The Order in Chaos

The

Subversion Repository Search Engine

(SupoSE)

Web Site:
www.soebes.com
Blog:
blog.soebes.com
Email:
info@soebes.com

Dipl.Ing.(FH) Karl Heinz Marbaise

Agenda

1. The Fundamental Idea
2. The Requirements
3. Ideas
4. Basic Concepts
5. Basic Architecture
6. The components
7. Open Questions
8. Roadmap
9. Current State

A. Examples

B. Performance

1. The Fundamental Idea

- We don't know the particular revision number
- We don't know the range of time
- We don't know which file etc.
- We don't know in which file in which revision etc.
- ...

2. The Requirements

- In which Revision the Ticket #76 has been solved ?
- Which Tags or Branches did or do exist within the current project?
- In which documents did we used the term(s) “…” ?
- In which file did we used the method “executeTestXYZ” ?

2. The Requirements

- Where do we used the property name „xyz...“?
- The search process shouldn't be limited to a single Repository.

3. Ideas

- If we would scan the whole Repository every time we do a query it would be to slow.
- We have basicly two phases
  - Initial Phase: Reading the content from the Repository and indexing it.
  - Update Phase: Read the changed/added contents of the Repository and indexing it.

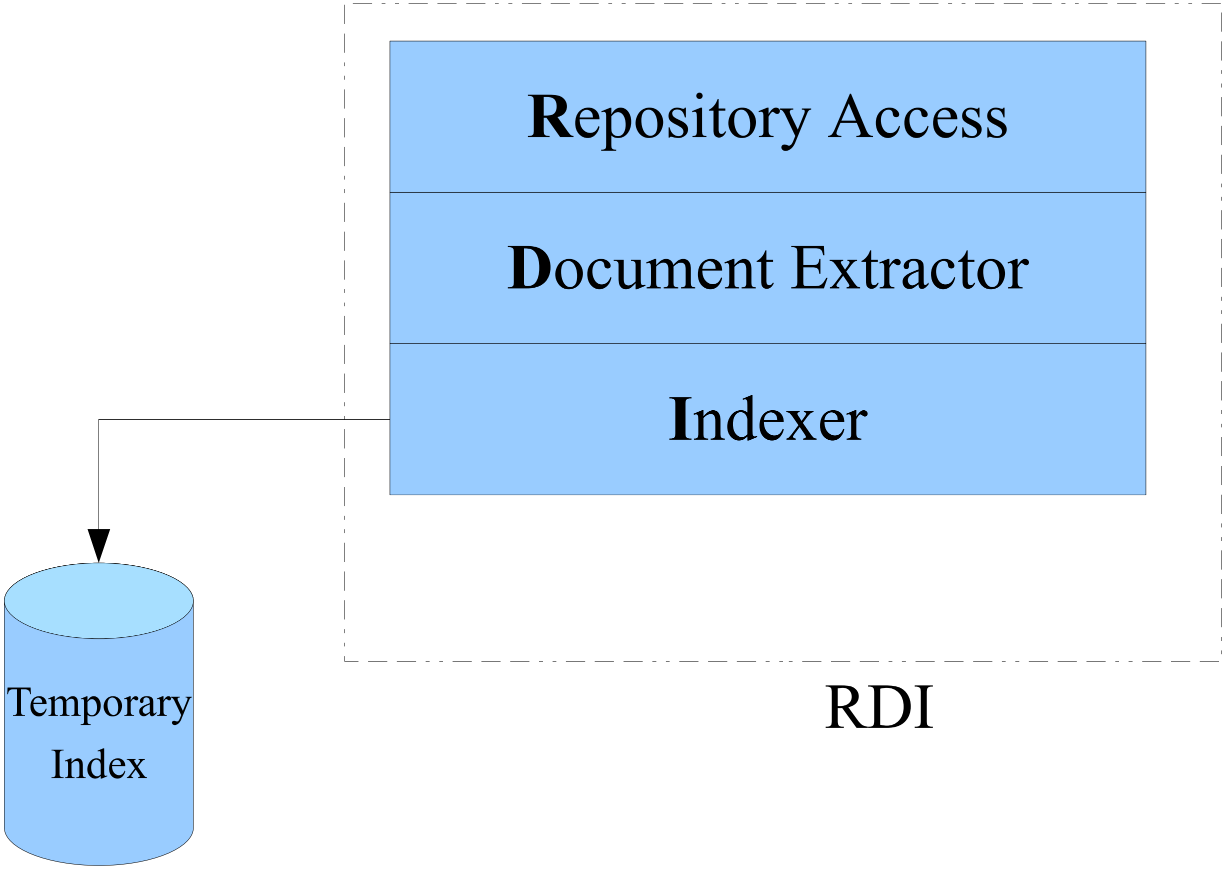
4. Basic Concepts

- Scan the repositories and indexing the information we need.
  - Use the file:/// protocol to access the Repository as preferable method.
  - Use other protocols (http, https or svn) if needed.

