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SI TOOLS 2

INFORMATION SYSTEM TOOL

User Guide for Administrator

SITools2 V2.0

Table of Contents

Introduction

This document is divided into the following chapters:

- Part 1, "Getting started".
- Part 2, "Administration system".
- Part 3, "Advanced configuration".

This guide is intended for users of different degrees of knowledge and experience with SITools2:

- Administrators: The system administrators can learn how to configure data sources, datasets from data sources, services on datasets, projects, security and user management
- Developers: The developers can learn how plug-ins are used in SITools2

This guide assumes that you have some knowledge in databases and HTTP standard.
For more information, see W3C HTTP standard and the appropriate documentation for your relational database system.

Part 1 Getting started

Scientific communities are expected to provide data access to their experiments. This led developers to redevelop some common functionalities contained in each archive facility instead of reusing existing applications. SITools2, a web application under GPLv3 license, has been designed in a community mind. It offers common services through an "easy-to-use" open source web platform. Furthermore, SITools2 is highly tunable. It allows connecting at different data sources and to expose their contents in various ways: a REST API and/or graphical user interfaces based on AJAX. With its opened architecture, SITools2 is also a framework that permits developers to extend the server API, simply integrating their own applications as plug-ins. Thus developers can act at each steps of the data research, request and retrieval, but also create highly specific services. The SITools2 client is also extensible by adding modules and advanced graphical components.

In the first chapter, we will get you started with OAIS (Open Archival Information System) and with SITools2 architecture. After this overview, the second chapter will guide you in the installation step. The third chapter will guide you through a simple tutorial explaining how to publish data through SITools2.

1. Architecture

Open Archival Information System

The OAIS model is an international standard that has been adopted for guiding the long term preservation of digital data and documents. In fact, the OAIS model is an ISO standard (ISO 14721:2003): it was developed by the Consultative Committee for Space Data Systems (CCSDS) in 2002, and was adopted as an ISO standard in 2003.

The OAIS model is simply a set of standardized guidelines that breaks down an archive into six functional entities to preserve digital data in a long term:

- Ingest
- Archival storage
- Data management
- Administration
- Preservation planning
- Access

In addition to these six entities, OAIS model defines the concept of information as a combination of data and representation information. The data is the digital data to preserve and the representation information being information that allows for the full interpretation of the data into meaningful information.

In this OAIS model, SITools2 implements the following functions:

- Access including interfaces with the archival storage and data management entities,
- Administration including a part of system configuration, active requests functions and customer service.

Even if other functions are not currently available in SITools2, it should be possible to add them by development of application plug-in.

SITools2 architecture

SITools2 framework is based on several concepts:

- ***Data source***: repository of data,
- ***Dataset and its semantic***: set of data that can be grouped together by a set of common criteria. Semantic is handled by a set of dictionaries that can be applied for a specific context (for instance: In interoperability system in astronomy, an element is defined by a set of attributes such as description, ucd, utype, type,… whereas the same element needs only a textual description for human understanding)
- ***Project***: set of datasets and services that are presented to end-user
- ***Portal***: Projects presented to end-user
- ***User management***: Set of services to handle user accounts
- ***Archival storage***: Services for accessing archival storage
- ***Application***: Whatever application that can be developed
- ***Security***: Services to handle security in respect of applications/services

Among these concepts, some of them are plug-ins (orange color). Others are configurable by adding manually JavaScript components (green color). And the other ones are some services available in the SITools2 core.

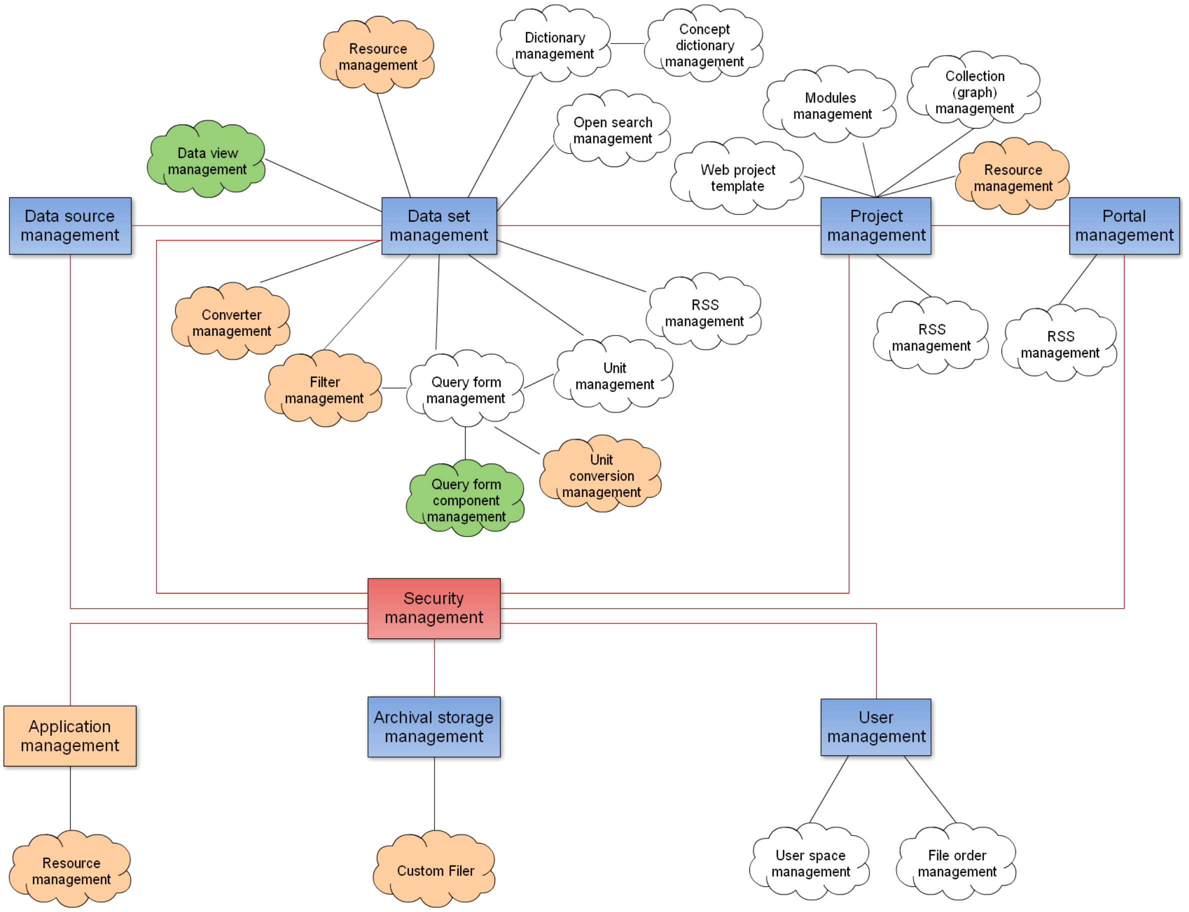


Figure 1: Architecture concepts

SITools2 is based on client/server architecture as illustrated on Figure 2: SITools2 applications. Therefore, SITools2 already provides a set of configurable applications. This way, anyone can use SITools2 "as is" and administrates the existing applications.

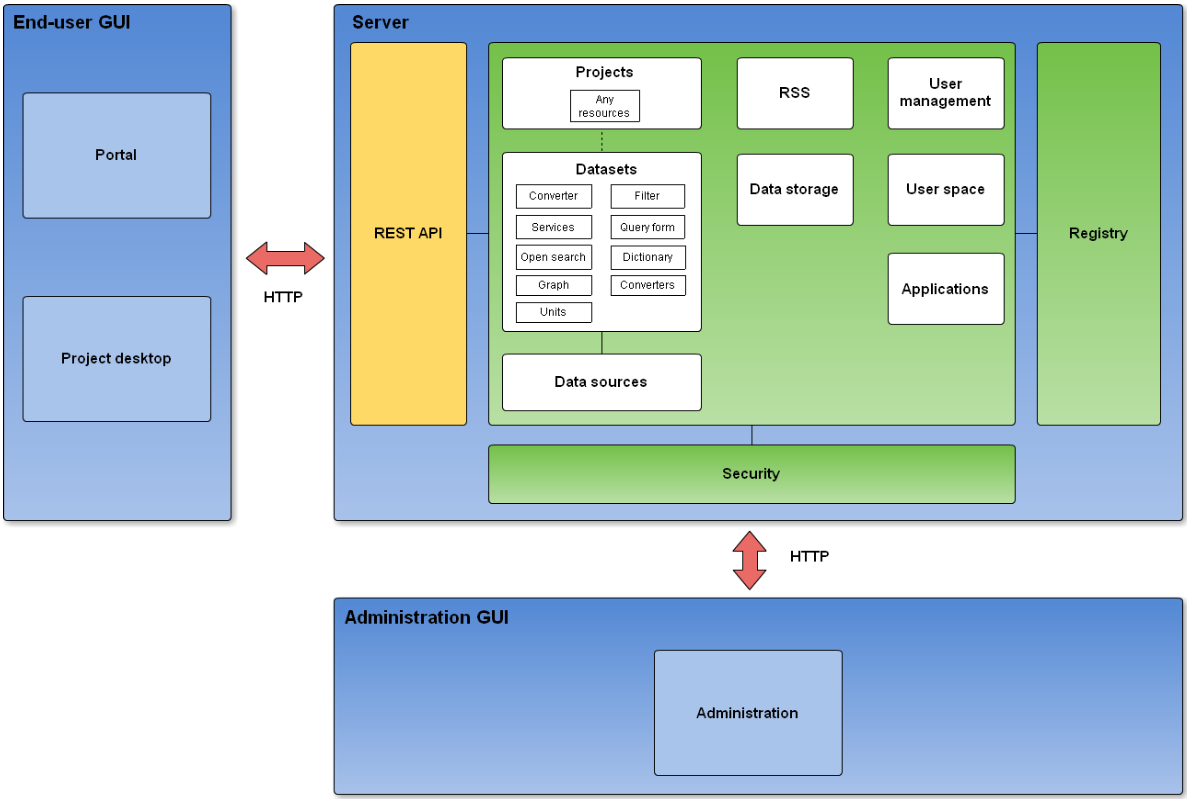


Figure 2: SITools2 applications

The server application is composed of several main functions:

