

Chapter 8

Report Generator

*REPORT

Introduction iReport Set-up

Preparation of iReport

The minimum version of iReport is 3.7.1. If it is not on the system, this graphical development environment can be downloaded from the developer community at <http://jasperforge.org/projects/ireport>.

Please note:

The following description is based on the installation of iReport version 3.7.1

Downloading of iReport

Follow the download button at <http://jasperforge.org/projects/ireport>



Select the options from the list of download options fitting to the platform currently installed.

iReport Download

The latest version of iReport is 3.7.1. Read the [Release Notes](#). Please select the file appropriate for your platform below. Sun Java 1.5.0 or later is required to run iReport.

Windows
iReport-3.7.1-windows-installer.exe
Win32 Installer. Windows XP, Vista and Windows 7 are supported.

Mac OS X
iReport-3.7.1.dmg
Apple Mac OS X disk image file

Linux
iReport-3.7.1.tar.gz
Generic tar.gz distribution.

Other platforms
iReport-3.7.1.zip
Generic ZIP distribution for all the other platforms.

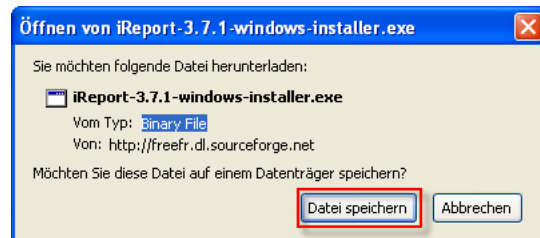
Plugin for NetBeans IDE 3.x
iReport-3.7.1-plugin.zip
This distribution allows to execute iReport as plugin for NetBeans IDE.

If you wish to compile iReport yourself, please download the [source code](#). You can find more info about how to compile iReport from [sources here](#).

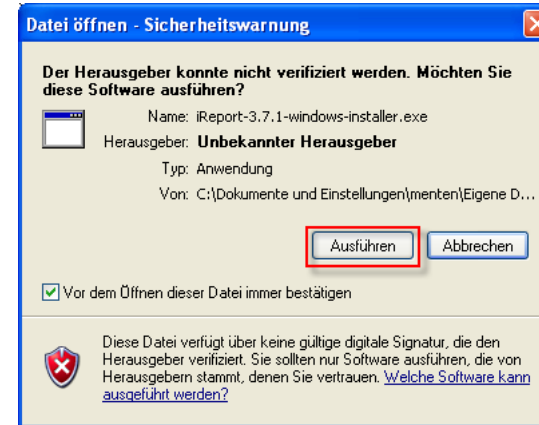
Forgo registration in the following screen and select the text link that goes to the download page directly.

No Thanks, Continue to Download

Save the selected object on the system.

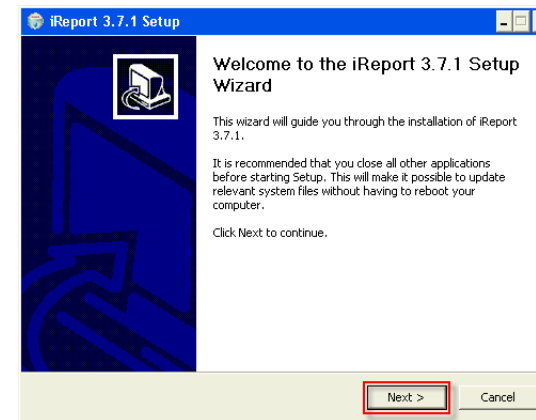


After the download is completed, double click on the file. Depending on the system, like the example here of a Windows client, other messages will be displayed, that must be confirmed before the installation actually begins.

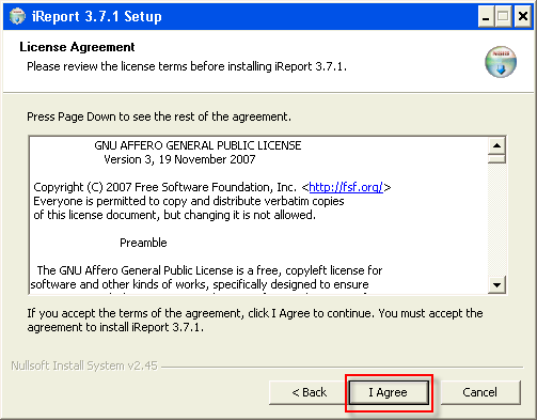


Click on **“run”** to start the program.

