Ocean Data Systems Ltd.

The Art of Industrial Intelligence

Dream Report®

Version 4.0

GETTING STARTED

Industrial Reporting and Analysis

http://www.dreamreport.net

Preface

Welcome to Dream Report

This document will assist you in creating a project in Dream Report in a simple and easy way, and will introduce you briefly to the Dream Report tools and the most important Dream Report functionalities.

About this document

This document contains 4 chapters, which you can use in the order which suits you:

Chapter 1 ***"Creating a Project in Dream Report"*** takes you step by step through the process of creating a project in the Dream Report Studio, giving you the main and important tips on how to define the project and its reports settings, data logging and report generation conditions; to configure connection to the datasources for data logging; to design the project/ reports layout. You can use this chapter as a handy reference as you create your own project in Dream Report.

Chapter 2 ***"Dream Report Runtime"*** gives an overview of the Dream Report runtime functionality, which executes project(s) running and report(s) generation.

Chapter 3 ***"Dream Report Web Portal"*** briefly describes the main functionalities and the characteristic features of the Dream Report proprietary web portal.

*****Chapter 4 ***"Dream Report Advanced Tools"*** describes special Dream Report modules, which you can use according to your needs for advanced product performance. This chapter is aimed at those users, who want to explore more of the wide range of functional possibilities, which Dream Report may offer.

About Dream Report

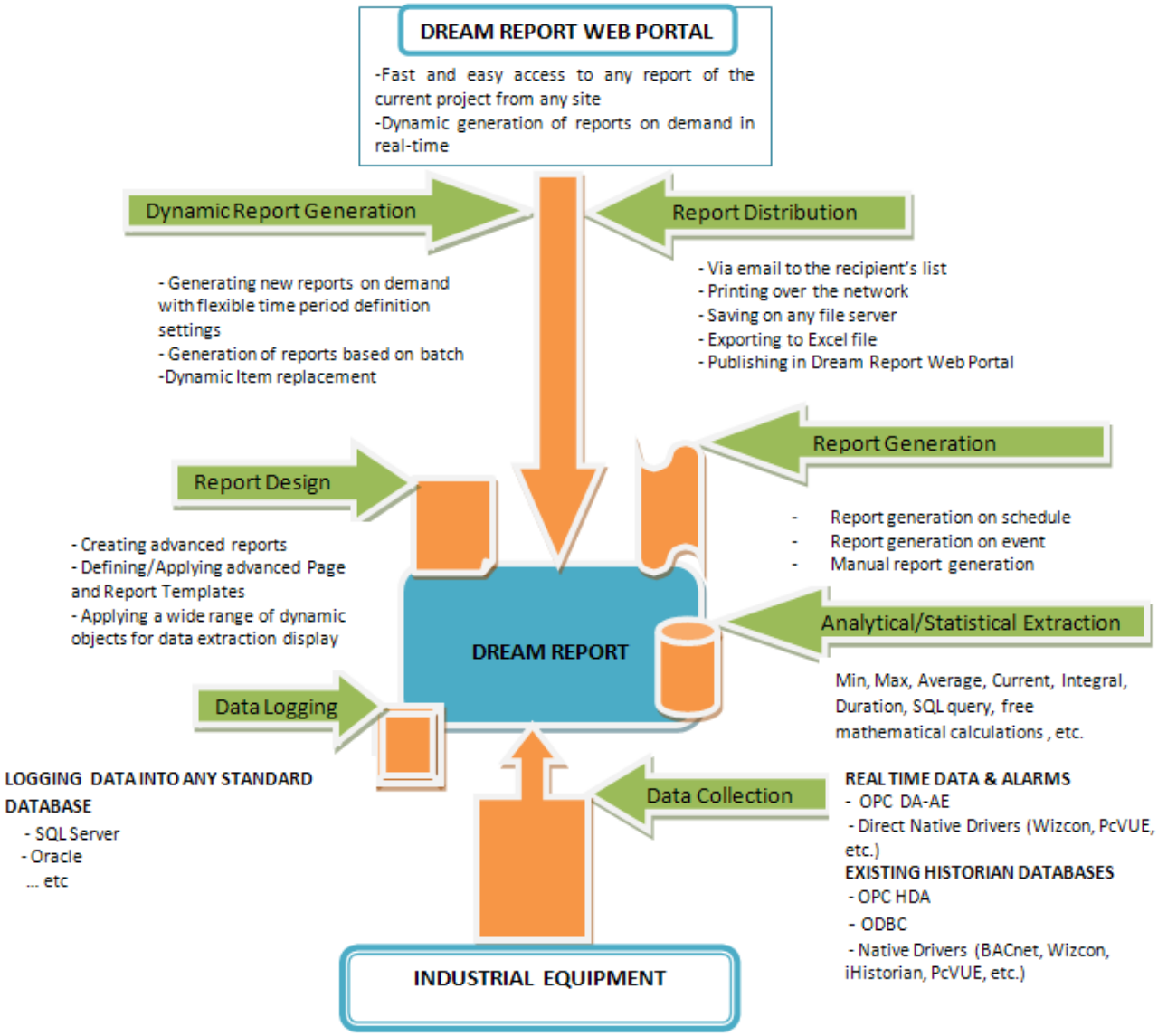
Dream Report is professional software for industrial automation, for real-time data and alarm acquisition, logging to the database as well as data analysis and advanced reporting, based on Dream Report database or any other external history data server.

Folders Organization

By default Dream Report installed itself in: ***"C:\Program Files\ODS\Dream Report".*** It also installs the following folders:

Clipart – Library of Icons, Images and Report Backgrounds
Database – Multilanguage file (***Lexicon.mdb*** and ***LexiconWeb.mdb***).
Documentation – **"Release Notes"** with the latest information about the new Dream Report release and **"Getting Started User Manual"** with the main guidelines on how to use the Dream Report product.
DR_Web_Portal – Web configuration files.
Help – Dream Report Online Flash help files.
License – Dream Report license.
Project – All projects saved by default.
Systems – System application files.
Templates – All templates saved.
Utilities – Some utilities (Adobe Reader, OPC Core component, SQL Server, HASP driver, etc.).

Dream Report Product Overview



System Requirements

Minimum System Requirements:

CPU: Duo Core 1,6 GHz+
RAM: 2Gb+
HDD: 400Mb (for installation) minimum
Video adapter: No requirements
Network adapter: No requirements
Monitor Resolution: 1024x768

Operating systems supported:

Windows XP Professional Edition (web portal requires Service Pack 3)
Windows 2003 Server (incl. R2) (web portal requires Service Pack 2)
Windows 2008 Server (incl. R2), any SP
Windows Vista (web portal requires Service Pack 1)
Windows 7 (32-bit and 64-bit)

Databases supported:

MS Access 2000, 2003, 2007
MS SQL Server 2000, 2005, 2008
MS SQL Server 2005 Express, 2008 Express, MSDE
MySQL 4, 5 (ODBC driver 3.51, 5.1)
PostgreSQL

Installation

1. Before Dream Report installation, please check if the following components are installed on the target computer:
a) Microsoft .NET framework 3.5 or 3.5 SP1;
b) IIS (Internet Information Services) – please ensure that this component is installed on your PC if you plan to run the Dream Report embedded web portal.
2. It is recommended to close all running programs due to the fact that, at the end of installation, you will be asked to restart the computer.
3. To start Dream Report installation, please use the CD (supplied by Ocean Data Systems) with the product installer or download the product from the Dream Report corporate web portal (***http://www.dreamreport.net***).
4. Run Dream Report setup executable.
5. Accept the license agreement.

