LDBC

Collaborative Project

FP7 – 317548

D1.1.3 Initial Benchmark Development Portal

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Abstract

This deliverable reports on the LDBC Benchmark Development Portal. The Benchmark Development Portal supports the development of benchmarks and host the benchmarks software and datasets. The portal consists of a set of tools that were installed and made available in the first months of the project. We have made available a web portal, a wiki, source code repository, a file-sharing repository and an issue tracker. The exiting tools will be maintain and upgraded if needed, and additional tools will be installed if needed.

Executive summary

This deliverable reports on the LDBC Benchmark Development Portal. The Benchmark Development Portal supports the development of benchmarks and host the benchmarks software and datasets. We have installed a set of tools that together form the LDBC Benchmark Development Portal, in order to support users in one or multiple phases of a benchmark development process. We have made available:

- A web portal (www.ldbc.eu/)
  The web portal is the main point for dissemination of its benchmarking activities, benchmark software, and officially recognised, audited benchmark results.
- A wiki (www.ldbc.eu/wiki)
  The wiki supports the collaborative work on LDBC benchmarks especially in the design phase and can be used to share early results.
- A source code repository (http://svn.ldbc.eu/)
  The source code repository is used for to share development code and distribute released benchmark software.
- An file sharing repository (sftp.ldbc.eu)
  The file-sharing repository enables the sharing of potentially huge files (e.g. datasets)
- An issue tracker (http://www.ldbc.eu:8085/)
  The issue tracker is a very useful tool to track feature requests and bugs in benchmark software.

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18.03.2012	0.1	Ioan Toma	First complete version of the deliverable.
03.04.2012	1.0	Ioan Toma	Final draft; Review comments implemented

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Abbreviations

CMF – Content Management Framework

CMS – Content Management System

LDBC – Linked Data Benchmark Council

RDF – Resource Description Framework

TUC –Technical User Community

SFTP – Secure File Transfer Protocol

SVN – Apache Subversion

1   Introduction

The main objectives of LDBC work package 1 (WP1) is to develop a common benchmark methodology that will include guidelines on how to define, extract, support and analyze benchmarks coming from various usage scenarios and focusing on different features of the graph and RDF databases. In order to support the development of benchmarks according to this common benchmark methodology, WP1 is also providing a benchmark development environment

This deliverable reports on the LDBC Benchmark Development Portal. The LDBC Benchmark Development Portal supports the development of benchmarks and host the benchmarks software and datasets. The portal consists of a set of tools that were installed and made available in the first months of the project. We have made available a web portal, a wiki, source code repository, a file-sharing repository and an issue tracker. Each of these tools is needed in one or multiple phases of a benchmark development process. The web portal is the main point for dissemination of its benchmarking activities, benchmark software, and officially recognised, audited benchmark results. The wiki supports the collaborative work on benchmarks especially in the design phase and for sharing early results. The source code repository is used for to share development code and distribute released benchmark software. The file-sharing repository enables the sharing of potentially huge files (e.g. datasets) and finally the issue tracker is a very useful tool to track feature requests and bugs in benchmark software. For each of the tools accounts have been created for project members and external individuals that have shown interest in developing LDBC benchmarks.

The exiting tools will be maintained and upgraded if needed. Additional tools will be installed if needed. We will report on future activities related to the development of the LDBC Benchmark Development Portal in the follow up deliverables i.e. D1.1.4 and D1.1.5, due M12, respectively M24.

The structure of this deliverable is as follows. In Section 2 describes the LDBC Benchmark Development Portal and its constituent tools. Finally, Section 3 summarizes the deliverable and briefly describes the future activities with respect to the LDBC Benchmark Development Portal.

2   LDBC Benchmark Development Portal

The LDBC Benchmark Development Portal consists of a set of tools that were installed and made available in the first months of the project. We have made available a web portal, a wiki, source code repository, a file-sharing repository and an issue tracker. Table 1 lists the tools that are part of the 1st release of the LDBC Benchmark Development Portal and their locations i.e. URLs where they are available. More details about the tools are provided in the following subsections.

