Generating Reports in WAY4™

Contents

Introduction

This document is intended for WAY4™ system administrators (bank or processing centre employees), responsible for Reports Engine R2 setup. Reports Engine R2 is used to generate reports.

When working with this document, it is recommended to use the following resources from the OpenWay documentation series:

- "Scheduler R2".

The following conventions are used throughout the document:

- Field labels in screen forms are shown in *italics.*

- Screen form button labels are encased in square brackets, such as [Approve].

- Sequences for selecting user menu items are given with arrows, as in Issuing → Contracts Input & Update.

- Sequences for selecting system menu items, are given with a different type of arrow, for example Database => Change password.

- Key combinations used when working with DB Manager are shown in angular brackets as in <Ctrl>+<F3>.

- Values that vary for each local instance of the program, such as the names of directories and files, as well as file paths are displayed in angular brackets, such as <OWS_HOME>.

- Warnings that there is a danger of making an incorrect action are marked with the ⚠ sign.

- Messages marked with the ⓘ sign contain information about important features, additional facilities or the optimal use of certain functions of the system.

Chapter 1. Purpose

Reports Engine R2 is used to generate reports.

In Reports Engine R2 a single setup mechanism is used for WAY4 client applications (DB Manager, WAY4 Manager, WAY4 Remote Access, WAY4Web Client, Scheduler R2).

Report generation modes:

- Batch mode.

- Single reports.

Chapter 2. Report Generation Principles

Oracle Reports Server is used to generate reports.

Oracle Reports Builder is used to edit report templates. Reports are generated using the Oracle Reports utility. For more information about working with Oracle reports, refer to documentation for the version of the Oracle Reports Server used.

Oracle Reports Server is installed according to the instructions in the documents "Oracle 11.1 Reports Services Installation" ("<OWS_HOME>\Manuals\system\ows_OracleReports11Setup.html"), "Oracle 12.2.1.2 Reports Services Installation" ("<OWS_HOME>\Manuals\system\ows_OracleReports12Setup.html").

Oracle Report Definition files (*.rdf) are used to store report templates in WAY4.

Standard report templates are stored in the "<OWS_HOME>\Client\Shared\Reports" directory.

Standard report templates from the <OWS_HOME> directory can only be modified by the WAY4 vendor and are only upgraded when the WAY4 version is upgraded.

Standard templates based on which reports will be generated require compilation. After compilation, a template is ready to be used and is referred to as a "working" template. Working templates are set up according to the instructions in the document "WAY4: Setting up Oracle Reports definition files" ("<OWS_HOME>\Doc\reportssetup.html").

Working templates must be compiled using the same operating system as that of the workstation on which these reports will be generated.

Working templates are stored in the directory whose path and name is set in the REPORTS_DIRECTORY parameter (see the description of the "REPORTS_DIRECTORY" parameter). Custom working templates created by users are also located in this directory. The directory with working templates should be located either in the report server's file system or on an external file server.

For working templates and custom working templates created independently by users to be stored in separate directories, the "HOME/WORK" option can be used. This option is available if the report server and client application use the same paths to working templates. In this case, working templates compiled on the basis of WAY4 standard templates can be stored in the directory whose path and name is set in the REPORTS_HOME_DIRECTORY parameter (see the description of the "REPORTS_HOME_DIRECTORY" parameter).

For WAY4Web Client, report files are generated in the report server file system or on an external file server. For DB Manager and WAY4 Manager, depending on the settings of the menu item responsible for generating a report,

reports may be displayed on the screen, sent to a printer, or saved in a file on a hard disk (in the report server file system or on an external file server).

Processes in WAY4Web Client are monitored using WAY4 Scheduler (see the section document "Scheduler R2"). In DB Manager and WAY4 Manager, report generation for standard templates is registered in the process log. Moreover, errors that occurred during report generation are saved in error logs in the temporary file directory.

Parameters that define rules for generating reports are set in the "dbm.ini" and "db.ini" files (see the section "Parameters Affecting Report Generation").

ⓘ Starting from version 03.41.30, the ability to locally generate reports in WAY4 is not supported.

Parameters Affecting Report Generation

This section lists parameters that affect report generation.

The values of the parameters "USE_DBMJ_TO_CALL_REPORTS", "REPORTS_DIRECTORY", "REPORTS_HOME_DIRECTORY", "REPORTS_ENGINE_URL", "REPORT_SERVER_HTTP_TIMEOUT", "CHECK_REPORT_FILE_AVAILABILITY" and "REPORT_SERVER_SSO_CONNECTION", "REPORTS_KRB5_CONF_FILE" are set in the "db.ini" file ([Client.DBM.Params] section).