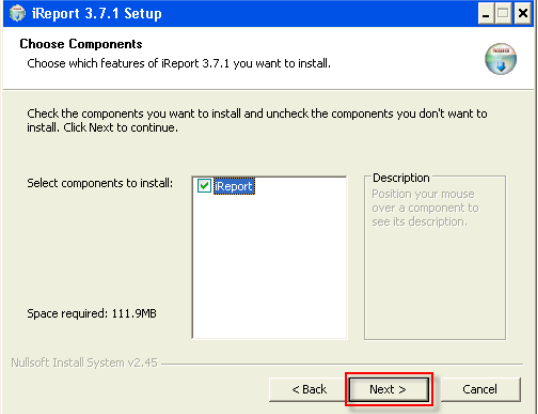
Installation follows the normal process, after certain options have been selected the user will be guide step by step through the installation process.



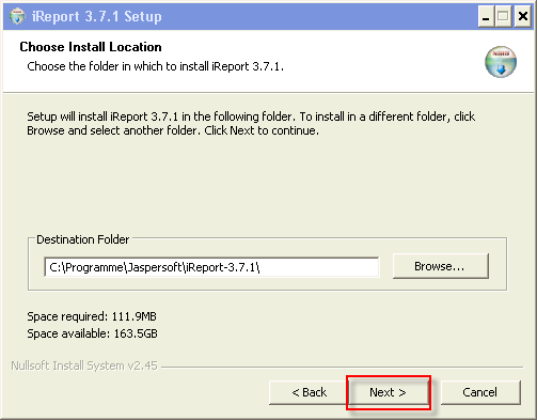
Click on **“Next”** to reach the next installation step.



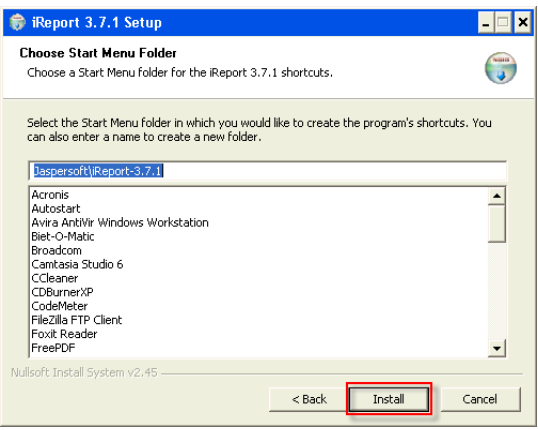
Click on "I agree" to agree to the terms and conditions of the software.



All elements are pre-selected in the next screen. Confirm by pressing "Next".

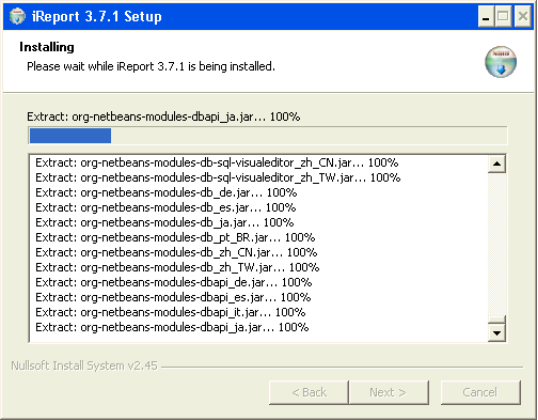


The installation directory can be selected in the next screen. Confirm the pre-set directory by pressing "Next" or use "Browse..." to select another directory.

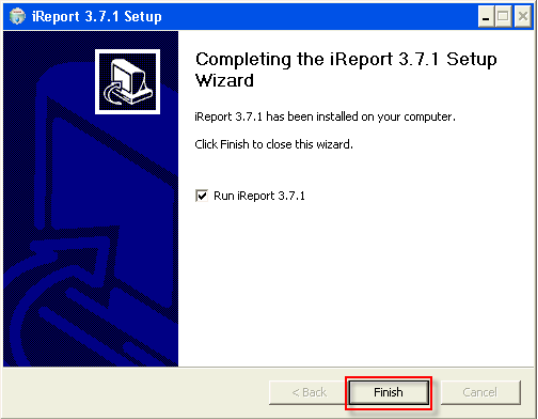


In the last step before installation begins, confirm the name of the entry in the start menu. Select a folder or determine the name of the entry.

When "Install" is pressed installation will be started and the application will be installed on the system. A progress display will show the installation's progress.