6. Select all required components from the Features Tree (including required communication drivers).

NOTE: *When installing Dream Report, it will automatically install only 4 basic drivers:* ***OPC****,* ***ODBC****,* ***Analytical*** *and* ***Simulation*** *drivers. If you need to use any other drivers in your project, then, during product installation, when you come to the "****Select installed components****" window in the Installation Wizard, you will see a tree of installed components and communication drivers. There you will have to expand the "Communication Drivers" branch of that tree and select (check) all drivers, which you may need using Dream Report. If you don't select the other drivers, which you may need in the project, at this stage, then, you will not be able to select them later. And your project will run only with 4 basic drivers (configured by default).*

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7. Wait while the product installation process is completed.
8. Restart the computer.

For more information

To get the most out of Dream Report, consult these resources:
Onscreen Help
FAQ
Dream Report website

Audience

This manual is intended for the first-time Dream Report users.

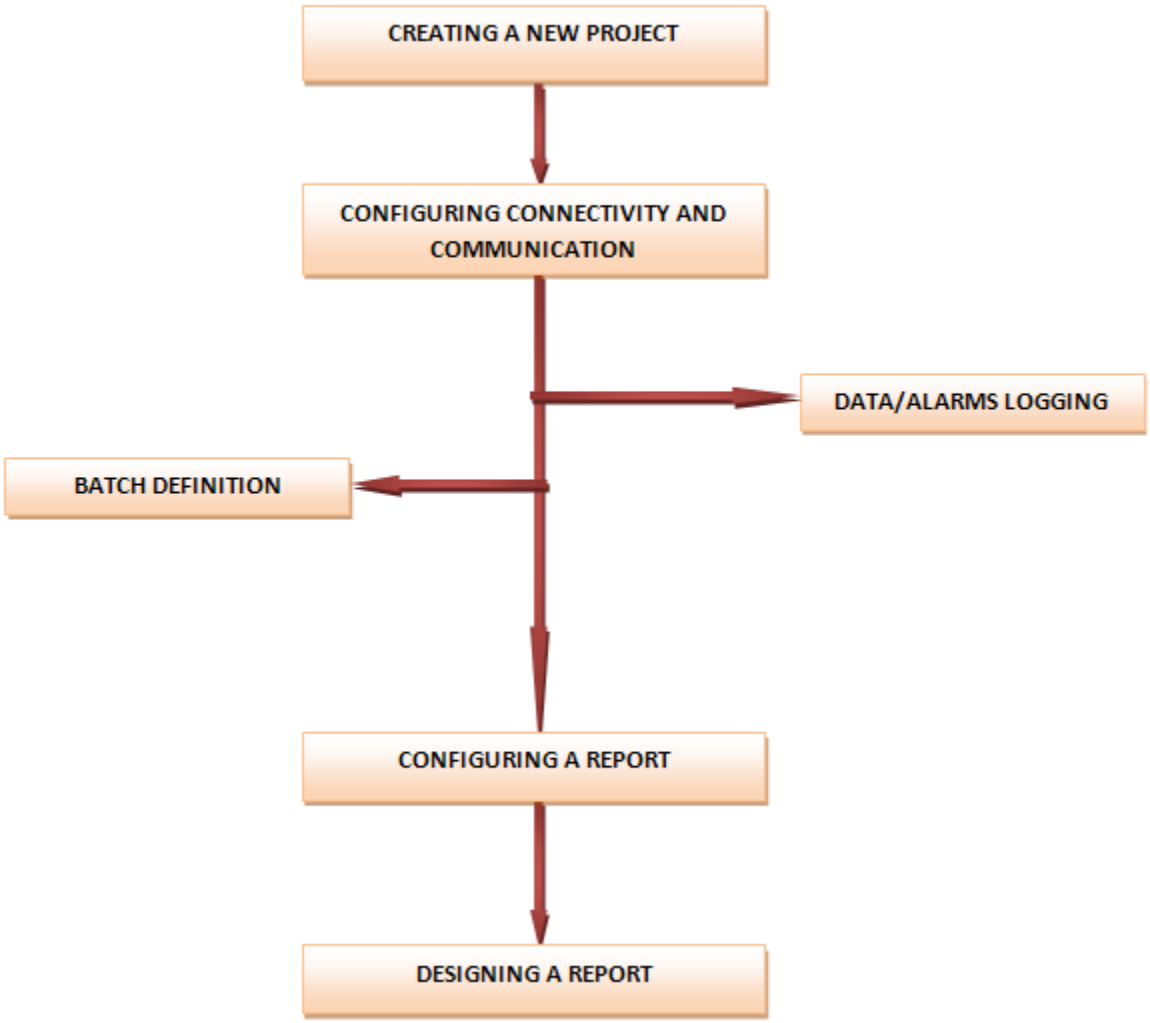
Customer Feedback

Dream Report welcomes your feedback. For comments and suggestions related to this and other manulas, contact: ***contact@dreamreport.net***.

Chapter 1. Creating a Project in Dream Report.

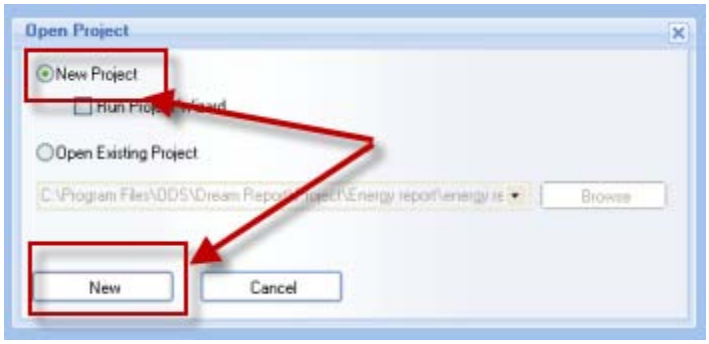
As soon as Dream Report has been installed, you can start creating a project, which you can later develop according to your needs. You can use the mechanism of project creation, which is described in this chapter, to create different projects in Dream Report.