- ***Data source***: Application that connects to a database
- ***Datasets***: Application that exposes data through datasets according to data policy
- ***Projects***: Application that exposes datasets and services through a project
- ***RSS***: Application that exposes RSS stream coming from datasets and projects
- ***Data storage***: Application that exposes files according to data policy
- ***User management***: Application that handles user accounts
- ***User space***: Application that handles user space for each user account
- ***Applications***: Plug-in that adds new applications
- ***Security***: Application that handles security access according to data policy
- ***Registry***: Application that registers each application of the system in order to use it

When new features are needed in SITools2, developers must develop new applications using the SITools2 framework. This framework is composed of two API: a server API in Java (Figure 3) and a client API in Ext-Js (Figure 4).

The framework on the server side is composed of a SITools2 core and a set of SITools2 extensions. The SITools2 core API is distributed as a standalone JAR, called *fr.cnes.sitools.core.jar*, and contains the main SITools2 API. SITools2 developers typically write extensions according to this SITools2 API to add new features to the core API.

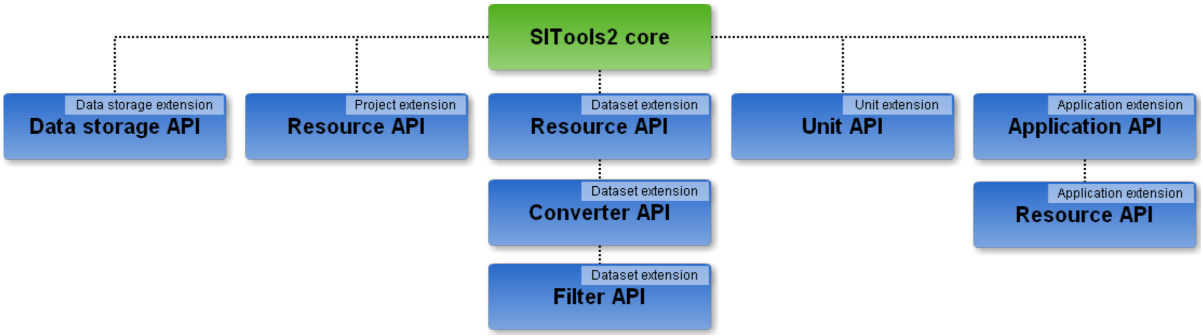


Figure 3: SITools2 server architecture

Then, the different JAR extensions are copied in a specific directory and then each JAR file is added in the CLASSPATH after the server has been restarted. As illustrated in Figure 3: SITools2 server architecture, developers can write different kinds of extensions when data access layer capability does not satisfy their needs. These extensions are pluggable and automatically discovered by SITools2. As illustrated in the following table, a description of each plug-in API is provided.

Plug-in	Description
Data storage	Provides an implementation API to check the file access using a business mechanism specific to each archive.
Resource (project context)	Provides an API to expose a resource attached to projects, datasets or applications.

Resource (dataset context)	Provides an implementation API to process data in a synchronous or asynchronous way.
Converter	Provides an implementation API to apply a transfer function on a data.
Filter	Provides an implementation API to add new search capability to the core API.
Unit	Provides an implementation API to convert units.
Application	Provides an API to expose new applications

The framework on the client side, written in JavaScript, is composed of a core part and extensions as application modules. Each module can be removed or added by configuration in the Administrator web interface.

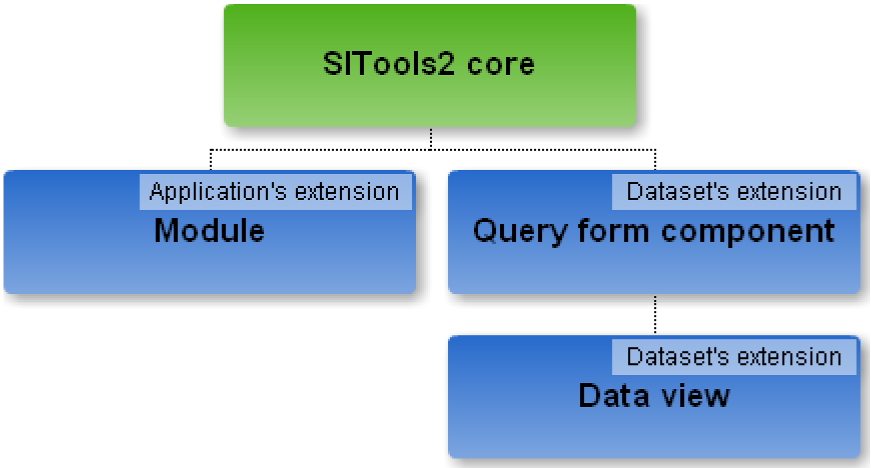


Figure 4: SITools2 client architecture

2. Installing, Starting and Stopping the system

1. System requirements

A set of components is required to use SITools2 as described below:

Component	Description
Database	PostGreSQL or MySQL. A database in one of these database systems must be created before installing SITools2
JAVA	Java version = 1.5 or 1.6 (SUN vendor is preferred)
Operating system	Linux / Unix 32-bit, 64-bit
Port number	Free. When SITools2 is configured with a port number lower than 1024, SITools2 must be run as root user. This is due to Unix constraints
Browser	Supported for up-to-date version of : • Firefox 3.5 + (PC, MAC, Linux) • Safari 3+ • Chrome 6+ • Opera 10.5+ (PC, MAC) Last version tested : • Firefox 16.0.2 • Safari 5.1.7 • Chrome 23.0 • Opera 12.10

Tableau 1: required components

First-time Users

Download the installer package from http://sourceforge.net/projects/sitools2/files/latest .

Then, follow the online tutorial for SITools2 installation:
http://sitools2.sourceforge.net/tuto/installation.htm

Note: SITools2's packager can be run using the following command line java –jar SITools2-2.0-install.jar

Starting the system

SITools2 starts by executing the following command:

```
cd <install_sitools2_directory> && ./sitools.sh start
```

Then, go to:

- `http://<hostname>:<port>/sitools/client-admin/` to access to the administration page. The default login/password is admin/admin
- `http://<hostmame>:<port>/sitools/client-user/` to access to the end user page

Stopping the system

SITools2 can be stopped by executing the following command:

```
cd <install_sitools2_directory> && ./sitools.sh stop.
```

Note: When setting a low port number for the SITools2 server on Unix system, the server must be started as root. This is not a limitation of SITools2 but a security of Unix system.

3. Tutorial

In this chapter, we will learn how to configure SITools2 so that an administrator publishes his data from an existing database.

1. Create a database as data source

The first step to publish data is to create a data source from which the administrator will expose some datasets. This tutorial explains how to expose a relational database as a data source: http://sitools2.sourceforge.net/tuto/createDb.htm

Setup the archival storage

Setup the dataset

From the defined data source, the administrator can define a set of datasets according to the archive needs. This tutorial explains how to define a simple dataset: http://sitools2.sourceforge.net/tuto/createDataset.htm

Setup the project

Once datasets are defined, the administrator needs to create a project in which he will select datasets he wants to expose to the web client: http://sitools2.sourceforge.net/tuto/project.htm

Results on SITools2 client

Another tutorial states a brief result of the administrator's configuration on the web client: http://sitools2.sourceforge.net/tuto/project_client.htm

Part 2 Administration system

From OAIS (Open Archival Information System) reference model, the administration entity provides the services and functions for the overall operation of the archive system, including:

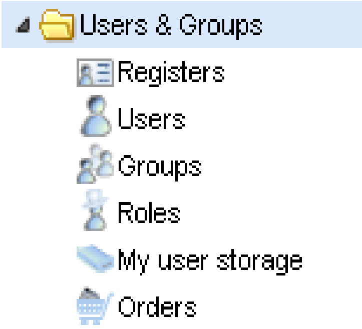
- Negotiate Submission Agreement function
- The Manage System Configuration function
- The Archival Information Update function
- The Physical Access Control function
- The Establish Standards and Policies function
- The Audit Submission function
- The Customer Service function

In SITools2, we currently provide a subset of these functions. Nevertheless, it would be possible to implement most of other OAIS functions by the use of plug-in mechanism.