As soon as the installation is completed the following display will appear. iReport can be directly started or, if desired the box next to "Run iReport..." can be unchecked to simply end installation.

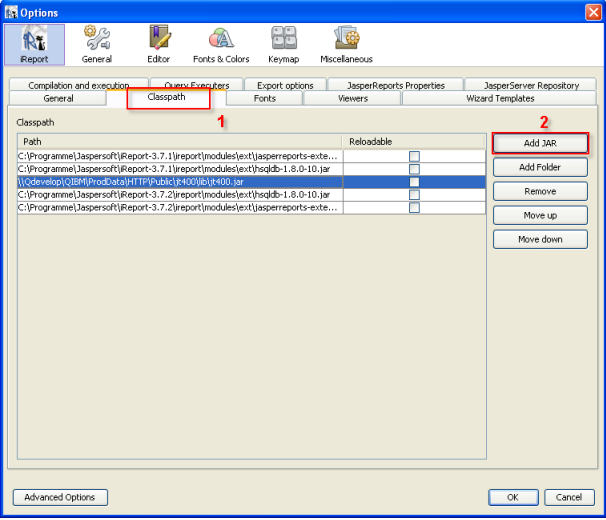
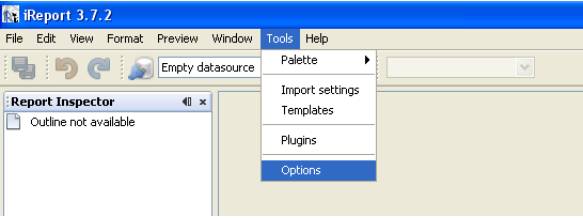


iReport Set-up

When iReport is started for the first time, a connection to the database must first be established. It is also required to integrate the corresponding drivers and to set the required parameters for database connection. This tutorial describes how iReport and i-effect® can be used together to create reports on an IBM Power Systems using IBM i as the operating system. IBM's relational database (DB2) has been installed on this system. iReport must be set-up as follows to connect it to an IBM DB2 database:

Set-up of the Class Library

Select the Menu Item "Extras-Options" from iReport's main menu.

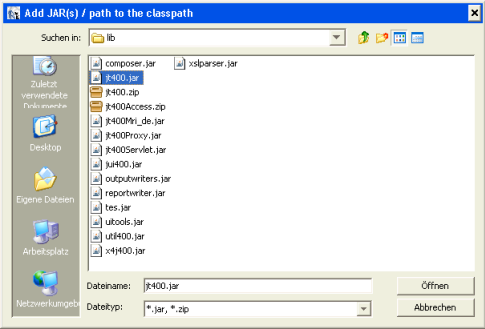


A new entry must be made in the tab "Classpath" in iReport's configuration screen. Click on "Add JAR" (2)

Select the file "jt400.jar" in the following screen. Normally, it can be found in the following directory of the IBM Power System:

```
../QIBM/ProdData/HTTP/Public/jt400/lib"
```

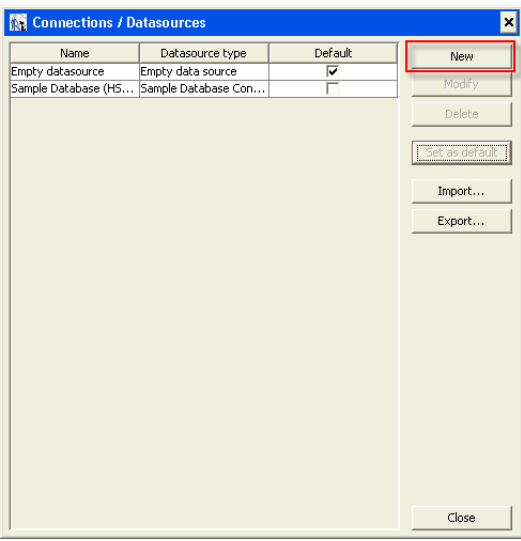
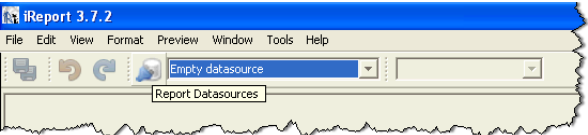
If the file is not present on the system, this library can be downloaded as a part of the IBM Toolbox for Java by the license program 5722JC1 or also from <http://jt400.sourceforge.net/> as an OpenSource Version of the IBM Toolbox for JAVA.