This is an overview of the major steps you need to go through when you start creating a project in Deam Report:

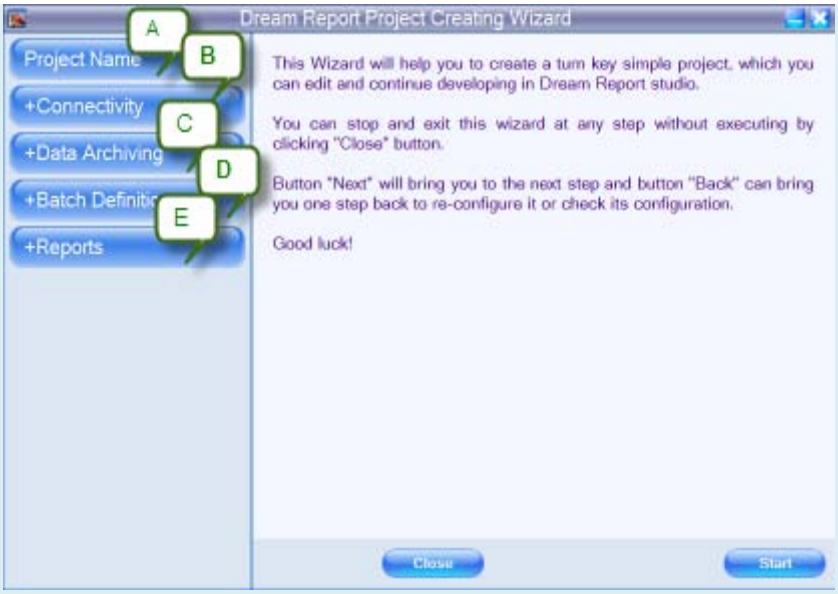


Step 1. Creating a New Project.

1. If Dream Report isn't opened, click the DR icon in the System folder. Dream Report Studio will be started with the "Open Project" window. When you start the new project, please enable the radio button "New Project". The next time when you need to open the project, which has already been set, please enable radio button "Open Existing Project" (please see the pic. below):

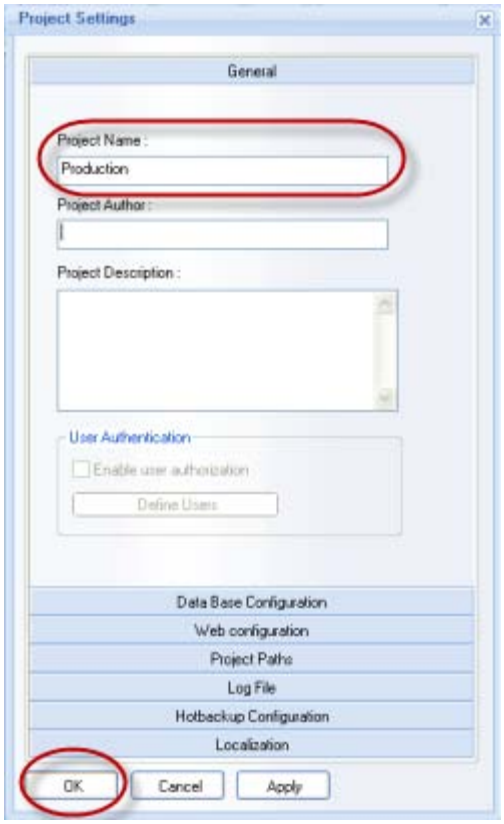


*The "Open Project" window has an option – **Run Project Wizard** – which is located just below the "New Project" radio button. When you start a new project, you can use this option to help you configure basic settings for your project. The **Dream Report Project Wizard** tool will assist you in creating a simple project in an easy way, and then you will be able to continue your project development (if needed) in the Dream Report Designer studio in a normal working mode.*



A	Define the name of your project and select the PC folder, where the project configuration files will be saved (the folder will have the project name you have entered).
B	Connect to any data source and acquire live data/alarms, or access its history.
C	Configure data logging into the Dream Report internal history database (if needed).
D	Define batches if your report is for a batch process (if needed).
E	Configure output properties for your project report.

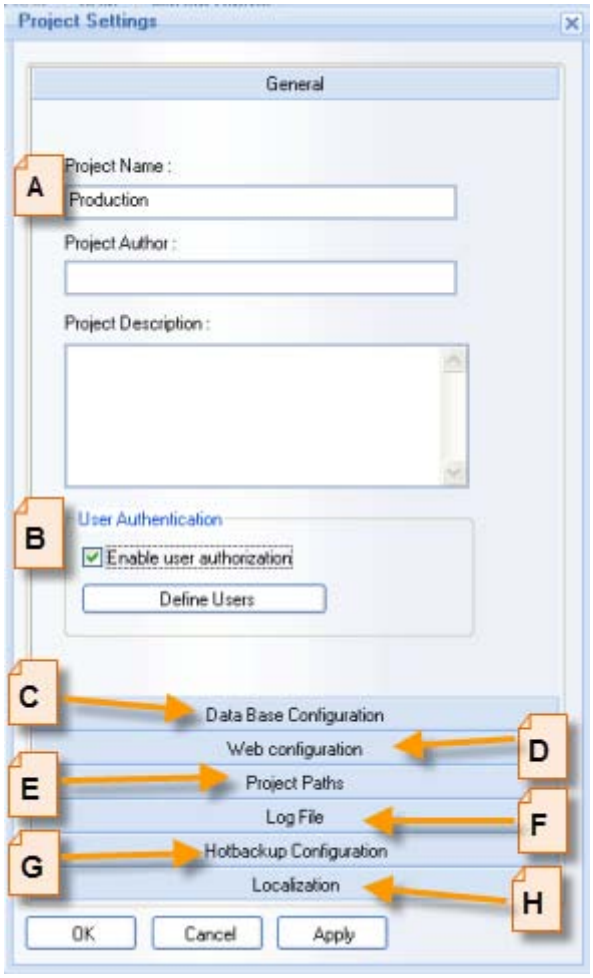
2. Define general project-related information (project name, author and description (optional) in the “Project Settings” dialog box, which will be opened (please, see the pic. below):



3. Click ***OK***, and the Dream Report Studio will be opened for your project configuration/settings.

4. Click ***General*** on the Project ribbon icon on the horizontal toolbar in the Dream Report Studio.

Note: *All the data entered will be applied to the overall project.*
Project configuration files will be saved in a folder, which will have the project name you have entered.

