Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for BUSINESS OBJECTS DATA SERVICES XI 3.2. You'll find the answers to all your questions on the BUSINESS OBJECTS DATA SERVICES XI 3.2 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 SERVICES XI 3.2
User guide BUSINESS OBJECTS DATA SERVICES XI 3.2
Operating instructions BUSINESS OBJECTS DATA SERVICES XI 3.2
Instructions for use BUSINESS OBJECTS DATA SERVICES XI 3.2
Instruction manual BUSINESS OBJECTS DATA SERVICES XI 3.2

SAP BusinessObjects Data Services Reference Guide

SAP BusinessObjects Data Services XI 3.2 SP1 (12.2.1)

You're reading an excerpt. Click here to read official BUSINESS OBJECTS DATA SERVICES XI 3.2 user guide
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Manual abstract:

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The data quality processes of SAP BusinessObjects Data Services allow organizations to easily standardize, cleanse, and consolidate data anywhere, ensuring that end users are always working with information that's readily available, accurate, and trusted. Documentation set for SAP BusinessObjects Data Services

You should become familiar with all the pieces of documentation that relate to your SAP BusinessObjects Data Services product. Document Documentation Map What this document provides Information about available SAP BusinessObjects Data Services books, languages, and locations Highlights of new key features in this SAP BusinessObjects Data Services release. This document is not updated for service pack or fix pack releases. Important information you need before installing and deploying this version of SAP BusinessObjects Data Services Release Summary Release Notes 18 SAP BusinessObjects Data Services Reference Guide Introduction Welcome to SAP BusinessObjects Data Services 1 Document Getting Started Guide What this document provides An introduction to SAP BusinessObjects Data Services Information about and procedures for installing SAP BusinessObjects Data Services in a Windows environment Information about and procedures for installing SAP BusinessObjects Data Services in a UNIX environment Guidelines and options for migrating applications including information on multi-user functionality and the use of the central repository for version control Information about how to use SAP BusinessObjects Data Services Designer Information for third-party developers to access SAP BusinessObjects Data Services functionality using web services and APIs Information about how to use SAP BusinessObjects Data Services Administrator Information about how to use SAP BusinessObjects Data Services Metadata Reports Release-specific product behavior changes from earlier versions of SAP BusinessObjects Data Services to the latest release. This manual also contains information about how to migrate from SAP BusinessObjects Data Quality Management to SAP BusinessObjects Data Services Information about how to improve the performance of SAP BusinessObjects Data Services Detailed reference material for SAP BusinessObjects Data Services Designer Installation Guide for Windows Installation Guide for UNIX Advanced Development Guide Designer Guide Integrator's Guide Management Console: Administrator Guide Management Console: Metadata Reports Guide Migration Considerations Performance Optimization Guide Reference Guide SAP BusinessObjects Data Services Reference Guide 19 1 Introduction Welcome to SAP BusinessObjects Data Services Document What this document provides A compiled "master" PDF of core SAP BusinessObjects Data Services books containing a searchable master table of contents and index: · Getting Started Guide · Installation Guide for Windows · Installation Guide for UNIX · Designer Guide · Reference Guide · Management Console: Metadata Reports Guide · Management Console: Administrator Guide · Performance Optimization Guide · Advanced Development Guide · Supplement for J.D. Edwards · Supplement for Oracle Applications · Supplement for PeopleSoft · Supplement for Siebel · Supplement for SAP A step-by-step introduction to using SAP BusinessObjects Data Services Technical Manuals Tutorial In addition, you may need to refer to several Adapter Guides and Supplemental Guides. Document Salesforce.com Adapter Interface Supplement for J.

D. Edwards What this document provides Information about how to install, configure, and use the SAP BusinessObjects Data Services Salesforce.com Adapter Interface Information about interfaces between SAP BusinessObjects Data Services and J.D. Edwards World and J.D. Edwards OneWorld Supplement for Oracle Ap- Information about the interface between SAP BusinessObjects Data Services and Oracle Applications plications Supplement for PeopleSoft Information about interfaces between SAP BusinessObjects Data Services and PeopleSoft 20 SAP BusinessObjects Data Services Reference Guide Introduction Welcome to SAP BusinessObjects Data Services 1 Document Supplement for SAP What this document provides Information about interfaces between SAP BusinessObjects Data Services, SAP Applications, and SAP NetWeaver BW Information about the interface between SAP BusinessObjects Data Services and Siebel Supplement for Siebel Accessing documentation You can access the complete documentation set for SAP BusinessObjects Data Services in several places. Accessing documentation on Windows After you install SAP BusinessObjects Data Services, you can access the documentation from the Start menu. 1. Choose Start > Programs > SAP BusinessObjects XI 3.