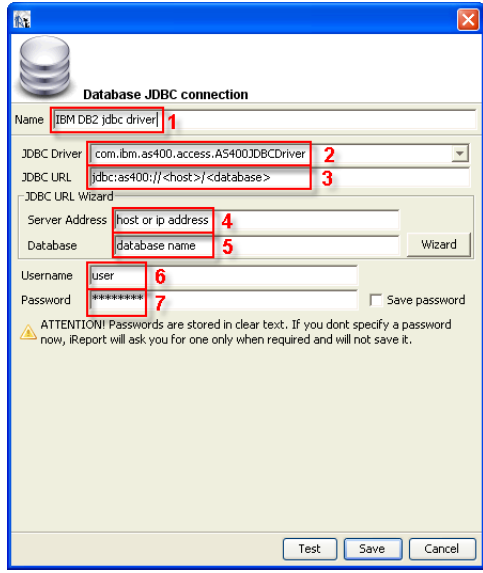
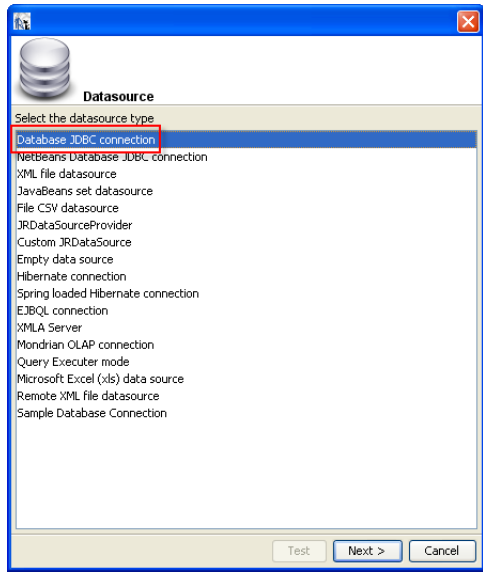
If the driver is integrated, the database connection can be configured in the next step.

Creation of a new Database Connection

Select the symbol for "Report Datasources" in iReport's main menu.



To create a new database connection click on "New" and select "Database JDBC connection" in the following screen.



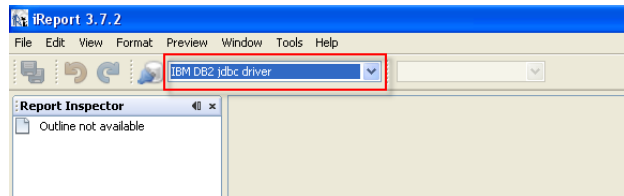
The following data must be entered in the following screen to set-up database accesses:

- 1) Free Designation of the Database connection
- 2) Class Name of the IBM DB2 JDBC database driver. Enter:
„com.ibm.as400.access.AS400JDBCdriver“
- 3) The URL for access to the system. jdbc:as400://<host>/<database> is the correct form. <host> is the name of the system and <database> ist he name of the database

Example : `jdbc:as400://develop.meb.de/develop`

- 4) DNS name or IP address of the connecting system.
- 5) Database's name
- 6) User name with access rights to the selected database.
- 7) User's password

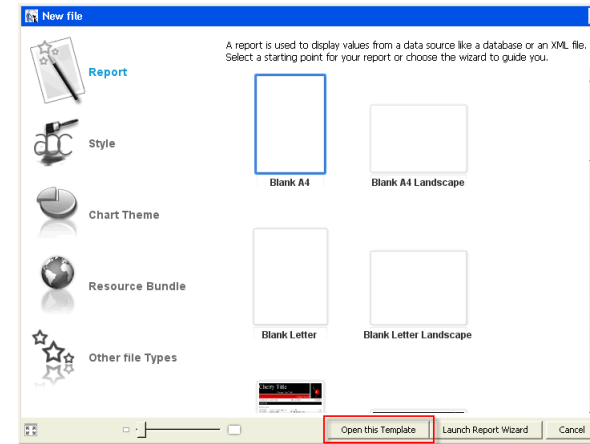
After successful set-up of a new database, it will appear as an additional selection in the toolbar and can be used to create a new report, as seen in the following chapter.



