represents the Job execution time window setting in the Settings control panel. In the example, that setting was 4 hours (from 1:00 AM to 5:00 AM). Therefore, all jobs in the repository finished executing within the desired time frame. The solid red bar indicates when the first job actually started, which in the case of the example was 1:00 AM. @@@@The time 1:00 AM is the same as the View data starting at value. @@@@Specify this window with the Job execution time window setting.



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The green range of the speedometer represents this value. @@@@ Click the Graph or Table tabs accordingly. @@@@ Click the Graph or Table tabs accordingly. @@@@ Click on the points to drill in to display the Job Execution Duration Gantt chart as described in the previous section Current (snapshot) speedometer. Also as with the speedometer dashboard, you can drill into the job for data flow execution duration times and audit details by clicking on a Gantt bar to display the Data Flow Execution Duration window.

Additionally, if auditing has been enabled, click on the Gantt bar to display the Audit Details page. 44 Data Integrator Management Console: Metadata Reports Guide Operational Dashboard Reports Job execution duration 4 See "Current (snapshot) speedometer" on page 40 for details on the Job Execution Duration Gantt chart, the Data Flow Execution Duration Gantt chart, and the Audit Details pages. Click the View all history button to display two tables: · Job Execution History--This table lets you to view execution history for all jobs or individual jobs. You can also select over how many days you want to view the history. This table displays the same information as in the Job Execution Duration table: repository name, job name, the start and end time of the job execution, the execution time (elapsed), the status, and whether the job is associated with a system configuration.

· Data Flow Execution History--This table includes three options for customizing the display: · · · Data Flow--Enter a data flow name for which to search and click Search. Job Name--Select all jobs or and individual job. View history for x days--Select over how many days you want to view the history This table displays almost the same information as in the Data Flow Execution Duration table: repository name, data flow name, job name, the start and end time of the data flow execution, the execution time (elapsed), and the number of rows extracted and loaded. Data Integrator Management Console: Metadata Reports Guide 45 4 Operational Dashboard Reports Job execution duration 46 Data Integrator Management Console: Metadata Reports Guide Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports chapter 5 Data Validation Dashboard Reports Introduction Introduction

Data Validation dashboard reports provide graphical depictions that let you evaluate the reliability of your target data based on the validation rules you created in your Data Integrator batch jobs. This feedback allows business users to quickly review, assess, and identify potential inconsistencies or errors in source data. This chapter describes: · · · · · Configuring Data Validation dashboards Functional area view Business rule view Validation rule view Sample data view Data Validation dashboards Settings control panel Configuring Data Validation dashboards To generate meaningful Data Validation dashboards, follow this process: 1. In your Data Integrator jobs in Designer, create data flows that contain validation transforms with validation rules. You use validation transforms to: · · Verify that your source data meets your business rules. Take the appropriate actions when the data does not meet your business rules. For more information on configuring and using the validation transform, see the following sections: · · 2.

"Using the Validation transform" on page 358 of the Data Integrator Designer Guide "Validation" on page 370 of the Data Integrator Reference Guide In the Data Validation application, create functional areas. A functional area is a virtual group of jobs that relate to the same business function, for example Human Resources or Customers. Functional areas can contain multiple Data Integrator jobs and one or more data validation business rules. See "Creating functional areas" on page 49. In the Data Validation application, create business rules. Business rules are typical categories of data, for example Social Security Number or Address. See "Creating business rules" on page 51. These business 3. 48 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Configuring Data Validation dashboards 5 rules contain validation rules that you created in your validation transforms in your data flows (see "Using the Validation transform" on page 358 of the Data Integrator Designer Guide ). Begin by opening the Management Console and clicking the Data Validation name or icon link on the Home page.

Creating functional areas After you create data flows with validation transforms and rules in Data Integrator Designer, next create functional areas as follows. Note: If you do not create any functional areas, the dashboard will display statistics for all jobs for the selected repository. To create functional areas In the Data Validation module, click the Settings link. The Repository tab displays. 2.

Verify the desired repository displays. To change the repository, select a different one from the drop-down list and click Apply. 3. 4. 5. Click the Functional area tab. The selected repository displays. Type a name for the new functional area (such as Customer) and optionally a description. Click Save. A list of batch jobs (and the associated system configuration for each, if any) appears that lets you select the jobs you want to include in this functional area. For more information on system configurations, see "Creating and managing multiple datastore configurations" on page 113 of the Data Integrator Designer Guide . You can change the sort order of the table by clicking the arrow in a column heading. 6. From the list of Available batch jobs, select the check box for each job to include in this functional area and click the arrow button to move it to the Associated batch jobs window. Note: 1.

· Jobs are not reusable among functional areas. Data Integrator Management Console: Metadata Reports Guide 49 5 Data Validation Dashboard Reports Configuring Data Validation dashboards · In the Administrator, deleting job information on the Batch Job Status page (Batch Jobs History) also clears data validation statistics from Data Validation Metadata Reports. 7. Click Apply to save the changes and keep the Functional area dialog box open, for example to add more functional areas. Clicking OK saves your changes and closes the Settings control panel. Clicking Cancel closes the Settings control panel without saving changes. To add another functional area, on the Functional area tab click Add and follow steps 4 through 7 in the previous procedure. To display a different functional area for editing, select it from the drop-down list. Delete a functional area by clicking Delete next to the functional area selected in the drop-down list.



