2012-02-20

RETE-DB - Manual

version 2

RETE-DB - Manual

RETE-DB is a multi-user web database,
providing high performance, data security and system scalability.

Target
This program is suitable for

- Address databases
  Define the fields you need; e.g. Name, Address, Phone number, Bank Account
  and limit the access rights: e.g. restrict the read access to Bank Account
- Todo lists
  Define a Title and a Description field
  and a choice-list of responsible persons.
- Bug management
  Define a choice-list for Status and Priority (e.g. open, in progress, closed and high, medium, low),
  an file-upload field to attach photos or videos,
  and restrict the write access for e.g. the Priority field
- Any other list
  which may contain texts, numbers, dates, choice-options or even files
  and to which you can limit read or write access on fields or records.

Features
RETE-DB is a web-based database frontend, which allows to enter, search and modify records.

- Custom database structure: The administrator defines the database layout via the web frontend.
- Groups: Access rights are defined on groups; a group concept simplifies the administration.
- Security: For every record and for every field, access rights can be defined separately.
- Performance: As tests have shown (see chapter 3.8), this program is amazingly fast - even when working with hundred thousands of records.
- Scalability: Multiple distributed RETE-DB instances can run in parallel on the same database.

- History: Every change of data is logged; even changes in the RETE-DB administration.
- Export: Search results can easily be exported to spreadsheet applications.
- Import: New records can be created and existing records can be updated with data of spreadsheet applications.

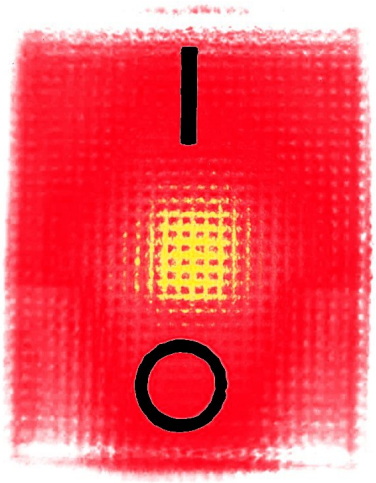
Limits

- RETE-DB is a project management tool. It is not a tool for individual issue handling as for example help-desk systems. Therefore no access rights for individual users exist, only a group concept is supported.

Contents

Chapter 1

User Manual

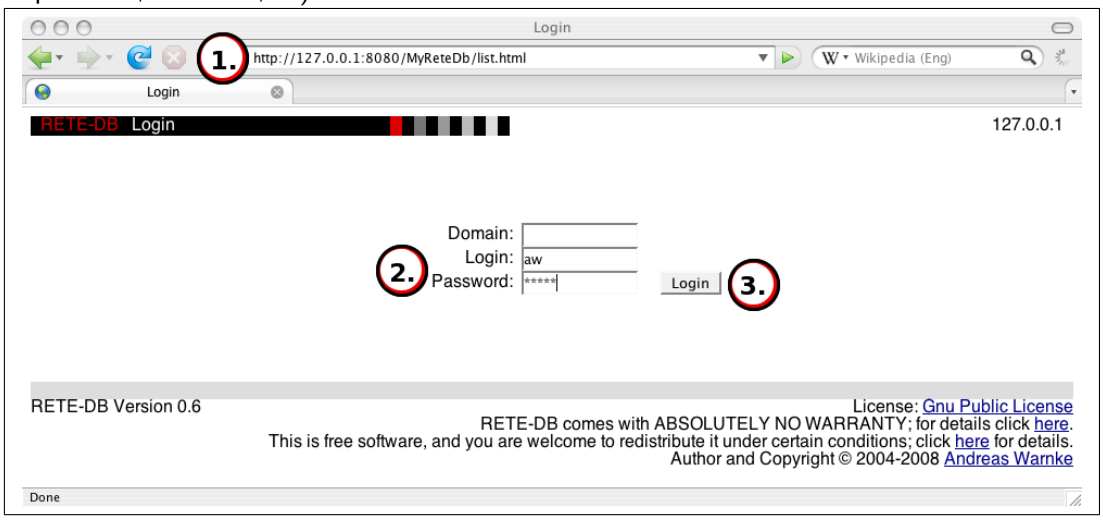


This section describes the basic functionality of RETE-DB (record entry, modification and record queries) as well as some more sophisticated features like data export, data import or bookmarks on search queries.

1.1 General Usage

1.1.1 Login

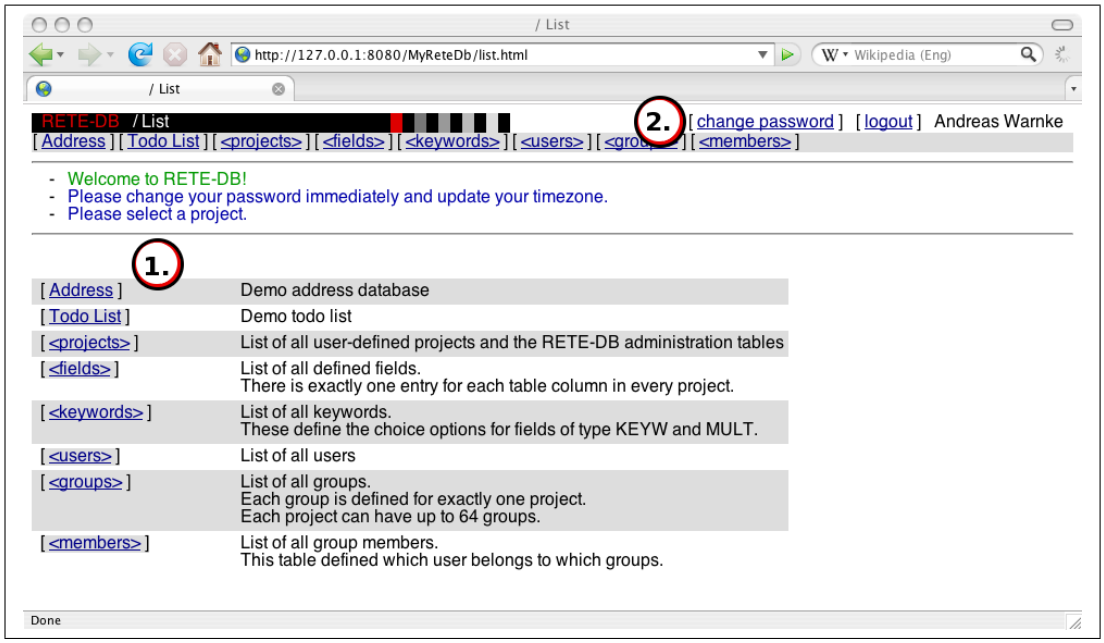
1. Enter the address of the RETE-DB server to a browser (E.g. Firefox, Internet Explorer ®, Safari ®, ...)



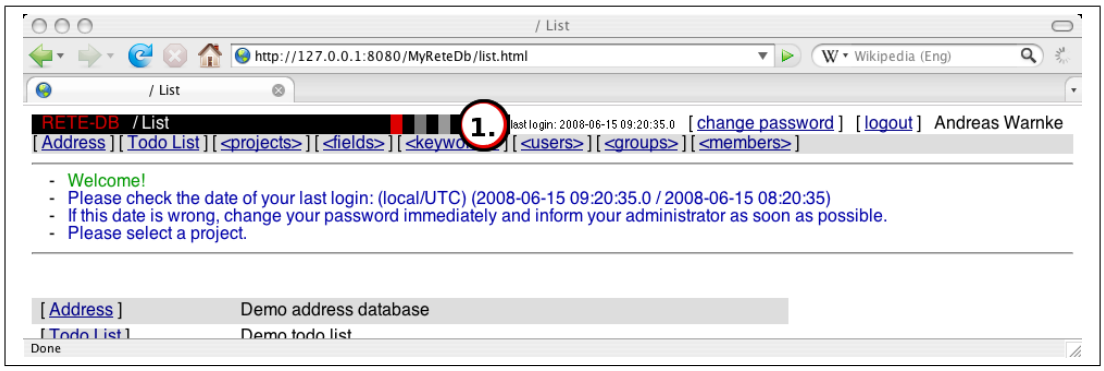
2. Enter your domain (if any), login and password.
3. Submit your login data.

Note:

- To use the RETE-DB system, you need to enable the "Cookies" checkbox in the preferences of your browser. Otherwise you will be asked for your password on every second page.

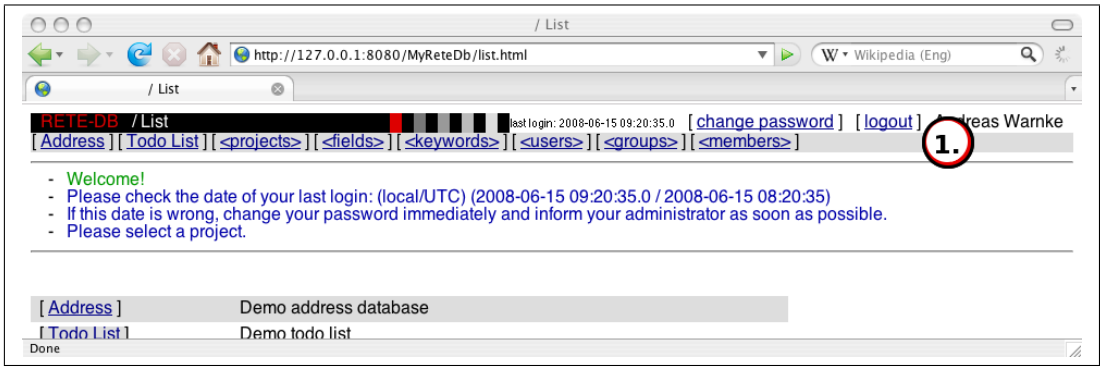


1. All projects to which you have access are listed on this page.
2. If you login the first time, you are asked to change your password. (see 1.1.3)



1. Otherwise, if this is not your first login, please check the date and time of your last login. In case this information is wrong, it might be that someone else has used your account.

1.1.2 Logout



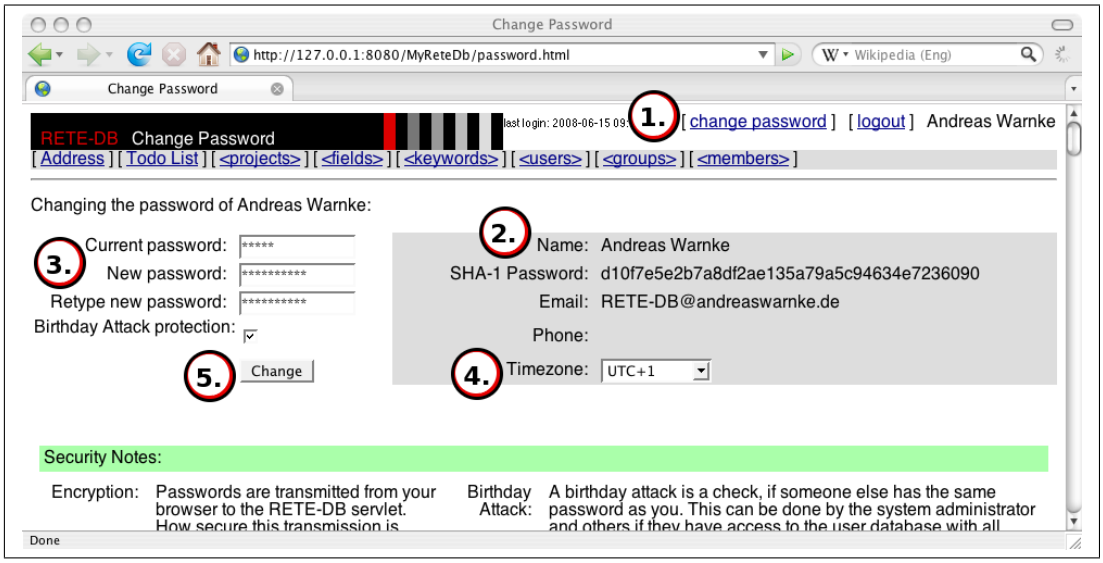
1. Please log out when you are finished. Every page provides a link in the top right corner.

1.1.3 Change your Password

1. Every page provides a link to change the password and timezone.

Note:

- Some users might have fix passwords. In this case, the link is greyed out.



2. Information on your account is displayed here: name, email address and telephone number.

③ You are requested to enter your current password and to enter your new password twice.
④ You may update your timezone here. (see 1.5)
⑤ Submit your new password and/or timezone.

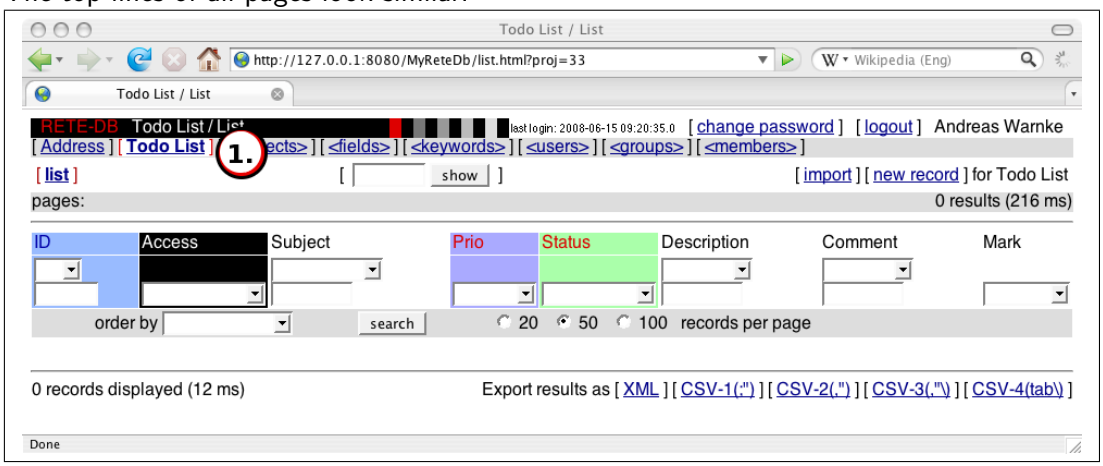
A Good Password

- is at least 7 characters long
- is a combination of different character types, such as capitals A-Z, lower-case characters a-z, digits 0-9 and other symbols $, %, !, ?, ...
- is not a word (in any language)
- is not related to the user (like the number plate of the user's car)
- is not written on a piece of paper as reminder (where other people can see it)
- is known to exactly one person (meaning you and only you)

A common way to find such a password is to think on a sentence that you can remember easily (e.g. "My pink T-shirts don't fit to my blue jeans.") and take the first characters of each word (resulting in "MpT-sd'tf2mbj").

1.1.4 Menu

The top lines of all pages look similar:



1. The second line shows all projects to which you have access. This allows to switch between the different projects.

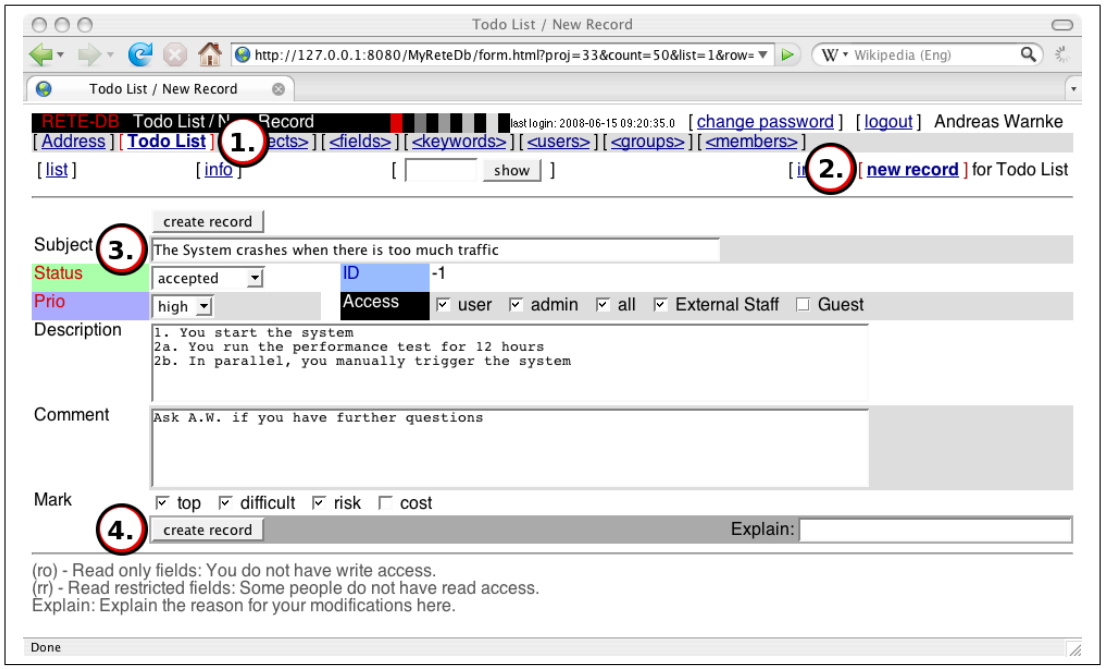
1.2 Records

1.2.1 Create a Record

1. Select the project.
2. Choose [new record] to get a form for creating a new record.

Note:

- This option is greyed out if you do not have permission to create a new record in the current project.

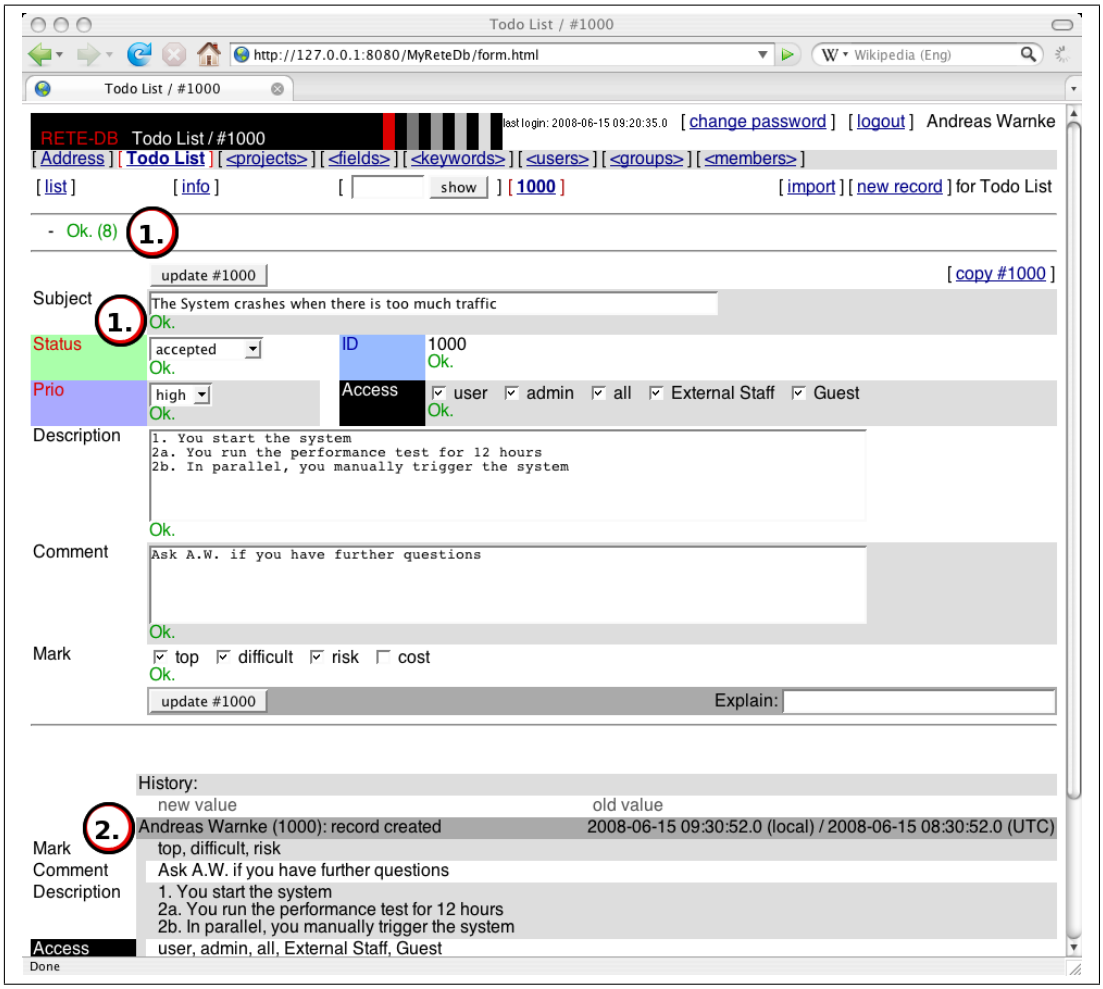


3. Fill in the requested data.

Note:

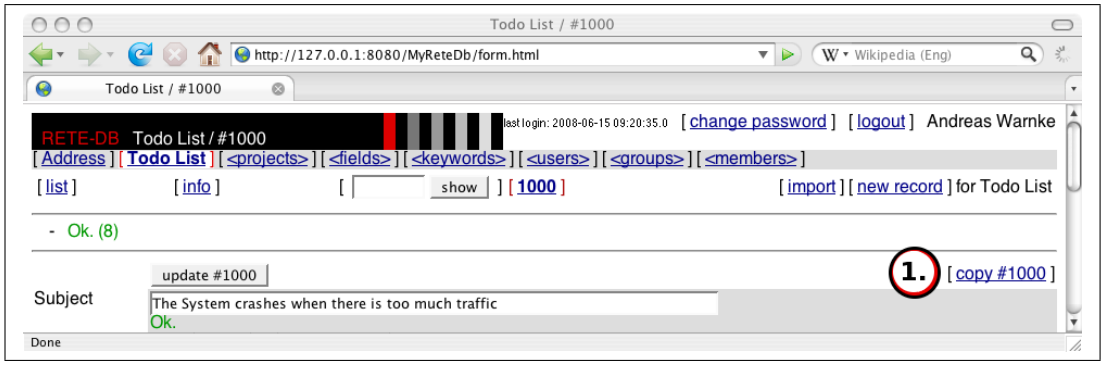
- If you want to limit the access to this record, remove the marks from the 'all' group as well as from the groups which shall not have access.
- Date format is 'YYYY-MM-DD'
- Time Format is 'YYYY-MM-DD hh:mm:ss'

4. If you want to, you can add a short explanation for your changes in the Explain field. Then click on one of the [create record] buttons.



1. After updating the record, the results are displayed.
2. On top of the history list, a new entry is displayed which shows your modifications.