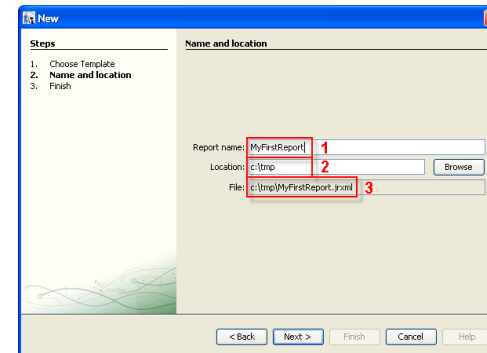
Create a Report

A new report can be created by selecting the file-new option from iReports menu. A variety of ready-made reports can be selected or a new one can be created by using the report wizard.

This tutorial describes the creation of a new, empty report that is connected with the DB2 database. More information regarding iReport, it's control elements, and detailed information about users of all functions in the application can be found in the manufacturers literature or in the online help that can be activated by pressing the F1 key.



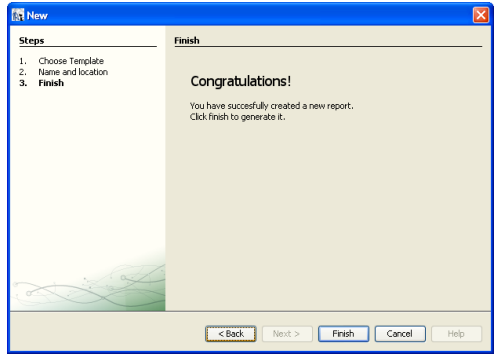
For this example select the template **“Blank A4”** and confirm the selection by clicking on **“Open this template”**.



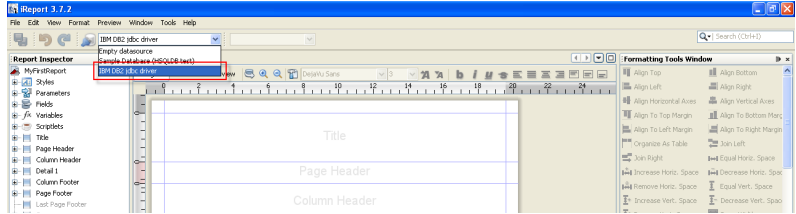
The following specifications must be made for the new report:

- 1) New name for the report file. **(1)** For this example **“MyFirstReport”**
- 2) Directory for storage of the new report file **(2)** . For this example **“c:\tmp”**
In the last entry field, the name of the new file as an absolute path will be displayed **(3)**

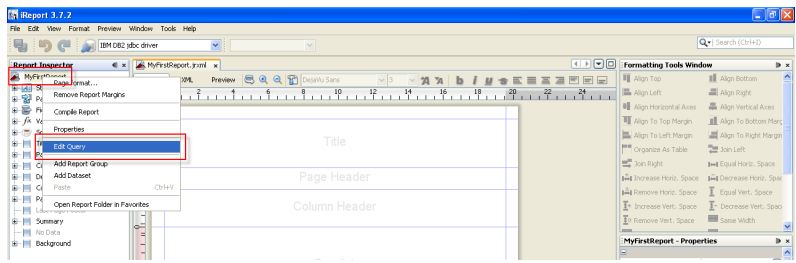
Enter the correct data as required and confirm by clicking on **“continue” (4)**.



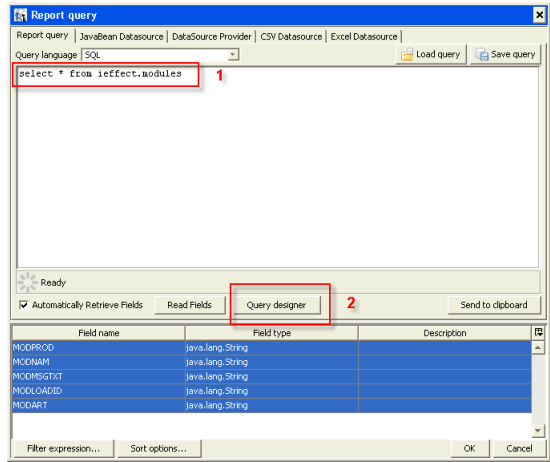
By pressing **“Finish”** the graphical editor will directly appear and both a connection to the database and a report can be created.



Select the data source defined in the previous step **“IBM DB2 jdbc driver”**. Information will be read from this data source that will be placed in the newly created report. An SQL query statement will be configured in the next step to tell the system which data should be selected for the report. This database query grants iReport access to the records and fields of the selected databases and tables.



Using the right mouse button select **“MyFirstReport”** from the left overview and select **“Edit Query”**.



