

Test automation for the back-end

Model-based Testing

The RapidRep Test Suite is an innovative software for automated back-end testing.

RapidRep can access data sets of different systems and connect them as required. Among the data sources supported are all common databases (Oracle, DB2, Microsoft Access, Sybase, SQL Server and many more) as well as structured text files.

RapidRep's flexibility can be seen in its numerous possible applications. For example, RapidRep can:

- verify the results of data processing.
- demonstrate the correct implementation of a migration.
- measure and improve the quality of data (raw data and results).
- repeat tests automatically and transfer their results to a test management system.

RapidRep is developed, distributed and continuously improved by FINARIS.

Based on your purchasing strategy, you can either buy or rent the RapidRep Test Suite.

You can find our current training program on our website. On demand, we offer workshops specially tailored to your needs at your or our offices.

Test management

Companies use test management systems (TMS) to plan, manage and track test cases. Only in a very limited way is testing the back-end supported by these systems. RapidRep on the other hand evaluates test cases by machine and documents the result in one of the systems supported like HP Quality Center, IBM Rational Quality Manager or Microsoft Team Foundation Server. RapidRep creates a detailed Excel workbook for each executed test case. In the TMS, these workbooks provide the revision-safe test proof.

Defect management

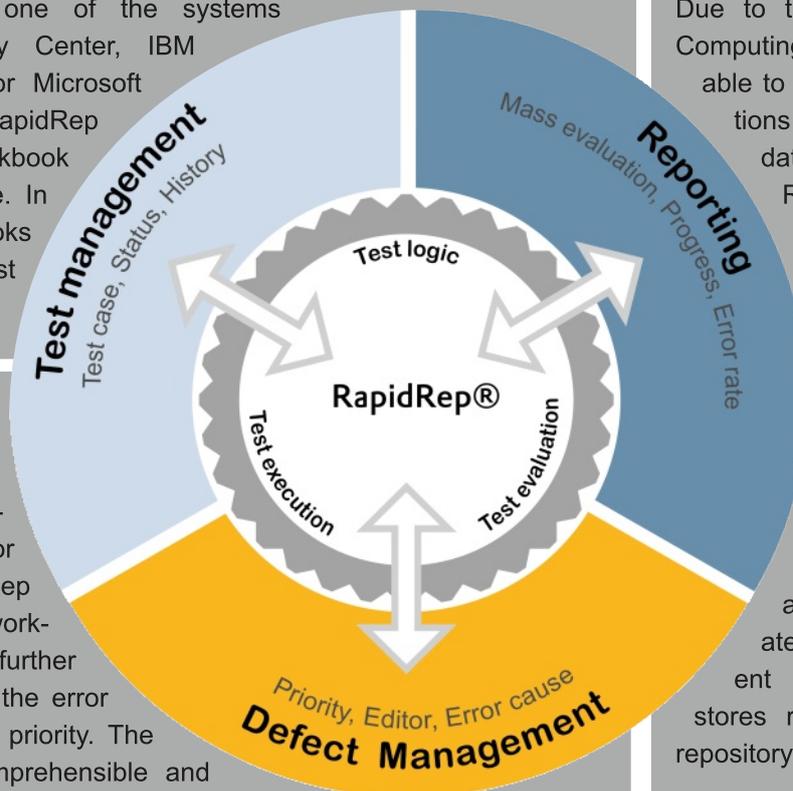
If RapidRep finds at least one deviation from the target result during the test evaluation, it creates a defect for the failed test case. RapidRep attaches the created Excel workbook and if required, it adds further information like for example the error cause, responsible editor or priority. The detailed workbooks are comprehensible and facilitate troubleshooting.

RapidRep supports numerous defect management systems.

Reporting

RapidRep can store results and interim results of the test execution in a database and then evaluate them. Due to the optional use of Cloud Computing technologies, RapidRep is able to perform very many calculations in parallel on different data sets.

RapidRep presents the evaluation results in user-defined Excel workbooks, providing you with an overview of large amounts of data. Examples for such mass evaluations are reports on the status of your data migration or data quality evaluations, for example. The workbooks created are absolutely transparent and replicable. RapidRep stores reports revision-proof to a repository.