The administration panel in SITools2 is split into different sections:

- The user management system responsible for handling user accounts
- The configuration system responsible for configuring the whole system
- The security management for defining the security of each application according to defined roles

1. User management



User management menu is composed of six functions:

- Registers: List of registered users that are waiting for validation by the administrator. Once user information is validated, his information is stored into the "Users" table and security of applications can be configured according to users.
- Users: List of archive's users
- Groups: Collection of users
- Roles: Role in the archive. A role is composed of "groups" or/and "users". The security is performed according to role.
- My user storage: space disk for each user
- Orders: list of orders

As illustrated bellow, the Figure 5 states the main different actions that the administrator can do on the administration page

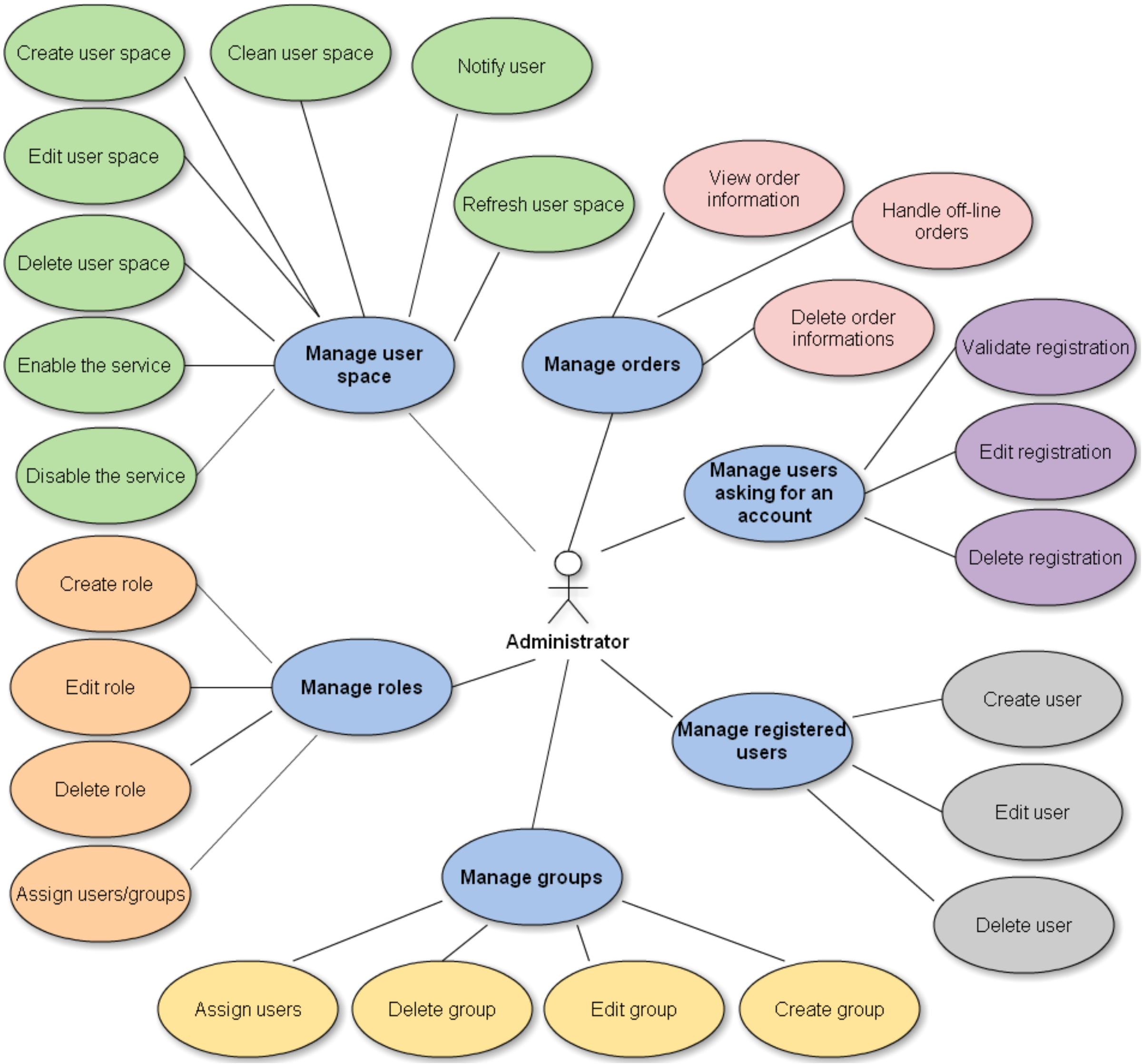


Figure 5: User management actions

1. Registers

When a user asks for an account in the archive, he must fill a set of information. The user account information is then transferred to the application in the **Registers** panel as illustrated in Figure 6. The administrator must then validate the user account to add it in the list of allowed user accounts of the archive.

A user account provides some special capabilities to user:

- Accessing to asynchronous services
- Having its own user storage
- Saving the user preferences
- Accessing to restricted projects, services or datasets

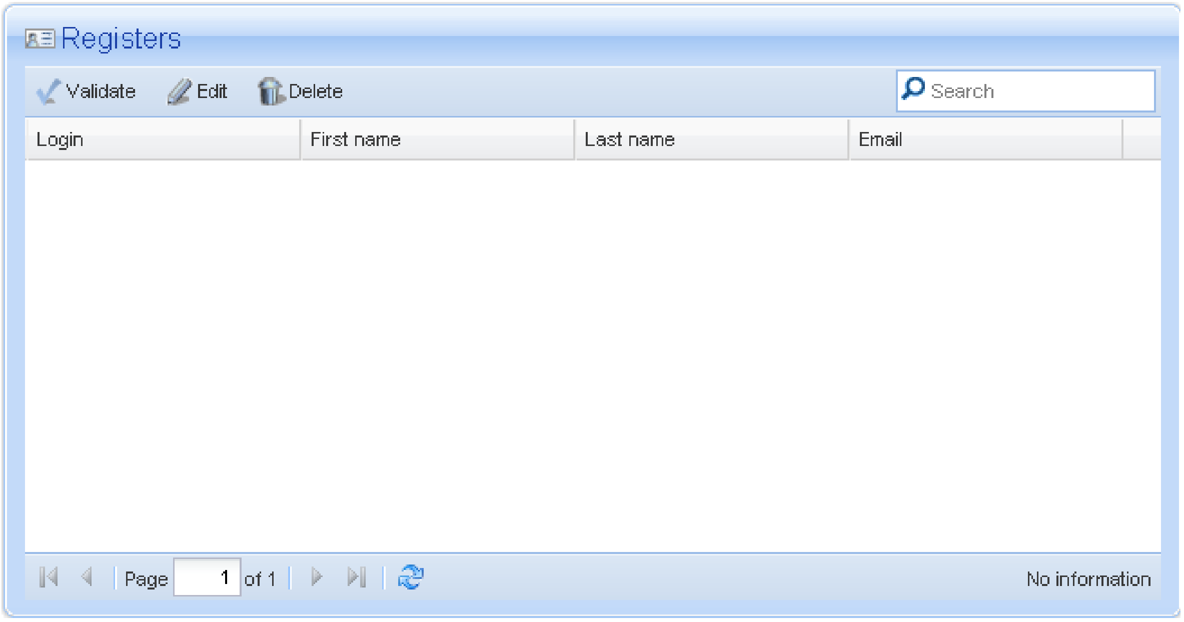


Figure 6: User registration panel

The **Registers** panel states the list of user accounts waiting for a validation. The panel displays the login, first name, last name and email that the user has filled during the registration step.

The administrator can delete a user account, edit his information or validate it. When a user is validated, the user information is stored in users table and the system sends to the newly created user a confirmation email.

Note: The email that the system sends to users is not yet customizable by the administrator.

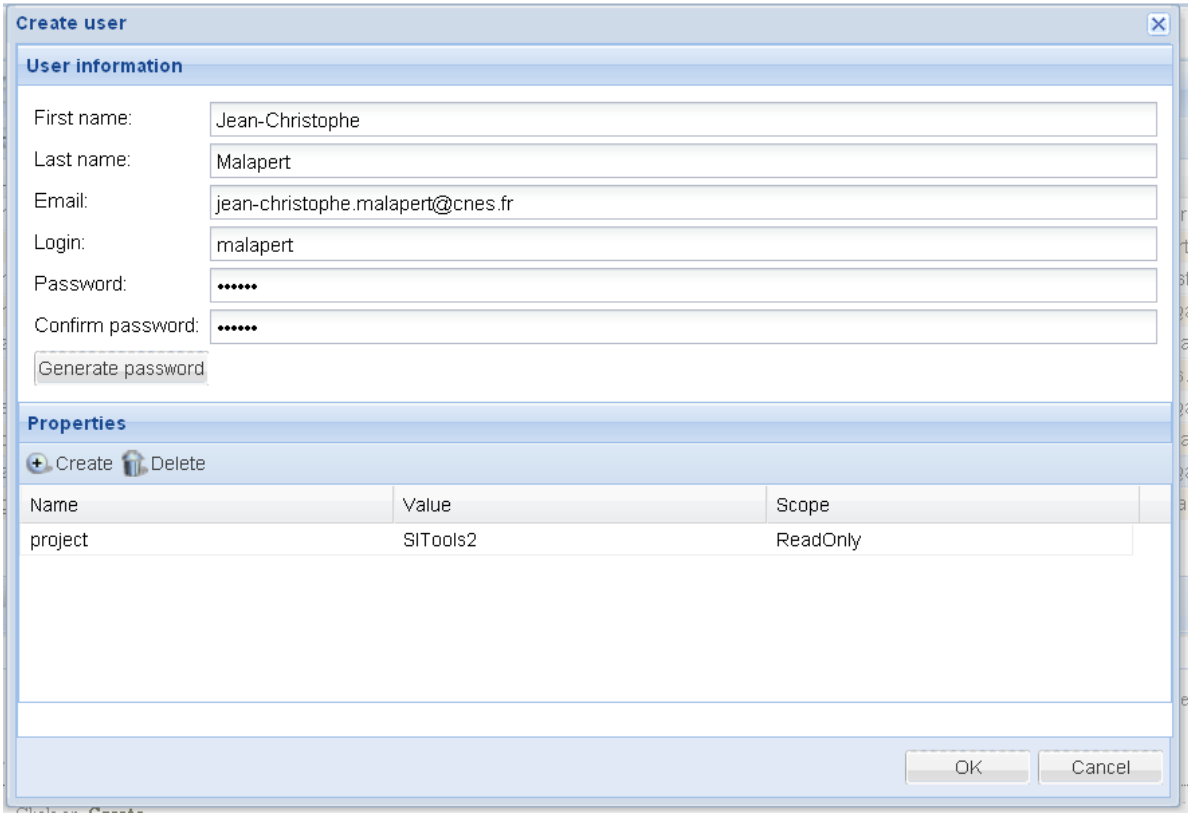
Validate a user account

Click on a row to select user information and click on **Validate**. A new user account is then created in the archive. A confirmation email is automatically sent to the user.