Tool	URL
LDBC Web Portal	www.ldbc.eu/
LDBC Wiki	www.ldbc.eu/wiki
LDBC Source Code Repository	http://svn.ldbc.eu/
LDBC File Sharing Repository	sftp.ldbc.eu
LDBC Issue Tracker	www.ldbc.eu/jira

Table 1 List of LDBC Benchmark Development Portal tools and their URLs

2.1   Web Portal

The LDBC Web Portal available at: www.ldbc.eu/ provides the infrastructure for hosting the LDBC Project Web Site.
The LDBC Web portal is the entry point for getting an overview of the project. Interested users can read about the LDBC project. It also presents the consortium members and their role in the project as well as the associated partners with whom LDBC collaborates. Furthermore, the web site provides access to researchers and industry to specific information, newest results and happenings within and outside the consortium, and to the schedule for achieving the project objectives. The LDBC Web portal is periodically updated to reflect the latest advancements with respect to project work and related activities.

In order to better support users to navigate and easily find information, the Web site was restructured and re-designed in the first six months.

The LDBC Web site contains the following areas:
- *Home*: This is the starting point for users, developers and all interested parties, and therefore contains a summary of all LDBC information.
- *Project*: This area provides detailed information about the LDBC project including objectives, target audiences and outcomes.
- *Partners*: This section lists the academic and industrial partners that are part of the project. It also includes subsections on:
  - *Associated Partners*: This page lists the associated partners and projects with whom LDBC collaborates.
  - *People*: This page gives an overview of the people involved in the LDBC project.
- *Events*: This section provides information about events:
- *Results*: This section provides access to several resources of the project including:
  - *Deliverables*: This area describes the different deliverables in the LDBC project including information about title, work package, partner etc. Deliverables already submitted are made available to the public on this Web page.
  - *Publications*: This section lists all LDBC publications that have been made available by the LDBC consortium.
  - *Presentations*: This page provides access to presentations given by the LDBC team. Presentations will be made available via Slideshare.[1]
  - *Talks*: This page lists the talks given by the LDBC team.
  - *Posters*: This page presents the LDBC posters.

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[1] http://www.slideshare.net/

- o **Press**: This area contains press materials including the LDBC logo and factsheet.
- o **Benchmarks**: This area provides information about the benchmarks developed in LDBC.
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- **Blog**: This area is used to provides access to the internal wiki and the LDBC Technical User Community (TUC).
- **Links**: This area provides access to the internal wiki and the LDBC Technical User Community (TUC).
- **Contact**: This page contains contact information.

For the benchmark development in particular the LDBC Web Portal will also include details for vendors and users containing reference information about the RDF and graph databases benchmarks developed by LDBC. Once the benchmarks are completed details will be available at: www.ldbc.eu/results/benchmarks/. One can track the development of the benchmarks at: http://www.ldbc.eu:8090/display/TUC/Benchmark+Task+Forces.

The LDBC Web Portal is based on Drupal. Drupal[2] is a free and open source content management system (CMS) and content management framework (CMF) written in PHP and distributed under the GNU General Public License. It is a very popular platform with a very large end-user and developer community. Drupal is in full compliance with W3C Web standards to allow interoperability with different browsers. The design of the LDBC Web Portal was created using Photoshop and was afterwards transferred to Drupal by building a theme from the original image with respect to CSS2[3] and XHTML 1.0[4] validity. The welcome page of the LDBC Web Portal can be seen in Figure 1.

Figure 1: LDBC Homepage

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[2] http://drupal.org/
[3] http://www.w3.org/TR/1998/REC-CSS2-19980512/
[4] http://www.w3.org/TR/xhtml1/