2 > SAP BusinessObjects Data Services > Data Services Documentation. Note: Only a subset of the documentation is available from the Start menu.

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2. Click SAP BusinessObjects at the top of the page. 3. Click All Products in the navigation pane on the left. You can view the PDFs online or save them to your computer.

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sdn.sap.com/irj/boc/blueprints Product documentation http://help.sap.com/businessobjects/ SAP BusinessObjects Data Services Reference Guide 23 1 Introduction Overview of this guide Address Supported Platforms (formerly the Products Availability Report or PAR) Content Get information about supported platforms for SAP BusinessObjects Data Services.

In the left panel of the window, navigate to Documentation > Supported Platforms/PARs > SAP BusinessObjects Data Services > SAP BusinessObjects Data Services XI 3.x. Click the appropriate link in the main window. https://service.sap.

com/bosap-support Overview of this guide About this guide The Data Services Reference Guide provides a detailed information about the objects, data types, transforms, and functions in the Designer. For source-specific information, such as information pertaining to a particular back-office application, refer to the supplement for that application. Who should read this guide This and other SAP BusinessObjects Data Services software documentation assume the following: · You are a software developer, consultant, or database administrator working on data extraction, data warehousing, data integration, or data quality. You understand your source and target data systems, DBMS, legacy systems, business intelligence, and messaging concepts. You understand your organization's data needs. You are familiar with SQL (Structured Query Language). If you are interested in using this software to design real-time processing, you are familiar with: · · · · 24 SAP BusinessObjects Data Services Reference Guide Introduction Overview of this guide 1 · · · DTD and XML Schema formats for XML files Publishing Web Services (WSDL, HTTP/S and SOAP protocols, and so on.) You are familiar with the installation environments: Microsoft Windows or UNIX. SAP BusinessObjects Data Services Reference Guide 25 1 Introduction Overview of this guide 26 SAP BusinessObjects Data Services Reference Guide Objects 2 2 Objects Characteristics of objects This section provides a reference of detailed information about the objects, data types, transforms, and functions in the Designer. Note: For information about source-specific objects, consult the reference chapter in the supplement document for that source.

Related Topics · Characteristics of objects · Descriptions of objects Characteristics of objects This section discusses common characteristics of all the objects. Related Topics · Object classes · Object options, properties, and attributes Object classes An object's class determines how you create and retrieve the object. There are two classes of objects: · · Reusable objects Single-use objects Related Topics · Reusable objects · Single-use objects Reusable objects After you define and save a reusable object, SAP BusinessObjects Data Services stores the definition in the repository. You can then reuse the definition as often as necessary by creating calls to the definition. 28 SAP BusinessObjects Data Services Reference Guide Objects Characteristics of objects 2 Most objects created in the software are available for reuse. You access reusable objects through the object library. A reusable object has a single definition; all calls to the object refer to that definition. If you change the definition of the object in one place, and then save the object, the change is reflected to all other calls to the object. A data flow, for example, is a reusable object. Multiple jobs, such as a weekly load job and a daily load job, can call the same data flow.

If the data flow is changed, both jobs call the new version of the data flow. When you drag and drop an object from the object library, you are creating a new reference (or call) to the existing object definition. You can edit reusable objects at any time independent of the current open project.

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For example, if you open a new project, you can go to the object library, open a data flow, and edit it. The object will remain "dirty" (that is, your edited changes will not be saved) until you explicitly save it.

Functions are reusable objects that are not available in the object library. The software provides access to these objects through the function wizard wherever they can be used. Some objects in the object library are not reusable in all instances: · · Datastores are in the object library because they are a method for categorizing and accessing external metadata. Built-in transforms are "reusable" in that every time you drop a transform, a new instance of the transform is created. "Saving" a reusable object means storing the language that describes the object to the repository.

The description of a reusable object includes these components: · · · · Properties of the object Options for the object Calls this object makes to other objects Definition of single-use objects called by this object If an object contains a call to another reusable object, only the call to the second object is saved, not changes to that object's definition. The description is stored even if the object does not validate. SAP BusinessObjects Data Services Reference Guide 29 2 Objects Characteristics of objects Objects are saved without prompting you: · · When you import an object into the repository. When you finish editing: · · · Datastores Flat file formats XML Schema or DTD formats You can explicitly save the reusable object currently open in the workspace by choosing Save from the Project menu. If a single-use object is open in the workspace, the Save command is not available. To save all objects in the repository that have changes, choose Save All from the Project menu. You are prompted to save all objects that have changes when you execute a job and when you exit the Designer. Single-use objects Single-use objects appear only as components of other objects. They operate only in the context in which they were created. "Saving" a single-use object means storing the language that describes the object to the repository.