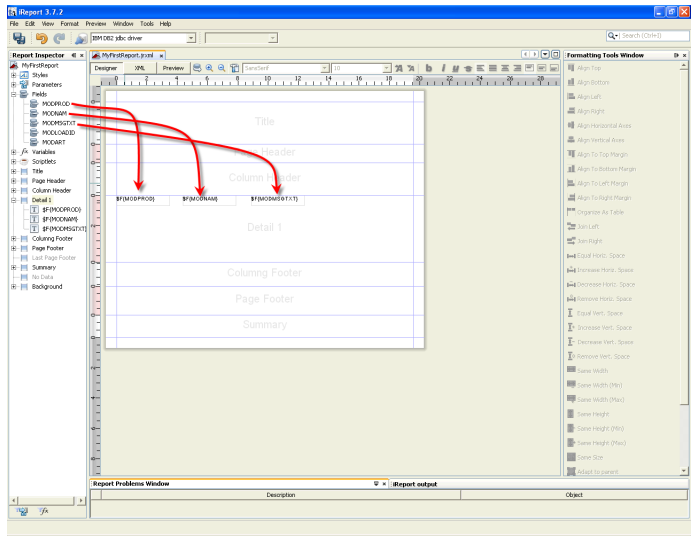
There are two ways to enter a database query. If the exact query term is known, this can be entered in the complete SQL Statement in the top area of the input window (1). iReport offers a Query Designer (2) for further support that uses tables and fields in a graphical editor that will help create a complete SQL statement.

The following example uses a simple database query in i-effect®'s module table. The simple statement **“select * from ieffect.modules”** can be thus entered into the input mask (1).

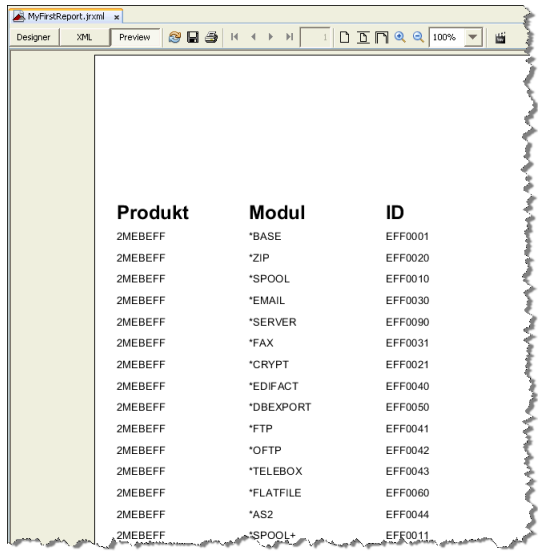
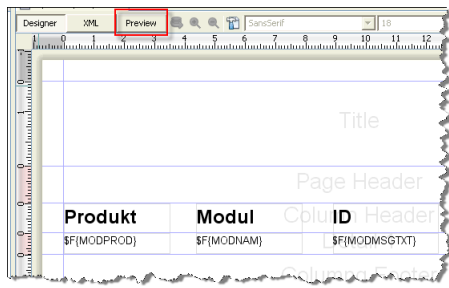
Please note: directly after the SQL statement has been entered, the field names of the results table will be displayed in the lower window. Proof of successful access to the database.

Confirm this dialog with **“OK”** and return to the design screen.

When the item fields is opened in the left overview, the **“fields”** of the results table of the database query can be seen.



Drag and drop the fields in the details section to position the elements. Three fields have been positioned next to one another in the section to display the list as a table. Reduce the size of the detail section to the required minimum by double-clicking on the lower line. Enter a static text for the headers. By clicking on "Preview" a completed version of the report will be displayed.