1.2.2 Copy a Record



1. To the right, there is a [copy] link which simplifies creating several records with similar content.

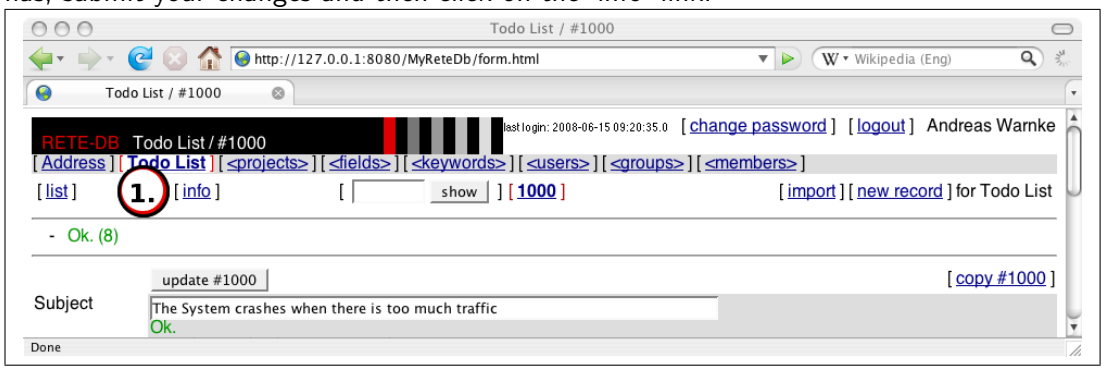
Note:

- There is no [copy] link if you have no create record permissions.
- The history is not copied.
- If there are files or passwords stored in the original record, these are not copied.

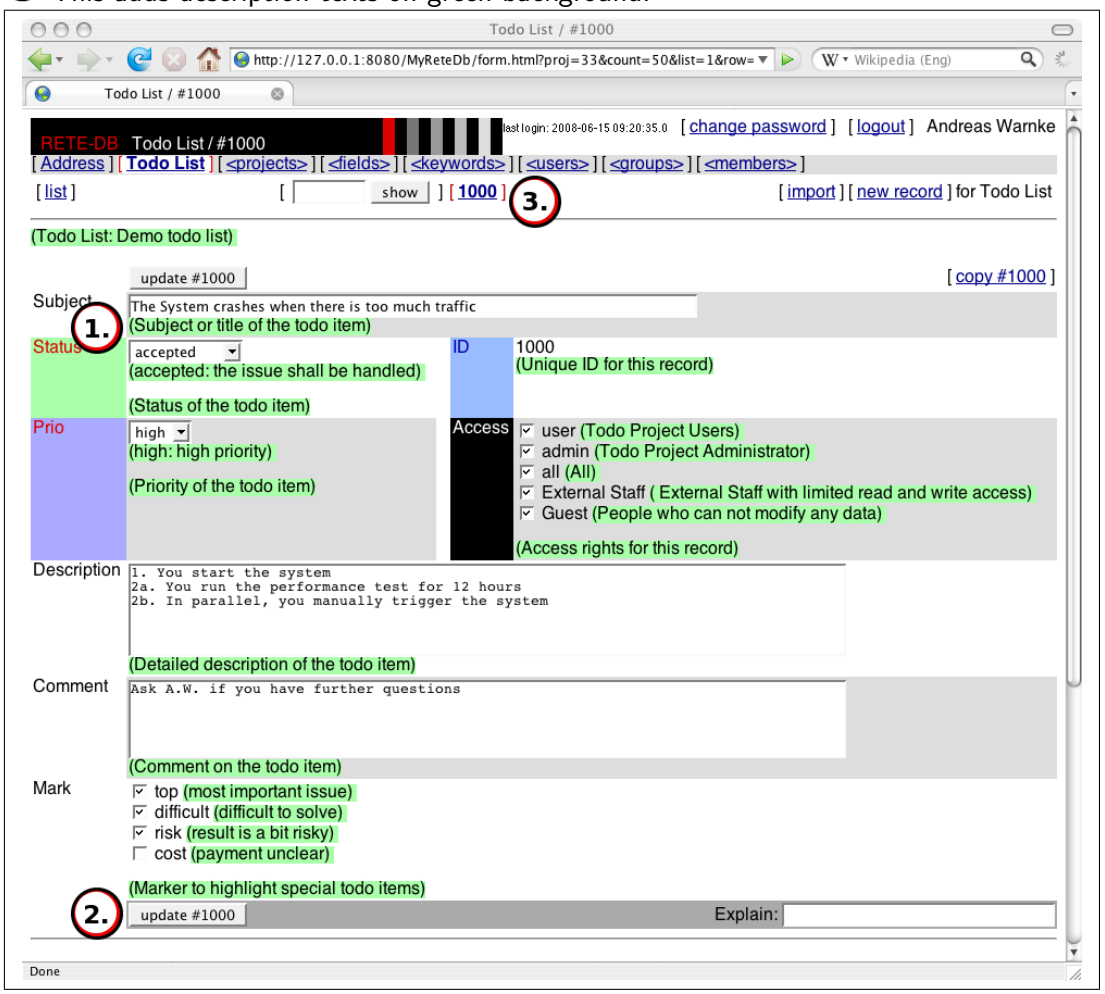
Afterwards, click on the [create record] button to permanently store the new record.

1.2.3 Record Information

1. If you are not sure what to enter into a field or what meaning a multiple-choice item has, submit your changes and then click on the 'info' link.



1. This adds description texts on green background.

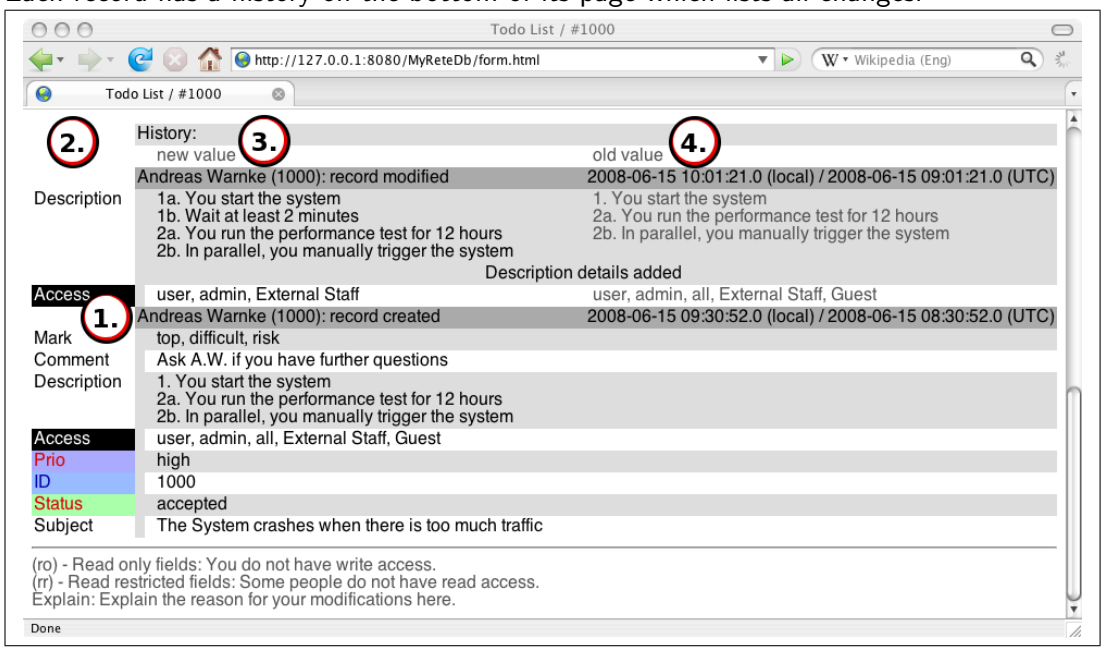


2. You may change data on this 'info' page

3. Or switch back to normal mode by clicking on the record id.

1.2.4 Record History

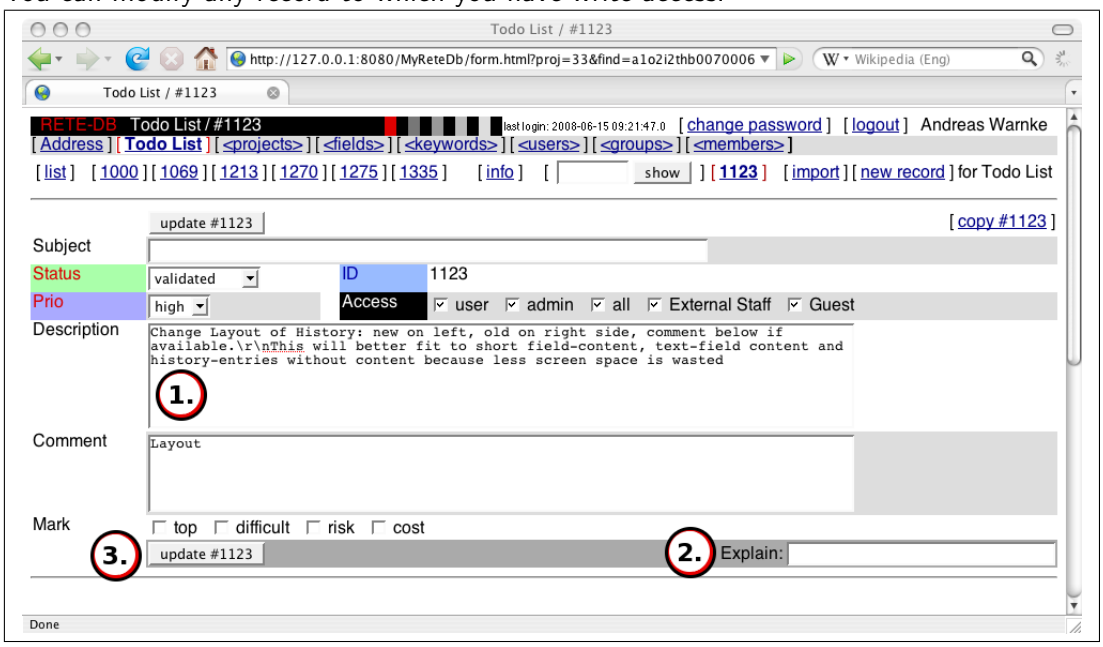
Each record has a history on the bottom of its page which lists all changes.



1. The dark grey lines shows by whom and when a modification has been done; The most recent changes are sorted to the top of the list;
2. The first column shows what has been changed;
3. The second column shows the new value that has been set;
4. The third column shows the old value before the modification.

1.2.5 Modify a Record

You can modify any record to which you have write access.



1. Simply change the data in the displayed fields.

Note:

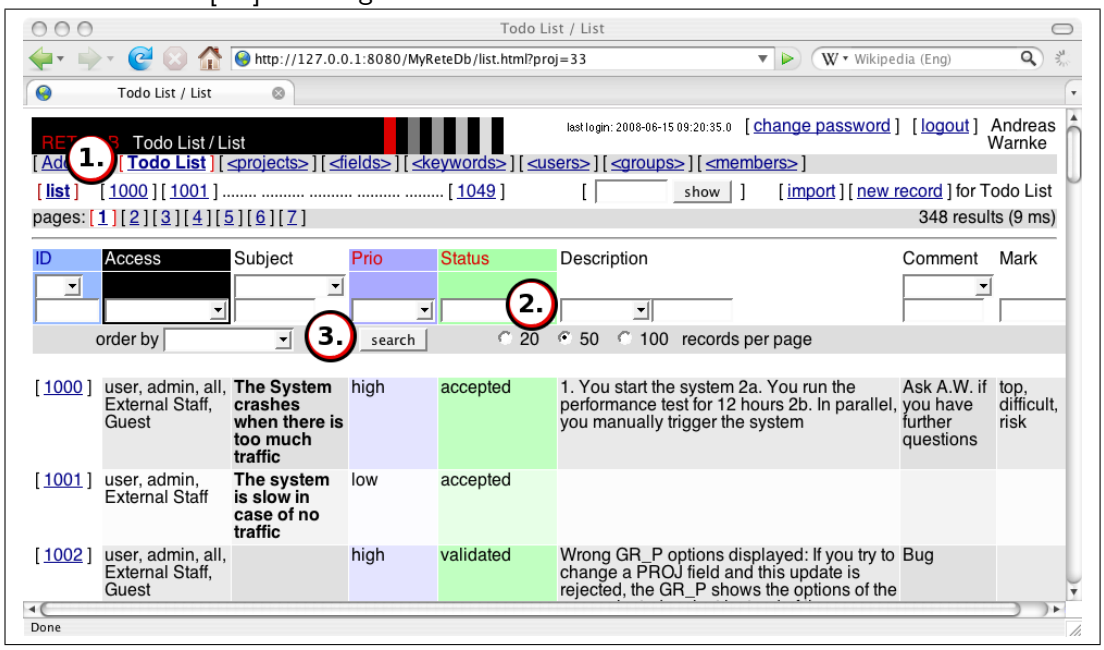
- Fields that you cannot modify are marked by '(ro)' which means read only.
- Some other users do not have read access to the fields marked with '(rr)' which means read restricted.

2. Write a short explanation why you change the data
3. Submit your changes.

1.3 Queries

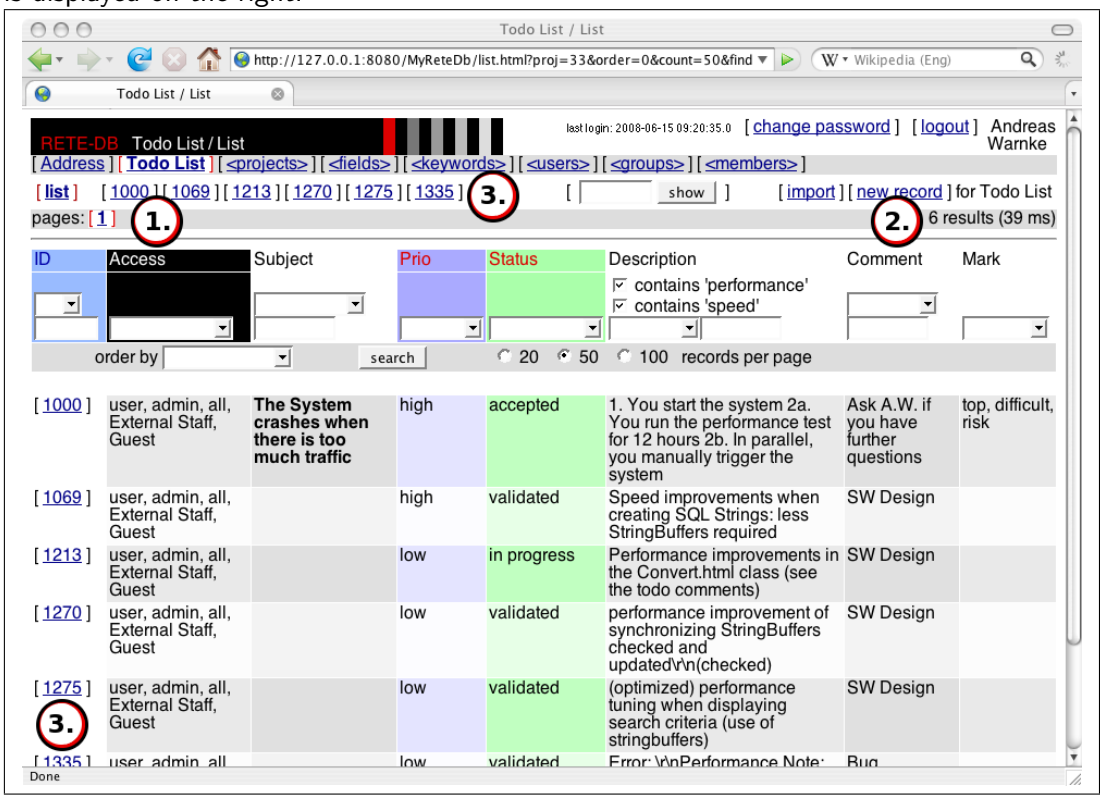
1.3.1 Search

1. Click on the [list] link to get to the search form.



2. Here you can enter search criteria for records and order the results.
3. Submit your query.

1. Note that there might be multiple result pages. In this case, you have to click on the different page links to see the results.
2. The total number of records to which you have access and which match your query is displayed on the right.



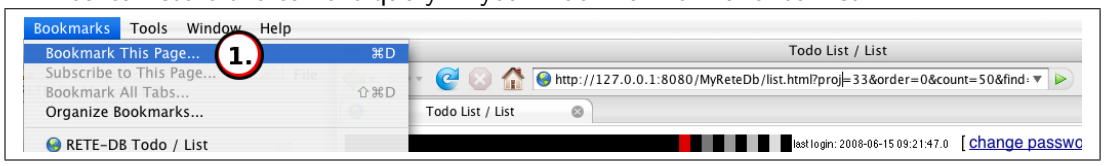
3. Click on the record ids to see the detailed record data.

Note:

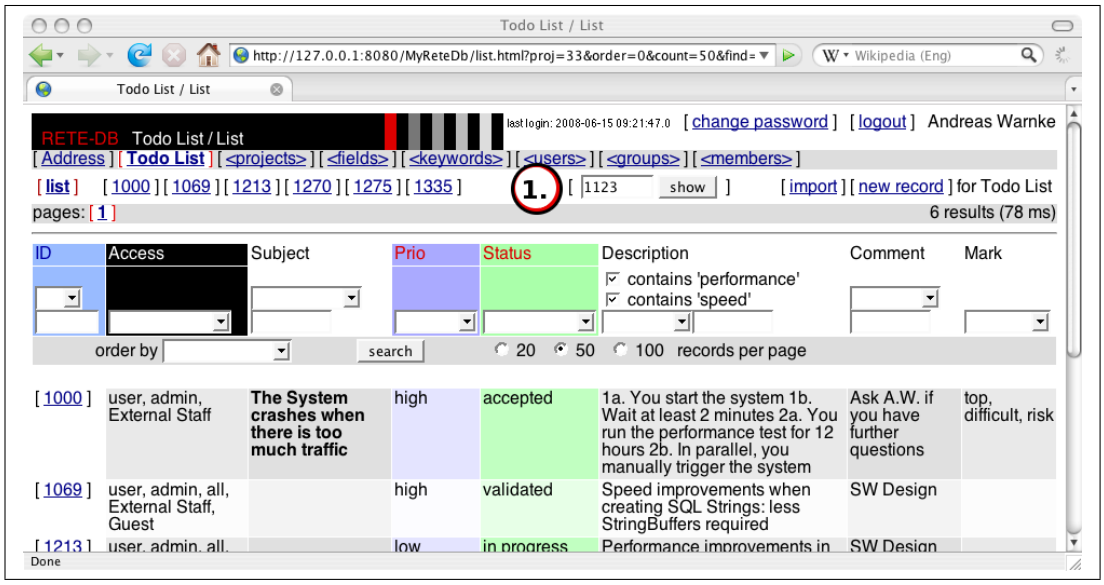
- You can enter multiple conditions for your query: RETE-DB allows to define several conditions on several fields simultaneously.
- Multiple criteria for one field are logically connected by an OR, criteria for different fields are logically connected by a lower priority AND.
- Some field types allow to invert the search: After searching on a field, a checkbox with the label "not" appears and can be selected.

1.3.2 Bookmark a Query

(1.) You can store the current query in your Bookmark or Favorite List.



1.3.3 Go to a Record



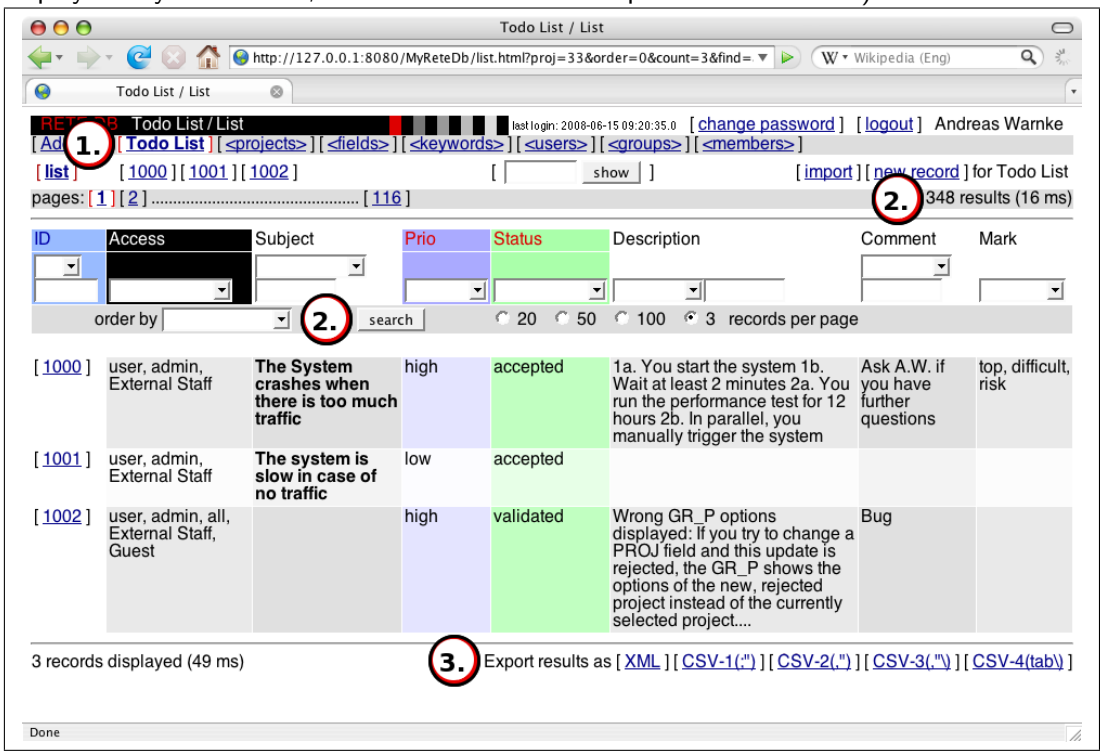
(1.) Enter the record id in the middle of the third line and press [show].

1.4 Export / Import

1.4.1 Export

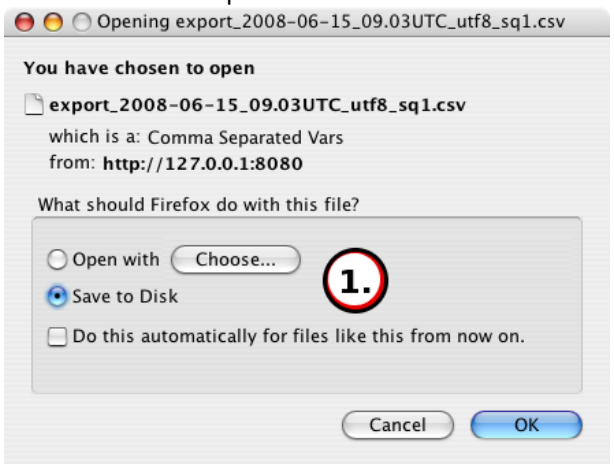
1. Select a project

2. Search for all records which you want to export; the total number of records is displayed on the right then.
The export file will contain all records that match to your current search.
(Supposed there are 348 records that match your search criteria but there are only 50 displayed in your browser, all 348 records will be exported nonetheless.)