The description of a single-use object can only be saved as part of the reusable object that calls the single-use object. The description is stored even if the object does not validate. Object options, properties, and attributes Each object is associated with a set of options, properties, and attributes: · · Options control the operation of an object. For example, in a datastore, an option is the name of the database to which the datastore connects. Properties document an object. For example, properties include the name, description of an object, and the date on which it was created. 30 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Properties merely describe an object; they do not affect an object's operation. To view properties, right-click an object and select Properties. · Attributes provide additional information about an object. Attribute values may also affect an object's behavior. To view attributes, double-click an object from an editor and click the Attributes tab. Descriptions of objects This section describes each object and tells you how to access that object. The following table lists the names and descriptions of the objects. Object Class Description Annotation Single-use Describes a flow, part of a flow, or a diagram in the workspace. Specifies the steps to execute if anerror occurs in a given exception group while a job is running. Defines the format for a COBOL copybook file source. Specifies the steps to execute based on the result of a condition. Catch Single-use COBOL copybook Reusable file format Conditional Single-use SAP BusinessObjects Data Services Reference Guide 31 2 Objects Descriptions of objects Object Class Description Defines activities that the software executes at a given time including error, monitor and trace messages. Batch Job Reusable Jobs can be dropped only in the project tree. The object created is a direct reference to the object in the object library.

Only one reference to a job can exist in the project tree at one time. Specifies the requirements for extracting, transforming, and loading data from sources to targets. Specifies the connection information needed to access a database or other data source. Cannot be dropped. Available in certain adapter datastores, documents are data structures that can support complicated nested schemas. A description of an XML file or message. Indicates the format an XML document reads or writes. Data flow Reusable Datastore Single-use Document Reusable DTD Reusable Excel workbook format Reusable Defines the format for an Excel workbook source. File format Reusable Indicates how flat file data is arranged in a source or target file. Returns a value.

Function Reusable 32 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Object Class Description Log Single-use Records information about a particular execution of a single job. Available in certain adapter datastores, message functions can accommodate XML messages when properly configured. Available in certain adapter datastores, outbound messages are XML-based, hierarchical communications that real-time jobs can publish to adapters. Groups jobs for convenient access. Retrieves a data set that satisfies conditions that you specify. Defines activities that the software executes on-demand. Message function Reusable Outbound message Reusable Project Single-use Query transform Single-use Real-time job Reusable Real-time jobs are created in the Designer, then configured and run as services associated with an Access Server in the Administrator. Real-time jobs are designed according to data flow model rules and run as a request-response system. Evaluates expressions, calls functions, and assigns values to variables. An object from which the software reads data in a data flow.

Script Single-use Source Single-use SAP BusinessObjects Data Services Reference Guide 33 2 Objects Descriptions of objects Object Class Description Indicates an external DBMS table for which metadata has been imported, or the target table into which data is or has been placed. Table Reusable A table is associated with its datastore; it does not exist independently of a datastore connection. A table retrieves or stores data based on the schema of the table definition from which it was created. An object in which the software loads extracted and transformed data in a data flow. A new table you want added to a database.

All datastores except SAP datastores have a default template that you can use to create any number of tables in the datastore.

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The software creates the schema for each instance of a template table at runtime. The created schema is based on the data loaded into the template table. Performs operations on data sets. Transform Reusable Requires zero or more data sets; produces zero or one data set (which may be split). Introduces a try/catch block. Repeats a sequence of steps as long as a condition is true. Orders data flows and operations supporting data flows. Target Single-use Template table Reusable Try Single-use While loop Single-use Work flow Reusable 34 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Object Class Description XML file Single-use A batch or real-time source or target. As a source, an XML file translates incoming XML-formatted data into data that the software can process. As a target, an XML file translates the data produced by a data flow, including nested data, into an XML-formatted file. A real-time source or target. As sources, XML messages translate incoming XML-formatted requests into data that a real-time job can process. As targets, XML messages translate the result of the real-time job, including hierarchical data, into an XML-formatted response and sends the messages to the Access Server. A description of an XML file or message.