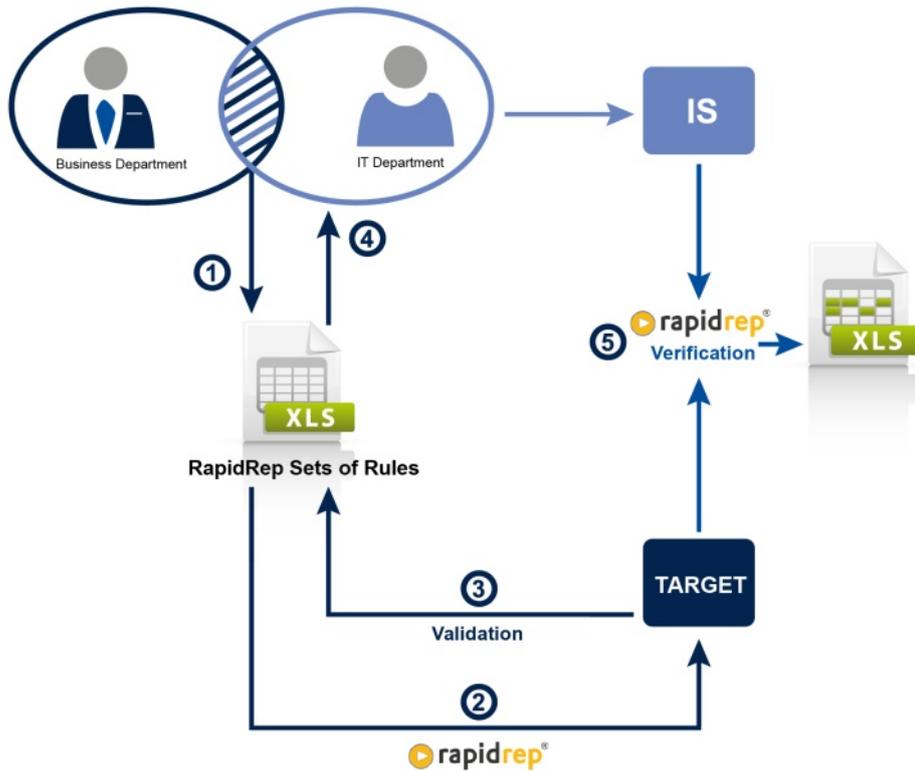
In testing, it is always about the question, whether the observed result corresponds with the expectation. To determine the expected result is often complex and laborious.

The following approach constitutes a highly efficient method for determining expected results with the help of sets of rules. If the expected results

In most companies, members of the business department determine which requirements shall be implemented by IT tools. Such requirements exclusively describe what shall be implemented but not the respective procedure from perspective of the IT department. Usually it is the task of the IT department to translate

RapidRep Sets of Rules

In the early stage of a project, the key players from business and IT department meet and define unique rules ① how the specifications can be implemented. Often MS Excel is utilized for this since it is easy to use and widely distributed. The structure of the RapidRep sets of rules is based on its application purpose and may differ from project to project. With regards to the method it is not important who captures these rules but that both sides understand the rules in the end. The subsequent validation determines whether these rules reflect the specification model correctly.



"Why spend all this time and money finding, fixing and fighting errors when you could prevent the incident in the first place?"

Philip B. Crosby (*1926)
American management consultant and writer

are already known or derivable by simple means (e.g. for a migration), the procedure is simplified because no sets of rules are required.

Automation

The rule-based RapidRep method relies on the factor automation. In order to perform an automated test, three things are required:

- I. The result of the IT implementation ("Is") must be observable and up to date.
- II. RapidRep must know the expected result ("Target").
- III. The business department must trust the target result.

requirements from a functional specifications document into a concrete data processing concept, which then serves as basis for the implementation. The quality of such a data processing concept is essential for the quality of the resulting program and its costs.

"The correct preparation of annual tax statements and income statements for our customers is very important to us. With RapidRep we can almost completely automate the test of customer documents in very large numbers. In this way we can save costs and achieve a high quality."

Rainer Janzen
Business project manager "Abgeltungssteuer"
Commerzbank AG



The validation is an iterative process to ensure that the RapidRep sets of rules are correct and complete. The validation is performed in three steps.

Thus, the three conditions for a successful test automation mentioned above are met. From now on test execution and documentation can run on a high level of automation.

"With the help of RapidRep sets of rules, the technical requirements are clearly described, approved by the business department and implemented in the IT faster and with much less effort. In addition, RapidRep accelerates the elimination of bugs in the test by automatically providing rule violations in form of detailed Excel workbooks."