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Next, create business rules to associate the validation rules in your data flows with your functional areas as described in the next section.

50 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Configuring Data Validation dashboards 5 Creating business rules After creating functional areas, associate business rules to each functional area as follows. Note: If you do not create business rules, each validation rule in the jobs that you have associated with a functional area becomes its own business rule. To create business rules In the Settings control panel, click the Business rule tab. On the Business rule tab, the default repository displays. (To change the repository, click the Repository tab, select a different repository, and click Apply.

) 2. 3. 4. 5. From the drop-down list, select the functional area to which this business rule will belong.

In the business rule definition area, type a name for the business rule such as Phone number. Select a priority for how significant this group will be to your business end users: High, Medium, or Low. Type an optional description for the business rule such as Phone and FAX. In this example, the validation rule checks to see if telephone and fax numbers in the USA conform to the seven-digit standard. Click Save. A list of validation rules appears. Select the validation rules you want to include in this business rule. See the table below for a description of the columns in the lists of validation rules (scroll horizontally to view the other columns). 7. From the list of Available validation rules, select the check box for all of the rules to include in this business rule and click the arrow button to move it to the Associated validation rules window.

Note: Validation rules are not reusable among business rules (you can use a validation rule only once and only in one business rule). 1. 6. Data Integrator Management Console: Metadata Reports Guide 51 5 Data Validation Dashboard Reports Configuring Data Validation dashboards 8. Click Apply to save the changes and keep the business rules dialog box open, for example to add more business rules. Clicking OK saves your changes and closes the Settings control panel. Clicking Cancel closes the Settings control panel without saving changes. 52 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Configuring Data Validation dashboards 5 The columns in the validation rule lists are as follows. Scroll horizontally to view the other columns. Note that you can change the sort order of the tables by clicking the arrow in a column heading.

Column Description Validation rule name The validation rule name in Data Integrator. The default is the column name unless you create a new name in the validation transform Properties dialog box. See "Using the Validation transform" on page 358 of the Data Integrator Designer Guide and "Validation" on page 370 of the Data Integrator Reference Guide. Description The description for the validation rule in Data Integrator. See "Using the Validation transform" on page 358 of the Data Integrator Designer Guide and "Validation" on page 370 of the Data Integrator Reference Guide.

Describes the hierarchy in Data Integrator from the job level to the data flow level to indicate where this validation rule has been defined. Full path System configuration The name of the system configuration selected for this job. For more information, see "Creating and managing multiple datastore configurations" on page 113 of the Data Integrator Designer Guide . To add another business rule, on the Business rule tab click Add and follow steps 3 through 8 in the previous procedure. To display a different functional area so you can edit its business rules, select it from the Functional area drop-down list. To display a different business rule for editing, select it from the Business rule drop-down list. Delete a business rule by clicking Delete next to the business rule selected in the drop-down list. Enabling data validation statistics collection To enable data validation statistics collection for your reports, you must verify two options--one at the validation transform level and one at the job execution level. Data Integrator Management Console: Metadata Reports Guide 53 5 Data Validation Dashboard Reports Viewing Data Validation dashboards Validation transform level In Designer, navigate to the validation transforms from which you want to collect data validation statistics for your reports. For the columns that have been enabled for validation, in the transform editor click the Validation transform options tab and select the check box Collect data validation statistics. Job execution level When you execute a job, the Execution Properties window displays. On the Parameters tab, clear the option Disable data validation statistics collection (the default) before executing the job. To run a job without collecting statistics, select the Disable data validation statistics collection option to suppress statistics collection for all the validation rules in that job. Viewing Data Validation dashboards To view Data Validation dashboards, on the Management Console Home page, click Data Validation. The functional area view displays (see the next section, Functional area view).

The upper-right corner identifies the repository for the reports you are viewing. You can change the repository to view in the Settings control panel (see "Repository tab" on page 61). Some dashboards let you to drill in to some of the components for more details. The navigation path at the top of the window indicates where you are in the Data Validation dashboard reports hierarchy. Click the hyperlinks to navigate to different levels. Functional area view The top-level Data Validation dashboard view is the functional area view. This view includes two dashboards: · · Functional area pie chart--A current (snapshot) report. History line chart--A historical (trend) report that displays trends over the last 7 days. To display this chart, click the link below the pie chart. To change the functional area dashboards to view, select a different functional area from the drop-down list at the top of the window.

Select All to view data for all batch jobs in that repository. 54 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Functional area view 5 If there are no functional areas defined, the chart displays statistics for all jobs for the selected repository. Functional area pie chart The pie chart displays status information for jobs that ran in the time period displayed. The Data collection period begins at the time set on the Repository tab in the Settings control panel (see "Repository tab" on page 61) and ends with the time you open the report Web page. The color codes on this chart apply to the volume of validation rules that passed or failed: · · Green--The percentage of rules that passed for the selected functional area.



