

Design and Architecture

Reporting Engine powered by JasperReports Library



BNP PARIBAS

Jasper Report Lifecycle

1. Design Phase (Generating .jrxml files)

- Implement the report template using an XML format (.jrxml file). In this design, we outline:
 - Layout (placement of titles, tables, charts, and so on)
 - Fields, parameters, and variables
 - Queries for the data source (SQL or JavaBeans, etc.)
 - Expressions (dynamic text, calculations, and formatting)

2. Compilation Phase (.jrxml → .jasper)

- The .jrxml file is transformed into a .jasper file (in binary format) before it gets filled with data.
- This compilation process converts design elements and expressions into active code.
- Security controls can be applied during this step.

3. Data Filling Phase (Fill .jasper with actual data)

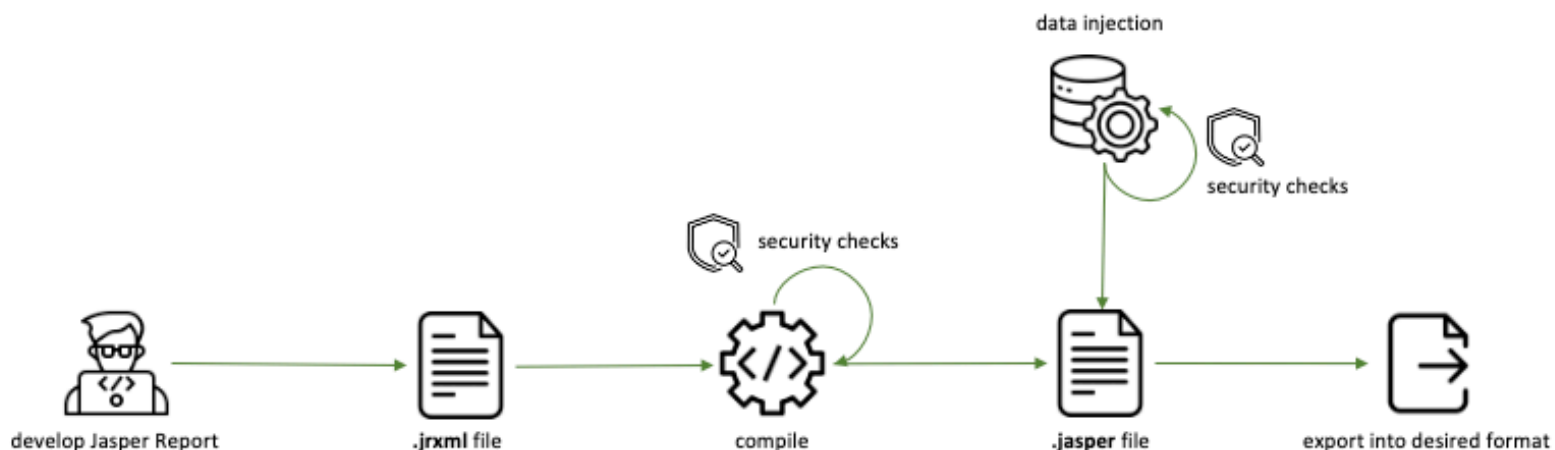
- Enrich the compiled report with genuine data by providing:
 - A DataSource (such as a JDBC connection, JavaBeans, Collections, etc.)
 - Any parameters the report requires
- Security controls can be applied during this step.

4. Export Phase (Produce PDF, HTML, Excel, etc.)

- The JasperPrint object is now ready to be exported into various output formats, including:
 - PDF (the most widely used)
 - HTML
 - Excel (XLSX)
 - CSV
 - DOCX

5. Viewing or Distribution Phase

- At last, the report is:
 - Displayed/distributed using a web application or an API or a web service.
 - Sent via email to users
 - Saved into a designated storage space.



Solution Architecture