Thomas Feindt

IT project manager "Abgeltungsteuer"
Commerzbank AG

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1. Rapid Prototyping

RapidRep applies individual rules on basis of a test case and generates a prototypical target result in an Excel workbook ②. The rules are changed until the business department views the result as correct ③.

2. Mass evaluation with result plausibility

With help of the sets of rules, RapidRep determines a large number of target results. The subsequent validation of these mass results ensures that the sets of rules take all possible constellations into account and that the results are consistent or plausible in themselves.

3. Approval

The business department accepts and approves the complete set of rules, which then flows into the data processing concept as concrete target ④.

From this point on RapidRep can be used as so called "test oracle". Everyone involved can trust the determined target result because they are involved in its derivation from the beginning. In addition, RapidRep documents the rules applied in the created Excel workbooks.

RapidRep determines for all test cases the respective target result and compares it with the results produced by the IT implementation ⑤. In this manner, batch scripts evaluate the complete test case portfolio - if required, several times a day.

The workbooks, which RapidRep optionally also transfers to a test/defect management system, facilitate



analysis and troubleshooting. This allows to quickly identify those rules which the actual result fails against and to find them in the corresponding programming code, provided the unique rule numbers are commented in the application's source code.

The advantages of this approach are obvious and lead in total to a significant saving of costs when testing the back-end. Additionally, the error rate is already significantly lower because the sets of rules prescribed by the business department are unambiguous and thus minimize misunderstandings in the implementation. The test evaluation is fully automated and reliable. The number of controllable test cases increases exponentially - at steady cost!



RapidRep provides interfaces to virtually any data source and optionally communicates its results to an existing test/defect management system. Therefore this software presents the link, previously missing in many companies, between application development and quality management.

The RapidRep Test Suite's possible applications are very diverse and cover projects in all business sectors in which data is processed. RapidRep customers from the financial sector, for example, use the software for projects such as "Abgeltungssteuer" (withholding tax) or Basel III and technical adaptations, such as data interfaces, migrations or ETL processes.

In several projects, RapidRep could significantly decrease the cost for testing the back-end. The increase in quality accompanying these cost savings is a direct result of the following features of RapidRep.

Automation

RapidRep has an efficient batch interface which allows for a highly automated degree of the evaluation of test cases and the generation of reports. Thereby, RapidRep performs the underlying calculations without any manual intervention. The evaluation of the complete test case portfolio can be repeated as often as required.

High level of integration

RapidRep communicates with all renowned test and defect management systems. As a consequence, RapidRep can be integrated smoothly and without manual intervention into an overall test process. The RapidRep user does not need any knowledge about the underlying test or defect management system.

Efficient integration of resources

In RapidRep, Excel workbooks play an important role. They allow to early on include members from the business and IT departments in designing the Excel templates together.

This ensures that the workbooks, which get automatically filled during the test evaluation, contain all details necessary to replicate the executed tests. The main effort lies then only in the error evaluation and not in the otherwise elaborate implementation and documentation of the tests.

Global Delivery Model

Due to its modular architecture of different specialized components, RapidRep enables the organizational separation of test case design and test execution.

Besides, RapidRep saves all artifact versions to a repository. This allows different persons to apply changes to the test implementation from everywhere.

Reusability

Many elements of a test implementation can be reused in other projects. Consequently, the supplied function libraries grow steadily to a collection for returning tasks. For the following standard problems, complete solutions are already available:

- Wizard for comparing data from different source systems (Data comparison wizard)
- Wizard for rule-based data quality evaluations (Data quality wizard)

After a one-time configuration, both solutions are ready for immediate use.

USP

In the market for test automation there is currently no solution comparable to RapidRep. The provable successes in projects show that a highly automated level of back-end testing can be realized with RapidRep. The license costs for purchasing or renting RapidRep amortize within a short period time.

HP Quality Center, IBM Rational Quality Manager, Microsoft Excel, Microsoft Team Foundation Server, Oracle, DB2, Sybase, SQL Server and RapidRep are (registered) trademarks of their respective owners.

System requirements



- 1 GB RAM, 400 MB hard drive space
- Windows XP SP3, Vista, 7 and 8
- RedHat- and SUSE-Linux GTK > 2.2.1
- IBM AIX
- Solaris / Open Solaris

Evaluation / Proof of Concept



Would you like to evaluate RapidRep® at a specific application case in your company?

Please contact us.

We gladly implement a RapidRep® test installation and convince you personally of our software's benefits.