

Requirements specification

Eclipse-BIRT-based application

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Requirements specification

Document history

Version	Date	Author	Comment
1.0	25.06.2008	Dennis Schladebeck	
1.1	11.07.2008	Joel Rosi-Schwartz	Sanitised for public distribution.

1 Current system description

The system is designed to create pre-defined reports to visualise data acquired from a data acquisition system. The data is stored in a proprietary structured ASCII format. Reports can be defined as templates and reused for different sets of data. Only a few users of the system will create new report templates, but many will run reports to visualise their data.

1.1 Software

Our customer is using BIRT version 2.2.2 with a custom JDBC driver as an adapter between the ASCII result-files and BIRT. The reports are designed using the BIRT Report Designer and can be executed with different data via the command line using BIRT Runtime. The entire system will migrate to the latest version of BIRT, 2.3, as a part of this work.

1.1.1 Report Designer

Using the BIRT Report Designer we can easily specify reports with parameterised data sources to allow the same report template to be used with different ASCII result-files.

1.1.2 BIRT Runtime

The BIRT runtime starts a headless version of BIRT, executes a given report and generates a PDF file.

1.1.3 Custom JDBC driver

BIRT already offered support to integrate custom database drivers, using the JDBC interface. We wrote a new JDBC driver, that wraps the access to an in-memory Hypersonic database, by pre-filling the database and returning the JDBC connection of the Hypersonic database to the outer world.

To fill the database with the desired data, the JDBC driver expects the path to the ASCII result-files in the connection url. Then the proprietary ASCII files are read, parsed and written into the Hypersonic database.

The architecture is shown in figure 1

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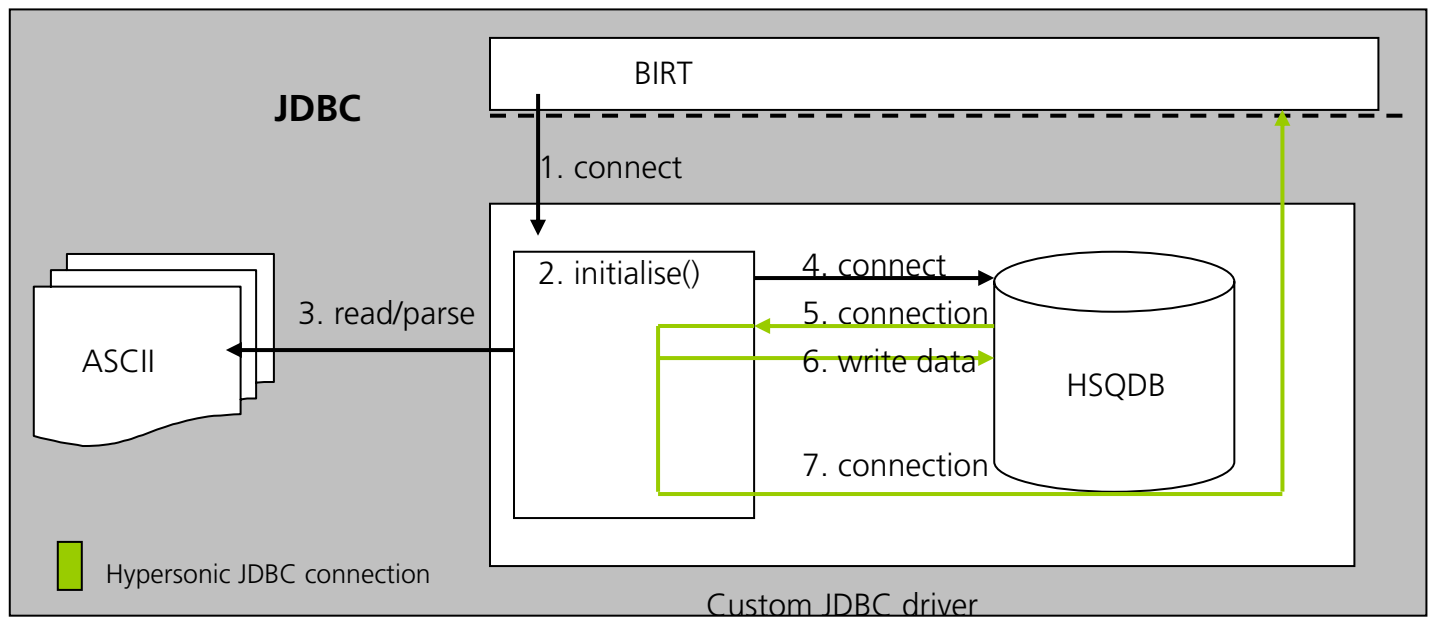


figure 1

1.2 Hardware

Standard office personal computers using Windows XP, Windows 2000 or Linux.

2 Requirements

Our customer requests a functionality to change values during report generation: not to change the values in the ASCII files manually or via a special editor, but to **change values** in the generated reports **and persist them back into the ASCII files via our JDBC driver**. The solution should be based on the latest released BIRT Version, which is BIRT 2.3.0 at the moment.

The following section describes the desired workflow in greater detail.

2.1 Report Editing

The user starts the BIRT Runtime to execute the report generation with a given ASCII result file. By using a special command-line parameter or BIRT parameter, BIRT does not use its PDF emitter to render to PDF files, but renders the report as a HTML GUI instead.

The HTML GUI should display the report in a similar layout as the generated PDF report. All fields filled with data read from database should be editable, with several obvious limitations (see 2.1.2.).

The users can then save or discard all changes. Saving the changes should result in writing the changed values back into the ASCII result files (see 2.1.2.).

2.1.1 Implementation thoughts

Whenever using data in BIRT we may need to carry through some meta information (where does the data come from, which table, column, row). Therefore we may have to make changes to the BIRT source code.

The web based editor could be realised as extension of the existing BIRT HTML report emitter.

We have already created a proof-of-concept sample implementation, where we added some extra meta information to the datasets and changed the BIRT data engine to read this meta information whenever data content in a report is created. We then manipulated the original HTML renderer to log the meta information, during the rendering of data fields.

The meta information we used looked like the following :

```
META ( FROM ) : TOA_INFO . TESTPLAN
```

```
META ( ID ) : 4
```

So we had the <table>.<column> and the primary key as information.

2.1.2 Limitations

There are several limitation on the editing functionality:

calculated values : values that are calculated (javascript) or that are the concatenation of more than one database field cannot be edited

charts / plots / tables : there should be an extra editor for high level BIRT components to allow rows to be added or the value pairs used in the charts / tables /etc. to be manipulated.

writing data back : the graphical editor does not need to write the changes directly into ASCII results files. It only needs to use the JDBC connection to execute the necessary update or insert statements, when SAVE is triggered.

formatted data : formatted data can only be edited when the formatting rules are known (having the date format in date fields for example)

meta information creation: it might be necessary for the user to manually add columns containing the meta information to the BIRT datasets. We favour a solution where the meta information is added by BIRT automatically.