If reports are generated from DB Manager or WAY4 Manager applications, these parameters can be redefined using the "Database => Configure" system menu item. Note that parameter settings specified in a local machine's client applications will have a higher priority than settings in the "db.ini" configuration file.

USE_DBMJ_TO_CALL_REPORTS

The USE_DBMJ_TO_CALL_REPORTS parameter sets the way reports will be generated:

- "YES" – Reports Engine R2 is used to generate reports.

- "No" – Reports Engine R2 is not used to generate reports.

The default value is "YES".

The parameter works when single reports are generated; reports are generated using WAY4 DB Manager or WAY4 Manager client applications.

REPORTS_DIRECTORY

The "REPORTS_DIRECTORY" parameter sets the path to the (working) directory where working templates created independently by a user or based on standard templates are located.

This parameter is mandatory and must be given a value.

REPORTS_HOME_DIRECTORY

The "REPORTS_HOME_DIRECTORY" parameter sets the path to the (home) directory with working templates based on standard WAY4 templates. If the parameter is set, the Oracle Reports utility searches for a report template in the working directory first ("REPORTS_DIRECTORY"). If the template is not found in the working directory, it is searched for in the home directory.

ⓘ This method of storing working templates separately is available if the client application from which a report is run and the Oracle Reports module use the same directory paths. This method cannot be used for storing reports if the client application runs under Windows and the report server runs under Unix.

REPORTS_ENGINE_URL

The "REPORTS_ENGINE_URL" parameter specifies the report server's URL address. Used for HTTP requests when generating reports.

This parameter is mandatory and must be given a value.

REPORT_SERVER_HTTP_TIMEOUT

The "REPORT_SERVER_HTTP_TIMEOUT" parameter sets the maximum time to wait for a response from the report server.

The parameter value is specified in seconds, the default value is 3600 seconds.

CHECK_REPORT_FILE_AVAILABILITY

The "CHECK_REPORT_FILE_AVAILABILITY" parameter indicates whether a check should be made for a working template. This parameter is used if the "HOME/WORK" option is used (see the description of the REPORTS_HOME_DIRECTORY parameter).

By default the parameter is not used and its value is "No".

REPORT_SERVER_SSO_CONNECTION

The "REPORT_SERVER_SSO_CONNECTION" parameter sets the user identification method if Single Sign-On mode is used (SSO, single identification in a virtual infrastructure).

This parameter is mandatory in SSO mode.

REPORTS_KRB5_CONF_FILE

The "REPORTS_KRB5_CONF_FILE" parameter sets the full name of the configuration file for the Kerberos network authentication protocol.

This parameter is mandatory in SSO mode.

Report Batch Execution

The pipe "com.openwaygroup.pipe.executing_report_batch.jar" is used to generate batch reports, see "Appendix 1. "Executing Report Batch" Java Pipe Parameters.

Local Language Support in Report Generation

WAY4 supports the ability provided by Oracle Reports to generate reports in different languages.

To use this feature, do as follows:

- The language must be registered in the "Languages" system dictionary (for WAY4Web Client this is the menu item "System core → Localization → Languages"; for DB Manager and WAY4 Manager – "Full → Configuration Setup → Language and Localisation → Languages").

- An XML file with a list of report element names in the local language must be created (custom XML file, Customize XML). This file may have the same name as the main report template but with the "*.xml" extension.

   The encoding in which report elements will be shown is specified in the XML file header using the "encoding" parameter, for example, encoding="UTF-8".

- Convert the custom XML file into an Oracle Report Definition file (*.rdf). The "rwconverter" utility included in the Oracle Reports distribution must be used for conversion. For details on using the utility, see the document "WAY4: Setting up Oracle Reports definition files" ("<OWS_HOME>\Doc\reportssetup.html"), as well as documentation for the version of the Oracle Reports generator used. The converted file must be stored in the directory specified in the REPORTS_DIRECTORY parameter.

- In the *Report Name* field of the parameters of the "Oracle Report" menu sub-item calling the report, specify the name of the report file (*.rdf) translated into the local language (see the section ""Oracle Report" Type" of the document "Menu Editor").

- If necessary, translate client messages that will be included in the report into the local language (see the section "Translating Messages into Local Languages" of the document "Configuration of Client Messages").

For DB Manager and WAY4 Manager applications the parameter defining the language of report content can be set in the following ways (listed in descending priority; if the report language was set using two or more parameters, the value of the parameter with the higher priority will be used):

- With the "P_LANGUAGE" parameter of the "Oracle Report" menu item calling the report. This setting has the highest priority.