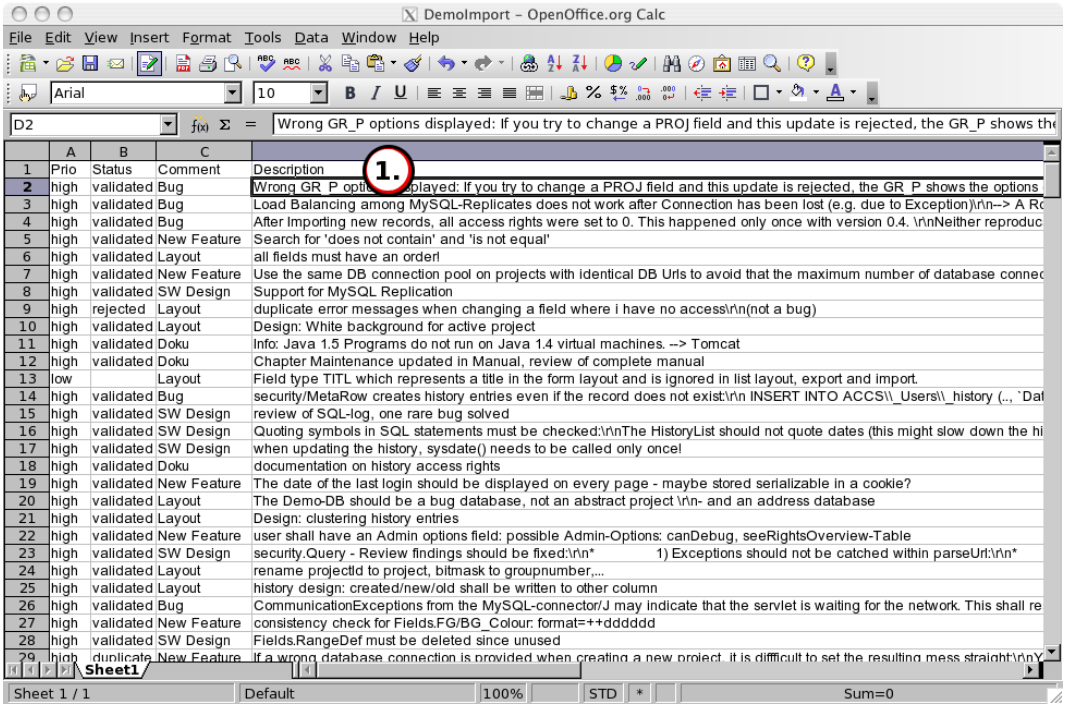
3. On the bottom of each [list] page, some export links are shown.
The format of the export is either csv (comma separated values) or XML. There are slight variations between the csv file formats of different spreadsheet applications. Therefore, there are several csv formats provided. Try these links to determine which format is the best for your purposes.

1. Click on an export link and save the file to disk.



1.4.2 Import

(1.) If you want to import data from a spread sheed application, the first row must list the field names of the RETE-DB project.



	A	B	C	
1	Prio	Status	Comment	Description
2	high	validated	Bug	Wrong GR_P options displayed: If you try to change a PROJ field and this update is rejected, the GR_P shows the options
3	high	validated	Bug	Load Balancing among MySQL-Replicates does not work after Connection has been lost (e.g. due to Exception)\r\n--> A Rc
4	high	validated	Bug	After Importing new records, all access rights were set to 0. This happened only once with version 0.4. \r\nNeither reproduc
5	high	validated	New Feature	Search for 'does not contain' and 'is not equal'
6	high	validated	Layout	all fields must have an order!
7	high	validated	New Feature	Use the same DB connection pool on projects with identical DB Urls to avoid that the maximum number of database connec
8	high	validated	SW Design	Support for MySQL Replication
9	high	rejected	Layout	duplicate error messages when changing a field where i have no access\r\n(not a bug)
10	high	validated	Layout	Design: White background for active project
11	high	validated	Doku	Info: Java 1.5 Programs do not run on Java 1.4 virtual machines. --> Tomcat
12	high	validated	Doku	Chapter Maintenance updated in Manual, review of complete manual
13	low		Layout	Field type TITL which represents a title in the form layout and is ignored in list layout, export and import.
14	high	validated	Bug	security/MetaRow creates history entries even if the record does not exist:\r\n INSERT INTO ACCS_Users_history (.., `Dat
15	high	validated	SW Design	review of SQL-log, one rare bug solved
16	high	validated	SW Design	Quoting symbols in SQL statements must be checked:\r\nThe HistoryList should not quote dates (this might slow down the hi
17	high	validated	SW Design	when updating the history, sysdate() needs to be called only once!
18	high	validated	Doku	documentation on history access rights
19	high	validated	New Feature	The date of the last login should be displayed on every page - maybe stored serializable in a cookie?
20	high	validated	Layout	The Demo-DB should be a bug database, not an abstract project \r\n- and an address database
21	high	validated	Layout	Design: clustering history entries
22	high	validated	New Feature	user shall have an Admin options field: possible Admin-Options: canDebug, seeRightsOverview-Table
23	high	validated	SW Design	security.Query - Review findings should be fixed:\r\n* 1) Exceptions should not be catched within parseUrl:\r\n*
24	high	validated	Layout	rename projectId to project, bitmask to groupnumber,...
25	high	validated	Layout	history design: created/new/old shall be written to other column
26	high	validated	Bug	CommunicationExceptions from the MySQL-connector/J may indicate that the servlet is waiting for the network. This shall re
27	high	validated	New Feature	consistency check for Fields.FG/BG_Colour: format=++dddddd
28	high	validated	SW Design	Fields.RangeDef must be deleted since unused
29	high	duplicate	New Feature	If a wrong database connection is provided when creating a new project, it is difficult to set the resulting mess straight:\r\nY

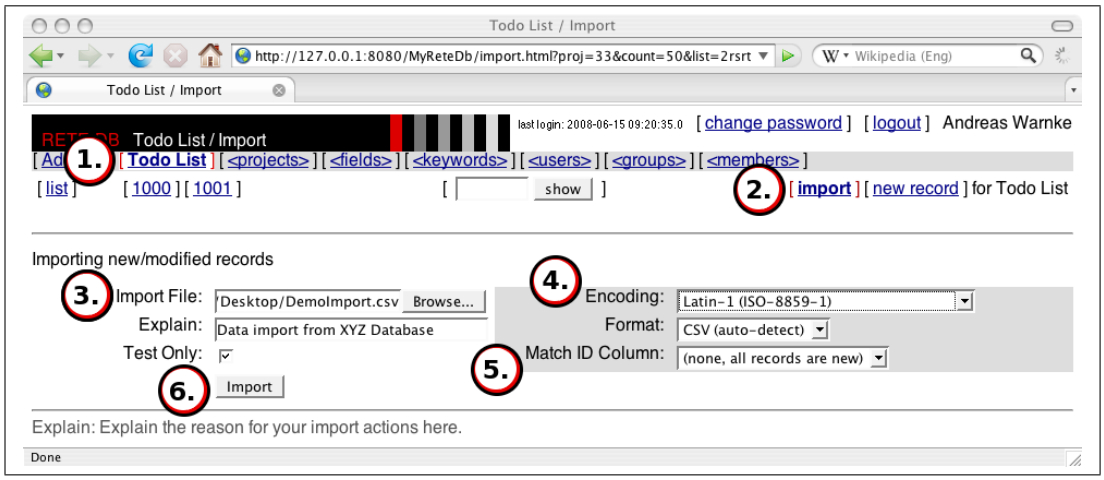
Save the file in CSV (Comma Separated Values) format.
The encoding shall be set to UTF-8, Latin-1 or Unicode (UCS-2); the cell separator can be either semicolon, colon or tab; the quoting symbol should be a double-quote.

(1.) When saving the file in CSV format, some formatting information will be lost.

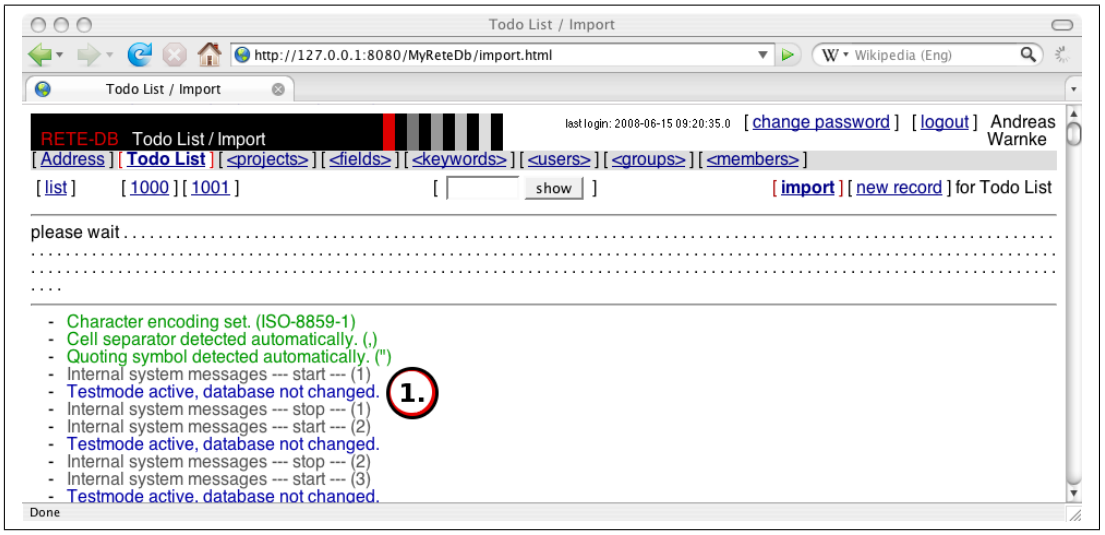
1. In RETE-DB, select the project to which you want to import data.
2. Go the the [import] page of the project to which you want to import data.

Note:

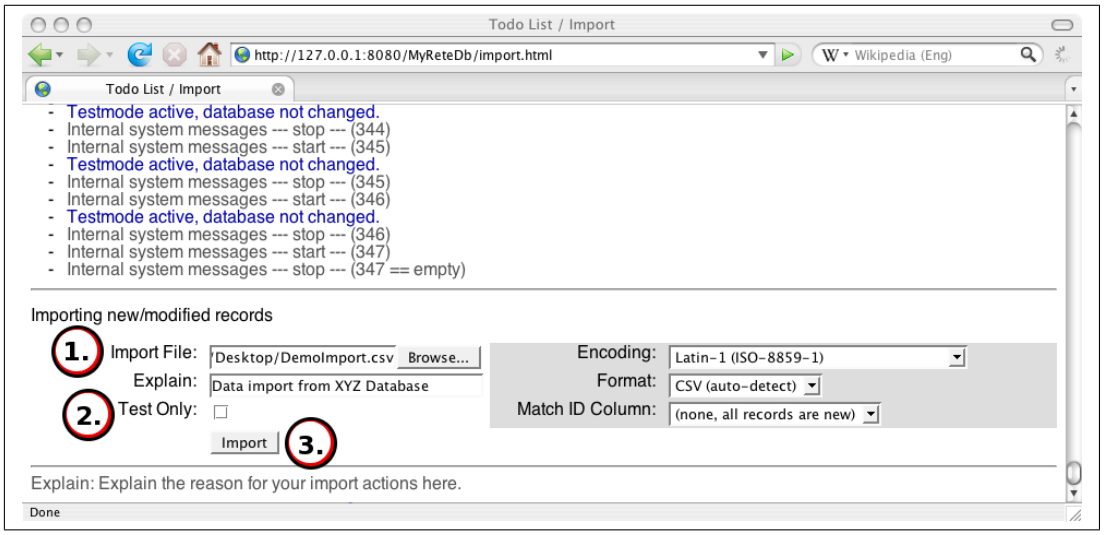
- Since updating existing records may change the complete project by one single action, you need special permissions to this.



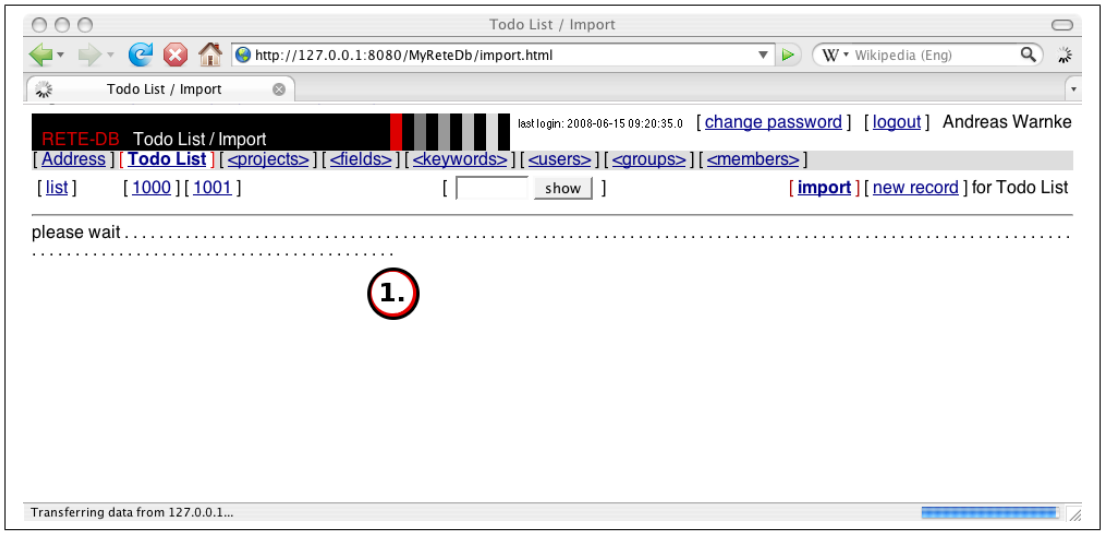
3. Choose the CSV file which to import.
4. 'Encoding': Select the character encoding in which the application stored the csv file. If you are ot sure, select Latin-1. This fits in many cases.
5. 'Match ID Column': Choose '(none, all records are new)', if all imported records are new. If you want to update existing records, choose the field name by which the imported records shall be matched to the existing RETE-DB records.
6. Upload the file in 'Test Only' mode first.



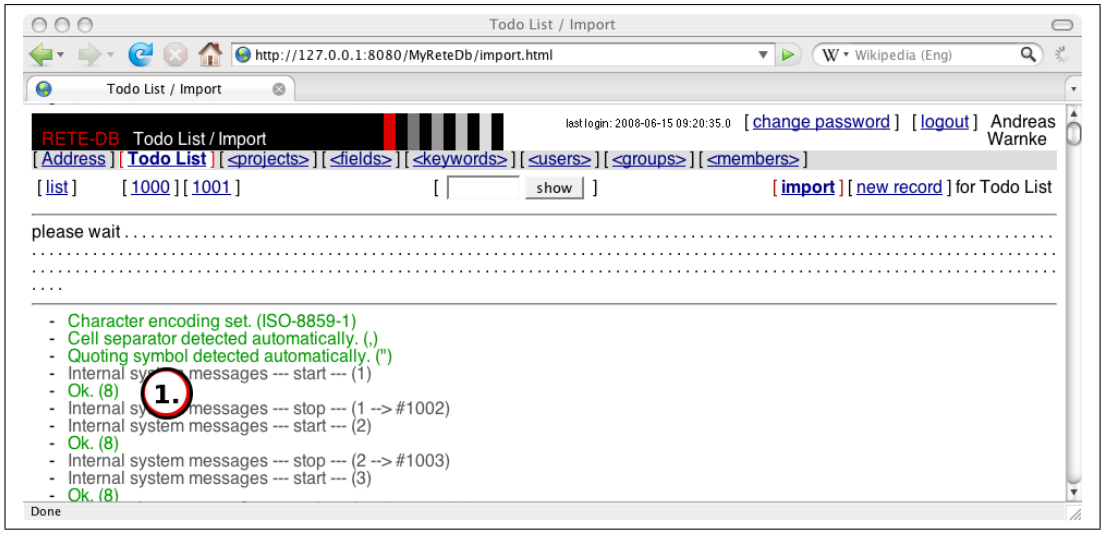
1. Check the results of the upload. Are there red-colored items?



1. If everything is ok, choose the file again
2. Remove the 'Test Only' option.
3. Upload the import file a second time.



1. Uploading a file might take some minutes. The reason for this is partly the huge number of history entries that need to be created and partly the way how RETE-DB ensures that your import does not block the RETE-DB system for other users.



1. Check also the second error report because the first error report checked the file structure only, not the access rights. Look out for red-colored items.

1.5 Timezones

All time values and history dates are stored in universal time (UTC=Universal time coordinated). UTC is the time on longitude 0 degree. Since longitude 0 is defined at London's suburb Greenwich, UTC is also called Greenwich mean time (GMT).
For easier handling of UTC times, these times are converted from and to local time when entering and displaying these time values. This feature only works if every user sets the timezone correctly: This can be done via the [change password] link in the top line of each page (see 1.1.3). A list of cities and their timezones is displayed there. Choose the appropriate timezone and click on the [change] button.

Note:

- The RETE-DB system does not switch automatically between summer (daylight savings) and winter (standard) time. If you are living in a region where summer and winter time are not identical, you need to switch your timezone twice each year.

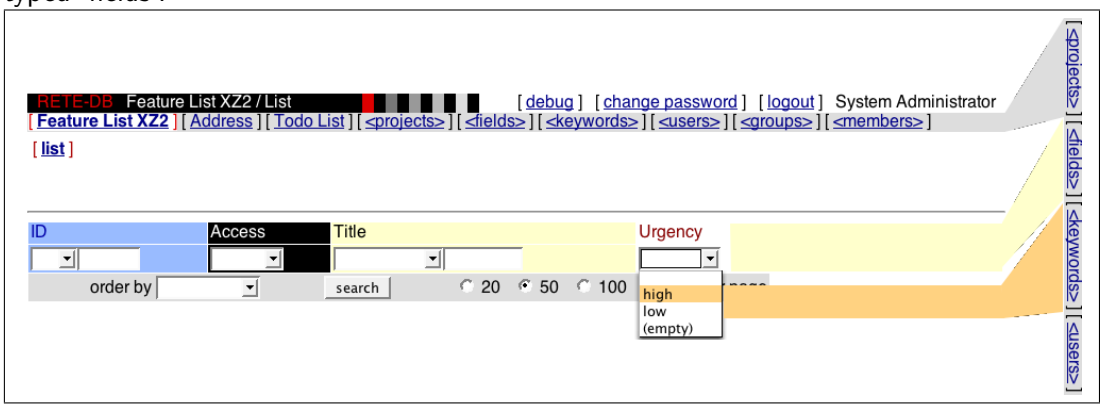
Chapter 2

Administration

This chapter describes how to create projects and how to manage accounts.

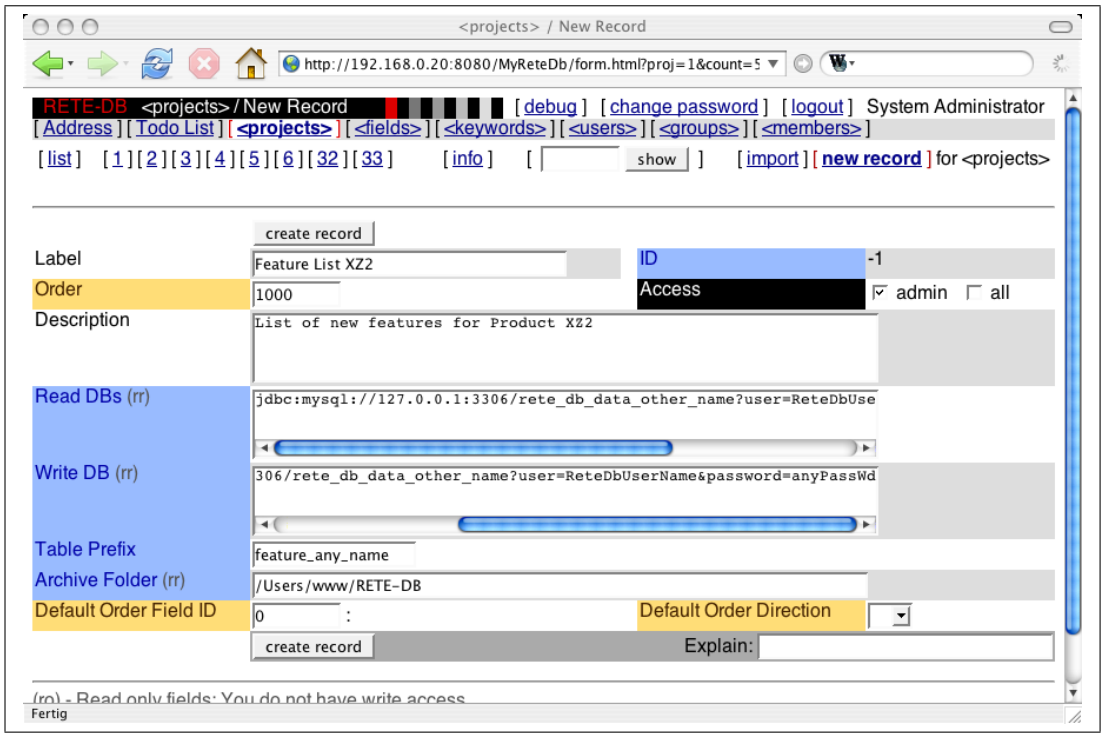
2.1 Overview on Projects and Fields

<projects> define the tables,
<fields> define the columns of each table,
<keywords> define the options of drop-down ('KEYW') and multiple-choice ('MULT') typed 'fields'.



2.1.1 Create a Project

To create a new project, go to project [<projects>], page [new record].
Take into account that every project causes some administration efforts. In some cases it is simpler to extend an existing, similar project than to create a new one.



Enter the requested information.