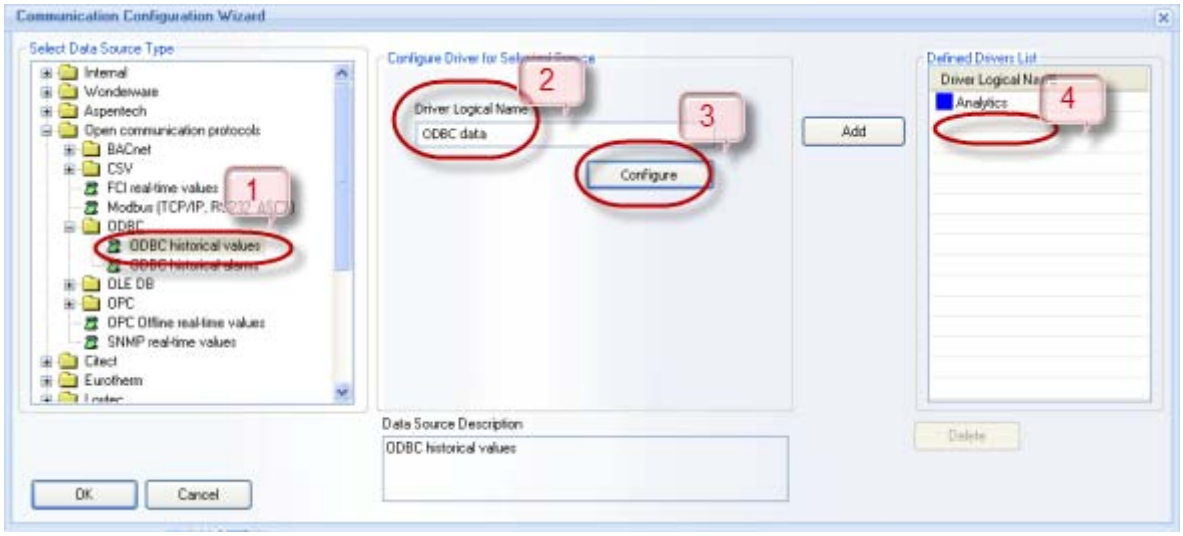


A	**Project Name** – define general project-related information, like project name, author and description.
B	**User management** – define user/user group authorization and authentication for access to different project modules.
C	**Data Base Configuration** – configure databases for data and alarm logging within the entire project. (Data can be logged either to the Dream Report default database or to any open database using the ODBC interface).
D	**Web Configuration** – define the remote station list for the web portal.
E	**Project Paths** – configure destination folders, where different project files will be written to.
F	**Log File** – define a log file to log online errors and information, which may be useful in debugging or auditing a project.
G	**Hotbackup Configuration** - define the local reporting runtime node as a redundant station, coupled with the main station.
H	**Localization** – set the language of the interface (i.e. all dialog boxes and

menus), configure date/time/week, and display settings for the report objects.

Step 2. Configuring Connectivity and Communication.

Now you need to connect to a data source to acquire live data, alarms or access its history. To do this, please select an appropriate communication driver in the "Communication Configuration Wizard" dialog box (it can be opened either from the Logger Studio or from the Report Designer Studio menu, by clicking the command button "Driver Configuration"):



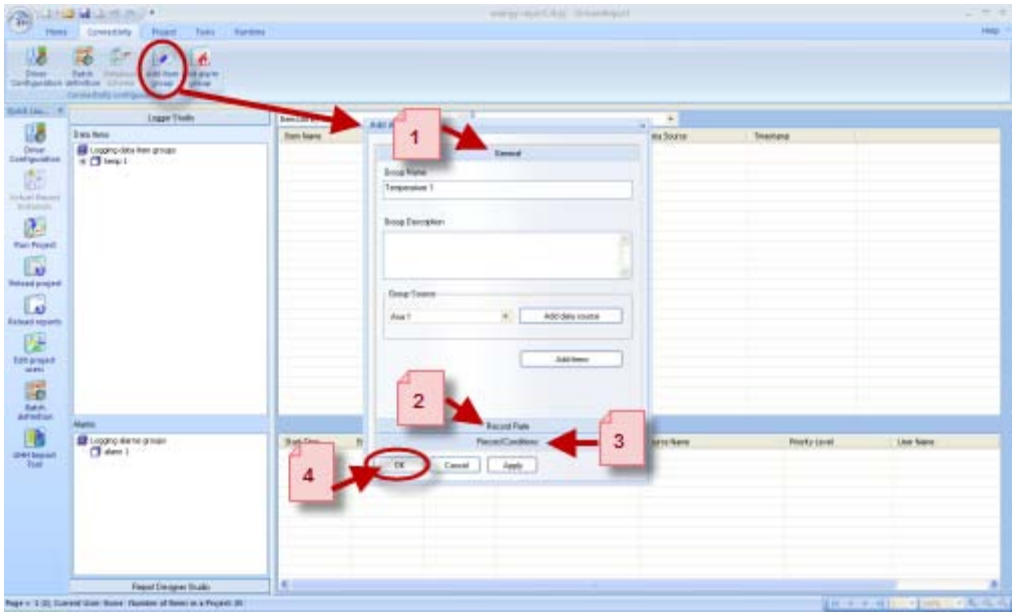
1	Select the type of the data source from the “Data Source” tree (the first browse level will be the list of the data source vendors, displayed as folders).
2	Give the logical name to the selected driver.
3	Configure the selected driver (button "***Configure***" will open the driver configuration dialog box. Each driver has its own configuration user interface, which depends on the specific protocol needs. If driver doesn't have any configuration interface, that button will be disabled).
4	Add the selected/configured driver to the list of defined divers.

Note: *When changing the definition of an existing driver, please, be aware that the name of the existing driver can NOT be changed.*

Step 3. Data/ Alarms Logging (optional).

If you need to log data/ alarms into the DR internal history database, please, go to the Logger Studio of Dream Report:

A	**Logger Studio** is a user interface to configure all data and alarm communication and logging.
B	**Data Items** is the section of the Logger Studio where you can define data logging conditions.
C	**Alarms** is the section of the Logger Studio where you can define alarms logging conditions.



1	Define the general properties of a group: logical name, short description (if needed), data source (to include items into the group), data items for the group.
2	Select the logging mode and the logging schedule for the entire group.
3	If you need to log data on some pre-defined condition, use this section ("Record Rate") to define this condition. Then, the values of items from the entire group will be logged only if this pre-defined condition is true. ***Note:*** *If the group logging schedule is defined, that data will be logged only when the logging period is active and the event is* ***TRUE****. If a group has no schedule defined, then, data will be logged when the condition is* ***TRUE****.*
4	Click *OK* and the data item group will be configured for logging.

TIP: Use the same procedure to configure alarm groups for alarms logging.

Step 4. Batch Definition (optional).

If your report is for a batch process (process loop), where the exact time period and duration are not known in advance, you can use the batch mechanism of Dream Report.

Batch can be defined in Dream Report in 2 ways:

1. By data item - if the batch ID is taken from a tag value from a real-time driver and its value is logged into a Dream Report database.

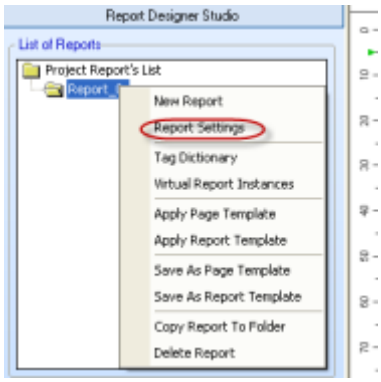
2. In external database - if the batch ID is taken from an external database (then, please, select the database, where batch information will be stored. During report generation Dream Report will automatically go to the database, analyze the values of a tag defined for the batch, recognize the start and end times of the batch and will then apply those times to the object).

TIPS: Each batch process is marked by a unique ID, and this ID will be used later to recognize and distinguish batches (process loops). So, in order to track batches, define the source for batch IDs.