Indicates the format an XML document reads or writes. A target that creates an XML file that matches a particular input schema. No DTD or XML Schema is required. XML message Single-use XML Schema Reusable XML template Single-use Annotation Class Single-use SAP BusinessObjects Data Services Reference Guide 35 2 Objects Descriptions of objects Access Click the annotation icon in the tool palette, then click in the workspace. Description Annotations describe a flow, part of a flow, or a diagram in a workspace. An annotation is associated with the job., work flow, or data flow where it appears. When you import or export that job, work flow, or data flow, you import or export associated annotations. Note: An annotation has no options or properties. Related Topics · Designer Guide: Creating annotations Batch Job Class Reusable Access · · In the object library, click the Jobs tab. In the project area, select a project and right-click Batch Job. Description A batch job is a set of objects that you can schedule and execute together. To execute the steps of any object, the object must be part of a job. A batch job can contain the following objects: · Data flows · Sources 36 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 · · · · · · · Transforms Targets Work flows Scripts Conditionals Try/catch blocks While Loops You can run batch jobs such that you can automatically recover from jobs that do not execute successfully. During automatic recovery, SAP BusinessObjects Data Services retrieves the results from steps that were successfully completed in the previous run and executes all other steps. Specifically, the software retrieves results from the following types of steps: · · · · · · · · · · Work flows Data flows Script statements Custom functions (stateless type only) SQL function EXEC function get_env function rand function sysdate function systime function Batch jobs have the following built-in attributes: Attribute Description Name The name of the object. This name appears on the object in the object library and in the calls to the object. SAP BusinessObjects Data Services Reference Guide 37 2 Objects Descriptions of objects Attribute Description Description Date created Your description of the job. The date when the object was created. Batch and real-time jobs have properties that determine the information collected and logged when running the job. You can set the default properties that apply each time you run the job or you can set execution (run-time) properties that apply for a particular run. Execution properties override default properties. To set default properties, select the job in the project area or the object library, right-click, and choose Properties to open the Properties window. Execution properties are set as you run a job. To set execution properties, right-click the job in the project area and choose Execute. The Designer validates the job and opens the Execution Properties window. You can set several types of execution properties: · · · · Execution options Trace properties Global variables Substitution parameters Related Topics · Designer Guide: Setting global variable values Execution Options Use execution options to help capture and diagnose errors using log, auditing, statistics collection, or recovery options. Log information goes to one of three files (in the $LINK_DIR\log\ Job Server name\repository name directory): 38 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 · · · Monitor log file Trace log file Error log file When you execute a job, you can also select a system configuration and a Job Server or server group from the Execution Options tab of the Execution Properties window. Select the Execution Options tab to set the following options. Options Description Select this check box if you want to display cache statistics in the Performance Monitor in the Administrator.

(The default is cleared.) Collect statistics for monitoring Note: Use this option only if you want to look at the cache size. For more information, see Monitoring and tuning caches in the Performance Optimization Guide. For more information, see the Using Caches chapter in the Performance Optimization Guide. Select this check box if you want to collect statistics that the Data Services optimizer will use to choose an optimal cache type (inmemory or pageable). This option is not selected by default. Collect statistics for optimization For more information, see Caching sources in the Performance Optimization Guide. For more information, see the Using Caches chapter in the Performance Optimization Guide. SAP BusinessObjects Data Services Reference Guide 39 2 Objects Descriptions of objects Options Description Select this check box if you do not want to collect data validation statistics for any validation transforms in this job. (The default is cleared.

) Disable data vali- For more information about data validation statistics, see Data Validation dashboards Settings control panel" in the Management Console: dation statistics collection Metadata Reports Guide. For more information about data validation statistics, see the Data Validation Dashboard Reports chapter in the Management Console: Metadata Reports Guide. Select the level within a job that you want to distribute to multiple job servers for processing: · Job - The whole job will execute on an available Job Server.

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· · Data flow - Each data flow within the job can execute on an available Job Server. Sub data flow - Each sub data flow (can be a separate transform or function) within a data flow can execute on an available Job Server.

For more information, see Using grid computing to distribute data flows execution in the Performance Optimization Guide. For more information, see the Distributing Data Flow Execution chapter in the Performance Optimization Guide. Distribution level Clear this check box if you do not want to collect audit statistics for this specific job execution. (The default is selected.) Enable auditing For more information about auditing, see Using Auditing in the Designer Guide.

For more information about auditing, see the Data Assessment chapter in the Designer Guide. 40 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Options Description (Batch jobs only) Select this check box to enable the automatic recovery feature. When enabled, the software saves the results from completed steps and allows you to resume failed jobs. You cannot enable the automatic recovery feature when executing a job in data scan mode. Enable recovery See Automatically recovering jobs in the Designer Guide for information about the recovery options. See the Recovery Mechanisms chapter in the Designer Guide for information about the recovery options. This property is only available as a run-time property. It is not available as a default property. Generates and exports all specified job reports to the location specified Export Data Qual- in the Report Server Configuration node in the Management Console Administrator. By default, the reports are exported to ity reports $LINK_DIR\DataQuality\reports\repository\job.