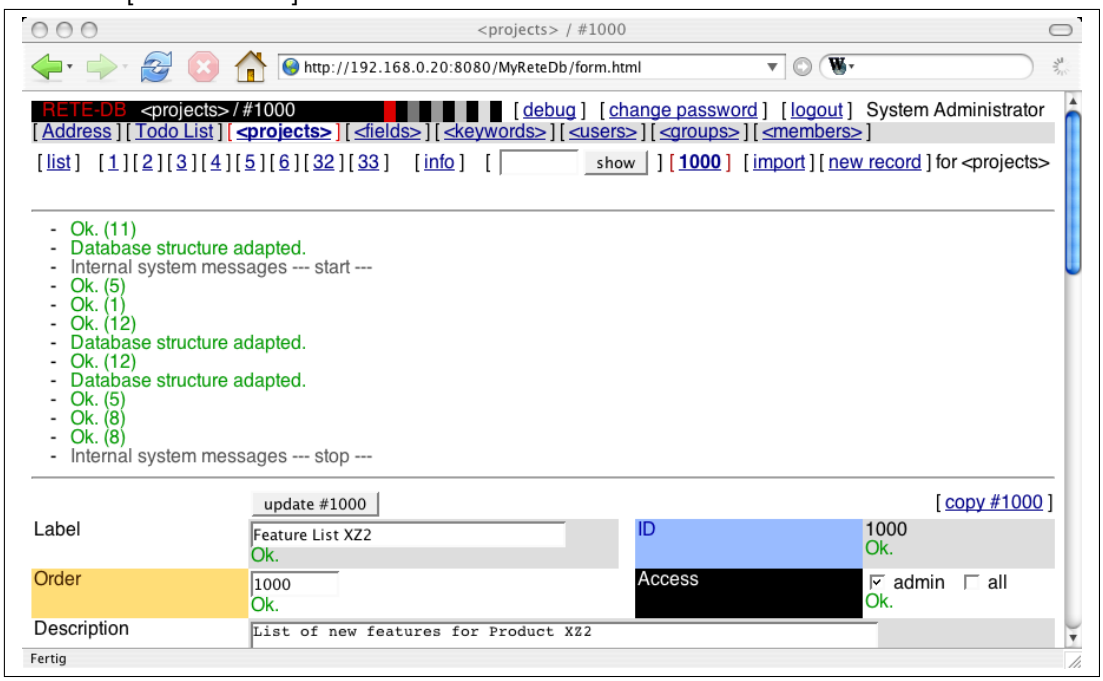
- Label: Give your new project a name. This can be modified later.
- WriteDB: This is an Url that is needed to access a database. The user and password should be encoded in this DB Url. An example URL looks like: jdbc:mysql://127.0.0.1:3306/rete_db_data?user=RETEDB&password=aaaabbCd-&characterEncoding=utf8
- ReadDBs: See WriteDB above. Multiple DB Urls are separated by a whitespace character.
- TablePrefix: This is a database-internal identifier that cannot be modified after creation. Choose a name that is similar to the Label. (Please choose only lowercase letters a-z , underscore _ or digits 0-9; the first character must be a letter.)
  Note:
  This identifier needs to be unique among all projects in the RETE-DB system.

- ArchiveFolder: This is a path to a folder in the filesystem where RETE-DB stores all uploaded files.
  Note:
  1) RETE-DB needs read and write access to this folder.
  2) This path must be accessible from all RETE-DB instances if RETE-DB is distributed to different servers.

There are some less important fields that you may want to fill in:

- Order: Allows to position this project within the list of all projects. Increase the number to shift this project right, decrease the number to shift it left.
- Description: Provide a short description for this project. This is visible to all users.
- Default Order Field ID: Choose the field by which the search results shall be ordered if a user has not provided a search order.
- Default Order Direction: Choose the direction (ascending or descending) if a user has not provided a search order.

Press the [create record] button.



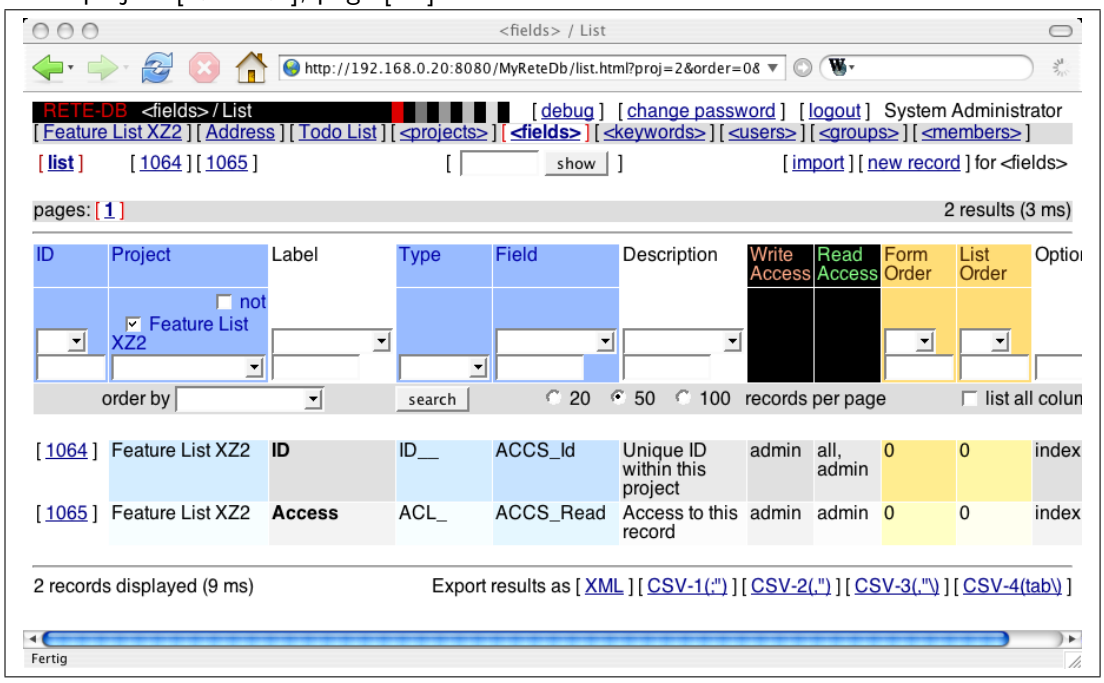
The <projects> record is created, the database structure is modified.
Also the two default <fields> 'Id' and 'Access', the <groups> 'admin' and 'all' and some <members> records are created.

2.1.2 Delete a Project

A project cannot be deleted from the database, but you can revoke all access rights. See chapter 2.2 how to hide a project.

2.1.3 List all Fields of a Project

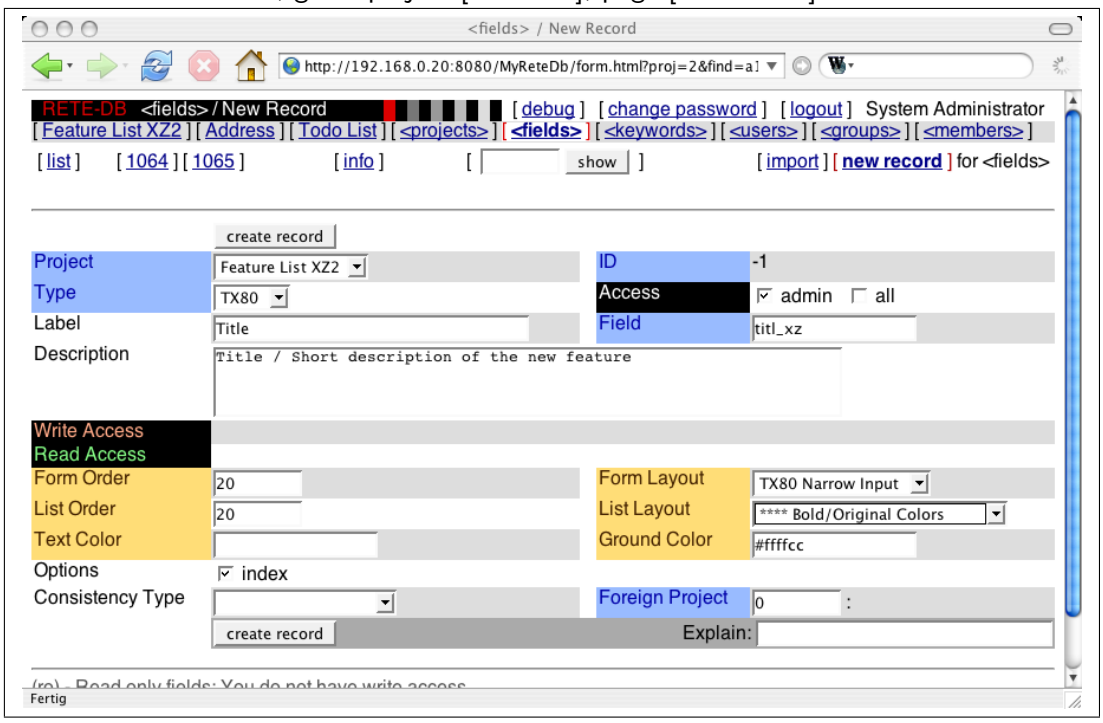
Go to project [<fields>], page [list].



To check, which 'fields' are already defined, [search] for all fields of the project.
Up to 318 fields per project may be defined.

2.1.4 Create a Field

To create a new 'field', go to project [<fields>], page [new record].



Enter the requested information.

Note:

- 'Project', 'Type' and 'Field' are fix and cannot be changed later.
- Field: The field name needs to be unique within this project. This is just a database-internal identifier and has no effect on anything the user can see.
- Field: Choose only letters A-Z, a-z, underscore _ or digits 0-9; the first character must be a letter.

Type
You can choose the following types for your fields:

- **INT_** Integer number
- **REAL** Real number
- **DATE** Date (without time)

- **TIME** Date and time (with automatic conversion between timezones)
- **TX16** Varchar 16: String of up to 16 characters
- **TX32** Varchar 32: String of up to 32 characters
- **TX80** Varchar 80: String of up to 80 characters
- **TXCC** Varchar 200: String of up to 200 characters
- **TEXT** MediumText: String of arbitrary length. Note on performance: Do not use this type if a TXCC is sufficient.
- **KEYW** Dropdown-box which references a single keyword. How to create the list of keywords is explained in 2.1.7.
- **MULT** Multiple-choice is a selection of multiple keywords. How to create the list of keywords is explained in 2.1.7.
- **FILE** One file. Use a zip archive if you want to upload several files to a FILE field.
- **ID__** RETE-DB internal type for the Id field. Do not use this type for other fields.
- **ACL_** RETE-DB internal type for the Access field. Do not use this type for other fields.
- **PASS** Password field
- **PROJ** Project list
- **GR_P** Group list. This list only makes sense in combination with one PROJ field; otherwise the list will be empty. (This type should not be used except in the administration projects.)
- **Nto1** Reference to one record of another project. (This type requires that the 'Foreign Project' field is filled in.)

Options

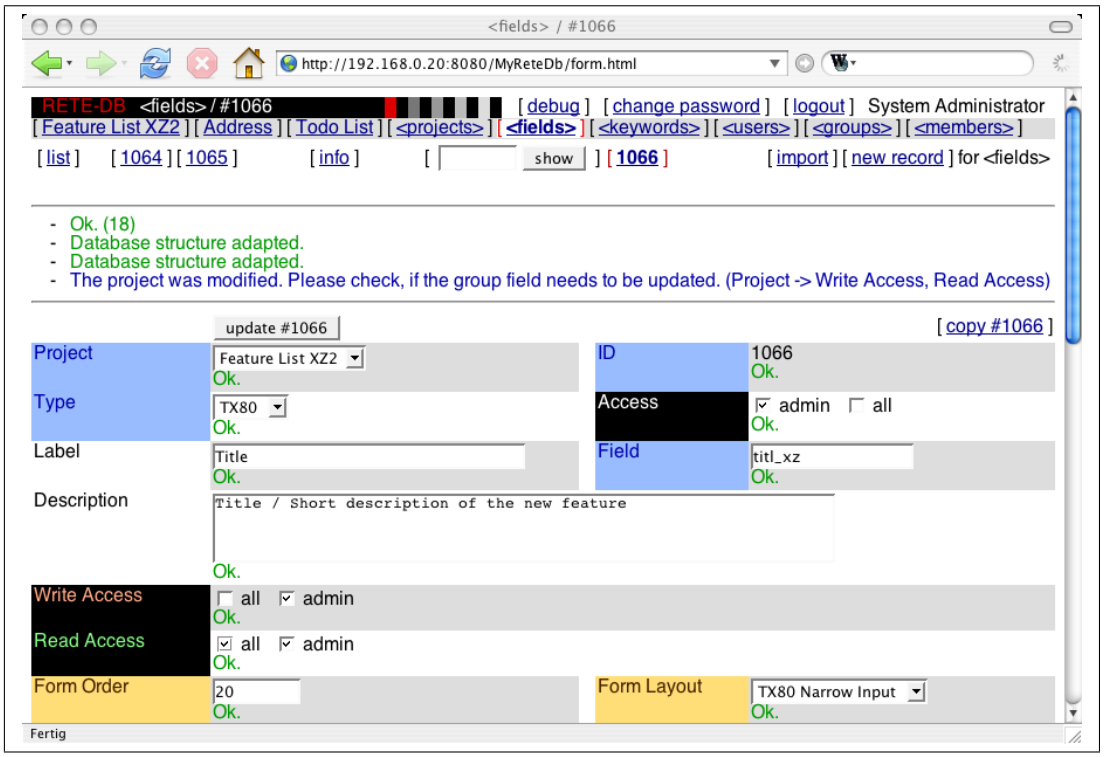
Check the 'index' box if you want to speed up searches on this field. Only check this option if this field is often searched because indices slow down other functions and occupy memory. There is no need to define an index on the 'ID' field because this field has already an database-internal index.

Note:

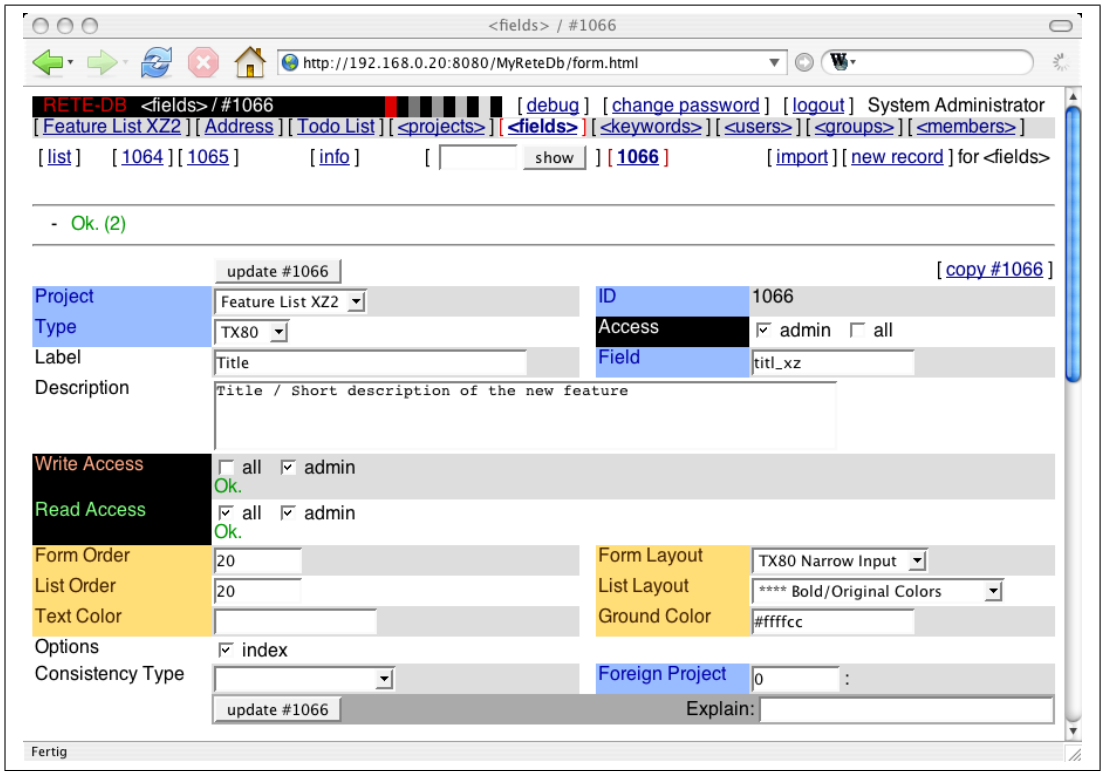
- Indices on TEXT-typed fields cannot be created if the character encoding of the database table is ucs2 or if MySQL is older than version 3.23.23 or if the table-type is not MyISAM.
- Indices on TEXT fields cannot be removed.
- MySQL does not allow to define more than 16 indices per table. 2 are already used by RETE-DB internally, 14 are remaining for your purposes.

Foreign Project

If the field type is Nto1, the Foreign Project states the number of the project which shall be referenced by the Nto1 field.
Finally, press the [create record] button.



The <fields> record is created, the database structure is modified.
Update the fields 'Write Access' and 'Read Access' for the new 'field' now.
Press the [update] button again.



A new 'field' is created. If the field is of type 'KEYW' (dropdown box) or 'MULT' (multiple choice), you need to define the <keywords> (see 2.1.7).

Display Options for Fields

There are some options that affect the color and layout of the fields:

- Form Order: This is a number that controls the position of the field in the form layout: The lower the number, the higher the line where the field is displayed. If fields have identical or consecutive numbers, RETE-DB tries to display these fields in the same line.
- List Order: This is a number that controls the position (column) of the field in the list layout. (For Nto1 fields, this number also influences which field shall be displayed in other projects when referencing this project. The TX32, TX80 or TXCC field with the lowest list order will be shown.)
- Text Color: Here, you can enter a color for the field name in the format #rrggbb where r,g and b are numbers from 0,1,2,...,9,a,b,c,d,e,f. Every color is mixed from a red (rr), a green (gg) and a blue (bb) component. #000000 is black, #ffffff is white, #00ff00 is green, #ff0000 is red, #ffff00 is a mix of green and red which results in yellow. See chapter B for more examples.

- Ground Color: Background color of the field name. See chapter B for examples. Leave this field empty for a white background.
- Form Layout: You can influence the layout of some field types by setting this option. The width of the input fields can be changed by 'ACL_ Wide Input', 'Nto1 Wide Input', 'TX80 Narrow Input', 'TXCC Narrow Input', 'MULT Narrow Input'; links can be highlighted by 'TEXT HTTP-Link'.
- List Layout: Set this option to '**** Hidden' if you want to hide a field (column) in the list view.
  Note:
  The field is not completely invisible: Every user who has read access still can make this field visible in the list page by selecting the 'list all columns' option.
  The other options influence text style and colors: '**** Black on Light Color', '**** Bold Black on Light Color', '**** Black on White', '**** Bold Black on White', '**** Original Colors', '**** Bold/Original Colors'.

Consistency Options for Fields

RETE-DB allows to define rules that reject changes of records and rules that do automatic changes after a user modified a record.
Some of these rules are already built into RETE-DB - but it is also possible to define your own rules by writing some lines of java code.

- Consistency Type: Activates consistency rules for this field. E.g. the rule that logs the last modification date is activated by the 'TIME LastMod' marker.

Note:

- Automatic changes to records are only possible if the admin group (Group Mask 0) has write access to this field. E.g. the 'TIME LastMod' rule does not work on fields without write access for the admin group.

Consistency Types

The following types are predefined in RETE-DB 1.2:

- **TIME Created** The time of the record creation is logged in this field. This only works if all groups that have record creation rights also have read access to this TIME field.
- **TIME LastMod** The time of the last modification is logged in this field. This only works if all groups that have any write access also have read access to this TIME field.

- **ACL_ Admin Access** Ensures that the administration group (0) always has access. Apply this consistency type to the Access field of the relevant project.

- **TX** Mandatory** Ensures that this field is never empty. This type can be applied to TX16, TX32, TX80 and TXCC field types. This only works if all groups that have record creation rights also have write access to this field.

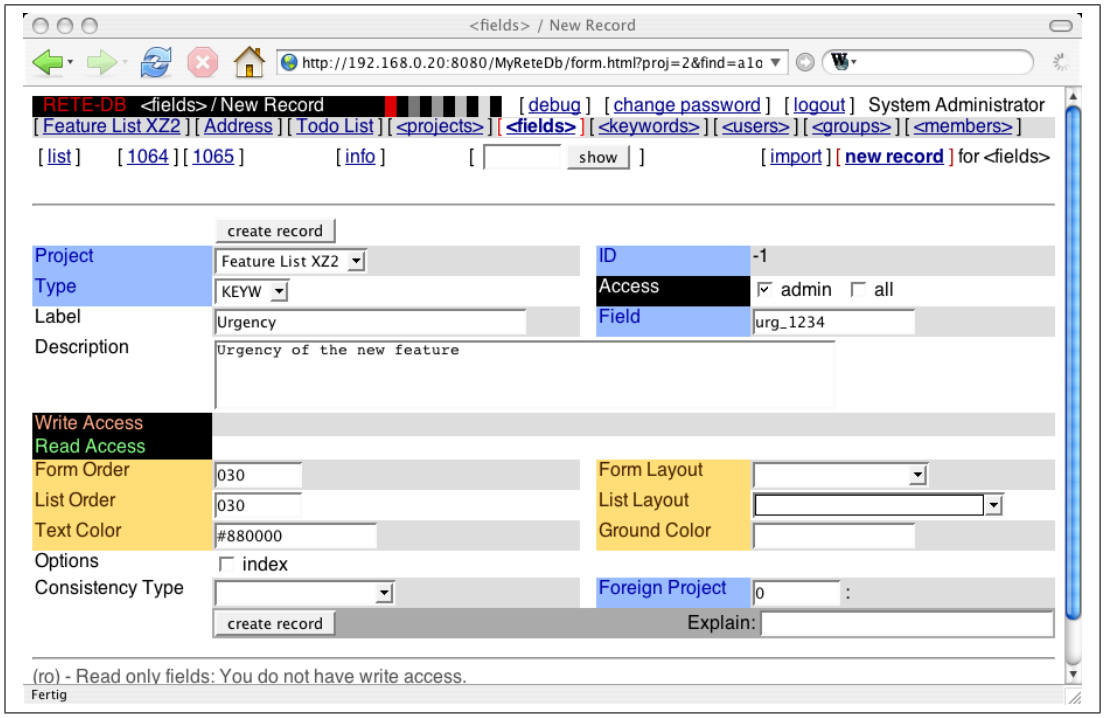
2.1.5 Delete a Field

Fields cannot be deleted. Also, the type cannot be changed. But you can remove all access rights to hide a field (see 2.2).