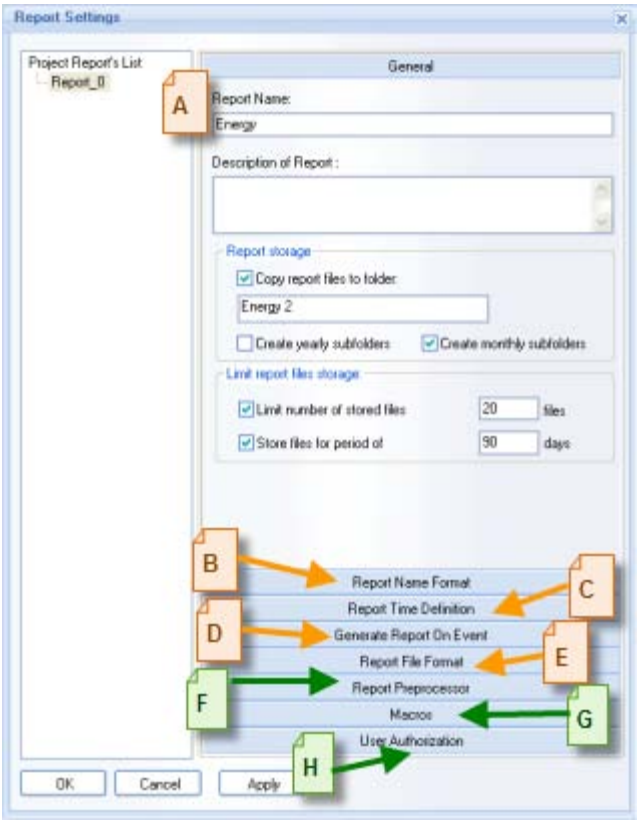
Dream Report batch definitions allow tracking batch IDs by a tag from any real-time data source or retrieving them from an external database in different formats.

Step 5. Configuring a Report.

In this step you can configure output properties of your report. To configure report settings, right-click on the report tree in the Report Designer Studio and select Report Settings from the context menu:



The “Report Settings” dialog window will be opened. The left tree will contain a list of reports, that will be defined in the project. Panels on the right will display settings for the selected report in the tree. If the report selection is changed, the panel will be updated with data from the selected report.



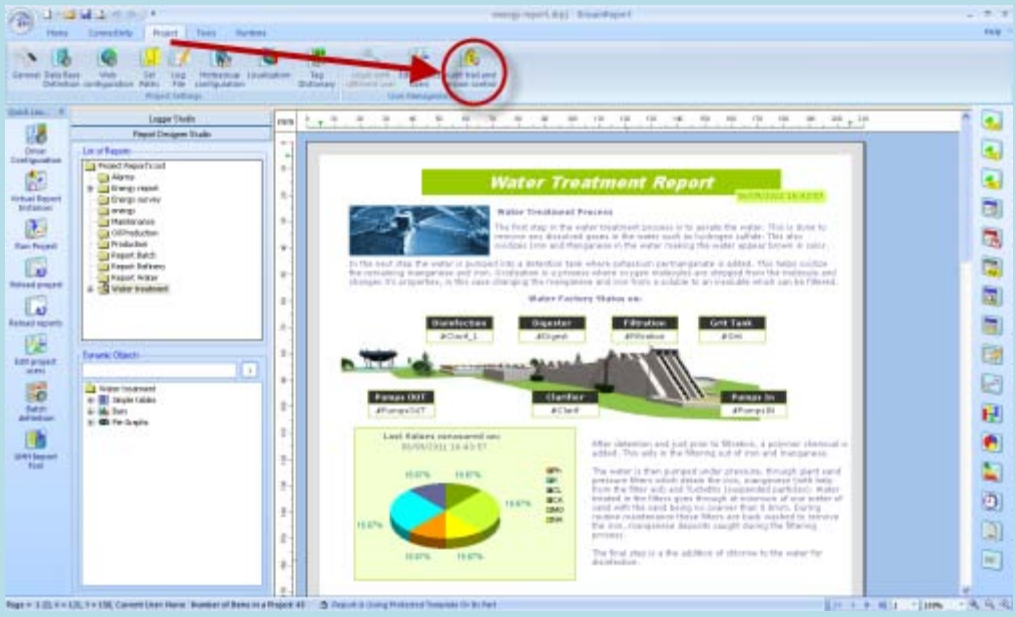
A	**Report Name** – define the name for your report. You can also configure storage and maintenance of report files in the General section.
B	**Report Name Format** – define how file names for an output file will be generated (the report file naming rule will be applied both to PDF and Excel report files).
C	**Report Time Format** – define an automatic report generation schedule: **generation on schedule** or **cyclic generation**.
D	**Report Generation on Event** – configure an event-based report generation and define different generation rules on event for different report instances.
E	**Report Distribution** – configure report output settings, i.e. what format the report will be generated in, and how and to whom it will be distributed.
F	**Preprocessor** (optional) – define the performance of an action (SQL query or stored procedure) before report generation using input parameters, and use the result as an input for report (e.g. as a list of tags).
G	**Macros** (optional) –define and attach a list of macros to each report separately and run it when the report is generated or on event.

H **User Authorization** (optional) – define access rights to each specific report for specific users.

TIP: The configuration of all reports in the project can be changed in one window without closing and reopening it again. Clicking on another report in the tree in the left part of the dialog window will automatically update the dialog window with the settings of the selected report.

Audit Trail and Version Control

This functionality enables to track design version of the reports, log and track all changes between versions and roll-back to a specific report version number. By default it is disabled when the new project is opened. It will become enabled if you click on the "Audit trail and version control" command button in the User Management section of the Project ribbon icon on the horizontal toolbar in the Dream Report studio (see pic. below):



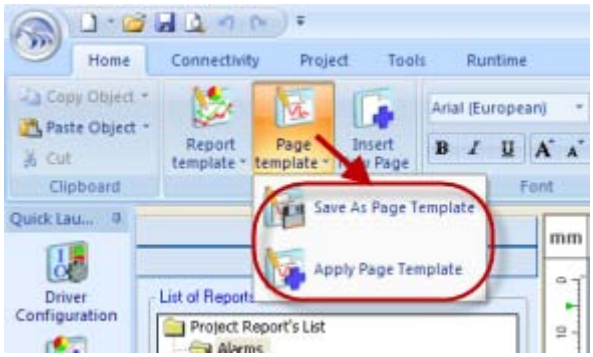
NOTE: *If the "Enable version control" option is enabled, then, any time each version of every report is saved, all the history of all the versions of every report will be automatically logged into the project database.*
When the entire project is saved, each report will be saved only if there have been any changes in this report.

Step 6. Designing a Report.

Now, when you have configured the main settings for your report, you can start designing it in the Dream Report Designer Studio.

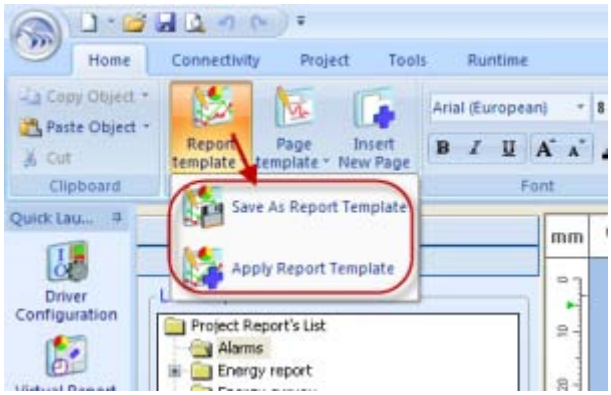
1. You can define report and page templates for your report.