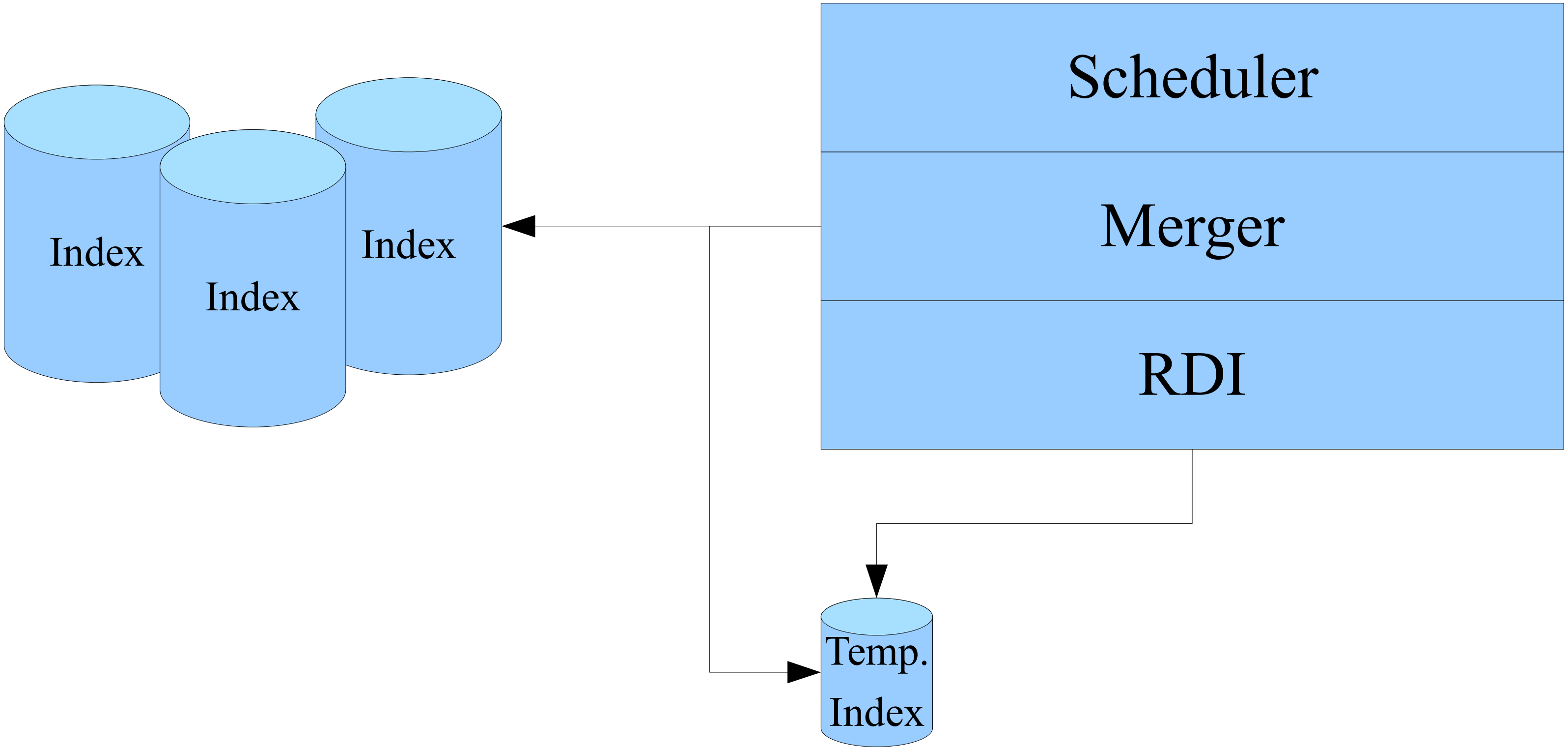
4. Basic Concepts

- Scan on a scheduled base for example daily or hourly etc.
- Should be made configurable.