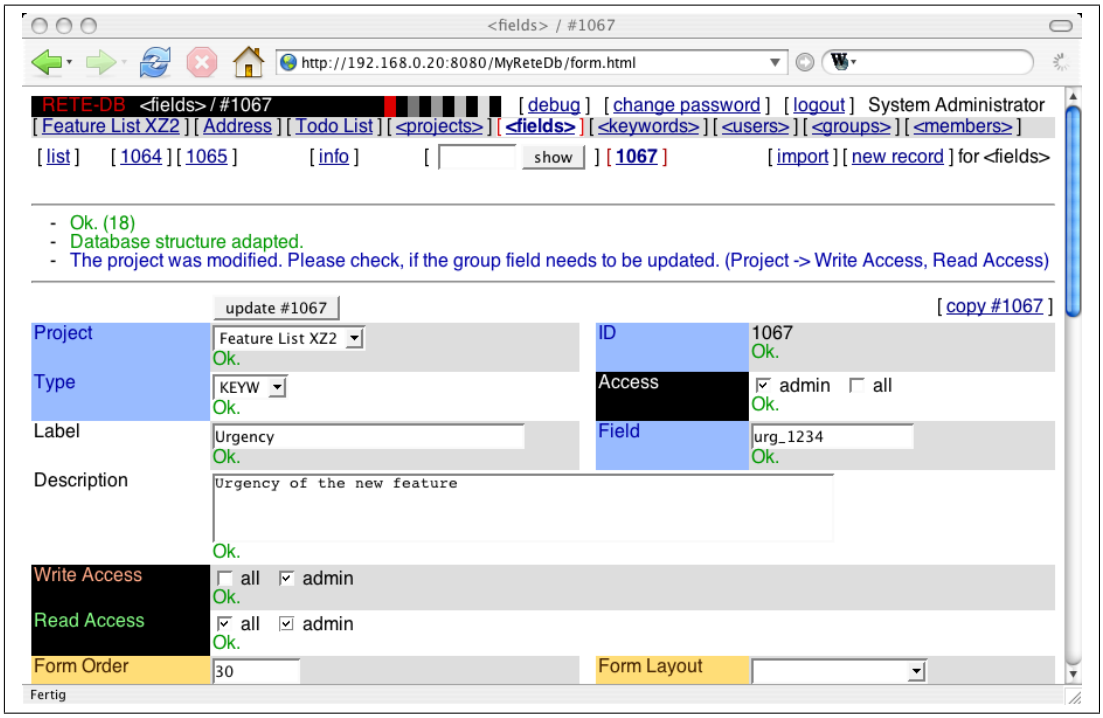
2.1.6 Create a Drop-Down or Multiple Choice (Keyword) Field

A keyword is a selectable option in a drop-down box or multiple-choice field.

To define a keyword, create a field as shown in chapter 2.1.4.



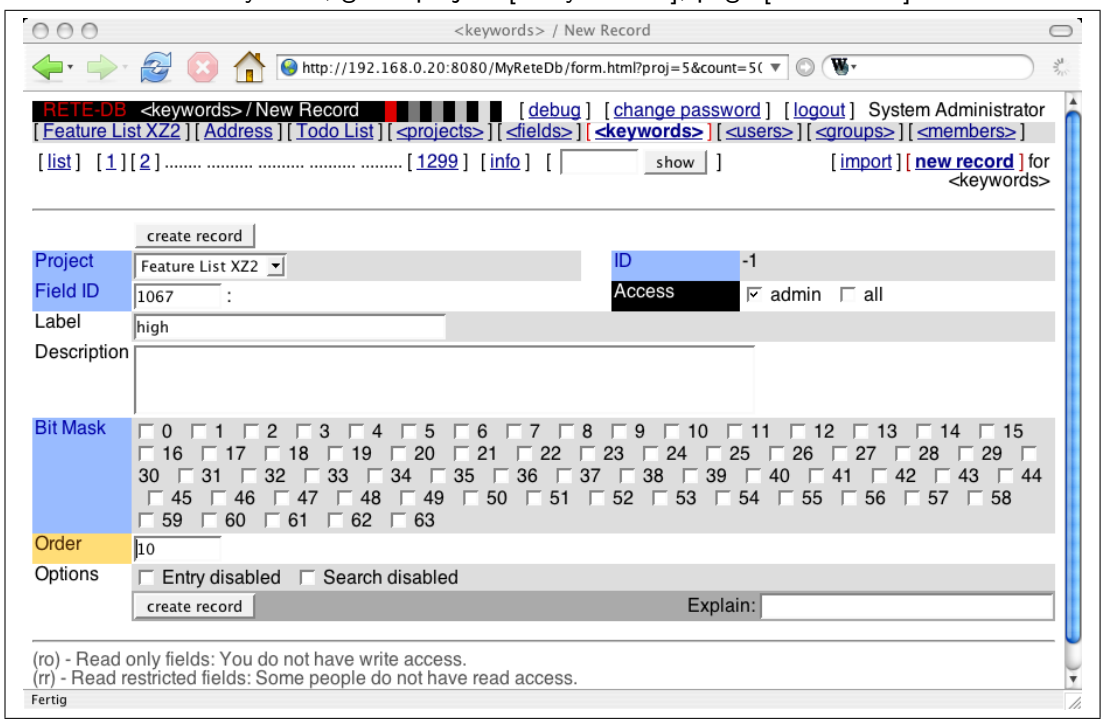
Set the Type to 'KEYW' for a drop-down box or to 'MULT' for a multiple-choice field.



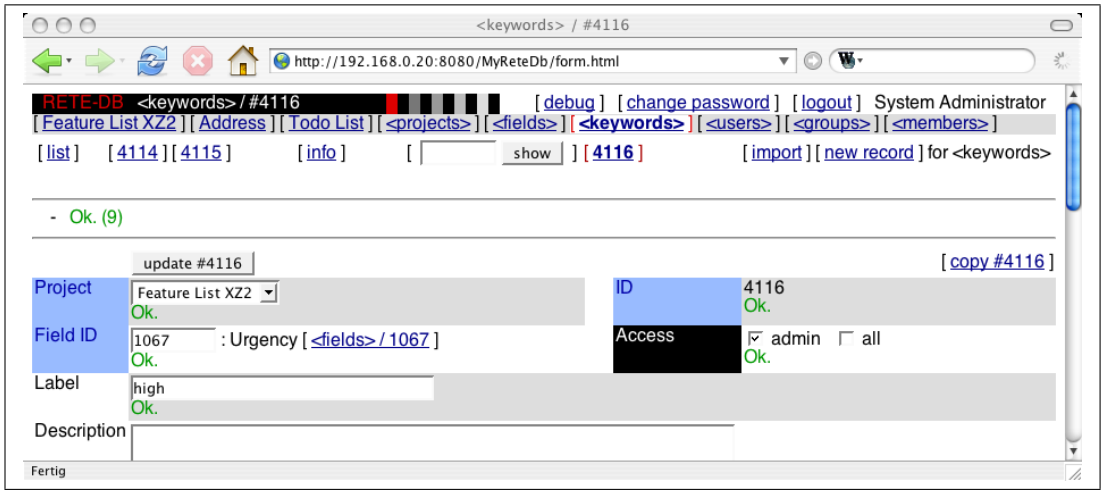
Update Read Access and Write Access fields.
An Id is assigned to the new keyword field: 1067.

2.1.7 Define Keywords

To create a new 'keyword', go to project [<keywords>], page [new record].



Enter the 'Project', the 'Field Id' (1067 in example of chapter 2.1.6) and a 'Label'.
If this 'keyword' is used in a 'field' of type 'MULT', check one of the 'Bit Mask' flags. Do not change this flag later.

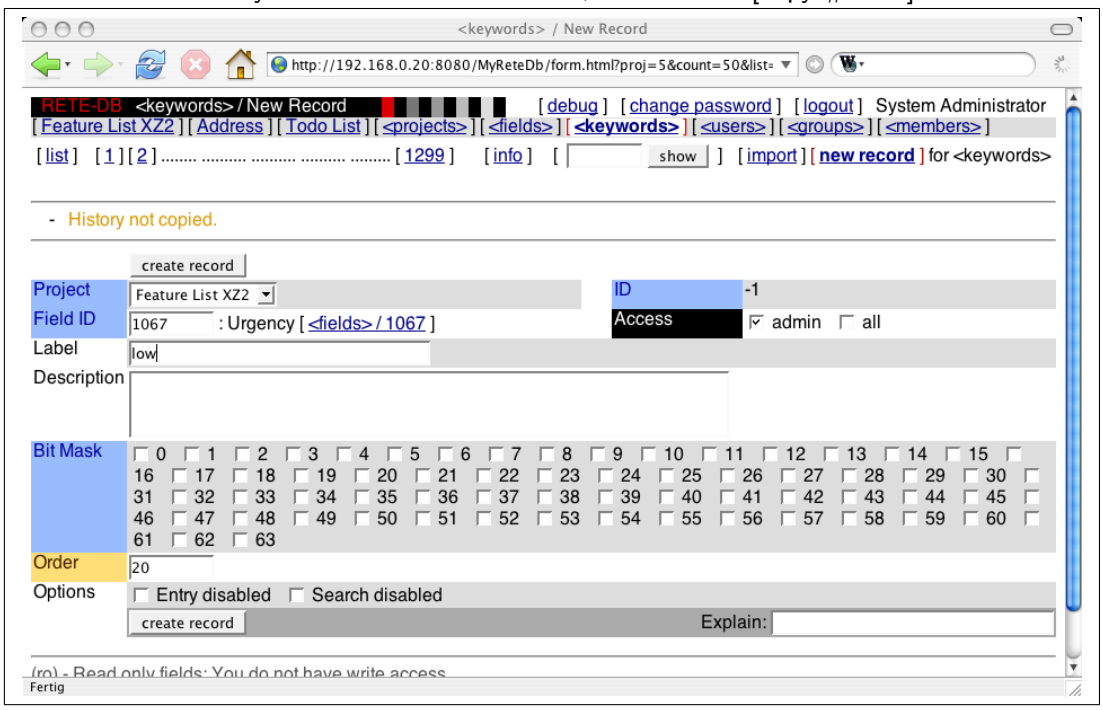


Every keyword has an order field which defines the position of the keyword within a dropdown box. The lower the number, the higher the keyword appears within the list.

Note:

- The order field does not define the order of search results when sorting results by this keyword. Search results are always sorted by the keyword ID (in case of single-select keywords) or by the Bit Mask (in case of multi-select keywords), never by the order field of the keywords.
- The field 'Notification Email' defines, to which distribution list an email shall be sent when the keyword gets selected. This field is intended to contain the email address of one distribution list. It is possible to add multiple email addresses here, separated by whitespace. Email are only sent if this feature is activated; see 4.8

To create several 'keywords' for the same 'field', click on the [copy #4116] link.



2.1.8 Delete a Keyword

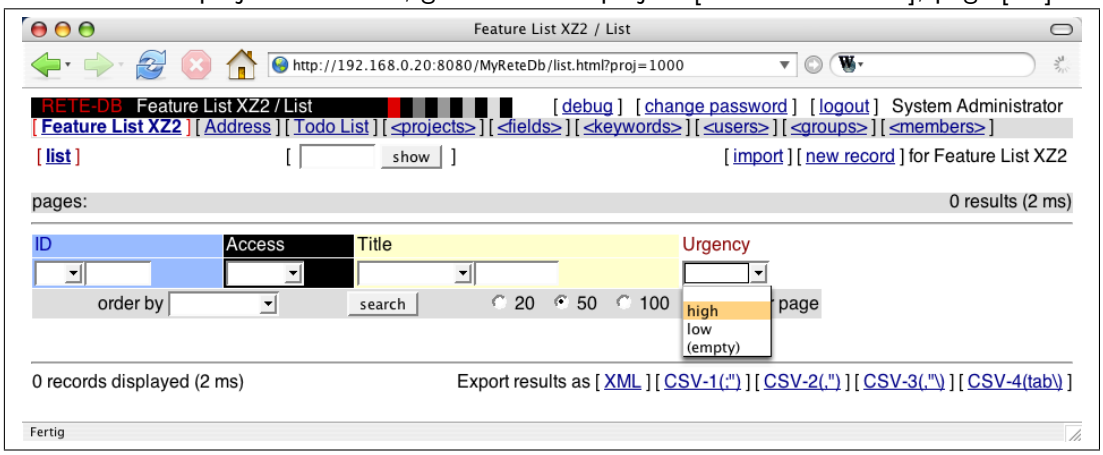
There may be several phases when deleting a keyword.

- The first most likely is disabling the keyword entry: By selecting the Entry disabled flag, nobody can enter this keyword anymore.
- The second phase is disabling the search for the keyword: By selecting the Search disabled flag, it is not possible anymore to search for this keyword.

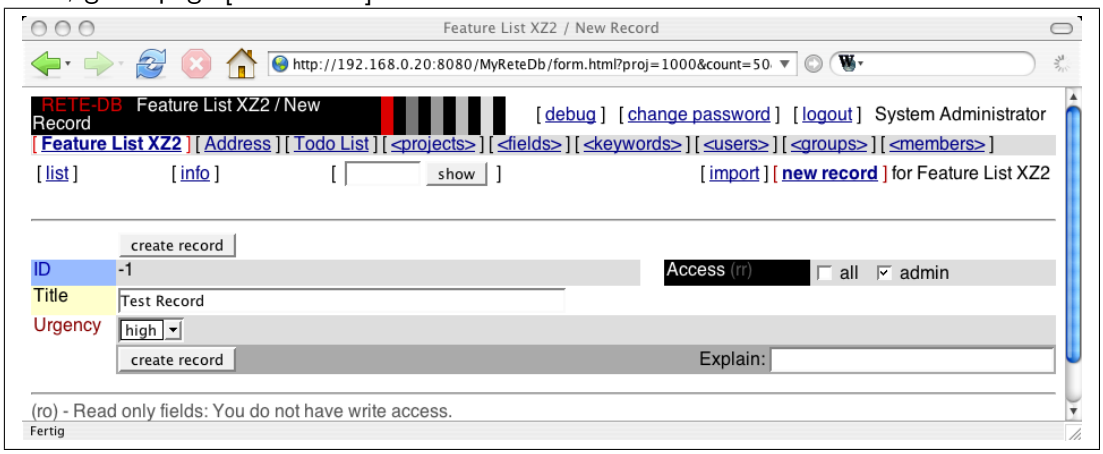
- The third step is to update all records where this specific keyword is still set: This must be done manually for every single record.

2.1.9 Check Results

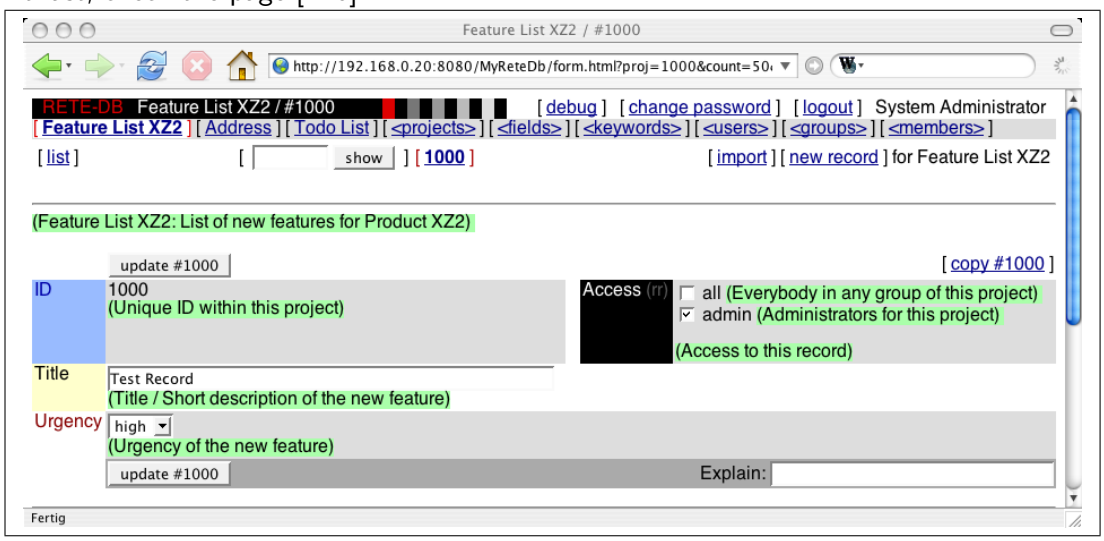
To see how the project looks like, go to the new project [Feature List XZ2], page [list].



Then, go to page [new record].



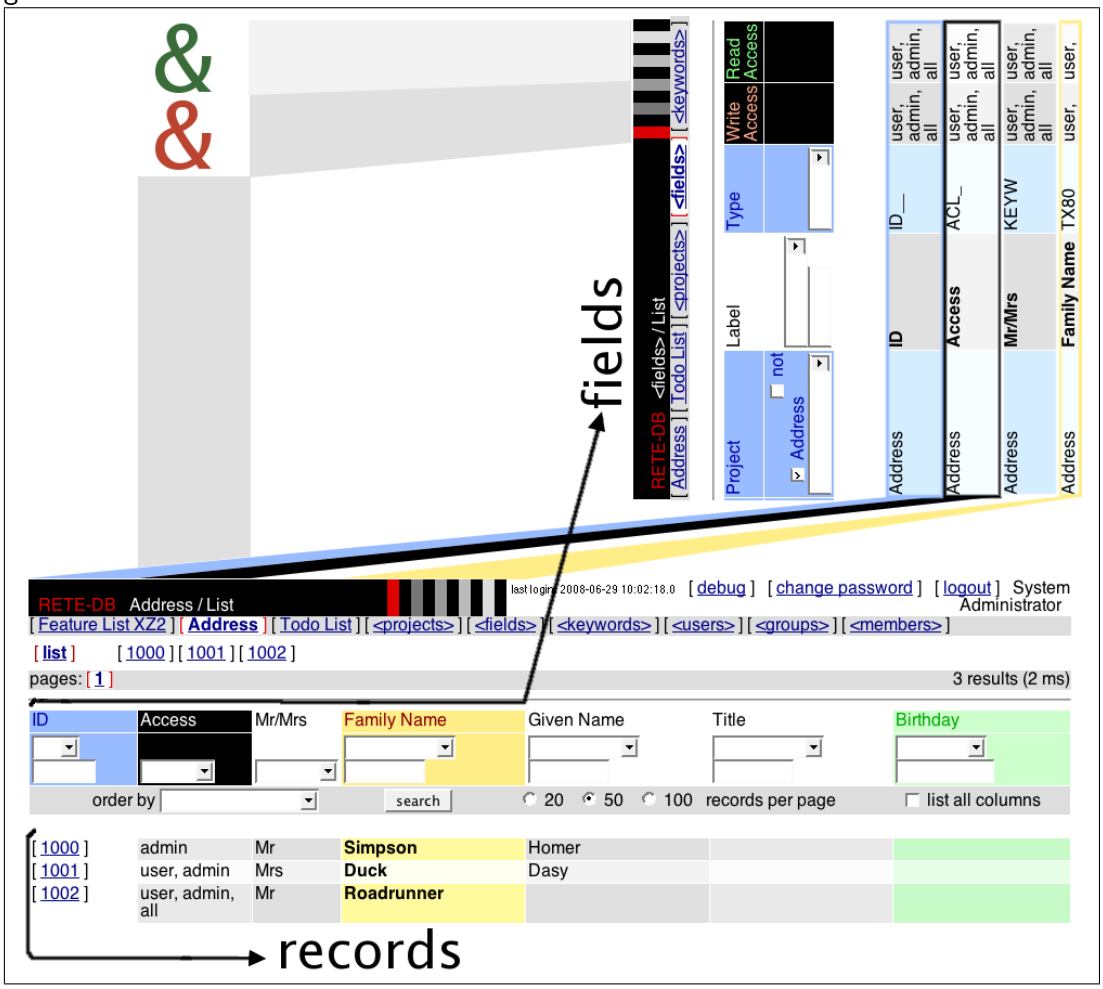
At last, check the page [info].



2.2 Access Rights

2.2.1 Overview

All access rights are defined on 'groups'.
A 'group' has read access to data if 'Access' to the record and 'Read Access' to the 'field' is granted.
A 'group' has write access if 'Access' to the record and 'Write Access' to the 'field' is granted.



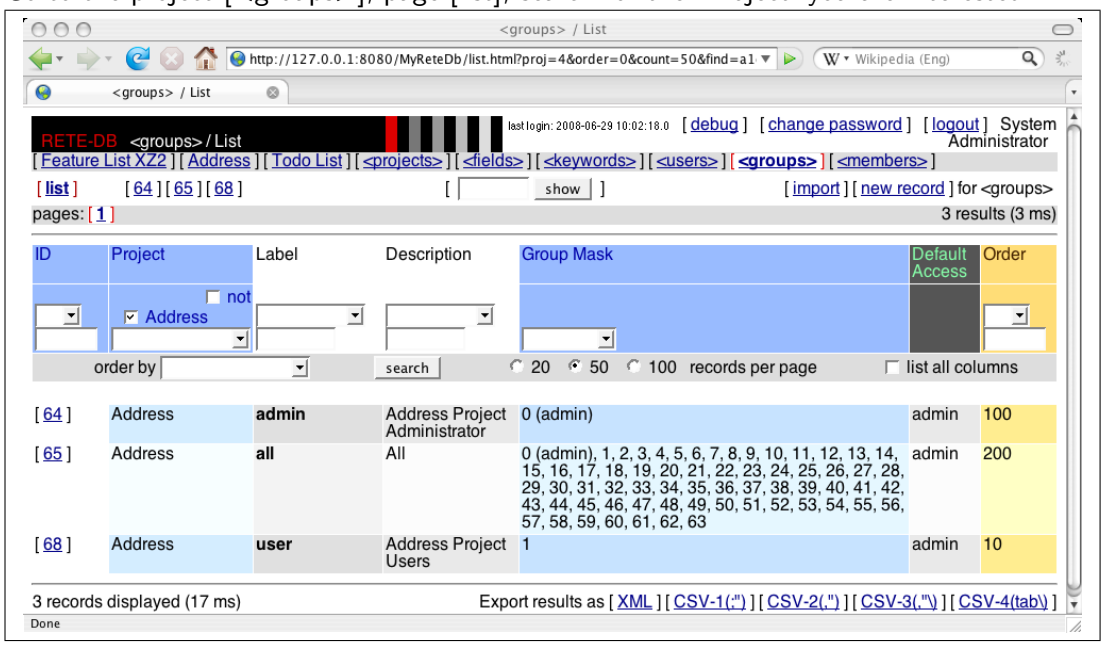
Notes on ID and Access Fields:

Write access on the ID field is the record creation right.
Write access on the Access field is also record deletion right since removing all access rights is equal to deleting a record.

If a user creates a record who has no write access to the Access field, this new record is visible to all groups that are listed in the Default Access field of the user's groups.