Page template. You can select an existing page template to apply to the current page – then, it will add all template elements to the report page without any damage to the existing report content, and each template element (pictures, background, graphic objects etc.) will be available for editing as independent objects. Or, you can create page templates to be easily used later within the reports. A page template is similar to the headers and footers of a page in other software:



A page template will save all static objects, including images, pictures, backgrounds, static drawings, static text, and some dynamic objects, such as page number, dynamic text and date/time. If you save any existing report page as a template, all static objects will be saved, and all dynamic statistic and analytic objects will be ignored.

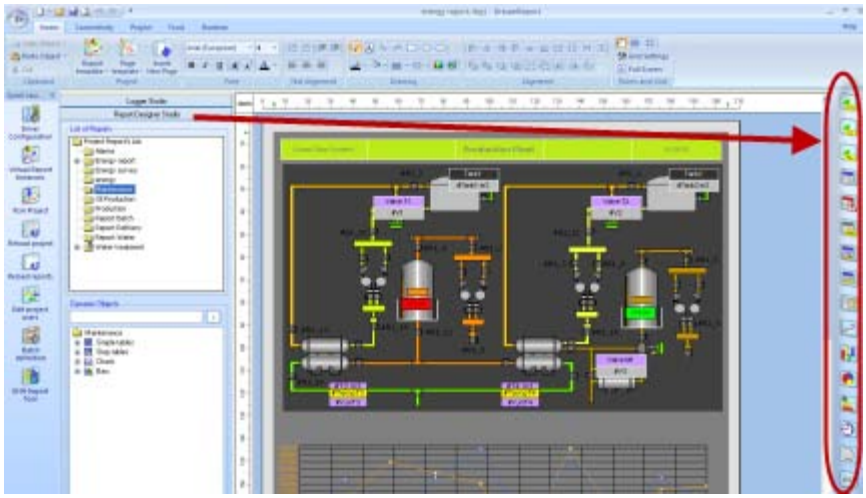
Report template. You can select an existing report template and configure settings for it. Or, you can create templates of entire reports to be used for creating other reports:



It can be used later to build similar reports. A report template will save all static, dynamic statistic and analytic objects within the report, but also will include report settings and Excel report configuration.

2. You can add static objects, static texts, bitmap pictures, background images and colors, or define settings for rulers and grid to your report using the toolbar buttons or the Designer menu in the Report Designer Studio.

3. In the Dream Report Designer Studio Elements toolbar you can select the dynamic objects, which will display your extracted data:

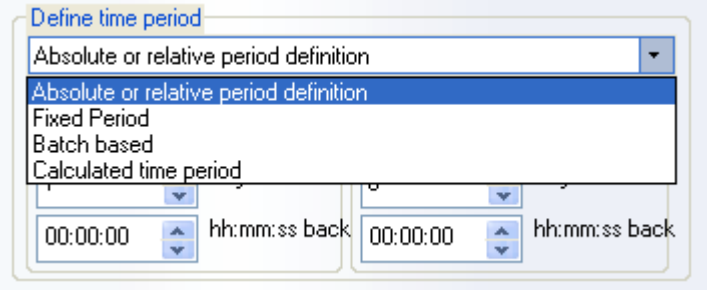


Dream Report offers different types of dynamic objects to display process analysis:

	**Single Data Object**: enables to extract Current value , Last, Min, Max, Average, Sum, Duration, Up, Down, Availability, Deviation, etc.
	**Compound Object:** enables to select predefine statistics and extract easily Min, Max, Sum, Average and Standard Deviation
	**Expression Object**: enables to do calculation based on Trigonometric, Mathematical and Boolean instructions
	**ItemTable**: enables to display an array of values from one or more data items within a specified value range, which were logged during the specified time period.
	**Alarm Table**: enables to define alarm filters groups and display them in a pre-formatted table
	**SQL Table**: enables to define the SQL Query and visualize the result as a table with predefined parameters
	**Automatic Statistical Table**: enables to select any period, define a step and select the statistics to be calculated and displayed
	**Free Table**: enables to build customized tables mixing text, dates and statistics
	**Pie Graph**: enables to compare and display alarms or statistics (current, last, Min, Max, Average,…) in a pie chart
	**Bar Graph**: enables to display alarms or statistics by period in a bar graph
	**Chart**: enables to display multiple statistics in charts

	**Step Table**: enables to create table automatically with a predefined time for each row in the table
	**Indicator**: enables to display calculated data in the new representation way according to the latest energy reporting standards
	**Date and Time Object:** enables to display a dynamic date and/or time in the desired format with a pre-defined offset (if needed)
	**Page Number Object:** enables to to display the number of the current page or the total number of pages in a report
	**Dynamic Text Object:** enables to display the text in a report, where the value is determined during report generation

4. You can define time period for the selected objects calculations. You can:
   - define the start and end of time period;
   - select a periodic interval (e.g. hourly);
   - use a batch definition (for batch process reporting).



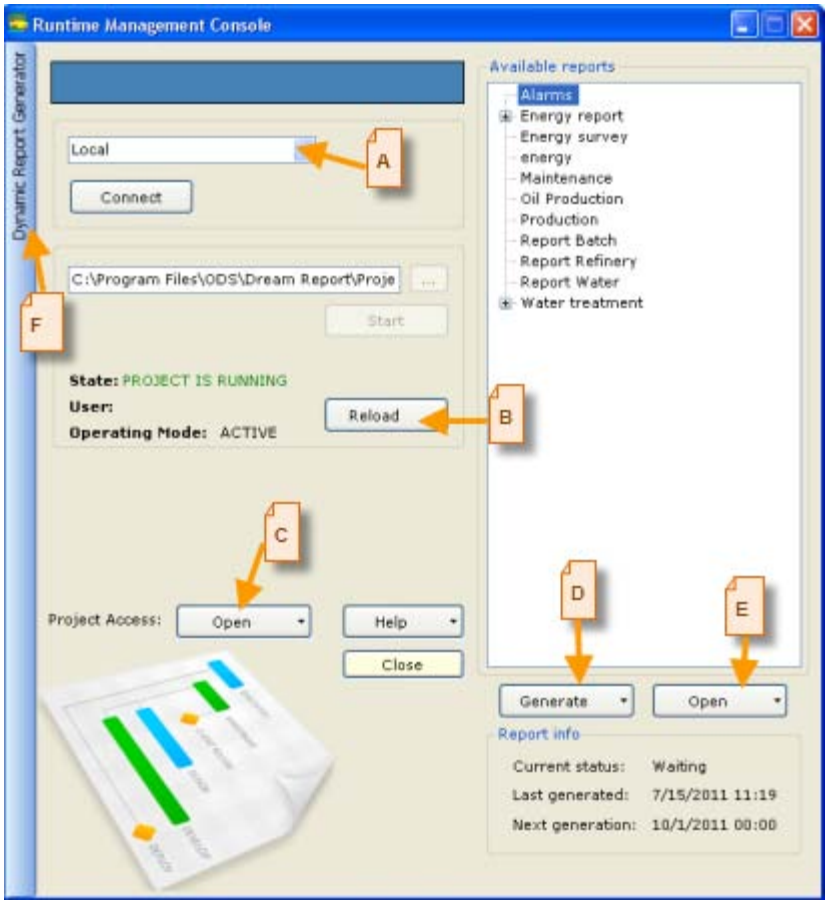
CHAPTER 2. DREAM REPORT RUNTIME

After your project and report(s) have been configured, then, in order to generate reports and log data into the Dream Report historian database, you need to run your project. Any Dream Report project can run by means of a special module - Runtime Manager (Runtime control service). This module can run either as a service (launched on the PC start) or as an application (launched on a user Windows login). To control all operations, related to the Runtime Manager(runtime service) and report generation the Runtime Management Console (RMC) is used.
Runtime Management Console enables managing the project in Runtime, i.e. enables to reload project/reports, to shut project, to provide access to different project options (project folders, Web portal, IIS configuration while the project is running), Dream Report license info, help documentation, generating reports on demand.