2.2   Wiki

A wiki is a tool for allowing people physically separate from each other to collaborate in the creation of joint work. Wikis have been in existence since 1995 [2] are in widespread use across all types of organisation. The LDBC consortium decided to use the Confluence[5] software to run the LDBC's wiki. The LDBC Confluence Wiki is available at: www.ldbc.eu/wiki. The welcome page of the LDBC Confluence wiki can be seen in Figure 2.
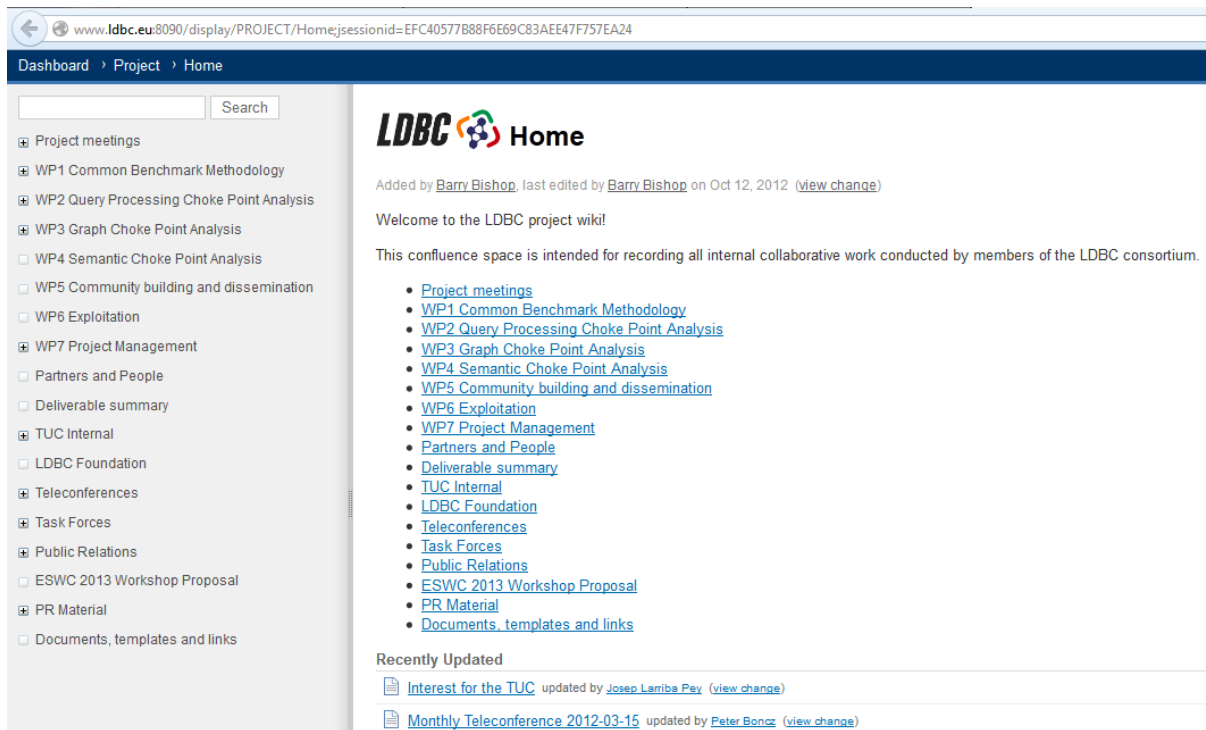

Figure 2: LDBC Confluence Wiki

The reasons for selecting Confluence software to run the LDBC's wiki are:
- **spaces** – Confluence introduces the concept of 'spaces' where each space is a separate work area and can have its own set of user access permissions. Links between wiki pages in separate spaces are very easy to create and manage;
- **navigation** – a number of features of Confluence make managing links and navigating content much easier than other wikis. For example, renaming a page using MediaWiki[6] is a complex operation, whereas Confluence allows any page to be renamed as part of the editing process – incoming links from all spaces are automatically updated. Confluence provides a hierarchical tree for exploring a space, which is both faster for navigation and also provides the user a clear understanding of the structure of the wiki;
- **import/export** – Confluence has built in support for importing and exporting HTML, PDF and MS Office documents. This makes it easy to develop wiki pages until completion and then export the result in most common formats in just a few seconds;
- **plug-ins** – there is a large selection of plug-ins available for Confluence that extend the feature set in a great variety of ways, e.g. there are plug-ins for extending the mark-up language to create UML diagrams, coordinate SCRUM process tasks, create diagrams, provide type-ahead search, time-tracking, etc. Many of these plug-ins are free and provided by the Confluence community;

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[5] http://www.atlassian.com/software/confluence/overview/team-collaboration-software
[6] http://www.mediawiki.org/wiki/MediaWiki

- **personalisation** – users are able to develop their own personal spaces and apply a number of 'gadgets' to wiki pages as well as to embed in non-confluence web-sites;
- **integration** – as well as integrating with the other Atlassian products (Jira, Fish-eye, Crucible, etc.) Confluence provides the means to integrate with external email systems, version control systems and many other productivity tools;
- **comments and forums** – social interaction is encouraged by built in forum support and the functionality to allow viewers to leave comments on pages;
- **page creation** – is achieved using a powerful rich text editor that makes it easy to design pages, insert macros and link to other pages, web-sites and attachments.