2.2.2 Check Group Definitions

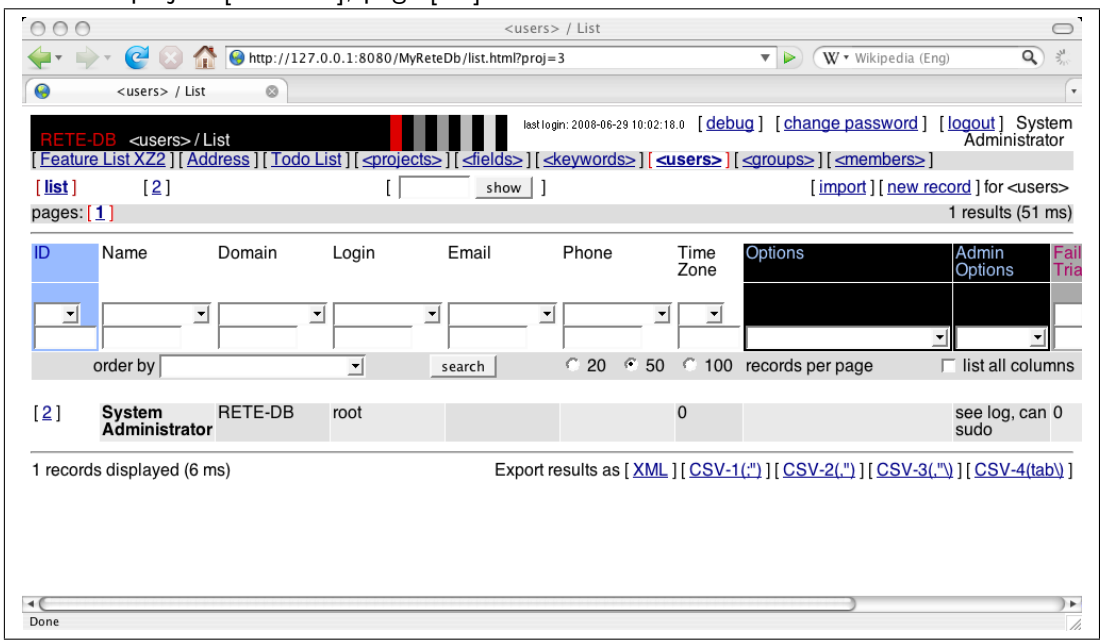
Go to the project [<groups>], page [list]; search for the 'Project' you are interested in.



Here you see all groups that are defined for this 'project'.

2.2.3 Check Accounts

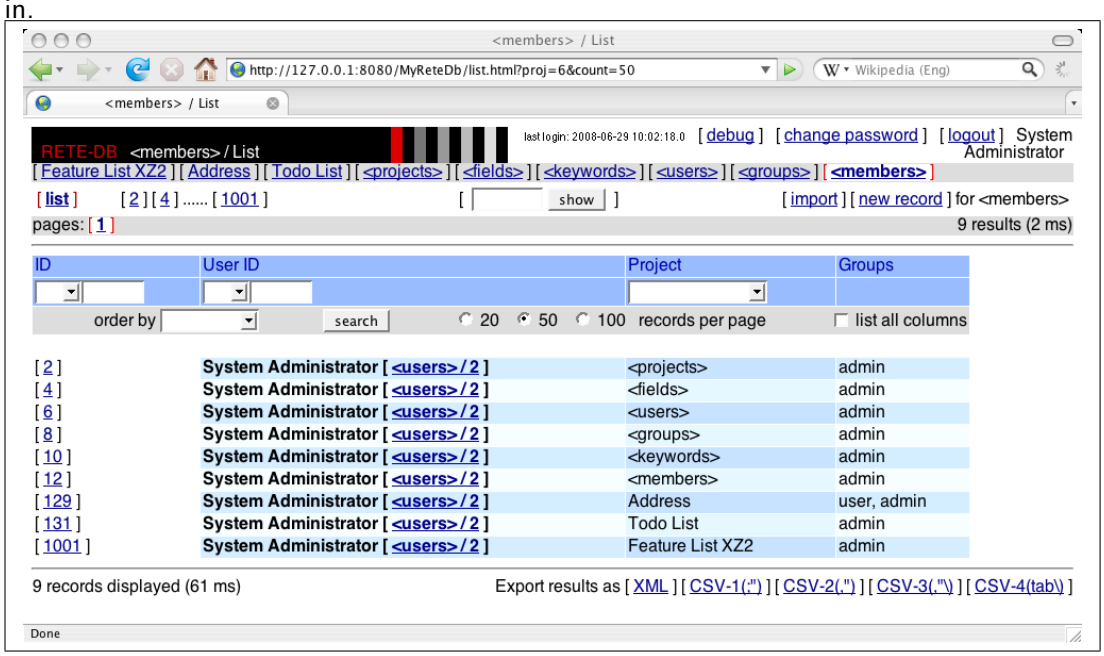
Go to the project [<users>], page [list].



This page lists all user accounts.
Note that this page does not show, which user belongs to which group. The [<members>] project lists this relation (see 2.2.4).

2.2.4 Check Group Members

Go to the project [<members>], page [list]; search for the 'Project' you are interested in.

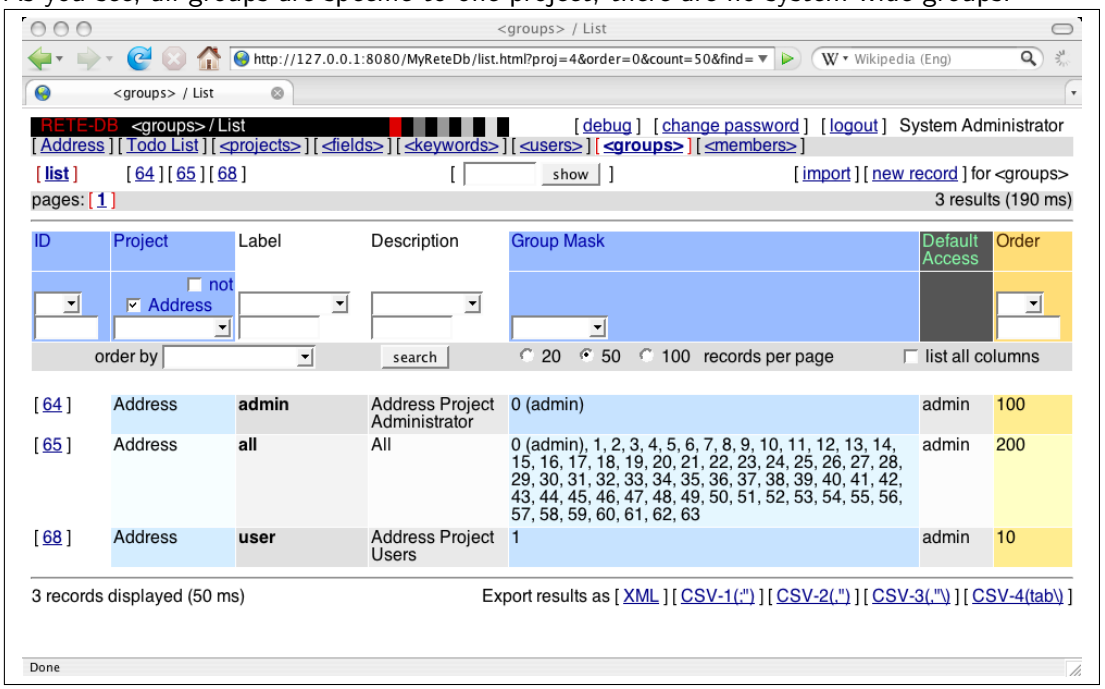


This page lists, which user is in which group.
Note that all group definitions are project-specific: If a user is in group 'admin' in project 'Address' for example; this does not mean that this user has any rights in any other project.

2.3 Manage Users and Groups

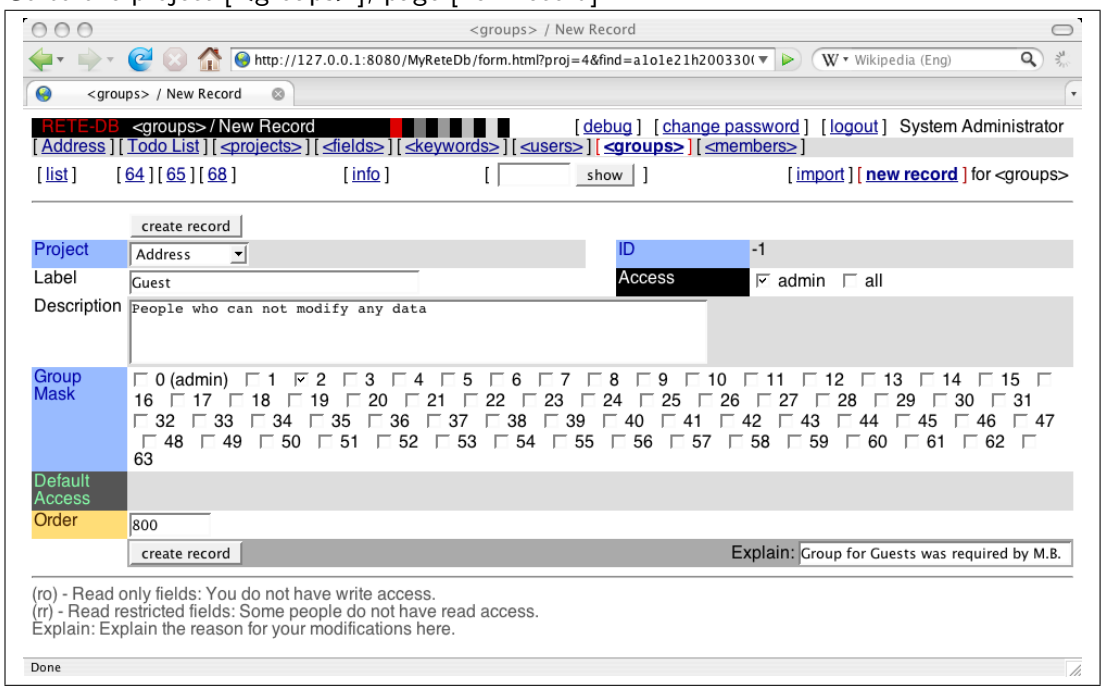
2.3.1 Create a Group

Go to the project [<groups>], page [list].
Search for the 'Project' you are interested in.
As you see, all groups are specific to one project; there are no system-wide groups.

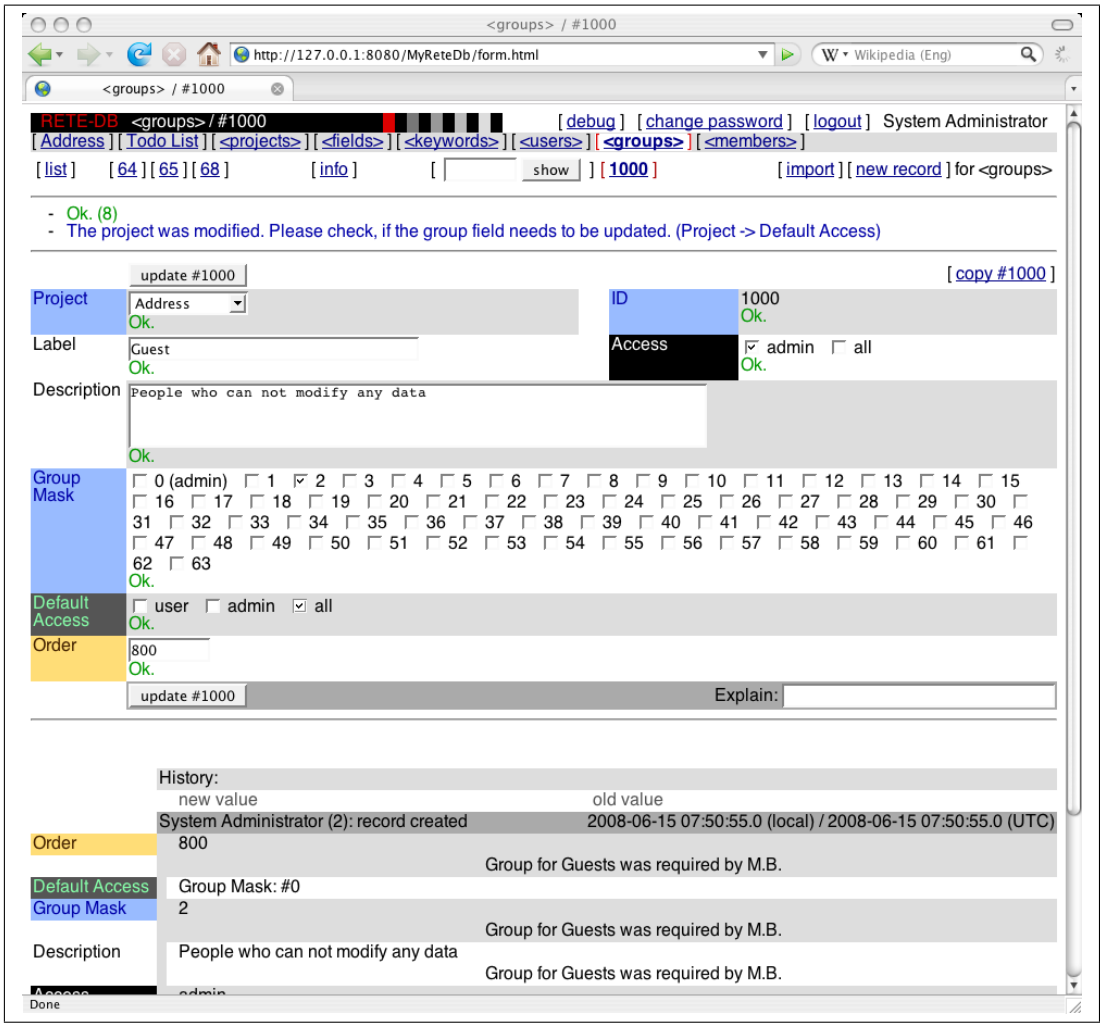


Check, which group masks are already in use (0 and 1 in this case, ignore the 'all' group).

Go to the project [<groups>], page [new record].



Check one of the 'Bit Mask' flags which are still unused. Do not change this flag later. Enter all data and press [create record].

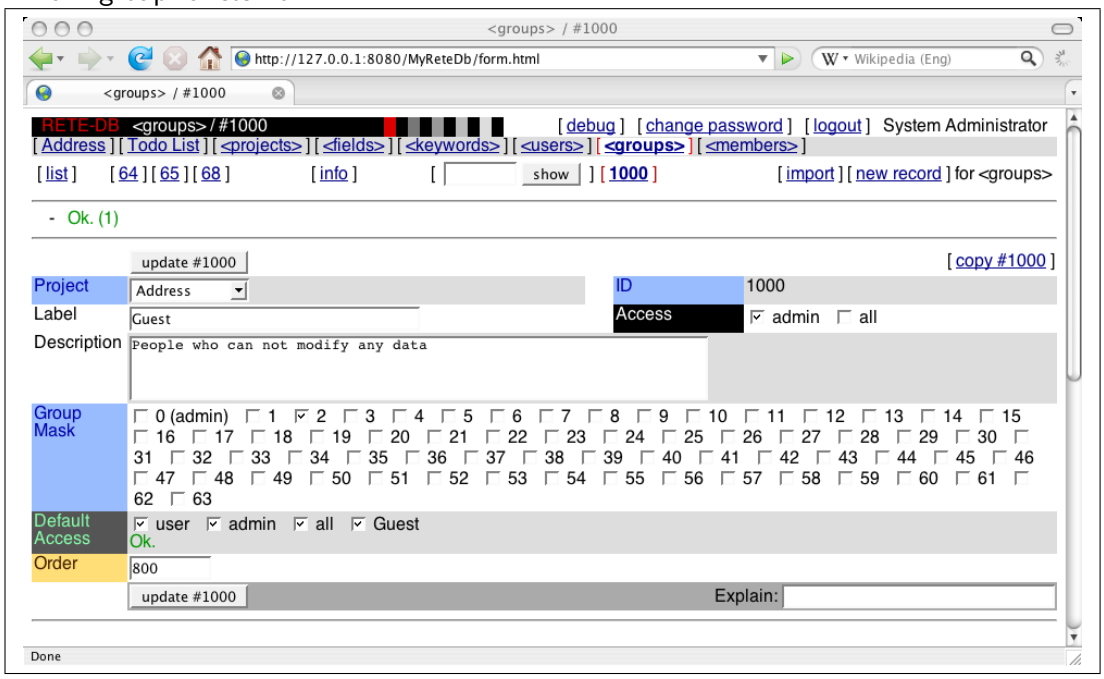


Update the 'Default Access'. This field defines who has access to a record created by this group. Then press [update #1000].

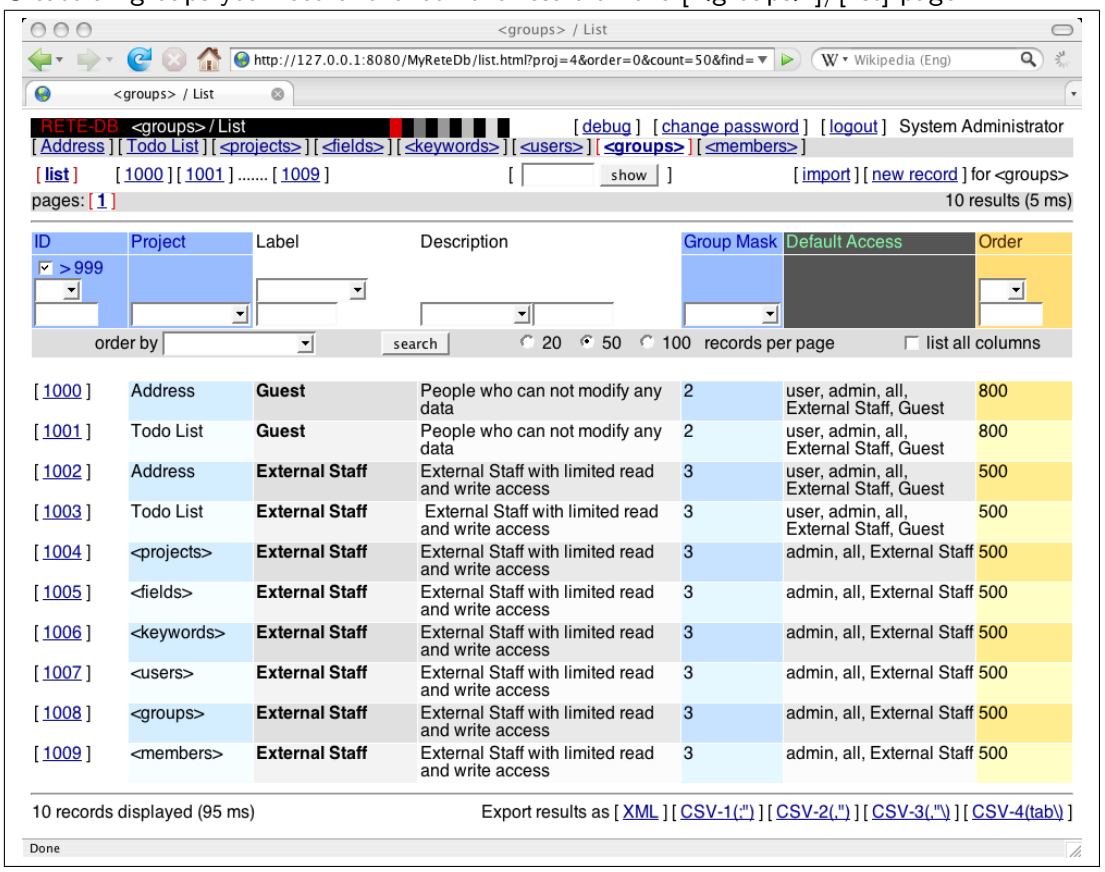
Note:

- Which user is in this group will be defined by <members> records.
- The option "Include LDAP members" allows to add all LDAP users to this group without defining records int the <members> project.

A new 'group' exists now.



Create all groups you need and check the result on the [<groups>]/[list] page.

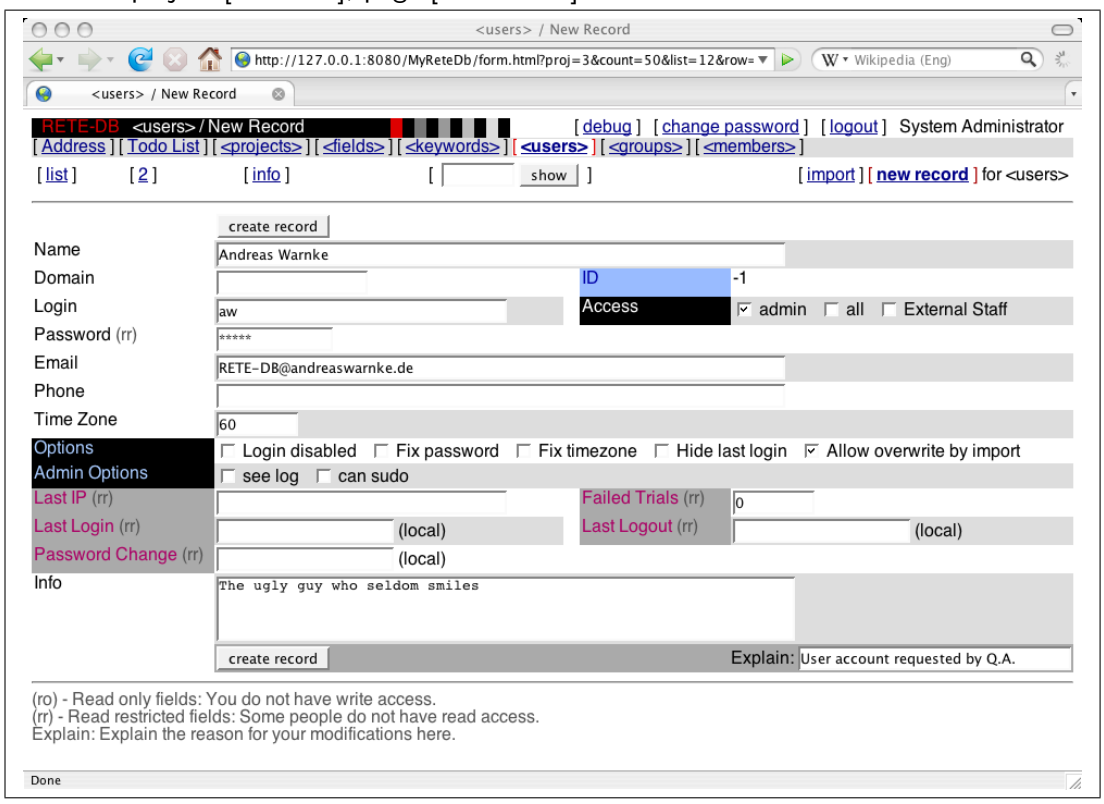


2.3.2 Delete or Modify a Group

Never change the label or group mask of a group (except spelling errors or in new, empty projects) since you would change only the label of a group; all existing definitions of access rights would change their intension.
You cannot delete a group.

2.3.3 Create a User Account

Go to the project [<users>], page [new record].



Enter all data (including an initial password) and press [create record].

Note:

- The fields 'Last IP', 'Failed Trials', 'Last Login', 'Last Logout' and 'Password Change' need not be filled in. These fields are updated by RETE-DB automatically.