Warning: Email information and email server settings must be correctly set so that the system notifies the user by email. When a configuration problem happens, please configure correctly the Starter.mail.send.* keywords in the ./workspace/fr.cnes.sitools.core/sitools.properties file.

Edit a user account

Find the user account by entering the last name in the search field, double click on it or click on **Edit**, you can then edit the user information.



Create user

User information

First name:	Jean-Christophe
Last name:	Malapert
Email:	jean-christophe.malapert@cnes.fr
Login:	malapert
Password:	••••••
Confirm password:	••••••

Name	Value	Scope
project	SITools2	ReadOnly

Figure 7: User registration edition

The administrator can change all fields related to the user. He can also add some properties based on keyword/value. At each property, a scope must be associated. The possible values of the scope are the following:

- ReadOnly: keyword/value is visible by the user but he cannot edit the value
- Editable: keyword/value is visible by the user and he can edit the value
- Hidden: keyword/value is not visible by the user

Note: During the registration process currently performed by the user, there is no check whether this login is already used by someone else. The verification is only checked when a user is being validated. That's why the administrator can change the user's login. The password is not displayed. If the administrator fills both "password" and "confirm password" fields, the new password is applied.

Warning: Email information and email server settings must be correctly set so that the system notifies the user by email. When a configuration problem happens, please configure correctly the Starter.mail.send.* keywords in the ./workspace/fr.cnes.sitools.core/sitools.properties file.

Warning: ***Login limitation*** the login is not case sensitive and should be from 1 to 64 Unicode characters, excluding the following symbols: ! " # $ % & ' ( ) * + , / : ; < = > ? @ [ ] \ ^ ` { } | ~ . The first character cannot be a minus sign or a space, and the last character cannot be a space. The user description can include up to 64 Unicode characters. A duplicated login check is only performed during the validation.

Warning: ***Password limitation*** the password is case sensitive and is limited to up to 40 characters, including letters, numbers, signs, and space. When a new password is set by the administrator, this new password is saved as the current one, otherwise the one provided by the user is kept

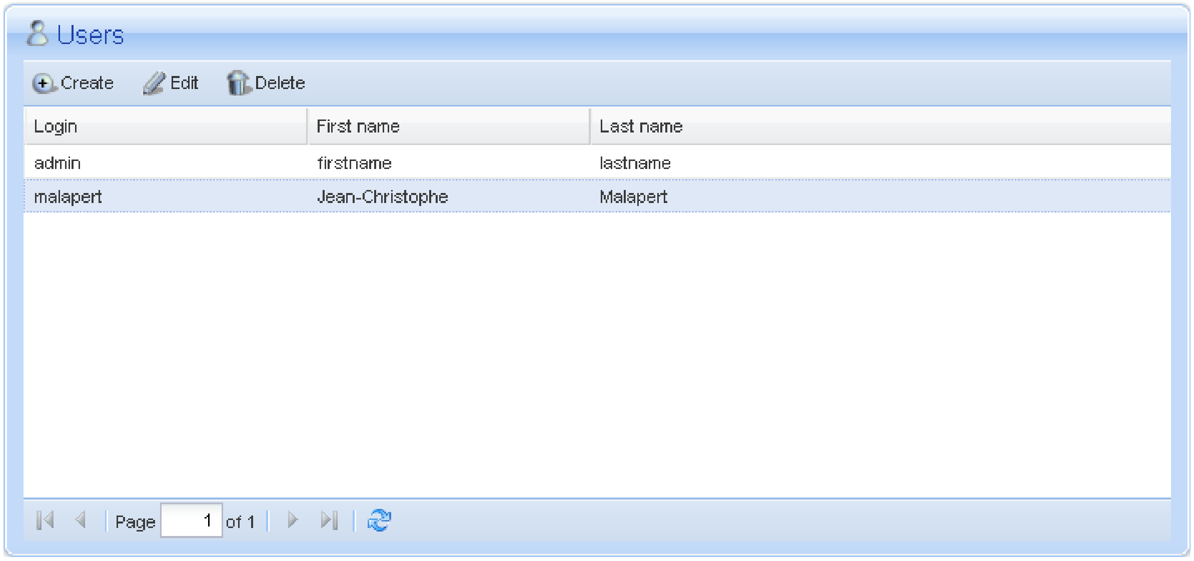
Delete a user account

Find the user account by entering the last name in the search field, click on it and click on **Delete**. The user information will be definitively removed from the archive as well as his user space

Note: When the registration of a user is refused by the administrator, no email is yet currently sent to the user by the system

Users

The list of registered users is displayed in Figure 8. From this panel, the administrator can create, delete or edit information of the user account.



Login	First name	Last name
admin	firstname	lastname
malapert	Jean-Christophe	Malapert

Figure 8: User account panel

1. Create a user account

As administrator, you can create a new user account. Click on **Create**, the **Create user** panel is displayed as illustrated in Figure 9. You must then fill the following information: first name, last name, email, login, password, confirm password and a set of properties.

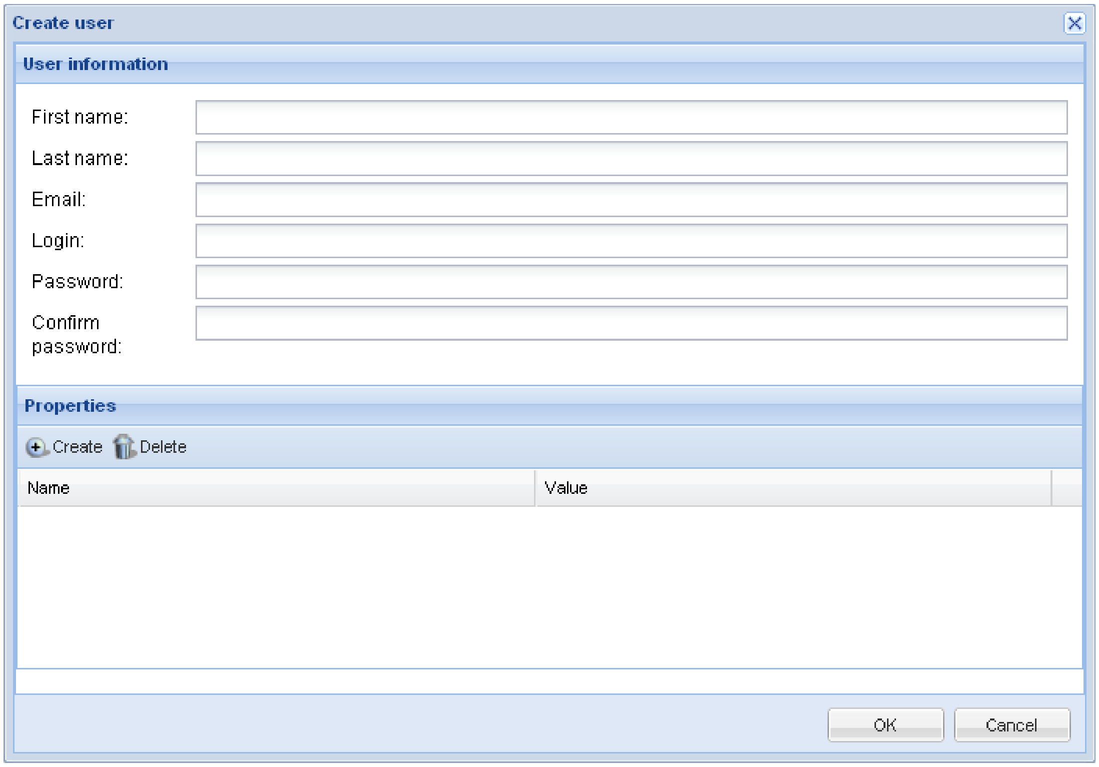


Figure 9: User account creation panel

Edit a user account

Find the user account by entering the last name in the search field, select a row and click on **Edit**. The edit *user information* panel is the same as the *create user information* panel at the exception that the administrator cannot change the login.

Delete a user account

Find the user account by entering the last name in the search field, select a row and click on **Delete**. The user account will be definitively removed from the archive's users.