Select the Job Server or server group to execute this job. A Job Server is defined by a host name and port while a server group is defined by its name. The list contains Job Servers and server groups linked to the job's repository. For an introduction to server groups, see Server group architecture in the Management Console: Administrator Guide. Job Server or Server group For an introduction to server groups, see the Using Server Groups chapter in the Management Console: Administrator Guide. When selecting a Job Server or server group, remember that many objects in the Designer have options set relative to the Job Server's location. For example: · Directory and file names for source and target files · Bulk load directories SAP BusinessObjects Data Services Reference Guide 41 2 Objects Descriptions of objects Options Description Enter the number of rows processed before the software writes information to the monitor log file and updates job events. The software writes information about the status of each source, target, or transform. For example, if you enter 1000, the logs update after processing 1,000 rows. Monitor sample rate (# of rows) The default is 1000.

When setting the value, you must evaluate performance improvements gained by making fewer calls to the operating system against your ability to find errors quickly. With a higher monitor sample rate, more data collects before calling the operating system to open the file: performance improves. However, with a higher monitor rate, more time passes before you are able to see any errors. Note: If you use a virus scanner on your files, exclude the log from the virus scan. Otherwise, the virus scan analyzes the log repeated during the job execution, which causes a performance degradation.

Print all trace messages Select this check box to print all trace messages to the trace log file for the current Job Server. Selecting this option overrides the trace properties set on the Trace tab. (Batch Job only) Select this check box to resume a failed job. The software retrieves the results from any steps that were previously exRecover from last ecuted successfully and re-executes any other steps. failed execution This option is a run-time property.

This option is not available when a job has not yet been executed or when recovery mode was disabled during the previous run. 42 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Options Description Select the system configuration to use when executing this job. A system configuration defines a set of datastore configurations, which define the datastore connections. For more information, see Creating and managing multiple datastore configurations in the Designer Guide. System configuraFor more information, see the Datastores chapter in the Designer tion Guide. If a system configuration is not specified, the software uses the default datastore configuration for each datastore. This option is a run-time property. This option is only available if there are system configurations defined in the repository. Select this check box if you want the optimizer to use the cache statistics collected on a previous execution of the job. (The default is selected.

) Use collected statistics For more information, see Monitoring and tuning caches in the Performance Optimization Guide. For more information, see Chapter 6: Using Caches in the Performance Optimization Guide. Trace properties Use trace properties to select the information that SAP BusinessObjects Data Services monitors and writes to the trace log file during a job. The software writes trace messages to the trace log associated with the current Job Server and writes error messages to the error log associated with the current Job Server. SAP BusinessObjects Data Services Reference Guide 43 2 Objects Descriptions of objects To set trace properties, click the Trace tab. To turn a trace on, select the trace, click Yes in the Value list, and click OK. To turn a trace off, select the trace, click No in the Value list, and click OK. You can turn several traces on and off. Trace Description Access Server Communication Writes messages exchanged between the Access Server and a service provider, including: · The registration message, which tells the Access Server that the service provider is ready · · · The request the Access Server sends to the service to execute The response from the service to the Access Server Any request from the Access Server to shut down Writes messages for Substitution Parameter and SDK Transforms: · Substitution parameters - Writes trace messages such as substitution configuration used and the actual value substituted for each substitution parameter. SDK transforms - Writes transform-specific information specified in the form of XML.

This information can be hierarchical. At runtime this XML information is extracted or assembled. The trace messages write the assembled XML. Assemblers · Audit Data Writes a message when auditing: · Collects a statistic at an audit point · Determines if an audit rule passes or fails Writes a message when the data flow starts, when the data flow successfully finishes, or when the data flow terminates due to error.