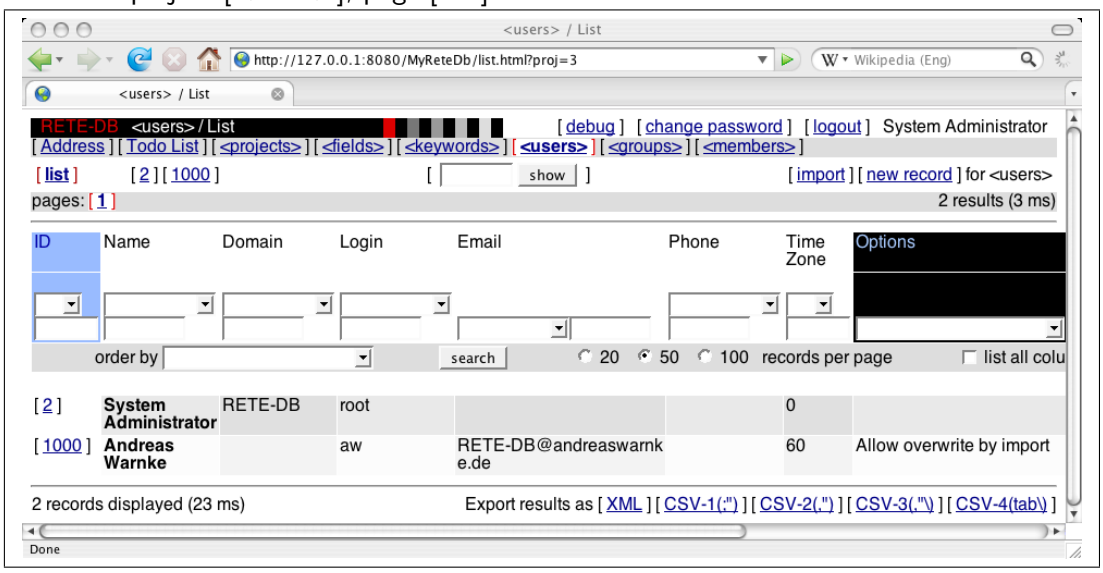
- The fields 'Options' and 'Admin Options' allow to control
  - if the user may login (see 2.3.4),
  - if changing the password or timezone for this user is allowed,
  - if the user can only login via a valid LDAP account and password,
  - if the user gets informed on his/her last login date,
  - if the user can see the log files,
  - if the user knows about the import problems (see E.4.4) and therefore is allowed to overwrite fields by an import
  - or do other administration tasks.

2.3.4 Delete a User Account

A user account is deleted by setting the "Login disabled" flag in the options field of the user. Note: If the user is logged in at that time, this user is thrown out of the system immediately.

2.3.5 Check User Accounts

Go to the project [<users>], page [link].

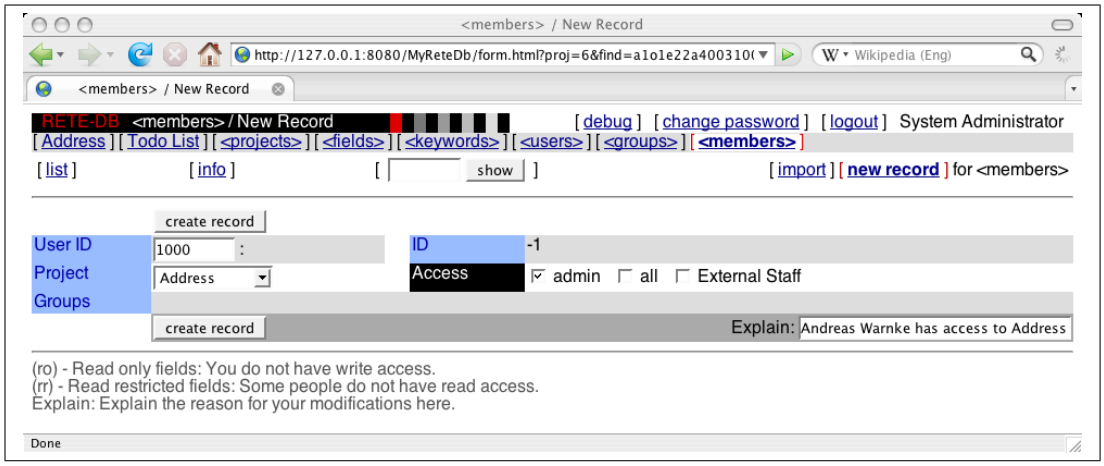


2.3.6 Define Groups of a User

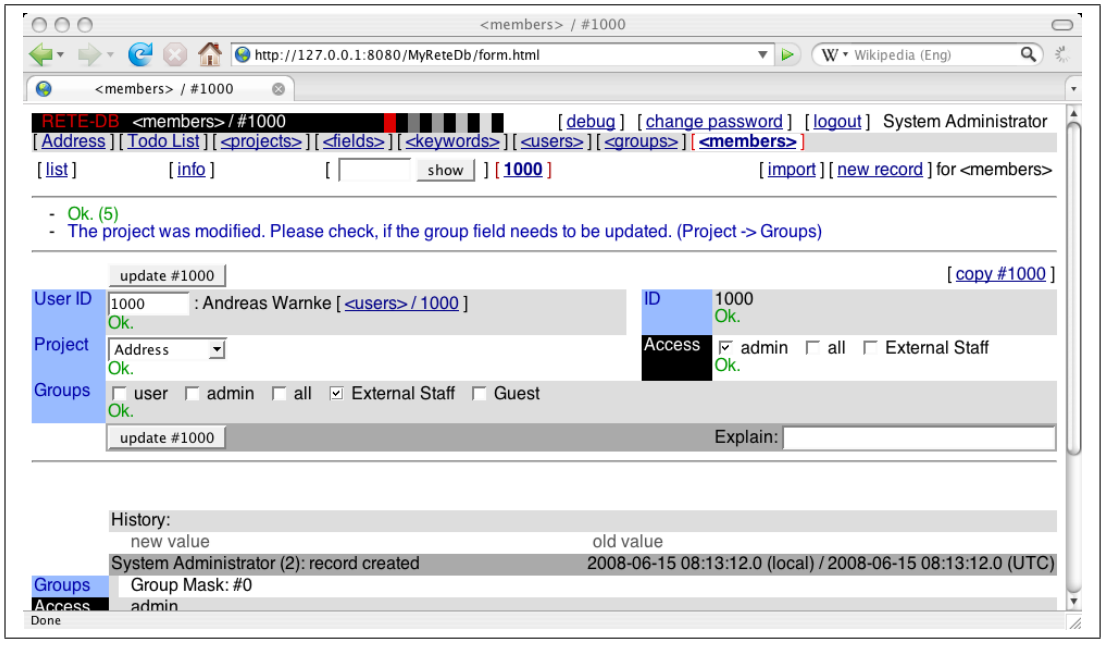
A Member record defines, to which groups a user belongs.

For every user and every project, there should be zero or one record in the <members> project: if there is no record for a user/project pair, the user has no access to the project at all; if there is one record for a user/project pair, the "Groups" field defines to which groups the user belongs.

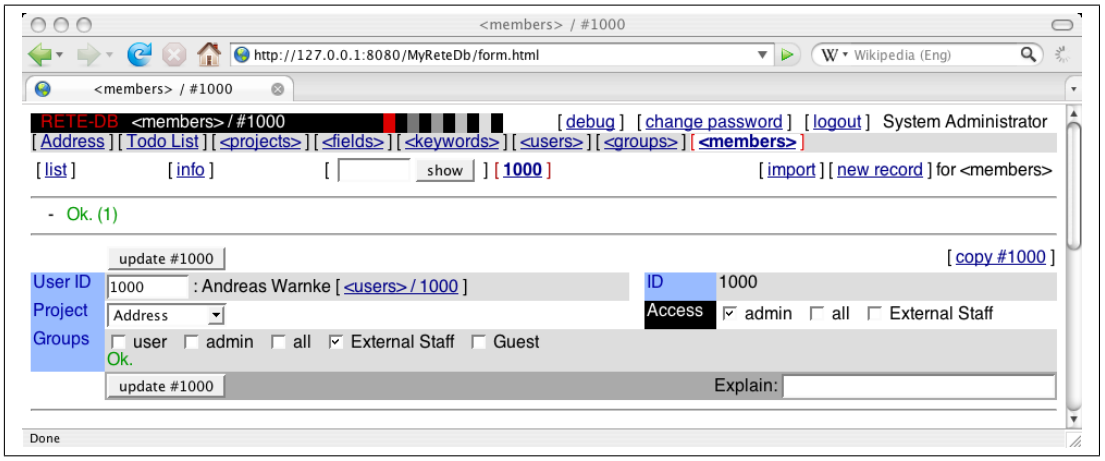
Go to the project [<members>], page [new record].



Enter 'User ID' and 'Project' and press [create record].

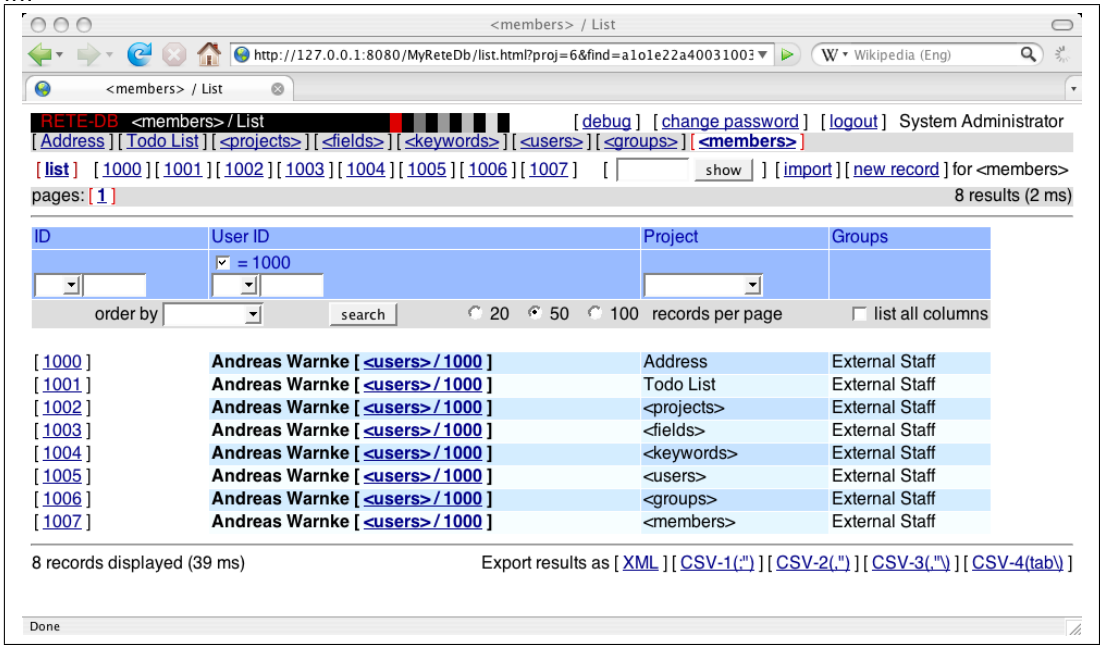


Enter all 'Groups' to which the user belongs and press [update #1000].



2.3.7 Check Groups of a User

Go to the project [<members>], page [list]; search for the 'User ID' you are interested in.



2.4 Checklist

This chapter provides two checklists to ensure that a new project is created successfully.

2.4.1 Define a new Project

Major tasks that need to be done when creating a new project are listed here.

- Create one <projects> record.
- Create several <fields> records.
- For all KEYW and MULT fields, create the appropriate <keywords> records.
- Define all <groups> for this project.
- Define, which user is in which group, by adding one <members> record for each user who shall have access.

2.4.2 Check a new Project

Some issues are stated here that are easily forgotten when creating a new project.

- Check, if the default access rights of the new <groups> are set.
- Check the read and write permissions on the new <fields> records.
- Check the <members> records, if all users are in the right groups.

Chapter 3

Maintenance

Read this chapter to get an overview on the following tasks:

- Back-ups + Resuming Operation
- Avoiding Intrusion + Intrusion Detection
- Virus detection
- Observing server load + Performance Tuning

3.1 Back-Ups

Back-ups must be done from the database contents and from the file-archive directories.

As described in the MySQL ® documentation, back-ups of the database can be invoked by one of the four commands mysqldump, mysqlhotcopy, cp or scp. Remember to lock and flush the tables when using the cp or scp commands (via the MySQL ® commands LOCK TABLES, FLUSH TABLES and UNLOCK TABLES) before copying the database files.

To keep the reference integrity of the data, it is strongly recommended to do the backups in the following order:

- First back-up all user projects (this is the rete_db_data database),
- then back-up all administration projects (this is the rete_db_meta database) and
- at last copy the file archive folders to your back-up media.

3.2 Resume Operation

To copy your data from one system to another or to recover from a backup, install the RETE-DB system as explained in chapter 4.

Before starting RETE-DB, copy the databases to your new system as well as the file archive folders. Check the parameters in the WEB-INF/web.xml file and check the following fields in the database:

- rete_db_meta.accs_projects_data.Read_DBs
- rete_db_meta.accs_projects_data.Write_DB
- rete_db_meta.accs_projects_data.ArchiveFolder

Then start RETE-DB and check the system.

3.3 Avoid Intrusion

One vulnerable point of a world-wide accessible multi-user system is that some users ignore security issues.

It therefore is the administrator's task to regularly remind all users on the security problems stated on the change-password page (see chapter 1.1.3).

Another problem is, that access right are not revoked automatically when a user leaves a project. The administrator should take care of keeping the list of valid user accounts up-to-date.

3.4 Detect Intrusion

After every login, each user should check the date of the last login. If this date is not correct, it is likely that someone else used this users account in the meantime. If this happens, this user should change the password immediately and inform the administator as soon as possible. The administrator then should check the log files to find out what happended.

3.5 Unlock the Database

To unlock the database after a brute force attack, login directly to your MySQL ® database and set the accs_users_data.Options fields to 0.

3.6 Detect Viruses

RETE-DB is completely ignorant to any code that is uploaded to the server. A virus is stored in the database and sent to the clients as any other data. It is not executed on the RETE-DB server.

This seems to be a consequent and robust handling, but please note: This makes RETE-DB a perfect virus storage. Therefore it is strongly recommended to install a virus scanner on the RETE-DB server that regularly scans the file-archive directories.

3.7 Observe Server Load

As a system administrator, it is your task to monitor the system load and check if there is enough performance available. Good tools, which you may consider to install, are webalizer and sar: they analyze http requests and server load.

3.8 System Performance

RETE-DB is an amazingly fast database. On fast computers with only few data anyway - but even on slow computers with hundred-thousands of records, working with RETE-DB is fun:

My iBook G3 needs only 20 seconds to search through 200.000 records (5-58 sec). 10.000 existing user accounts have no effect on the efficiency of a single request.

Even my 10 years old 120 MHz PPC604 Processor without Java Just-In-Time Compiler needs only 20 seconds to search through 200.000 records (6-50 sec).

On both tested systems, the hard-disk speed was the limiting factor.

This chapter describes, how you can further improve response times.

3.8.1 Performance tuning

Creating indices on fields that are often searched is the most common way to enhance performance. This can easily be done by checking the index option of the <fields> records as shown in chapter 2.1.4.

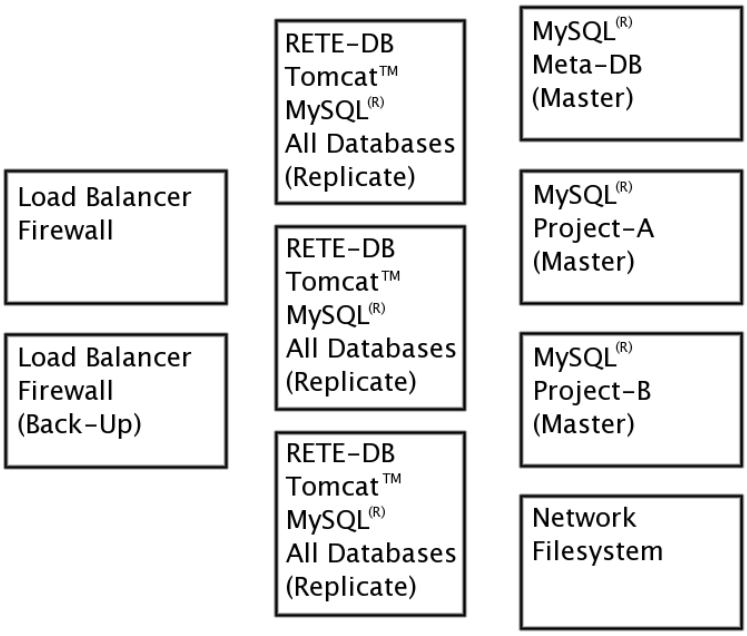
Other options are:

- If there are a lot of TEXT fields defined in a project, modify the constant net.rete_db.RETE_DB.security.RowSelector.MAX_TEXT_JOINS between 3 and 30 and recompile RETE-DB. Set this value to a higher value if your database runs on a remote machine or if your MySQL ® database has a lot of memory; set it to lower values if memory is limited.

- Use a faster computer with more memory.

3.8.2 Distribute the Database and RETE-DB

If the performance is still not sufficient, you have the following options:



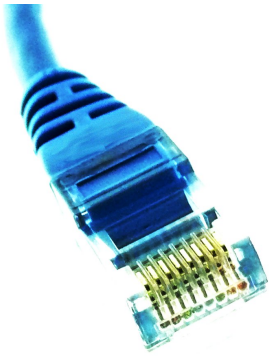
- Distribute the RETE-DB servlet to multiple computers and let multiple instances run in parallel.

- Use a load balancer to dispatch the http requests to these RETE-DB instances.

- Replicate the MySQL ® databases: RETE-DB will send all UPDATE and INSERT requests to the master server and RETE-DB will send the SELECT statements to the local, replicated database.
- Partition the MySQL ® database and distribute the different RETE-DB projects to different servers. You can do this also with the uploaded files if necessary.

Chapter 4

Installation



This chapter explains how to install RETE-DB.

4.1 Overview

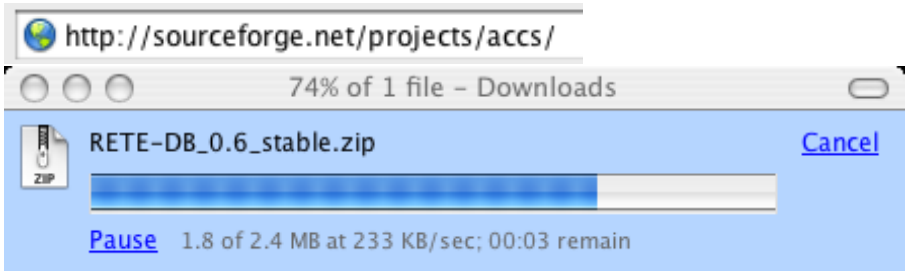
The following environment is required:

- MySQL ® database
- Java ™ Runtime Environment
- Servlet Engine (e.g. Apache Tomcat ™)
- mysql-connector-java-5.1.18-bin.jar (see 4.7)
- commons-fileupload-1.2.1.jar and commmons-io-1.4.jar (see 4.7)
- ldap.jar and utilities.jar (see 4.7)

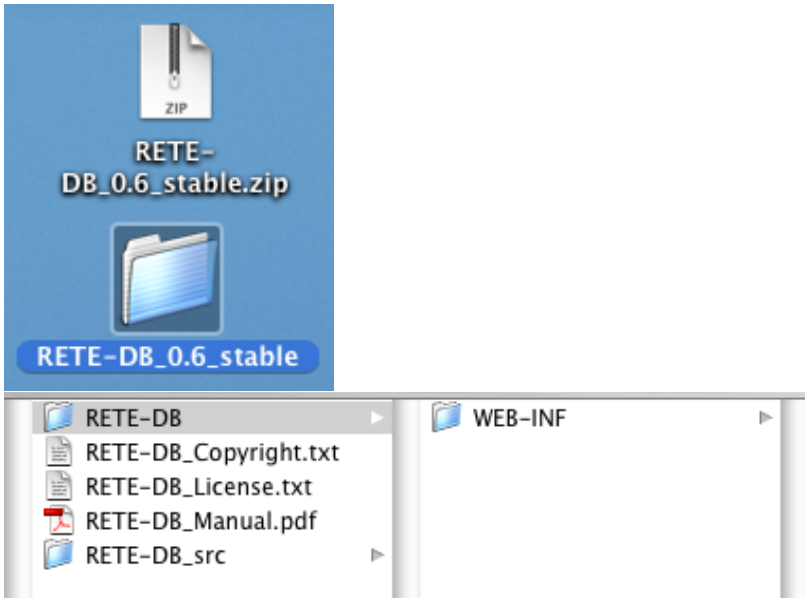
Optionally, you may want to install

- phpMyAdmin or MySQL®-Administrator
- Apache ™ HTTP Server
- mod_jk to connect Apache Tomcat ™ to Apache ™ HTTP Server. mod_jk also provides load balancer functionality.
- mod_ssl to provide encrypted data transfer

4.2 Download RETE-DB

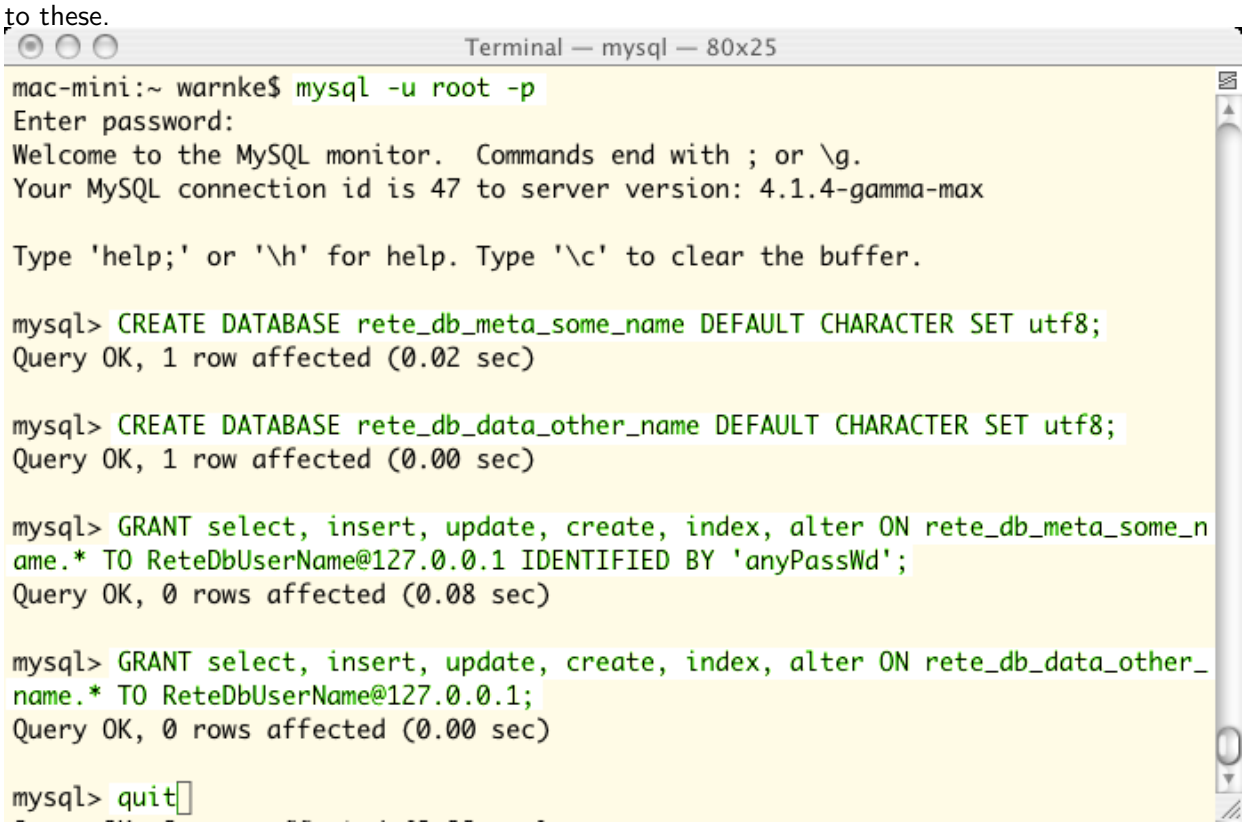


4.3 Unzip the Archive



4.4 Prepare the MySQL ® Database

Login to your database system, create two databases and a database-account with access to these.