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Red--The percentage of rules that failed for the selected functional area with a High priority label. Note: If you have All selected for Functional area, the failed portion appears red and does not include priority information. Data Integrator Management Console: Metadata Reports Guide 55 5 Data Validation Dashboard Reports Business rule view · · Orange--The percentage of rules that failed for the selected functional area with a Medium priority label. Blue--The percentage of rules that failed for the selected functional area with a Low priority label. See "Creating business rules" on page 51 for how to set the priority labels.

Click on the failed pie "slices" to drill into the report: · · If there is at least one functional area and business rule defined, the Business rule view displays. See "Business rule view" on page 56. If no functional areas or business rules are defined, the Validation rule view displays. See "Validation rule view" on page 58. History line chart The History line chart displays the percentage of all validation rule failures that occurred on each of the last 7 days. Data Integrator collects the number of failures for the last run of all of the batch jobs that are associated with this functional area on each day. To display the History line chart, click the link below the pie chart. Business rule view The Business rule dashboard is a bar chart that depicts the percent of validation failures for each defined business rule. You access this chart by clicking on one of the failed "slices" of the functional area pie chart. Note: If no Functional areas or Business Rules have been defined, drilling down on the functional area pie chart displays the Validation rule view.

Therefore, the "business rules" are the same as the validation rules. The Data collection period begins at the time set on the Repository tab in the Settings control panel (see "Repository tab" on page 61) and ends with the time you open the report Web page. 56 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Business rule view 5 You can filter the view by selecting an option from the Priority drop-down list: · · · · All High priority Medium priority Low priority The chart displays 10 bars per page; click the Next or Previous links to view more. To view the business rules associated with another functional area, select it from the Functional area drop-down list. To see the validation rules that apply to a particular business rule, click on that bar in the chart. The Validation Rule View displays. See "Validation rule view" on page 58. Data Integrator Management Console: Metadata Reports Guide 57 5 Data Validation Dashboard Reports Validation rule view Validation rule view When viewing the Functional area pie chart (the Data Validation Home page) and you click on one of the failed pie "slices" to drill into the report, if no functional areas or business rules have been defined, the Validation rule view displays. Note: If no Functional areas or Business Rules have been defined, drilling down on the functional area pie chart displays the Validation rule view. Therefore, the "business rules" are the same as the validation rules.

The Validation Rule page includes two dashboards: · · Validation rule bar chart--A current (snapshot) report. History line chart--A historical (trend) report that displays trends over the last 7 days. To display this chart, click the link below the Validation rules bar chart. The chart displays 10 bars per page; click the Next or Previous links to view more. To view the validation rules for a different business rule, select it from the Business rule drop-down list. Validation rule bar chart The Validation rule bar chart displays the percentage of rows that failed for each validation rule. The Data collection period begins at the time set on the Repository tab in the Settings control panel (see "Repository tab" on page 61) and ends with the time you open the report Web page. 58 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Sample data view 5 You can click on a bar to display the Sample data view. (See "Sample data view" on page 59.) History line chart The History line chart displays the percentage of all validation rule failures that occurred on each of the last 7 days.

Data Integrator collects the number of failures for the last run of all of the batch jobs that are associated with this functional area. To display this chart, click the link below the Validation rules bar chart. Sample data view If you have enabled the option to collect sample data in a validation transform (see "Validation" on page 370 of the Data Integrator Reference Guide ), the Sample data page includes two images: · Sample data table Data Integrator Management Console: Metadata Reports Guide 59 5 Data Validation Dashboard Reports Data Validation dashboards Settings control panel · History line chart If you have not configured the validation transform to collect sample data, only the History line chart displays. To view sample data from another validation rule, select it from the drop-down list. Sample data table If you have configured the validation transform to collect sample data (see "Validation" on page 370 of the Data Integrator Reference Guide ), this page displays up to 50 rows of sample data in tabular form. The column that maps to the currently selected validation rule appears highlighted. History line chart The History line chart displays the percentage of all validation rule failures that occurred on each of the last 7 days. Data Integrator collects the number of failures for the last run of all of the batch jobs that are associated with this functional area. To display this chart, click the link below the sample data table. Data Validation dashboards Settings control panel The dashboard settings window allows you to change the options for your reports.

In the upper-right corner of the window, click Settings. The three settings tabs are: · · · · · Repository tab Functional area tab Business rule tab Click Apply to save the changes and keep the Business rules dialog box open, for example to add more business rules. Clicking OK saves your changes and closes the Settings control panel. Clicking Cancel closes the Settings control panel without saving changes. For all of the Settings pages: 60 Data Integrator Management Console: Metadata Reports Guide Data Validation Dashboard Reports Data Validation dashboards Settings control panel 5 Repository tab The settings on the Repository tab include: · · Repository--Select a repository to view from the drop-down list.



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