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Data Flow This trace also reports when the bulk loader starts, any bulk loader warnings occur, and when the bulk loader successfully completes.
44 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Trace Description Writes a message when reading IDoc files including: IDoc file reader · · · start reading the IDoc file stop reading the IDoc file result of the IDoc file validation Memory Source Memory Target Writes a message for every row retrieved from the memory table. Writes a message for every row inserted into the memory table. Optimized Dataflow For consulting and customer assurance use. Writes a message related to RFC calls including: RFC Function · · · start of RFC call end of RFC call a message for each record received from the software for the RFC call Row Writes a message when a transform imports or exports a row. Writes messages from readers of SAP system tables including: · SAP Table Reader · · · start reading from table stop reading from table start of connection to SAP system where table is present end of connection to SAP system SAP BusinessObjects Data Services Reference Guide 45 2 Objects Descriptions of objects Trace Description Scripts and Script Functions Writes a message when the software runs a script or invokes a script function.
Specifically, this trace links a message when: · The script is called. Scripts can be started any level from the job level down to the data flow level. Additional (and separate) notation is made when a script is called from within another script. · · A function is called by the script. The script successfully completes. Session Writes a message when the job description is read from the repository, when the job is optimized, and when the job runs. Writes data retrieved before SQL functions: · Every row retrieved by the named query before the SQL is submitted in the key_generation function SQL Functions · Every row retrieved by the named query before the SQL is submitted in the lookup function (but only if PRE_LOAD_CACHE is not specified). When mail is sent using the mail_to function. · 46 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Trace Description Writes a message when the bulk loader: · Starts · · · Submits a warning message Completes successfully Completes unsuccessfully, if the Clean up bulk loader directory after load option is selected Additionally, for Microsoft SQL Server and Sybase ASE, writes when the SQL Server bulk loader: · · Completes a successful row submission Encounters an error This instance reports all SQL that the software submits to the target database, including: SQL Loaders · · · · · When a truncate table command executes if the Delete data from table before loading option is selected. Any parameters included in PRE-LOAD SQL commands Before a batch of SQL statements is submitted When a template table is created (and also dropped, if the Drop/Create option is turned on) When a delete from table command executes if auto correct is turned on (Informix environment only).

This trace also writes all rows that the software loads into the target. SQL Only Use in conjunction with Trace the SQL Transforms option, the Trace SQL Readers option, or the Trace SQL Loaders option to stop the writing of trace messages for data sent and received from the database. SAP BusinessObjects Data Services Reference Guide 47 2 Objects Descriptions of objects Trace Description SQL Readers Writes the SQL query block that a script, query transform, or SQL function submits to the system. Also writes the SQL results. Writes a message (using the Table_Comparison transform) about whether a row exists in the target table that corresponds to an input row from the source table. SQL Transforms The trace message occurs before submitting the query against the target and for every row retrieved when the named query is submitted (but only if caching is not turned on). Writes a message when the software invokes a stored procedure. This trace reports: · When the stored procedure starts · The SQL query submitted for the stored procedure call The value (or values) of the input parameter (or parameters) The value (or values) of the output parameter (or parameters) The return value (if the stored procedure is a stored function) When the stored procedure finishes Stored Procedure · · · · Tables Writes a message when a table is created or dropped. The message indicates the datastore to which the created table belongs and the SQL statement used to create the table. Writes a message when an ABAP dataflow starts or stops, and to report the ABAP job status.
Trace ABAP Trace Parallel Exe- Writes messages describing how data in a data flow is parallel procution cessed. 48 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Trace Description Transform Writes a message when a transform starts, completes, or terminates. Writes a message when the work flow description is read from the repository, when the work flow is optimized, when the work flow runs, and when the work flow ends. Work Flow Catch Class Single-use Access With a work flow in the workspace, click the catch icon in the tool palette. Description A catch object is part of a serial sequence called a try/catch block.
The try/catch block allows you to specify alternative work flows if one or more errors occur while executing a job. Try/catch blocks "catch" exception groups of errors, apply solutions that you provide, and continue execution. For each catch object in the try/catch block, specify the following: · One or more groups of exceptions that the catch object handles. If you want to assign different actions to different exception groups, add a catch for each set of actions. · The actions to execute if an exception in the indicated exception groups occurs.
SAP BusinessObjects Data Services Reference Guide 49 2 Objects Descriptions of objects It is recommended that you define, test, and save the actions as a separate object rather than constructing them inside the catch editor. The actions can be a single script object, a data flow, a workflow, or a combination of these objects. · Optional error functions inside the catch block to identify details of the error. If an exception is thrown during the execution of a try/catch block, and if no catch object is looking for that exception group, then the exception is handled by normal error logic. For batch jobs only, do not reference output variables from a try/catch block in any subsequent steps if you are using the automatic recovery feature.

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Referencing such variables could alter the results during automatic recovery. Also, try/catch blocks can be used within any real-time job component. However, try/catch blocks cannot straddle a real-time processing loop and the initialization or cleanup component of a real-time job. Catch objects have the following attribute: Attribute Description Name The name of the object. This name appears on the object in the diagram.