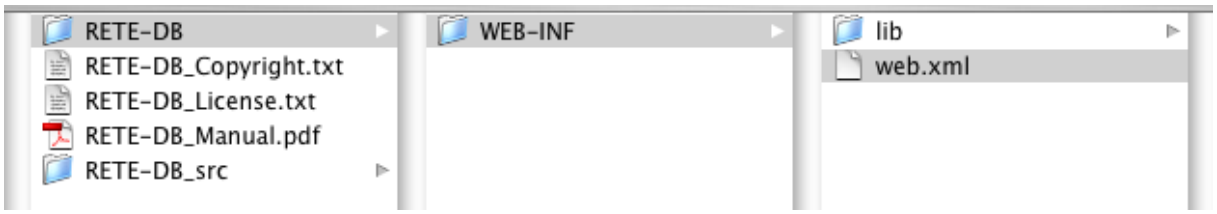


Note:

- Adjust the "@127.0.0.1" or "@localhost" restriction if your database runs on a remote server.
- utf8 allows fulltext indices even in older MySQL database versions and might therefore be more interesting than ucs2.
- If your database is older than MySQL 4.1, do not specify a DEFAULT CHARACTER SET since this is not supported.

4.5 Update the web.xml File

Update the settings in the web.xml file:




```
<?xml version="1.0" encoding="ISO-8859-1"?>.
<!DOCTYPE web-app.
  PUBLIC "-//Sun Microsystems, Inc.//DTD Web Application 2.2//EN".
  "http://java.sun.com/j2ee/dtds/web-app_2_2.dtd">.
<!-- This is the RETE-DB configuration. Modify as appropriate. -->.
.
<web-app>.
  <display-name>RETE-DB</display-name>.
  <description>Multi-User Database Frontend - .
               designed for speed, scalability and security</description>.
  <distributable/>.
                .
  <!-- Standard Action Servlet Configuration (with debugging) -->.
  <servlet>.
    <servlet-name>RETE-DB</servlet-name>.
    <servlet-class>net.rete_db.rete_db.controller.Main</servlet-class>.
    .
    <init-param>.
        <!-- the initial database connection -->.
        <param-name>Meta_DB_Url</param-name>.
        <param-value>jdbc:mysql://127.0.0.1:3306/rete_db_meta_some_name?user=ReteDbUserName&amp;password=anyPassW
    </init-param>.
    .
    <init-param>.
        <!-- the default database connection -->.
        <param-name>Data_DB_Url</param-name>.
        <param-value>jdbc:mysql://127.0.0.1:3306/rete_db_data_other_name?user=ReteDbUserName&amp;password=anyPass
    </init-param>.
```

Note: In the web.xml file, the character & needs to be replaced by & .

Check, that the www user has access to the File-Upload folder:

```
 <init-param>.
     <!-- folder for temporary files. These are deleted automatically.
          if no longer needed. The folder name needs no slash at the ending.
     -->.
     <param-name>FileUpload_TempFolder</param-name>.
     <param-value>/tmp/RETE-DB_file_uploads</param-value>.
 </init-param>.
```

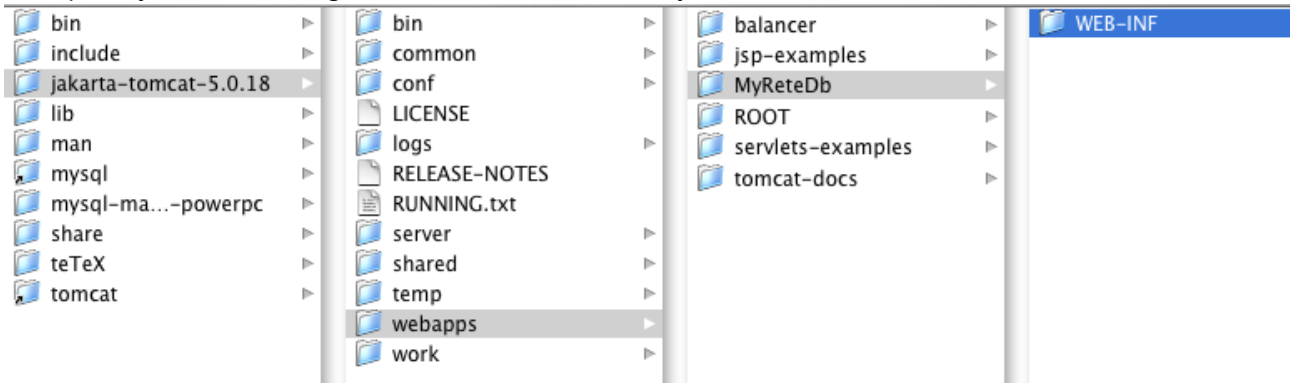
There are several parameters to configure a connection to an LDAP server if you want to use external authentication:

- LDAP_Enabled
- LDAP_ServerHost
- LDAP_ServerPort
- LDAP_ServerLoginDN
- LDAP_ServerPassword
- LDAP_UserLoginDN

Check the comments in web.xml for a description on these parameters.
A <users> record will be created automatically when an LDAP user logs in.

4.6 Install RETE-DB

Copy the RETE-DB folder to your Apache Tomcat ™ webapps folder. Rename it to for example MyReteDb. Change the owner of all files in MyReteDb to www.



4.7 Install Required Java Packages

Three Java packages are required that are not part of a the standard Java Runtime Environment:
A MySQL database driver (org.gjt.mm.mysql.Driver or com.mysql.jdbc.Driver; this is contained in the archive mysql-connector-java-5.1.18-bin.jar; see http://www.mysql.com)
The Jakarta File Upload Classes (commons-fileupload-1.2.1.jar and commmons-io-1.4.jar; see http://www.apache.org)
And the OpenLDAP Classes (novell-jldap-devel-2009.10.07-1unix contains ldap.jar and utilities.jar; see http://www.openldap.org)

These packages shall exist somewhere in the Java classpath. You can put these e.g. in tomcat/common/lib (for tomcat and all web-apps access) or tomcat/shared/lib (for access by all web-apps) or tomcat/webapps/MyReteDb/WEB-INF/lib (for access by RETE-DB only).

4.8 Setup email notification (optional)

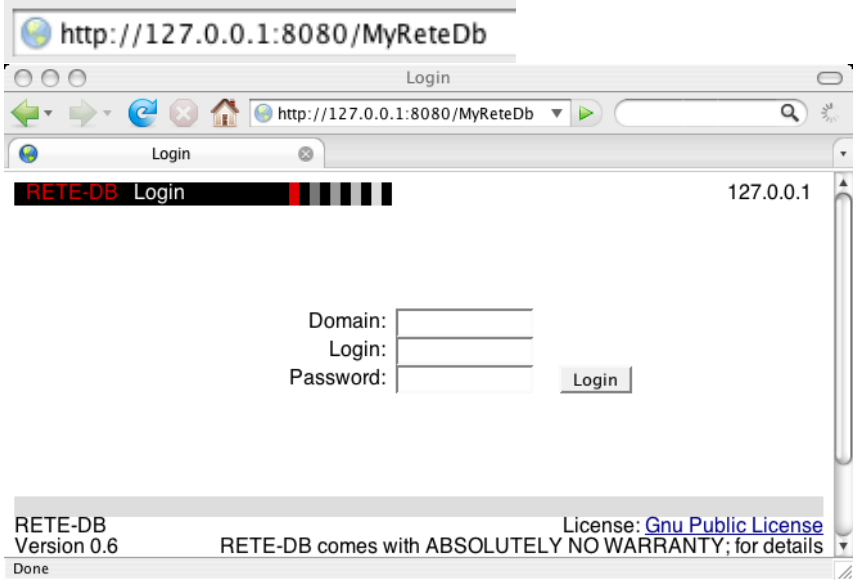
To enable sending email notifications, unzip rete-db_notifications.jar, edit the file net/rete_db/rete_db/consistency/SendMailConfiguration.properties and zip the archive again.
If your java runtime environment does not provide the J2EE packages, you need to install the packages activation.jar, imap.jar, mailapi.jar, pop3.jar, smtp.jar. See RETE-DB_3rd_party_libs.zip at http://sourceforge.net/projects/accs/files/RETE-DB/RETE-DB_1.1.9_dev/

4.9 Restart the Servlet Engine

```
[mac-mini:local/jakarta-tomcat-5.0.18/bin] root# setenv JAVA_HOME /usr
[mac-mini:local/jakarta-tomcat-5.0.18/bin] root# ./shutdown.sh
Using CATALINA_BASE:   /usr/local/jakarta-tomcat-5.0.18
Using CATALINA_HOME:   /usr/local/jakarta-tomcat-5.0.18
Using CATALINA_TMPDIR: /usr/local/jakarta-tomcat-5.0.18/temp
Using JAVA_HOME:       /usr
[mac-mini:local/jakarta-tomcat-5.0.18/bin] root# sudo -u www ./startup.sh
Using CATALINA_BASE:   /usr/local/jakarta-tomcat-5.0.18
Using CATALINA_HOME:   /usr/local/jakarta-tomcat-5.0.18
Using CATALINA_TMPDIR: /usr/local/jakarta-tomcat-5.0.18/temp
Using JAVA_HOME:       /usr
[mac-mini:local/jakarta-tomcat-5.0.18/bin] root#
```

4.10 Check, if RETE-DB is running

Start a browser and enter the address of RETE-DB:



The initial password is:
Domain: RETE-DB
Login: root
Password: RETE-DB

4.11 Troubleshooting

In case of problems,

- set the DebugLevel in the web.xml file to debug (see 4.5),
- enable logging in your Servlet Engine,
- restart your Servlet Engine and
- check the log files.

This may help you in finding the problem.

Note:

- A ClassNotFound or NoSuchMethod exception may indicate incompatibilities to the installed libraries

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- sar is the name of a program which analyzes system performance
- webalizer is the name of a program which displays server statistics

Appendix B

Colors

This chapter shows some example colors.

B.1 Text Colors

#000000 Black
#333333 Gray
#000055 Blue
#003333 Blue-Green
#003300 Green
#442200 Brown
#550000 Red
#440033 Violet

B.2 Ground Colors

#ffffff White
#cccccc Gray
#ccccff Blue
#ccffff Blue
#ccffcc Green
#ffffcc Yellow
#ffcccc Red
#ffccff Violet

Appendix C

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Version 2, June 1991

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Appendix E

Software Design

Several aspects of the general design, speed, scaling and security issues are described here.

The abstraction level of this description is focused on packages, not on classes. See the javadoc documentation for a low-level interface specification.

E.1 Packages (static view)

RETE-DB implements an MVC architecture:

- model (entity classes) and security (DB access classes)
- view and export
- controller (event handler), import_ and consistency (business logic)
- utils

The controller package implements a Front Controller Design Pattern: All requests are passed to net.rete_db.RETE_DB.controller.Main which first identifies the user and then dispatches the request to the appropriate handler.

RETE-DB is designed to be a lean database front-end with access control and logging functionality. Both features are implemented by the security package.

Additionally, there is a mechanism designed to implement some consistency checks. This can support the workflow of your process to some degree: Modifications to records can be rejected easily or additional changes can be done in the database automatically.

E.2 Packages (dynamic view)

RETE-DB is an event-driven application: All actions are caused by a request to the servlet container.

RETE-DB first handles the requested actions and collects the results in a result list; then it displays these results and the requested information to the user.

A typical call chain is:

- A user requests modifications to and information from the database,
- Main (the front controller class) checks the login data,
- Main delegates the modification request to the Updater class in the controller package,
- the Updater asks the consistency package if the changes are allowed,
- the Updater performs the modifications on the database (via the security package),
- the Updater tells the consistency package to do additional changes,
- the Updater returns a list of results to Main,
- Main tells the view package to display the results as well as the requested information,
- the view package displays the result list,

- the view package requests information form the database via the security package and displays the results.

Access Control Boundaries
There are three possible data streams: From the http request to the database, from the database to the html response, from the request directly to the response.

Access is controlled at the database boundary by the security package: If the current user has no read access, data must never be loaded from the database to the RETE-DB servlet. If the user has no write access, data must never be sent to the database.

Note: The consistency checks can bypass these rules if necessary by requesting a superuser account.

E.3 Perfornamce, Scalability and Security

High performance is achieved by the following concepts:

- Database design: Some redundancy decreases the number of SQL statements and inner joins. Redundant fields are marked with the ending 'Copy' in their database field name.
- Access rights are determined by simple bit operations, no joins to group or users tables are required.
- No use of tag libraries, servlet frameworks, xml transformations
- Database connection pools
- Object pools
- Avoiding String manipulations
- Avoiding Object creations
- Only a few SQL statements per http-request are sent to the database - which is a great advantage if the database is located on a remote server
- Only few bytes are stored in the session object. This speeds up the data transfer between servlet engines when these are distributed to different servers

Scalability is possible through

- The MySQL database, the RETE-DB servlet and the Apache webserver can be distributed to different computers.
- only the few, serializable session data, a database connection and NFS access are required for an instance of the RETE-DB servlet to handle a request. This allows RETE-DB to run simultaneously on different servers.

- The database is clustered, tables can be distributed to different databases on different computers
- Only few SQL commmands are sent from the RETE-DB servlet to the database. This avoids that the network becomes the bottleneck when moving the database to a remote server.
- The MySQL feature of replicating one database to different servers is supported.

Security A clear and restrictive security policy which was already part of the design before the first line of code was written, guarantees the safety of the data:

- Data to that the user has no read access is never loaded from the database to the RETE-DB servlet.
- Data to that the user has no write access is never sent to the database.
- Responsibility for these access checks is located at the security package.
- The fact that neither SQL statements nor SQL connection objects must ever cross the package boundary of the security package allows the security package complete access control on the database.
- If someone probes invalid passwords, this user's account is disabled automatically.
- Passwords are encrypted before they are stored in the database.

E.4 Database Design

For every project, a group of three tables exists in the database: A data table which contains the current values, a log table which contains the histories and a table storing long texts.

There are some table groups for the administration tasks (<projects>, <fields>, <keywords>, <users>, <groups>, <members>) and there is one of these groups for each custom project that is managed by RETE-DB.

Most of these table groups are independant of each other. This enables a distribution of the databases to different servers.

The <projects> and the <members> tables must be located in the same database. For compatibility to future versions, it is recommended to keep all administration tables in one database.

E.4.1 Data Tables

Each project has a data table. Data records consist of the following information:

- ACCS_Id: Id of the record. (The name of this field still reflects the former program name: Access controlled cell server).
- ACCS_Read: Read rights to this record. This is a bitmask; each bit sets or revokes access for one group. This field also determines the write access. There is no separate write access field for the following two reasons: It is difficult to explain separate write and read permissions to the users, and this solution would not fit to many real-world problems where write access is better controlled by the more flexible consistency checks.
- ...: Any number of user-defined fields. These are appended to this table automatically when a record in the <fields> project is created.
- FILE fields are also user-defined, but in contrast to the other field types, every FILE field produces three fields in the database: ACCS_FilePath_..., ACCS_FileSize_... and ... (where ... is the field name).

E.4.2 History Tables

Each project has a history table. History records consist of the following information:

- Id: Id of the history entry
- ReadSnapShot: Read access to the modified field at the time when the history entry was created.
- DataRow: Id of the modified record
- NewStart: Time when the change was made
- NewEndCopy: Time when the next change to the field is made. This information is currently not used - but it is interesting if you want to implement a search or data-export on a past time.
- UserId: ID of the user who did the changes.
- UserNameCopy: A copy of the user's name. This field is not updated when the name of the user is modified later.
- Action: Currently there are only two types: created (1) and modified (2)
- Reason: Explanation text
- FieldId: Id of the field that was modified
- OldValueCopy: Value before the change
- NewValue: Value after the change

- OldTextCopy: Only for TEXT fields: Id of the text record before the change
- NewText: Only for TEXT fields: Id of the text record after the change
- OldValue2Copy: Only for FILE fields: Filesize before the change
- NewValue2: Only for FILE fields: Filesize after the change
- OldValue3Copy: Only for FILE fields: Path to the file in the filesystem of the server
- NewValue3: Only for FILE fields: Path to the file in the filesystem of the server

E.4.3 Text Tables

Each project has a text table. The reasons for not simply storing TEXT fields in the data table are:

- Performance: When searching over non-indexed fields in the data table, huge texts in that table would slow down the search. (On the other hand, this design slows down the display of one single record, since multiple records need to be read from the database just to display a single record. Nonetheless, the database design is a good compromize between fast search and fast record display.)
- Compactness: Every text would have to be stored three times if it were not stored in a separate table: once in the data table and two times in the history.

Text records consist of the following information:

- Id: Id of the text entry; used to reference texts from the data as well as from the history tables.
- Text: Text

E.4.4 Transactions

RETE-DB does not know about transactions. This has the advantage of high performance, but it also has some disadvantages when multiple users change a record at the same time.

Export/Import: When a user exports some records to a spreadsheet application (e.g. at 10:00 am), modifies the data there and imports the records afterwards back to RETE-DB (e.g. at 11:30 am), this user might unintentionally overwrite changes done by other users during that time (between 10.00 and 11:30 am).

To avoid this problem, a user needs a special right to overwrite records by an import. The administrator should give this right only to users who know about these problems or to users who have very limited write access and therfore can not overwrite changes done by others.

Simultaneous changes via a browser: When two users change a record at the same time, the second user who sends the update request will overwrite all modifications of the first user. Even fields that were not modified by the second user will be reset to their original value if the first user changed them.

The risk of a second user overwriting the values of the first can be reduced by limiting the write access rights of every user to the necessary minimum.

Should this case happen nonetheless, the second user will notice that more fields were changed than intended. The user can see the earlier changes in the history and undo the unintended modifications.

Extremely rare situations: Supposed, two users press the submit button at the exact same time. Then it can happen that the history is partly inconsistent:

- Two history entries might have the same timestamp.
- The order of the history entries might be different from the order of the actual changes. This means that the actual value of a record might be logged in the second-latest history entry.
- The displayed 'old value' might be wrong.
- There is a hidden and unused feature in RETE-DB, that logs not only the date of a change in the history but also the time intervals without change (see E.4.2). These time intervals might overlap.

Unexpected errors: If the RETE-DB servlet is terminated or encounters an unexpected error, the following things can happen:

- The latest history entries might be missing.
- Some texts exist in the database but are not referenced. This is not a problem - only a waste of memory.
- Some uploaded files might exist but are not referenced. This is not a problem - only a waste of memory.

Conclusion:

- It might occur, that one user overwrites changes of another user by accident if both users modify a record at the same time.
- Some very unlikely situations produce small inconsistencies in the history.

For most applications, these problems are acceptable: Data is not modified without cause, every change is logged in the history (except if the servlet is terminated in the right millisecond), access rights are not compromized.

E.5 Design of Request URLs

The request URLs (Uniform resource locators) are defined in such a way that

- No URL should exceed the 1024 byte limit. (This cannot be guaranteed)
- A user can bookmark any URL or send it to someone else so that the same page will be visible when the URL is requested again.

E.5.1 find Parameter

In general, a query URL contains a phrase like "...find=a2o3e...". The first a says that the criteria of the different columns shall be connected by an AND operator. Replace the "a" by an "o" to connect the criteria of the different columns by OR. Or prepend an "n" in front of the "a2o3e..." query to get all results that do not match the specified criteria (n=NOT).

The digit 2 says that there are 2 columns that are connected by AND. The o3 says that there are three criteria on the first column that are logically connected by an OR.

Note:

- The NOT operator might produce unexpected results when applied to TEXT, DATE and TIME fields due to possible NULL values.

E.6 Errors

Table 'rete_db_meta.accs_users_data' doesn't exist:
You get a "java.lang.RuntimeException: java.sql.SQLException: Table 'rete_db_meta.accs_users_data' doesn't exist" if you delete the database while RETE-DB is running.

In this case you need to restart the RETE-DB servlet.

No such file or directory:
You get a java.lang.RuntimeException: java.io.IOException: No such file or directory exception if either the FileUpload_TempFolder in the web.xml file does not exist or is write protected or if the Archive Folder of the project does not exist or is write protected.

Login impossible or changing data does not work:
These effects may occur if your harddisk is full or if the MySQL database file has reached the maximum file size of your filesystem.

2 history entries modified instead of 0 or 1:
This effect may occur if one record is modified by two different tasks at the same time. See E.4.4.

Unexpected: Either the system user has limited access rights or nothing has to be done in Dispatcher.doAutomaticChanges():
This might occur if the admin-group 0 does not have access on a field for which a consistency check is defined. Please check the access rights on the fields.

sun.io.MalformedInputException: Missing byte-order mark:
When importing a csv file in unicode (UCS-2) format, check that this file begins with the unicode character FEFF to identify the byte order in the file.

java.lang.RuntimeException: java.sql.SQLException: Syntax error or access violation, message from server: "You have an error in your SQL syntax. Check the manual that corresponds to your MySQL server version for the right syntax to use near '()' at line 1"
de.quartztime.RETE_DB.security.DBStatementWrapper.executeQuery (DBStatementWrapper.java:439)
Add the following lines to your web.xml file:

```
<init-param>
<!-- Does the UTC_TIMESTAMP() command exist?
This should be "false" for MySQL 3.x or 4.0.x databases,
"true" or undefined for MySQL 4.1.1 and newer.
-->
<param-name>Database_UTCTimestampAvailable</param-name>
<param-value>false</param-value>
</init-param>
```

Other Errors:
Please feel free to write an email to RETE-DB@andreaswarnke.de in case of problems.

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