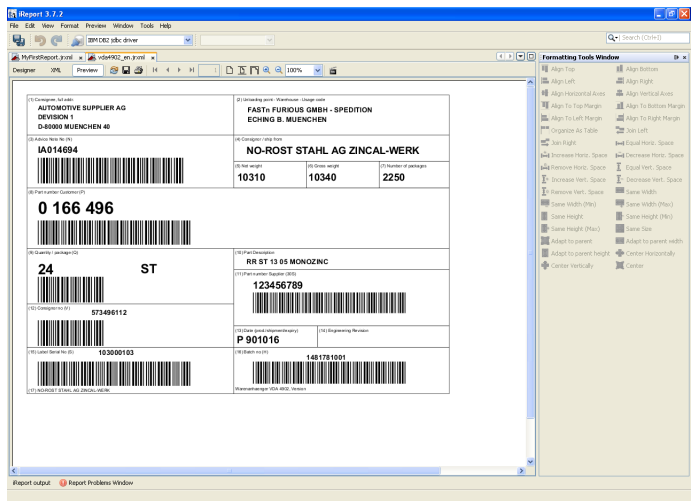
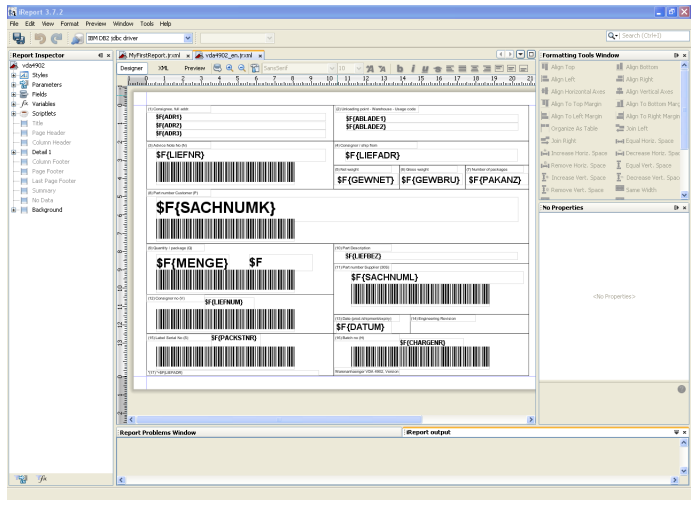


Reports created in this manner will be saved in a file with the ending "jrxml" "My-FirstReport.jrxml" is the file's name in the example provided. The file must be stored on the IBM Power System in order to be able to run it with i-effect®. Use the following call in i-effect® to create the report. (In this example it is assumed that the report is saved in the /tmp directory)

```
IEFFECT/RUNREPORT REPORTXML(/tmp/MyFirstReport.jrxml')
  DBUSER(<user> <password>)
  OUTPFILE(/tmp/ModuleList.pdf')
```

Replace <user> and <password> with the respective names of user and password, so that i-effect® can access the database. This call creates the report as a PDF file and saves the results as the file "/tmp/ModuleList.pdf".

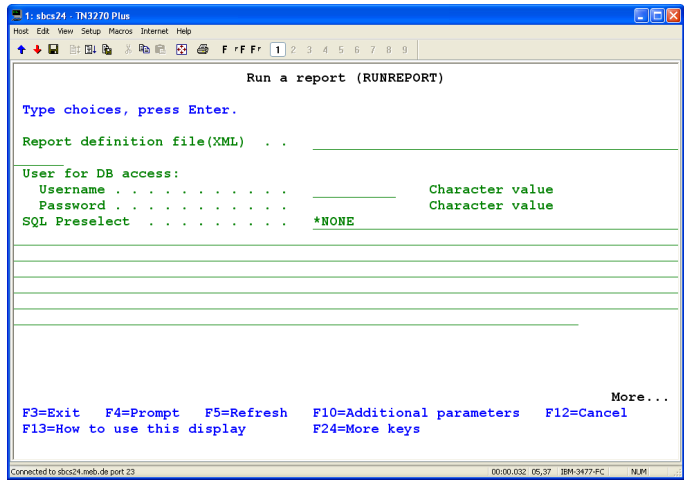
More complicated reports will be generated in the same manner, as, for example the sample report of a VDA4902 material tag.

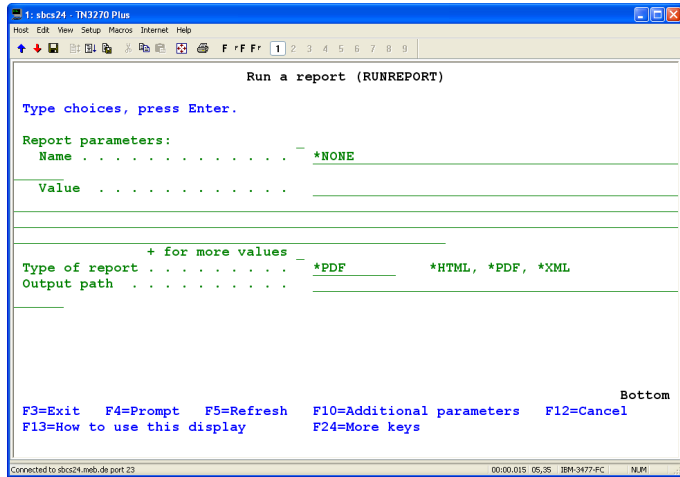


Report Generation with RUNREPORT

The command RUNREPORT can be used to create a report. An XML report definitions file, in which the details for a report are defined, is accessed for this purpose. The results files can be created as PDF, HTML, or XML.