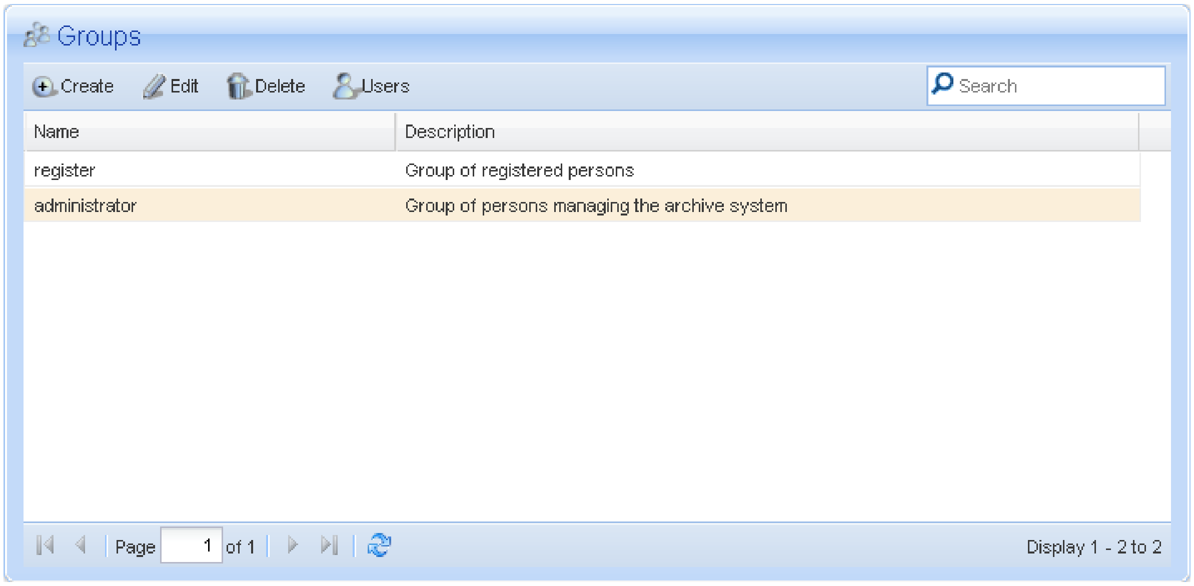
Warning: ***Login limitation*** the login is not case sensitive and should be from 1 to 64 Unicode characters, excluding the following symbols: ! " # $ % & ' ( ) * + , / : ; < = > ? @ [ ] \ ^ ` { } | ~ . The first character cannot be a minus sign or a space, and the last character cannot be a space. The user description can include up to 64 Unicode characters. A duplicated login check is only performed during the validation.

Warning: ***Password limitation*** the password is case sensitive and is limited to up to 40 characters, including letters, numbers, signs, and space. When a new password is set by the administrator, this new password is saved as the current one, otherwise the one provided by the user is kept

Groups

A group is a collection of user accounts. It is useful to consider creating a group when the administrator needs to set up the same security rights to a group of users.

The notion of group is not predefined in SITools2. The administrator can then create whatever groups he needs. In addition, the administrator can edit and delete groups.



Name	Description
register	Group of registered persons
administrator	Group of persons managing the archive system

Figure 10: Groups panel

1. Create a group

As administrator, you can create groups. You need to click on **Create**. A new panel is displayed as below with the following information: Name and description

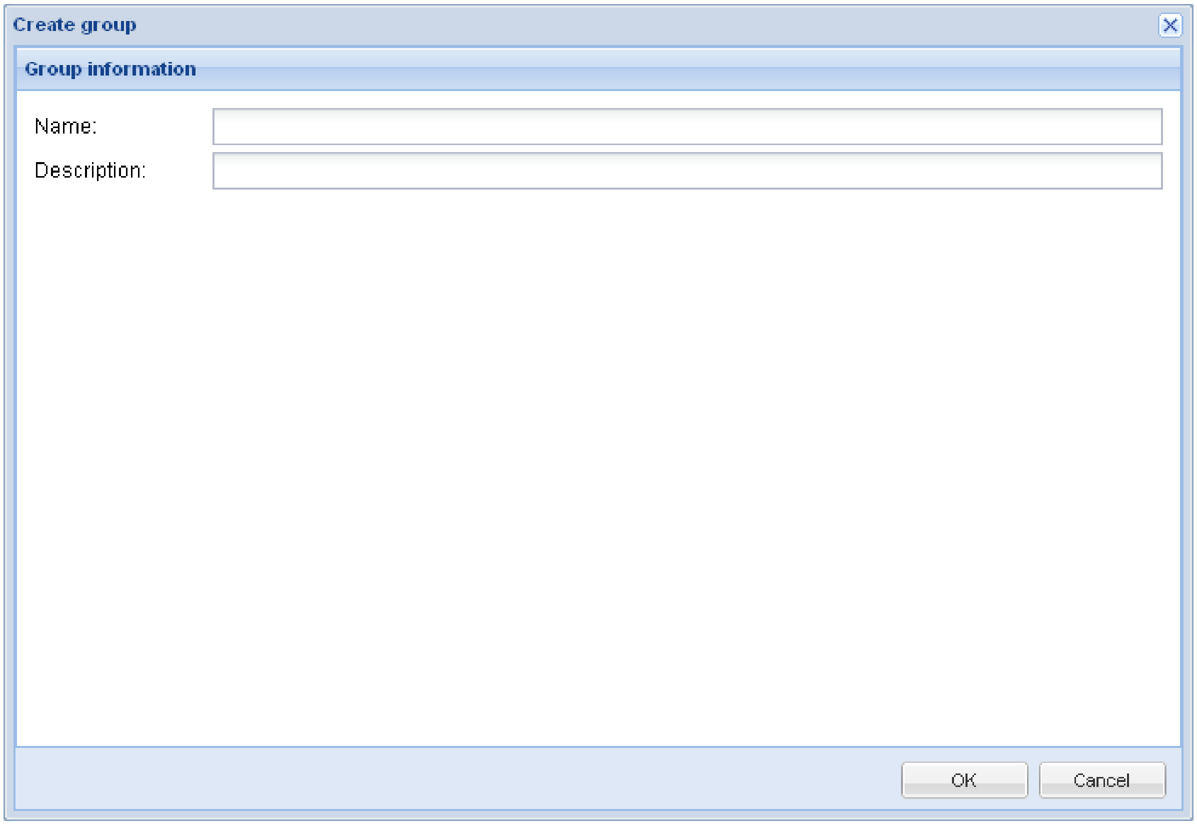


Figure 11: Groups creation panel

Warning: ***Naming conventions*** The group name is case sensitive and should be from 1 to 32 Unicode characters, excluding the following symbols: ! " $ % & ' ( ) * + , / : ; < = > ? @ [ ] \ ^ ` { } | ~. The first character cannot be a minus sign or a space, and the last character cannot be a space. The group description is case sensitive and limited to up to 128 Unicode characters.

Edit a group

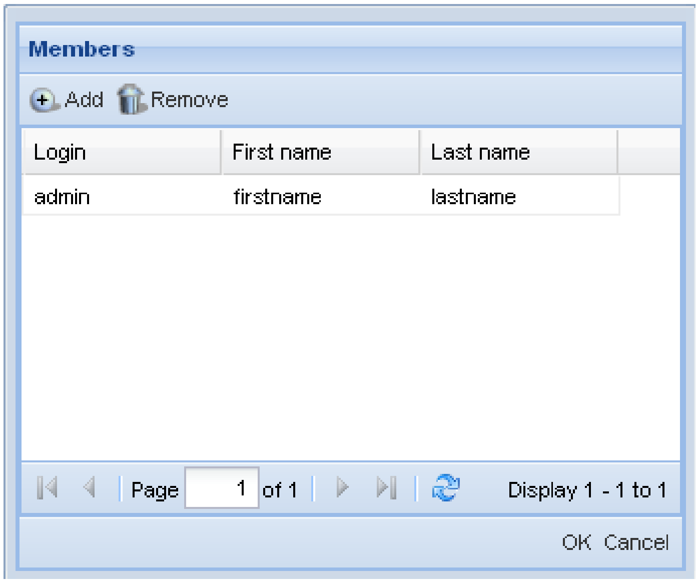
As administrator, you can only edit the description in the group panel. To edit group information, select the group to edit and click on **Edit** and edit the description.

Delete a group

As administrator, you can delete groups. To delete a group, select the group to delete, click on it and click on **Delete**.