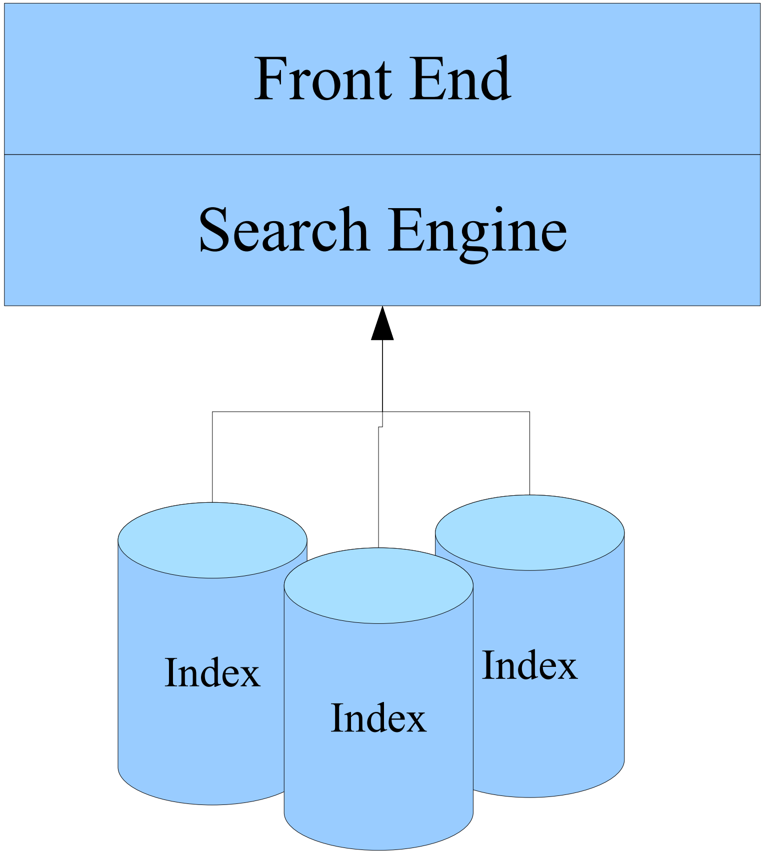
5. Basic Architecture



5. Basic Architecture



5. Basic Architecture



6. The components

- Accessing the Subversion Repository via Java only
  - SVNKit
- Full Text searching capabilities
  - Apache Lucene
- Scheduled running of Jobs
  - Quartz Framework

6. The components

- Document Scanning and information extraction
  - TIKA Framework
- Parsing of different Languages (like Java)
  - ANTLR 3.0

7. Open Questions

- Security for the indexed results
  - Authorization of the Search Engine
- What about restrictions for the search results ?
- What about property changes?
  - How do we get informed about them? Hook Scripts ?

7. Open Questions

- What if a repository has path-based authorization and what will happen if this has been changed?
  - What about the already indexed informations?
  - What about the search result?

8. Roadmap

- GUI
  - May be Web based or Swing or...
- May be PlugIn's
  - Redmine, Eclipse, trac etc.
- Enhance documentation (DocBook Maven?)
- Enhance Command line interface
  - Better output etc. (e.g. sorting)

8. Roadmap

- Interface to make the connection of other applications possible
  - SOAP/RPC ?
  - RESTlet others ?
- Make the scheduled part runnable in JBoss/Tomcat/Jonas etc. ?
- Performance ?
- Clustering?

9. Current State

- Currently Command Line Based only.
- Indexing of single or multiple (scheduled) repositories working
  - Results can be stored into different destination indexes, can be configured.
- Searching currently only via command line or via Luke (Swing)

A. Examples

- Scanning of a single Repository

```
supose
    scan
    --url file:///path/to/repos
    --index index.Repos
```

A. Examples

- Scanning of multiple Repositories

  ```
  supose
      schedule
      --configuration repositories.ini
      --configbase ./
  ```

A. Examples

- Which tags existing in SupoSE Repository?

```
supose
    search
    --index index.Supose
    --query "+path:/tags/*"
```

A. Examples

- The output of the query before:

```
 1. R:14 F:/tags/RELEASE-0.1.0 K:A
 2. R:29 F:/tags/RELEASE-0.2.0 K:A
 3. R:48 F:/tags/RELEASE-0.2.0.1 K:A
 4. R:70 F:/tags/R_0.3.0.0RC1 K:A
 5. R:76 F:/tags/R_0.3.0.0RC2 K:A
 6. R:91 F:/tags/0.4.0.0RC1 K:A
 7. R:93 F:/tags/R_0.4.0.0RC1 K:A
 8. R:111 F:/tags/R_0.4.0RC2 K:A
 9. R:112 F:/tags/R_0.4.0.0RC2 K:A
10. R:115 F:/tags/R_0.4.0.0RC2 K:A
11. R:92 F:/tags/0.4.0.0RC1 K:D
12. R:112 F:/tags/R_0.4.0RC2 K:D
13. R:114 F:/tags/R_0.4.0.0RC2 K:D
```

A. Examples

- Do exist Word files in this repository?

  ```
  supose
      search
      --index index.Supose
      --query "+filename:/*.doc"
  ```

A. Examples

- What is part of revision 100 of the particular repository?

  ```
  supose
      search
      --index index.Supose
      --query "+revision:100"
  ```

B. Performance

- Currently the scan of the SupoSE repository itself (with 112 Revisions) via http:// (Internet)
  - This has taken ca. 25 Minutes ;-(

- A scan of Repository (2.8 GiBi) with 12168 Revisions via file:/// protocol took ca. 37 minutes.

On-line Sources I

- [1] Homepage SupoSE
  - http://www.supose.org
- [2] SVNKit pure Java Subversion Library
  - http://www.svnkit.com
- [3] ANTLR
  - http://www.antlr.org
- [4] Quartz Framework
  - http://www.opensymphony.com/quartz/

On-line Sources II

- [5] Lucene Framework
  - http://lucene.apache.org
- [6] Tike Framework
  - http://lucene.apache.org/tika

Questions?

supose@supose.org

- Thank you for your attention.