Licenses for the *BASE, *SPOOL and *SPOOL+ modules are required, in order to use this command.





Report Definitions File (XML)

Specify an XML file that contains the definitions for creating a new report. This can be an uncompiled.jrxml file or a compiled.jasper file.

User for DB Access (DBUSER)

Enter the user that has access rights to the database from which the report will be created.

This parameter consist of two elements:

User Name Enter the desired database user.

Password Enter the aforementioned user's password.

SQL Pre-select (SQLPRESLT)

An SQL select statement can be specified here, that is run before report creation and who's results are sent along to the creation process. Every line of the result set will be passed on individually to report creation and a separate report file will be generated for them.

Every results column is available during the filling process as a report parameter.

The parameter name corresponds to the column name inclosed in % (%COLUMNNAME%). The parameters in this notation can be accessed with in the report.

Example:

Query type „Select * From MyTable“ provides columns “Col1”, “Col2” and “Col3”

These columns are available in the report as parameter “%Col1%”, “%Col2%” and “%Col3%”.

Please be careful to enter the parameters with the correct name in the report definition.

Important:

Please assign the correct Java data type to the parameters in the definition. If a results column, e.g. is an SQL Type “Char” the report definition of the Java data type of the corresponding parameter must be “java.lang.String”. The wrong data type will result in an error during report creation. Which SQL type corresponds to which Java type during pre-select, can be found at “<http://java.sun.com/j2se/1.5.0/docs/guide/jdbc/getstart/mapping.html>” in section “8.9.1 JDBC Types Mapped to Java Types”.

Report Parameters (PARMS)

With Report Parameters it is possible to pass on additional data in the form of a key value to the report creation. These parameters are sent to JasperReports during the filling process. They can be useful, if JasperReports cannot take them from the original data sources.

The parameters can be accessed within the report using the following pattern: %PARAMETERNAME%.

Example:

To access a parameter with the name ‚MyParam‘, %MyParam% must be entered in the report. Please note, the parameter values will be passed on to report creation as the data type String. Please store the parameters in the report definitions with the data type ‘java.lang.String’.

If a number is entered as a parameter value, e.g. 123, this must be converted in the report to the Java ‘Integer’ data type, if, for example, calculations will be made with them.

Report Type (TYPE)

Enter the format type here for output of the report.

Possible Values:

**PDF* The report will be created in PDF format.

**HTML* The report will be created in HTML format.

**XML* The report will be created in XML format.

Output Path (OUTPFILE)

Enter the complete name, including path, of the output file here.

i-effect Application Server (EFFSERVER)

It is possible, with i-effect®, to remotely call up certain tasks from another IBM-Power System in the network. It is also possible to call up this command remotely. The sever on which i-effect®, is installed and licensed must be specified in this case.

This parameter consists of three elements.

DNS Name or IP

Enter the DNS name or the IP address of the i-effect® server.

**LOCALHOST* This default value specifies that the command is called up on the same system where i-effect® is installed. It is required that a port be assigned in the next parameter

TCP/IP-Port

Enter the port from which the i-effect command will be called up. This port is dependent on the area for TCP/IP ports specified in the default settings of the *BASE module. (Menu item 80).

The following settings are possible:

<i>Command SNDAS2</i>	Base Port + 0
<i>Command SNDEMAIL</i>	Base Port + 1
<i>Command SNDFAX</i>	Base Port + 1
<i>Command SNDSMS</i>	Base Port + 1
<i>Command RCVEMAIL</i>	Base Port + 1
<i>Command RUNREPORT</i>	Base Port + 3
<i>Command SNDBACK</i>	Base Port + 4
<i>Command SNDOFTP</i>	Base Port + 6

Select the base i-effect TCP/IP port area and add a number that corresponds to the desired command

Type of Call

This parameter defines whether the calling server first waits for feedback or is immediately available for further actions.

<i>*SYNCH</i>	Synchronous means that the system will wait for an answer from the remote side. Only after this is the system available for further actions.
<i>*ASYNCH</i>	The iSeries server is immediately available for further actions, as processing of the remote-controlled call runs in the background