Assign users to a group

As administrator, you can assign users to a group. To assign users, select the group and click on **Users**. The following panel appears and it displays the members of the group:



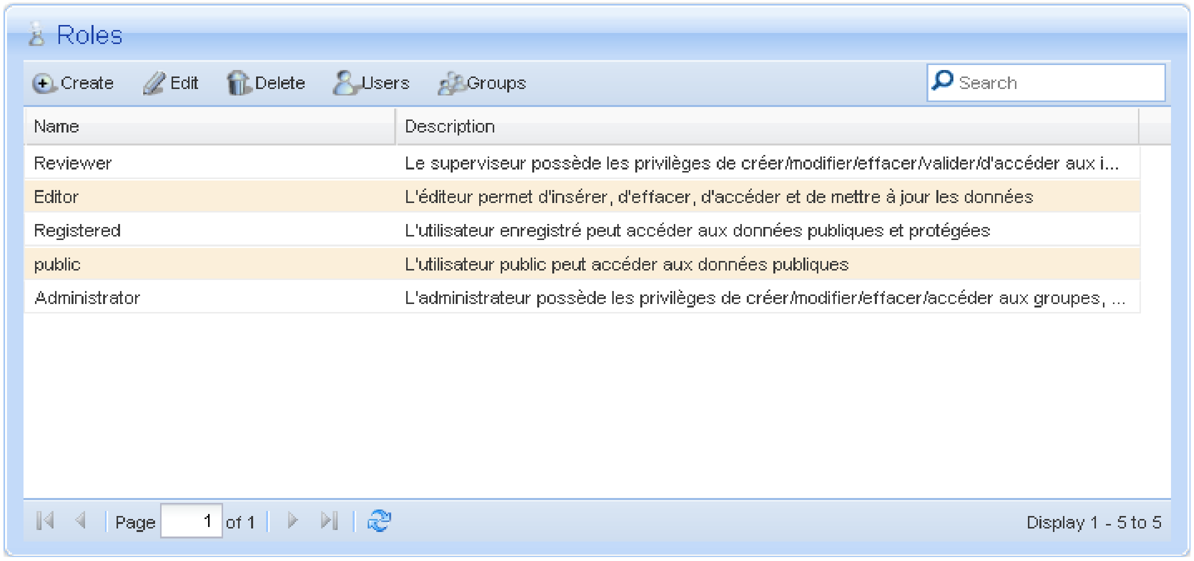
Login	First name	Last name
admin	firstname	lastname

Figure 12: Setting members into group

From this panel, you can add or remove users from the group.

Role

A role is a set of user accounts and/or groups. A role is important because the security of applications is performed according to roles. As illustrated on the following figure, the administrator can create, edit, delete or assign users/groups to an existing role.



Name	Description
Reviewer	Le superviseur possède les privilèges de créer/modifier/effacer/valider/d'accéder aux i...
Editor	L'éditeur permet d'insérer, d'effacer, d'accéder et de mettre à jour les données
Registered	L'utilisateur enregistré peut accéder aux données publiques et protégées
public	L'utilisateur public peut accéder aux données publiques
Administrator	L'administrateur possède les privilèges de créer/modifier/effacer/accéder aux groupes, ...

Figure 13: Role panel

1. Create a role

As administrator, you can create a role. You need to click on **Create**. Enter the role name and description. Click on **OK** to validate.

Edit a role

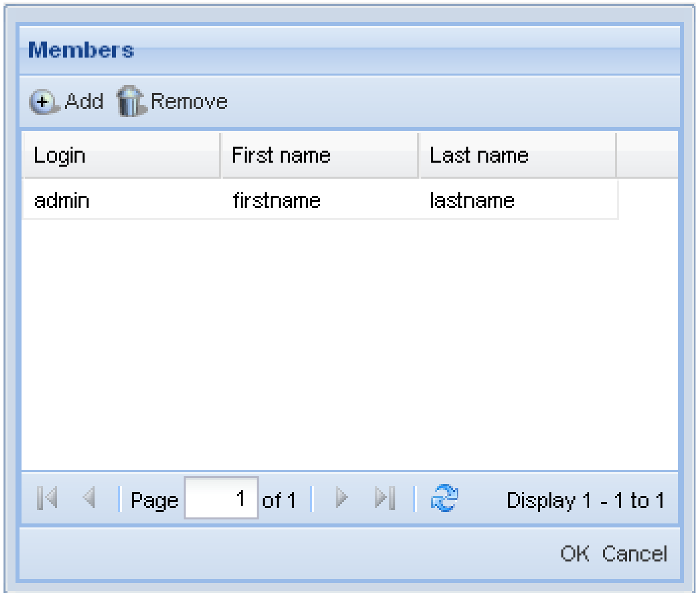
As administrator, you can edit a role description. To edit it, select the role to edit, click on **Edit** and edit the description field. Click on **OK** to validate.

Delete a role

As administrator, you can delete a role. To delete one, select the role to delete and click on **Delete**.

Assign users to a role

As administrator, you can assign users to a role. To assign users, select the role and click on **Users**. A panel appears displaying the members of the group. You can add or remove users from the role.



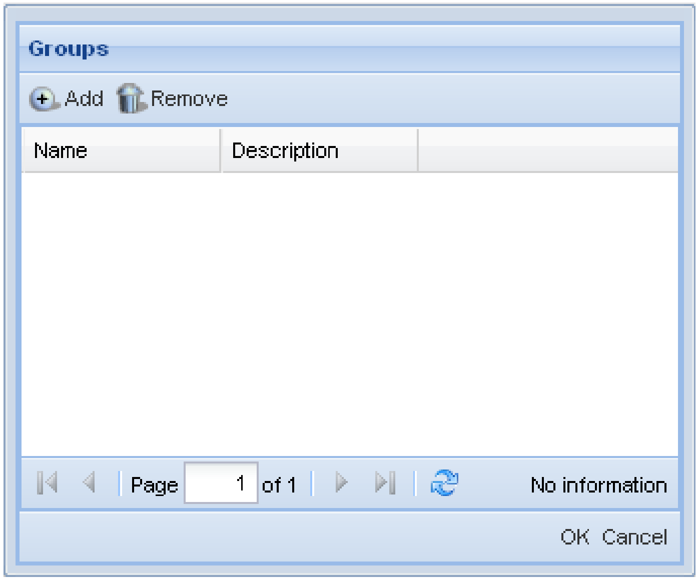
Login	First name	Last name
admin	firstname	lastname

Display 1 - 1 to 1

Figure 14: Setting users into role

Assign groups to a role

As administrator, you can assign groups to a role. To assign groups, select the role and click on **Groups**. A panel appears displaying the members of the group. You can add or remove groups from the role.



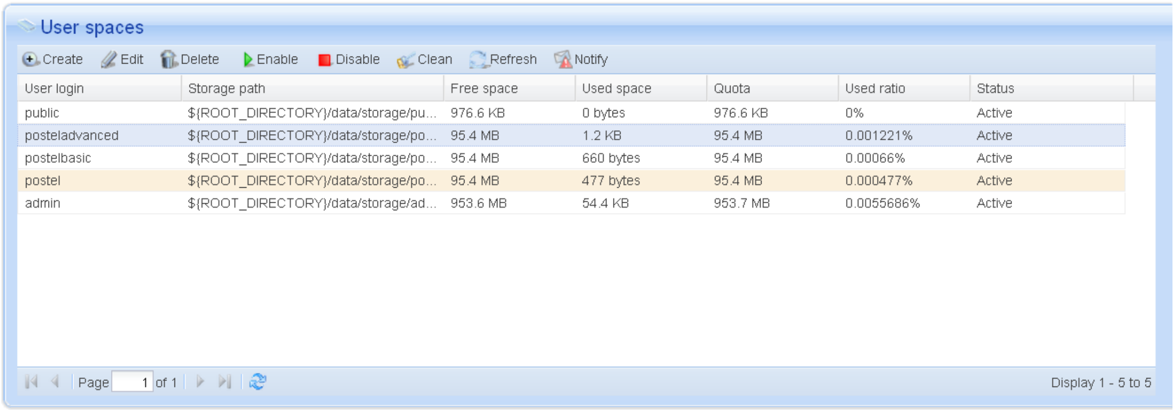
Name	Description

No information

Figure 15: Setting groups into role

My user storage

For each new user, user storage is automatically created. User storage could be used to store window preferences of an application module. In addition, it is also a free space on the server for the user where some asynchronous services can store results.



User login	Storage path	Free space	Used space	Quota	Used ratio	Status
public	${ROOT_DIRECTORY}/data/storage/pu...	976.6 KB	0 bytes	976.6 KB	0%	Active
posteladvanced	${ROOT_DIRECTORY}/data/storage/po...	95.4 MB	1.2 KB	95.4 MB	0.001221%	Active
postelbasic	${ROOT_DIRECTORY}/data/storage/po...	95.4 MB	660 bytes	95.4 MB	0.00066%	Active
postel	${ROOT_DIRECTORY}/data/storage/po...	95.4 MB	477 bytes	95.4 MB	0.000477%	Active
admin	${ROOT_DIRECTORY}/data/storage/ad...	953.6 MB	54.4 KB	953.7 MB	0.0055686%	Active