This chapter describes the mechanism of running Dream Report project(s), logging data and executing report(s).

Dream Report Runtime Manager enables:

- data logging
- standard/dynamic report generation
- multiple runtime options



A	You can select a project, to which the Runtime Management Console will be connected.
B	You can reload the project or the reports, or shut the project. ***NOTE:*** *You can also reload project/reports directly from the Dream Report Studio by clicking on the Reload project or Reload reports command buttons.*
C	You can access different functionalities directly from the Runtime Management Console.
D	You can generate the selected report (there are 3 options for the report generation format: “PDF”, “Excel” and “PDF and Excel”).
E	You can open the generated report in one of the 3 formats: “PDF”, “Excel” and “PDF and Excel”.
F	You can generate reports on your demand by defining time period for the report directly in runtime .

CHAPTER 3. DREAM REPORT WEB PORTAL

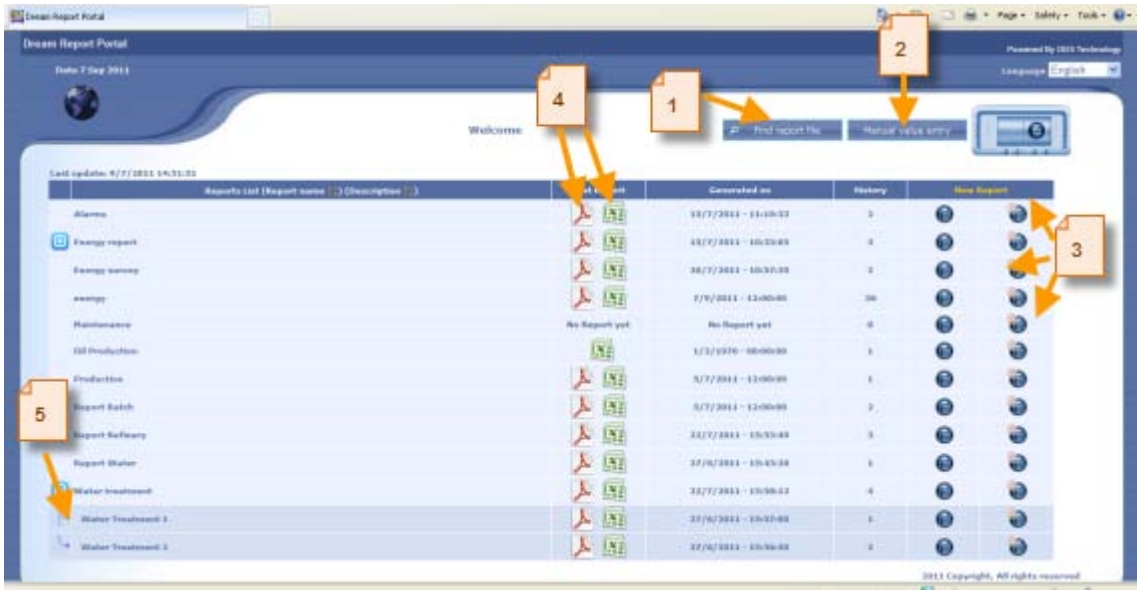
Dream Report has its own proprietary web portal, where all the reports from the entire project are published automatically upon their generation. You can browse reports from the currently running project, visualize any existing report from the entire project, and generate any report on demand in real-time directly on the Dream Report Web Portal. This web portal uses ASP.net web technology and has communication with the Dream Report Runtime Manager, using Microsoft .NET Framework version 3.5 or higher. During its installation, Dream Report automatically installs all necessary files to use the web functionality (if the web server is installed later, you will have to uninstall and re-install Dream Report again if you want to use the web functionality).

This chapter describes Dream Report Web Portal and its functionalities.

To load the web portal on the local computer, you just need to open Internet Explorer and type: http://localhost/drweb (or http://<IP address>/drweb).
This will automatically open the welcome page of the Dream Report web portal.

Dream Report Web Portal:

- is password protected and enables visualization of all reports from any site
- enables users to access authorized reports only
- provides direct access both to the lately-generated reports and to the archived reports
- enables generation of a new report at any time on demand



1	**Find Report File** – you can quickly find the report files needed, using the specified search criteria (either by time period or by key words in a filename/report file).
2	**Manual Value Entry** – you can edit and enter manual values in the report for logging into the Dream Report database. ***Note**: "Manual Value Entry" button wil appear on the Web Portal pages only if the project has a manual driver defined. Otherwise, this button will be hidden.*
3	**New Dynamic Report Generation** – you can generate reports or report instances on demand in the Web Portal.
4	**PDF/Excel Report Format Display** – in the "Last Report" column you can visualize the last reports generated both in PDF and Excel formats.
5	**Virtual Report Instances** - you can visualize virtual instances of the report (if defined) in the "Reports List" tree. When you expand this tree, the list of instances of that report will be displayed ("Generated on" and "History" columns will display info for each instance).

If you need to find all the information about the report generated, go to the Detail page of Dream Report Web Portal:

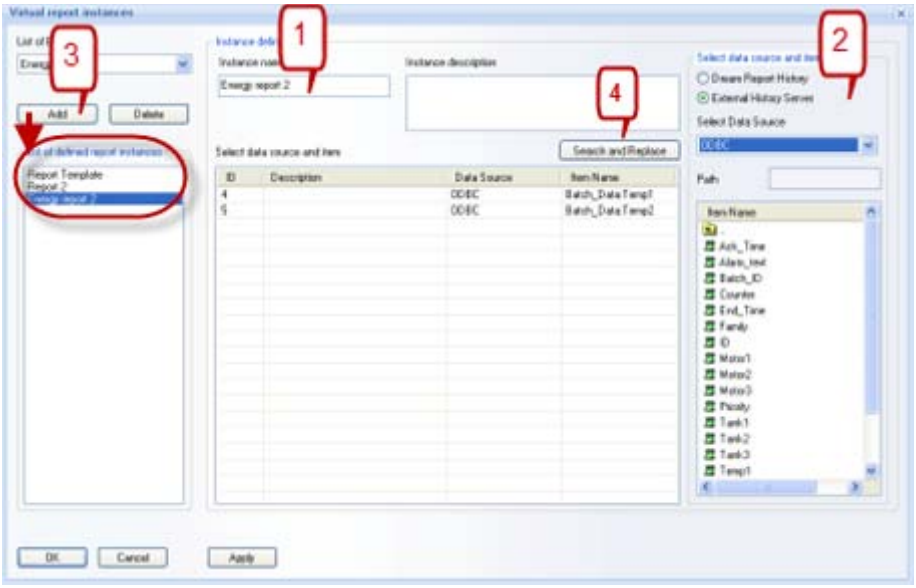
NOTE: *To have access to a project in the Dream Report Web Portal, each time a new project is started, you will have to configure IIS (Internet Information Server) for that project manually. For this you should click on the* ***Configure IIS*** *button either in the Web Configuration dialog box of the Project Settings section in the Dream Report Studio, or in the Runtime Management Console dialog window.*

*CHAPTER 4. DREAM REPORT ADVANCED TOOLS

This chapter describes different modules, which you may use in Dream Report to serve your needs for precise and advanced performance of our product.