The LDBC Confluence Wiki has to distinct areas:
- a password protected area, intended for the internal use of the project, available at: http://wiki.ldbc.eu:8090/display/PROJECT/
- a publically open area for all those interested in participating in the LDBC Technical User Community (TUC), available at: http://wiki.ldbc.eu:8090/display/TUC/

Under the project area of the wiki the following information areas are available:
- *Project meetings*: This area contains information about all LDBC project meetings.
- *Work packages:* A dedicated area for each work package (WP1-7) is available containing information such a deliverables and tasks.
- *Partners and People*: This section lists the academic and industrial partners that are part of the project.
- *Deliverable summary*: This area contains a table with all deliverables to be delivered in LDBC.
- *TUC Internal*: This area contains information related to Technical User Community (TUC).
- *LDBC Foundation*: This section provides information about the LDBC foundation, its setup and operation.
- *Teleconferences*: This area list all the LDBC monthly teleconferences including participants, agendas and actions.
- *Task forces*: This area contains project interanal information about the benchmark task forces.
- *PR materials*: This area contains the PR materials such as project fact sheet.
- *Documents, templates and links*: This area contains the legal documents, deliverable and reports templates, and guides.

Under the publicly available area dedicated to Technical User Community the following information areas are available:
- *Benchmark Task Forces*: This area contains public information about the benchmark task forces that were set up for each benchmark being developed.
- *Events:* This area list of the TUC meetings including detailed information such as agenda, slides and logistics.
- *Use cases*: This area collects information related to the various use-case scenarios being discussed during the evolution of the TUC.

2.3   Source Core Repository

A source code repository is a system that is used to maintain current and historical versions of files including source code and documentation. Project deliverables are also available in the source code repository.
The LDBC consortium decided to use the Apache Subversion[7], shortly SVN, to run the LDBC's source code repository. LDBC SVN is available at: http://svn.ldbc.eu/. The LDBC SVN is also brows-able online, the starting page being displayed in Figure 3.

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[7] http://subversion.apache.org/

Figure 3: LDBC SVN Source Code Repository

The main reason for selecting Apache Subversion (SVN) to run the LDBC's source code repository is that Subversion is a very popular, widely used, now a top-level Apache project being built and used by a global community of contributors.

2.4   File Sharing Repository

A file sharing repository is a system that supports the distribution or access to digitally stored information, such as computer programs, multimedia (audio, images and video), documents, or electronic books.[8] The LDBC consortium decided to use a Secure File Transfer Protocol server[9], shortly SFTP, to run the LDBC's file sharing repository. LDBC SFTP is available at: sftp.ldbc.eu. One can use any SFTP client to access the LDBC file sharing repository.

The file-sharing repository enables the sharing of potentially huge files (e.g. datasets) that are part of the benchmarks. There is a difference in scope between the file sharing repository and the source code repository. The file sharing repository is used to share the potentially huge data, while the source code repository is used to share and manage the source code and documentation.

2.5   Issue Tracker

An issue tracker or an issue tracking system, also known as ITS, trouble ticket system, support ticket or incident ticket system, is a computer software package that manages and maintains lists of issues, as needed by an organization[10]. The LDBC consortium decided to use the JIRA[11] software to run the LDBC's issue