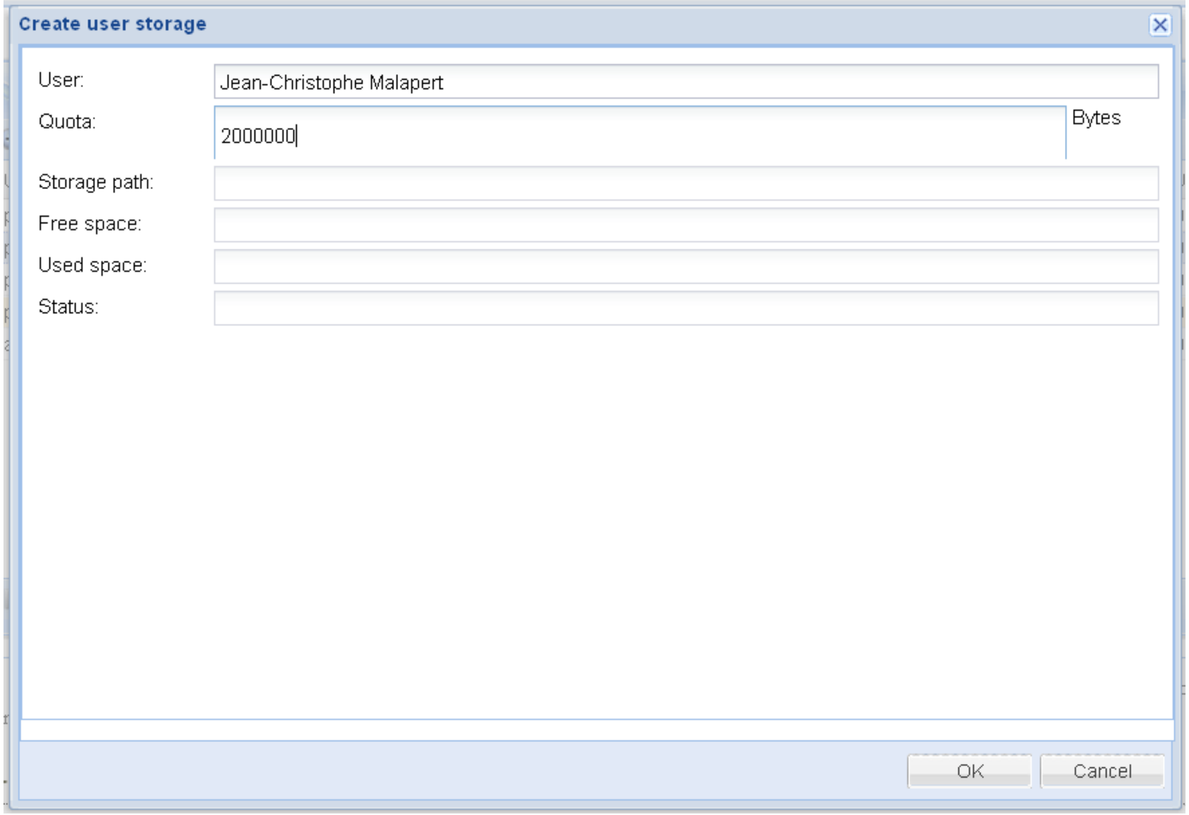
Figure 16: User storage panel

The "user storage" panel lets the administrator create, edit and delete user storage for users. In addition, the administrator can enable or disable the user storage service. At last, the administrator can also clean, refresh and notify a user who exceeds the allowed disk space.

1. Create a user storage

User storage is automatically created when a user is created or validated by the administrator. Nevertheless, the administrator can create a user storage if needed.

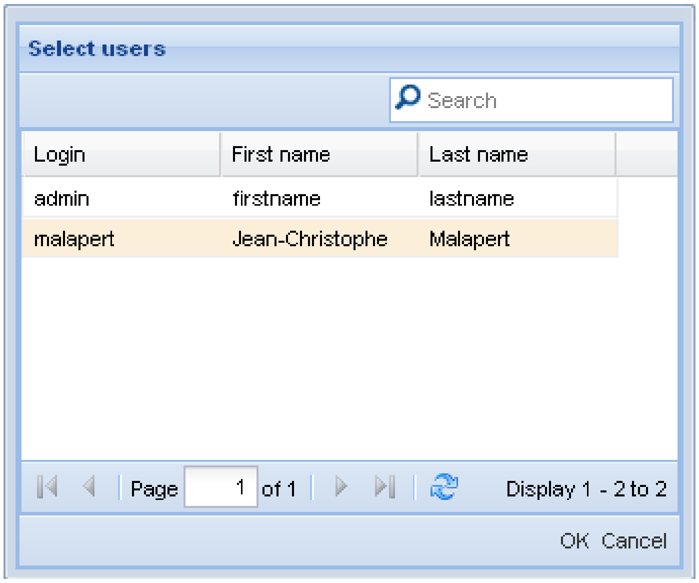
To create user storage, click on **Create**, the panel below is displayed.



User: Jean-Christophe Malapert
Quota: 2000000 Bytes
Storage path:
Free space:
Used space:
Status:

Figure 17: User storage creation

Click on the **user** field, select a user and click on **Ok** to validate your choice.

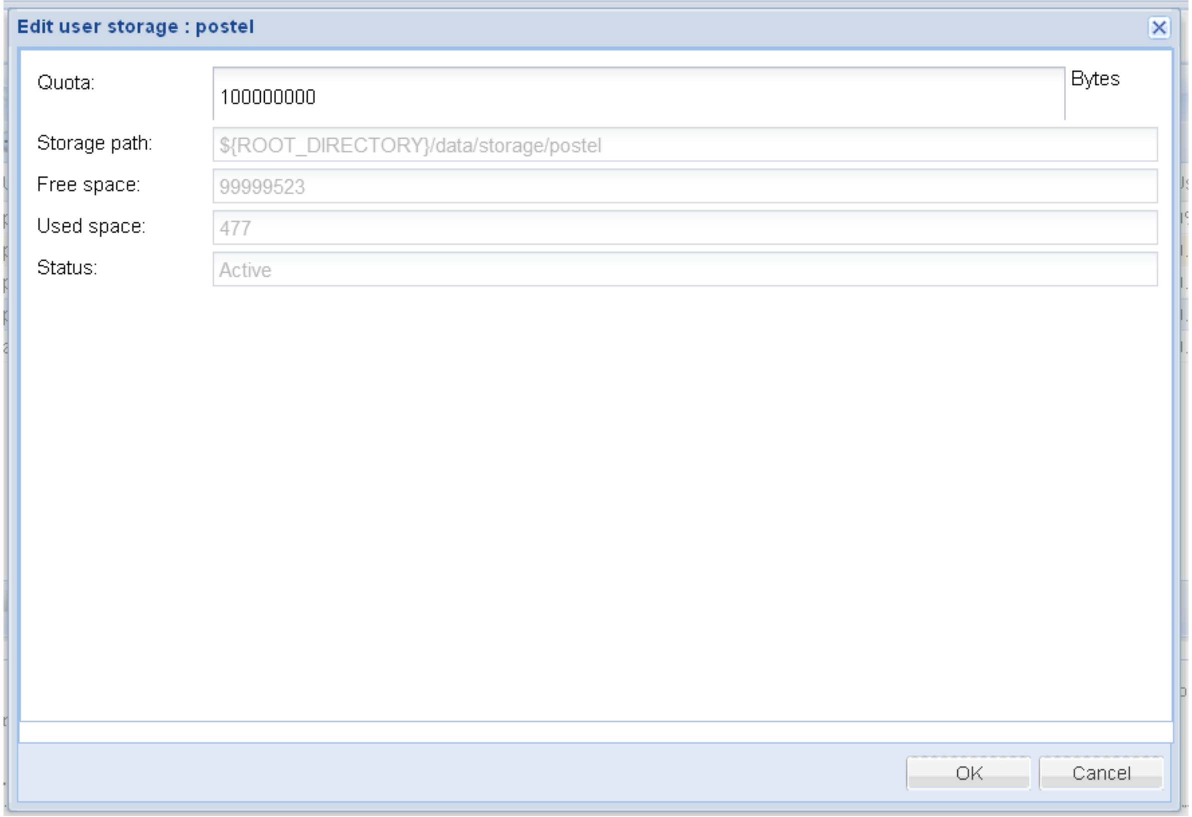


Login	First name	Last name
admin	firstname	lastname
malapert	Jean-Christophe	Malapert

Figure 18: User choice for a user storage

Edit an existing user storage

The administrator can increase the disk space that is allowed to a user. As administrator, click on **Edit** to display the following panel:



Edit user storage : postel

Quota: 100000000 Bytes

Storage path: ${ROOT_DIRECTORY}/data/storage/postel

Free space: 99999523

Used space: 477

Status: Active

Figure 19: User storage edition

Next, you need to change the quota and click on **OK**.

Delete a user storage

Select the user storage you want to delete and click on **Delete** to remove the user storage.

Enable a user storage

Select the user storage and click on **Enable** to start the service.

Disable a user storage

Select the user storage and click on **Disable** to stop the service. When this service is stopped, the user will not be able to see the result of asynchronous services, nor be able to save user preferences.

Clean a user storage

Select the user storage and click on **Clean** to remove all files contained in the user storage.

Refresh a user storage

Select the user storage and click on **Refresh** to compute the disk space that is used in user storage.

Notify a user

Select the user storage and click on **Notify** to notify a user that he exceeds the bound of his user storage.

Note: The email that the system sends to the user is not yet customizable by the administrator.

Warning: Email information and email server settings must be correctly set so that the system notifies the user by email. When a configuration problem happens, please configure correctly the Starter.mail.send.* keywords in the ./workspace/fr.cnes.sitools.core/sitools.properties file.

User order

The files ordered by the user are notified to the administrator as illustrated in the Figure 20.