The following table describes exception groups that you can catch in a try/catch block: Exception group Catch All Exceptions Execution errors Database access errors Group number All 1001 1002 Description All errors Errors in the job server Errors from the database server while reading data, writing data, or bulk loading to tables 50 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Exception group Database connection errors Flat file processing errors File access errors Repository access errors SAP Execution errors System resource exception SAP BW execution errors XML processing errors COBOL copybook errors Excel book errors Group number 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 Description Errors connecting to database servers Errors processing flat files Errors accessing local and FTP files Errors accessing the repository Errors from the SAP system Errors accessing operating system resources Errors from the SAP BW system Errors processing XML files and messages Errors processing COBOL copybook files Errors processing Excel books Errors processing Data Quality transforms Data Quality transform errors 1013 Catch error functions The following table describes error functions that you can use in the script that your catch work flow executes. Note: You can only invoke these error functions inside a catch script, a user function, or in an audit script for a data flow. If you call these error functions in any other place, a validation error occurs. Catch error func- Return data type Description tion and size error_timestamp() timestamp Returns the timestamp of the caught exception. SAP BusinessObjects Data Services Reference Guide 51 2 Objects Descriptions of objects Catch error func- Return data type Description tion and size Returns the context of the caught exception. For example, "\Session datapreview_job\Dataflow debug_DataFlow\Transform Debug" Returns the error message of the caught exception. Returns the error number of the caught exception. error_context() varchar 512 error_message() varchar 512 error_number() int Related Topics · Designer Guide: Work flows, Example: Catching details of an error Catch scripts A script is the most common action that a catch executes for a thrown exception. The catch script can contain the following: · Catch error functions and other function calls · Nested try/catch blocks · if statements to perform different actions for different exceptions The syntax for a try/catch block within a script is as follows: try begin steps end catch(integer_constants) begin steps end Where: 52 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 steps Catch error functions, other function calls, if statements, or other statements you want to perform for an error in the specified exception group number. One or more exception group numbers that you want to catch. Use a comma to separate exception group numbers. For example, integer_constants catch(1002,1003) Specify ALL to catch all exceptions: catch(ALL) Related Topics · Designer Guide: Work flows, Example: Catching details of an error COBOL copybook file format Class Reusable Access In the object library, click the Formats tab. SAP BusinessObjects Data Services Reference Guide 53 2 Objects Descriptions of objects Description A COBOL copybook file format describes the structure defined in a COBOL copybook file (usually denoted with a .cpy extension). You store templates for file formats in the object library.

You use the templates to define the file format of a particular source in a data flow. The following tables describe the Import, Edit, and Source COBOL copybook options. Import or Edit COBOL copybook format options The "Import COBOL Copybook" and "Edit COBOL Copybook" format windows include options on the following tabs: · · · Format Data File Data Access The "Edit COBOL Copybook" format window includes options on the following tabs: · · Field ID Record Length Field Format tab The Format tab defines the parameters of the COBOL copybook format. Format tab options are not editable in the "Edit COBOL Copybook" window. Format option File name Description Type or browse to the COBOL copybook file name (usually has a .cpy extension). This file contains the schema definition. For added flexibility, you can enter a variable for this option. 54 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Format option Expand OCCURS Description Specifies the way to handle OCCURS groups. These groups can be imported with each field in an OCCURS group in one of the following ways: · Getting a sequential suffix for each repetition: fieldname_1, fieldname_2, etc. (expanded view) · Appearing only once in the copybook's schema (collapsed view). For a collapsed view, the output schema matches the OCCURS group definition, and for each input record there will be several output records. If a copybook contains more than one OCCURS group, you must select this box. The default is selected. Ignore redefines Source format Determines whether or not to ignore REDEFINES clauses.

The format of the copybook source code. Options include: · Free--All characters on the line can contain COBOL source code. · Smart mode--the softwareattempts to determine whether the source code is in Standard or Free format; if this does not produce the desired result, choose the appropriate source format (Standard or Free) manually for reimporting. · Standard--The traditional (IBM mainframe) COBOL source format, where each line of code is divided into the following five areas: sequence number (1-6), indicator area (7), area A (8-11), area B (1272) and comments (73-80). Source codes [start] Defines the start column of the copybook source file to use during the import. Typical value is 7 for IBM mainframe copybooks (standard source format) and 0 for free format. Source codes [end] Defines the end column of the copybook source file to use during the import. Typical value is 72 for IBM mainframe copybooks (standard source format) and 9999 for free format. Generate record number field If selected, creates a new field at the beginning of the schema that the software populates at run time with the record number. SAP BusinessObjects Data Services Reference Guide 55 2 Objects Descriptions of objects Data File tab The Data File tab defines the parameters of the data file.

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Data file option Directory Description Specifies the directory that contains the COBOL copybook data file to import. For added flexibility, you can enter a variable for this option. If you include a directory path here, then enter only the file name in the Name field. During design, you can specify a file in one of the following ways: · For a file located on the computer where the Designer runs, you can use the Browse button. · For a file located on the computer where the Job Server runs, you must type the path to the file.