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[8] http://en.wikipedia.org/wiki/File_sharing
[9] http://en.wikipedia.org/wiki/SSH_File_Transfer_Protocol
[10] http://en.wikipedia.org/wiki/Issue_tracking_system
[11] http://www.atlassian.com/software/jira/overview

tracker. LDBC JIRA is available at: http://www.ldbc.eu:8085/. The welcome page of the LDBC JIRA can be seen in Figure 4.
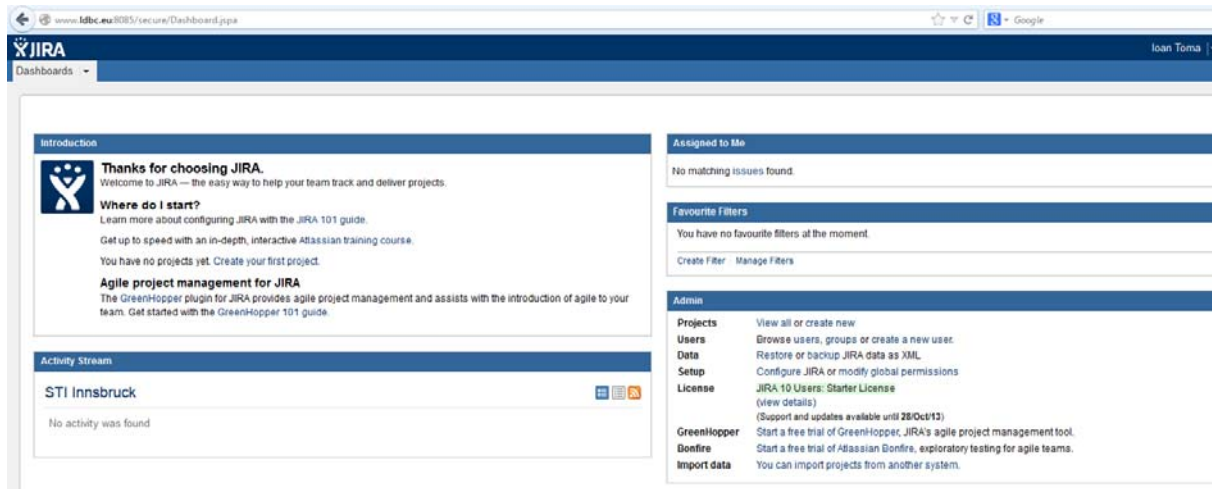

Figure 4: LDBC JIRA Issue Tracker

One main reason for selecting JIRA software to run the LDBC's issue tracker is the **integration with Confluence Wiki**. Being also a product of Atlassian, JIRA nicely integrates with Confluence Wiki. Confluence content can be viewed in JIRA and the other way around, both systems can have an integrated user management, etc. For more details about the integration of the two systems the reader can have a look at [1].

Additional reasons for selecting JIRA as an issue tracker are described in [2] and include **polished user experience**, **customizable workflows**, **search and reporting**, **flexible agile planning** and **easy-to-use importers.**

In LDBC, the issue tracker will be used track feature requests and bugs in benchmark software. For each benchmark issues will be created and assigned to/by members of the benchmarks development teams. Once solved by the developers, the issues will be closed. One can closely track the development of the LDBC benchmarks by having a look at the issues tracker and by checking the wiki page: http://www.ldbc.eu:8090/display/TUC/Benchmark+Task+Forces.

3   Conclusions

This deliverable gives an overview of the first version of the LDBC Benchmark Development Portal. We installed several tools that are essential in supporting the collaborative development of benchmarks. We have made available a web portal, a wiki, source code repository, a file-sharing repository and an issue tracker. Most of the tools that are part of the LDBC Benchmark Development Portal are free of use. The exception is the wiki and issue tracker, Confluence products, for which the consortium has decided to purchase licenses. Administration and maintenance of the tools is performed by UIBK which will provide this service also in the future.

As future work we will:

- Maintain and upgrade the exiting tools. In particular we will investigate if a better solution for file sharing is needed in terms of usability;

- Install additional tools if needed. In particular a forum will be installed in order to allow people (both from the project and outside the project) to hold public conversations on graph and RDF benchmarks related topics.

Future activities related to the development of the LDBC Benchmark Development Portal will be reported in the follow up deliverables i.e. D1.1.4 and D1.1.5, due M12, respectively M24.

References

[1]   Integrating   JIRA   and   Confluence.   Available   at:
      https://confluence.atlassian.com/display/DOC/Integrating+JIRA+and+Confluence

[2]   Anja Ebersbach (2008), Wiki: Web Collaboration, Springer Science+Business Media, ISBN 3-540-35150-7

[3]   Ken Olofsen (2012). Why did you GO JIRA? Available at: http://blogs.atlassian.com/2012/05/top-reasons-to-go-jira/