- In generating a report, the system user's language can be used. This language is set in the *Language* field of the "Constants for <user group name>" form opened by clicking the [Constants] button in the "User Groups and Users - View" grid form (Full → DB Administrator Utilities → Users & Grants → User Groups and Users – View).

- In generating a report, the language specified in WAY4 global settings can be used ("Full → Configuration Setup → Main Tables → Global Constants").

The current solution does not support the ability to redefine the report generation language for WAY4Web Client.

For reports provided to clients (statements) the client's language can be used to determine the report language.

Sample setup:

- German is registered in the WAY4 database (see Fig. 1).

Languages			‹‹ ‹ › ››	2 of 2	✕
Name	**Code**	**2-byte Code**		**Default Country Code2**	
ENGLISH	E	en			
➜ GERMAN	G	de			

| Ins | Del | Query |

Fig. 1. List of languages registered in WAY4

- In the "Test_Report_German.xml" XML file, labels are translated into German. A fragment of this file containing a translation of the "B_Field" object (contract number) into German ("Feld") is shown below.

```xml
<?xml version="1.0" encoding="ISO-8859-1" ?>

<report name="Test_Report" DTDVersion="9.0.2.0.10">

<customize>

...

  <object name="B_Field" type="REP_GRAPHIC_TEXT">

    <properties>

        <property name="textSegment"><![CDATA[Feld]]></property>

    </properties>

  </object>

...

</customize>

</report>
```

- Using the "rwconverter" utility, the "Test_Report_German.rdf" file was created and put into the working directory; the path to this directory is specified in the "REPORTS_DIRECTORY" parameter.

- Messages that will be included in the report are translated into German.

- For the menu item that calls this report, "Test_Report_German.rdf" is specified in the *Report Name* field of "Oracle Report" menu sub-item parameters.

- The *Languages* field in "Global Constants" is empty.

- "GERMAN" is specified in the *Language* field of the "Constants for German-Speaking Staff" form. For other user groups, the *Language* field is not filled in.

- The "P_LANGUAGE" parameter is not defined for the menu item that calls this report.

With these settings, users in the "German-Speaking Staff" group will get reports with labels in German and that contain client messages translated into German.

If a German is specified in the "P_LANGUAGE" parameter of the menu item that calls this report, the report will be generated in German for all users.

Appendix 1. "Executing Report Batch" Java Pipe Parameters

The pipe is used with the following parameters:

Parameter	Value	Mandatory/ Optional	Description
SQL_SELECT	SQL SELECT script	Mandatory	SQL query text. For each string returned, a query is sent to the Oracle Reports utlity. Columns specified in the query can be used as pipe parameters. Example of columns used in queries: STATUS_TEXT = FinInst: %8%, Branch: %1%, Report Type: %2% P_ZIP = @ZIP_CODE@ Column names or the serial number of a column in the table can be specified as query parameter values. The name or number of a column must be framed by the '@' character (the '%' character is used for compatibility).
STATUS_TEXT		Mandatory	Text that will be shown in the status panel when each job is generated.
INI_SECTION		Optional	Name of the section in the db.ini file with additional parameters that will be transferred to the Oracle Reports utility. Used to generate more than one report with a set of specific parameters.
reportName, REPORT		Mandatory	Name of the report file (RDF). The path to the report file is not specified in the parameter.
destName, DESNAME		Mandatory	Name of the result file (with reports) or email address for sending the result file.
destType	file/server_file/mail/printer	Optional	Report destination: "file" – the file is saved on the client computer. "server_file" – the file is saved on the report server. "mail" – the report file is sent from the report server to an email address. "printer" – the report file is sent from the report server to a printer. The default value is "file".
processTitle, TITLE		Optional	Report header transferred to the Oracle Reports utility in the P_TITLE parameter.
destFormat, DESFORMAT	DFLT/ HTML/ PDF/S PREA DSHE ET/RT F/XML /wide/...	Optional	Oracle Reports utility parameter defining the file format. The default value is "wide". See Oracle documentation for a detailed description of the parameter (http://www.oracle.com).

Parameter	Value	Mandatory/ Optional	Description
drawMode, MODE	bitmap /chara cter	Optional	Oracle Reports utility parameter defining the file type. The default value is "character". See Oracle documentation for a detailed description of the parameter (http://www.oracle.com).
numberOfCopi es		Optional	Oracle Reports utility parameter defining the number of file copies. The default value is "1". See Oracle documentation for a detailed description of the parameter (http://www.oracle.com).
REPORTS_E NGINE_URL		Optional	The parameter redefines the value of the REPORTS_ENGINE_URL parameter (report server URL address).
P_*		Optional	Parameters whose names begin with "P_" are transferred to the report server as is.