VIRTUAL REPORT INSTANCES

Use Virtual Report Instances to create multiple pre-defined instances of the same report template, where each instance will use the same template with different pre-defined tags.



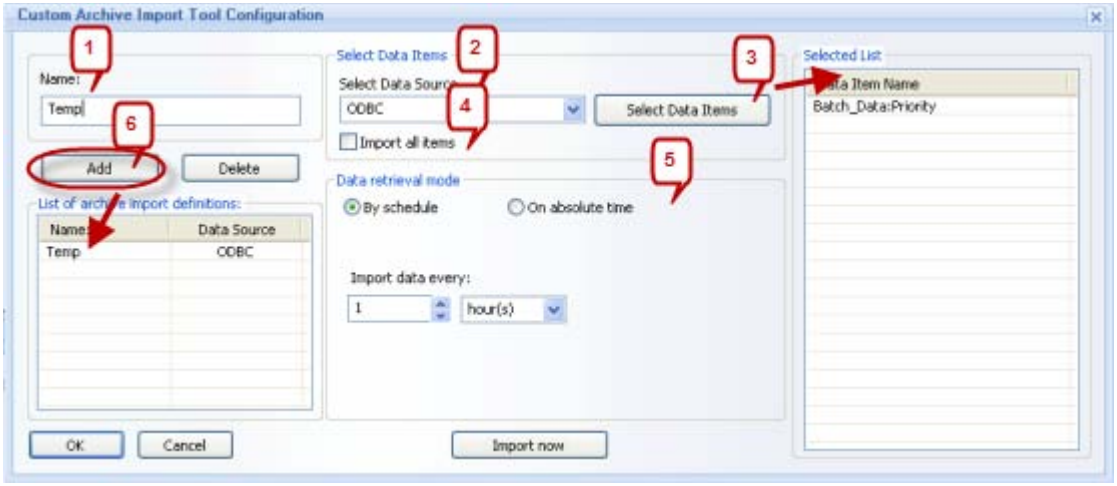
1	Enter Instance name (has to be unique for that report).
2	Select required data sources and items/tags for each dictionary entry.
3	Click on "***Add***" button. The defined instance will be added to the "List of defined report instances".
4	Find and replace data items if you need.

Creating virtual instances enables users to:

- Set separate generation schedule for each instance
- Set separate generation event for each instance
- Select manually tags for report at generation time

CUSTOM ARCHIVE IMPORT TOOL

Use Custom Archive Import Tool to access any available external archive (using any defined HDA driver) and periodically import its data (values) into the Dream Report internal database (which makes the data available for reporting from the standard Dream Report database).



1	Put a logical name of the import definition into the Name edit box. Import definition name is unique and can't be the same for multiple import definitions.
2	Select the history access data source, which will point to the needed external archive.
3	Select data items, which values you need to import. All the selected items will appear in the “Selected List of Data item Names”.
4	***Note:*** If you want to import data from all data items, available at the data source, you ***DON’T*** need to open the item selection window. Just check the check box "Import all items" and Custom Archive Import Tool will import all values from all found items.
5	Set “Data retrieval mode”: by schedule or on absolute time.
6	Click on the button "Add". The import definition will be added to the “List of archive import definitions”.

SETPOINT ANALYSIS

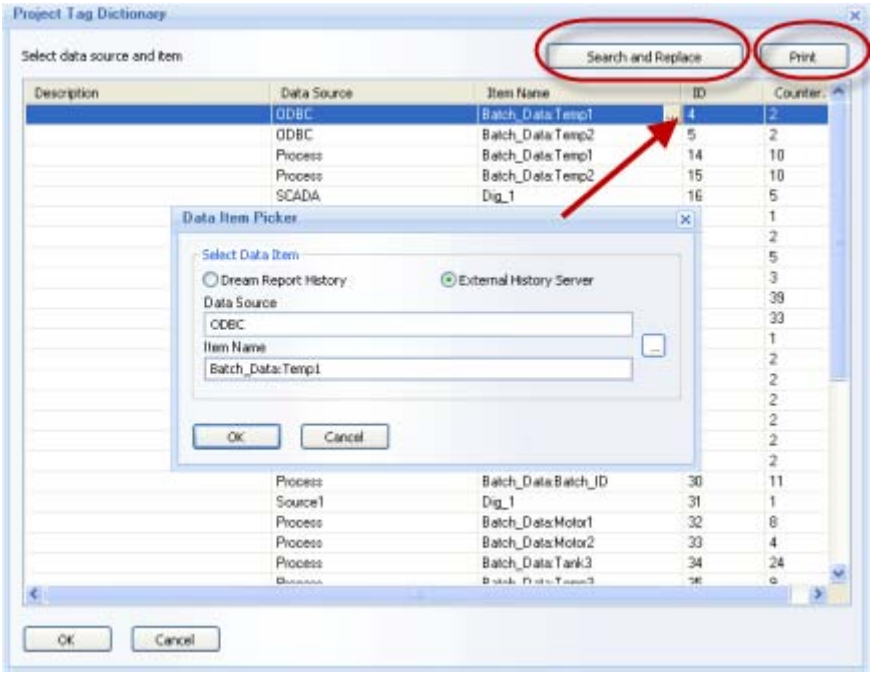
Use Setpoint Analysis for smart analyzing of thermal and other processes, where the process is based on a setpoint stability analysis.

1	Enter a logical Name to define a setpoint (logical name is unique and can't be the same for different setpoints).
2	Enter Setpoint Value
3	Enter Bandwidth (Bandwidth defines high ("**Upper Tolerance**") and low ("**Lower Tolerance**") levels for the stability).
4	Select items/tags, which will be used for this setpoint analysis.
5	Click on the button "***Add***" and a new setpoint definition will be added to the project. Its name, value and tolerance will appear in the "**List of defined setpoints**".
6	Define the stability period by setting the time period when the values will remain stable.
7	Define the criteria for the rate of change measurement before entering the stability zone.
8	Define the criteria for the rate of change measurement after exiting the

	stability zone.
9	Select options, which will be used to define automatic process validation.

TAG DICTIONARY

Use this fuctionality to create tag dictionary for multiple reports. You can search, change, replace tag items in an easy and manageable way.



Note: *Changing one tag in the project tag dictionary will modify all related objects, where that tag has been used.*

Project Tag Dictionary (the list of tags) is:

- Global for the project, i.e. includes all tags, which are used in the project and their descriptions (optional)
- Printable and easy accessible