You can type an absolute path or a relative path, but the Job Server must be able to access it. Type the name or browse to the COBOL copybook data file. You can use variables or wild cards (or ?). File name If you leave Directory blank, then type the full path and file name here. Type Specifies the record format--fixed or variable: · Fixed(F) · Variable(V) Specifies whether variable-length records of the data file contain information about the length of each record.*

The possible values are: · 2-byte integer · 2-byte followed by 0x0000 (integer followed by two zero bytes) · 4-byte integer · None--No length information at the beginning of each record Defines fixed record length in bytes. All records in the file have this length (padded, if necessary). Specifies the length of extra character padding in bytes at the end of each record. Has record length Record size Record trailer length 56 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Data file option Has record mark Description Defines whether there is an extra byte in the beginning of each record's data. Describes how the existing data file stores binary data: · Big endian--the most significant byte comes first · Little endian--the least significant byte comes first Specifies the character encoding of character data in the data file. Defines the number of data records to skip before starting to process the file. For added flexibility, you can enter a variable for this option. Defines the number of records to read and process. For added flexibility, you can enter a variable for this option. Integer format Code page Skip first Read total Low Value and High Identifies a valid hexadecimal value for a low value, high value, or both Value from the copybook and applies the associated Action.

You can also use a variable to define a different value at run time. The Low Value default is 0x40 and the High Value default is 0xFF. For example, if the source field is binary 0x40, enter a Low Value of 0x40 and select the action Convert to NULL. The result would be as follows for these data types: · Char--Character represented by 0x40 · Packed decimal--NULL · Binary--0x40 Action For a Low or High Value, applies one of the following actions: · No conversion--Reads the value as an ASCII character (default). · Convert to NULL--Converts the given value to NULL. · Convert to 0--Converts the given value to 0. Data Access tab The Data Access tab specifies how access the data file. If both check boxes are cleared, the software assumes the data file is on the same computer as the Job Server. SAP BusinessObjects Data Services Reference Guide 57 2 Objects Descriptions of objects Data access option FTP Host Description Select to use FTP to access the data file. Type the computer (host) name, fully qualified domain name, or IP address of the computer where the data file resides.

Type the FTP user name. Type the FTP user password. Type or browse to the directory that contains the COBOL copybook data file to import. If you include a directory path here, then enter only the file name in the Name field. Type or browse to the COBOL copybook data file Name.

You can use variables or wild cards (or ?). User Password Directory File name If you leave Directory blank, then type a full path and file name here. Custom Executable User Password Arguments Select to use a custom executable to access the data file. Type the name of the program to read data file. Type the user name.*

Type the password. Include any custom program arguments. Field ID tab If the imported copybook contains multiple schemas, the Field ID tab is visible on the "Edit COBOL Copybook" window. These options allow you to create rules for identifying which records represent which schemas. 58 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Field ID option Use field <FIELD NAME> as ID Edit Delete Insert above Description Select to set a value for the field selected in the top pane. Clear to not set a value for that field. Changes the selected value in the Values pane to editable text. Deletes the selected value in the Values pane. Inserts a new value in the Values pane above the selected value. Inserts a new value in the Values pane below the selected value.

Insert below Record Length Field tab After you import a copybook, the Record Length Field tab is visible on the "Edit COBOL Copybook" window. It lets you identify the field that contains the length of the schema's record. Record Length Description Field column Schema Record length field Offset The data schemas in the copybook. Click to enable a drop-down menu where you select a field (one per schema) that contains the record's length. The value that results in the total record length when added to the value in the Record length field. The default value for offset is 4; however, you can change it to any other numeric value. SAP BusinessObjects Data Services Reference Guide 59 2 Objects Descriptions of objects COBOL copybook source options The source editor includes the following COBOL copybook options on the following tabs: · · · · Source Field clauses Data File Data Access Source tab Source option Description Makes the source table an embedded data flow port. Make port For more information, see Creating embedded data flows in the Designer Guide. For more information, see the Embedded Data Flows chapter in the Designer Guide. Performance Indicates the rank of the source relative to other tables and files in the data flow when creating a join.

The sources with higher join ranks are joined before joining sources with lower join ranks. Join rank For more information, see Join ordering in the Performance Optimization Guide. and the Other Tuning Techniques chapter in the Performance Optimization Guide . Note: Must be a non-negative integer. When set to its default value (zero), SAP BusinessObjects Data Services determines join order.

60 SAP BusinessObjects Data Services Reference Guide Objects Descriptions of objects 2 Source option Description Cache Indicates whether the software should read the required data from the source and load it into memory or pageable cache.

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