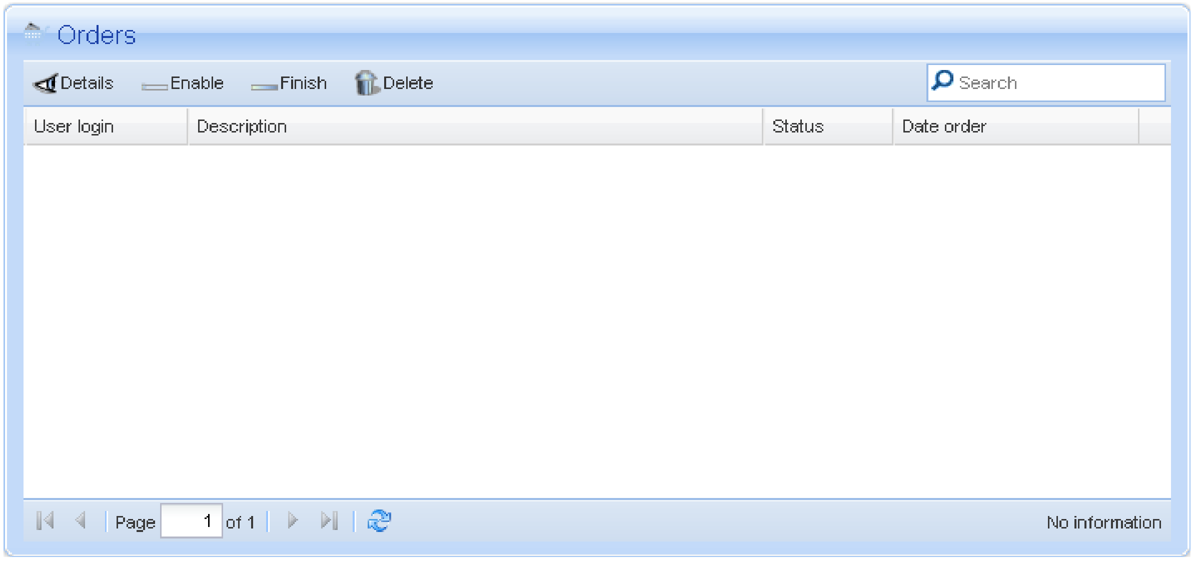


Figure 20: Orders panel

1. Details

To view the detail of an order, select an order item and click on **Details**.

Enable

The Enable function is particularly useful for off line order. When the administrator clicks on **Enable**, a message is sent to the user. This message tells that the data has being packaged.

Finish

The Finish function is particularly useful for off line order. When the administrator clicks on **Finish**, a message is sent to the user. This message tells that the package has been sent.

Delete

This function allows the administrator to delete an order information item.

2. Data Storage management

The Data storage management menu is composed of seven functions:

- Create data storage: As administrator, you can create a set of directories that you want to put online.
- Edit data storage: edition of a specific data storage item.
- Delete data storage: delete a data storage item.
- Enable data storage service: start the service for a data storage item
- Disable data storage service: stop the service for a data storage item
- Set permissions according to role: for each data storage item, select the permissions according to role
- Choose a specific implementation: for each data storage, provide your own implementation about data storage access

As illustrated bellow, the Figure 21 states the main different actions that the administrator can do on the administration page.

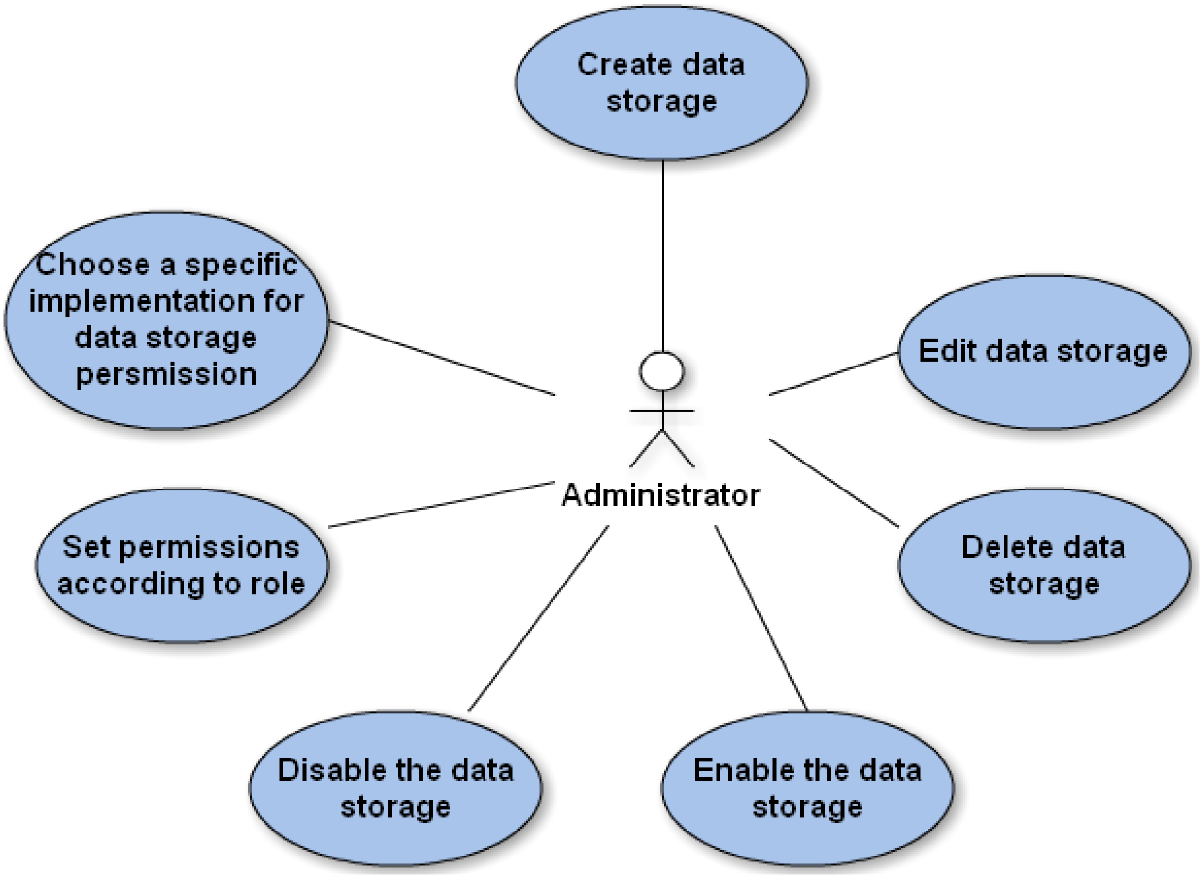
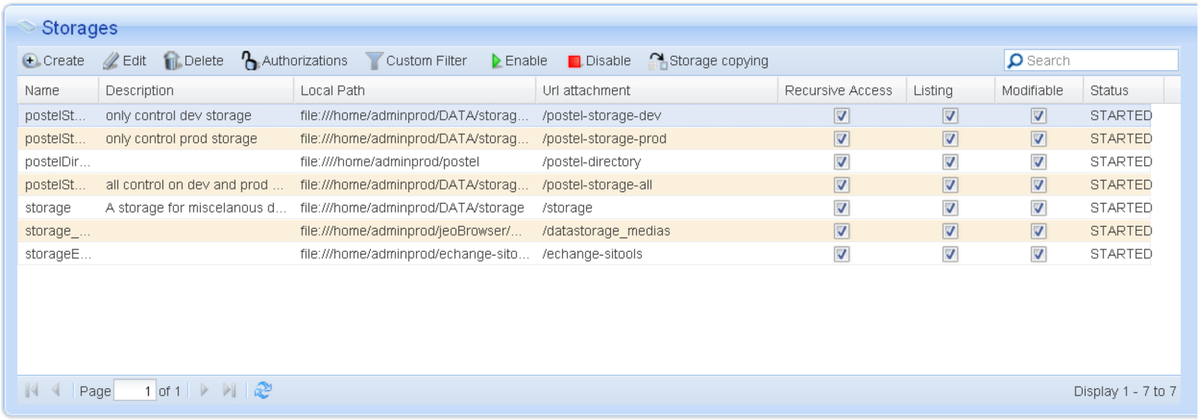


Figure 21: Data management actions

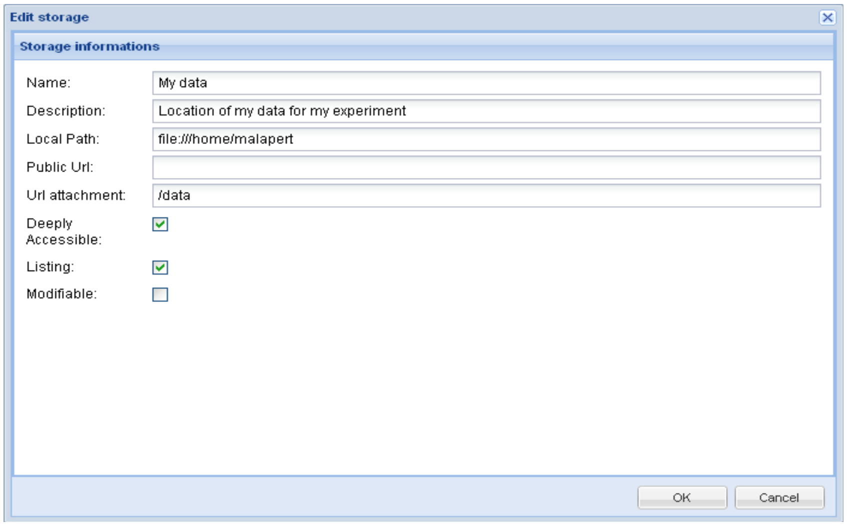


Name	Description	Local Path	Url attachment	Recursive Access	Listing	Modifiable	Status
postelSt...	only control dev storage	file:///home/adminprod/DATA/storag...	/postel-storage-dev	☑	☑	☑	STARTED
postelSt...	only control prod storage	file:///home/adminprod/DATA/storag...	/postel-storage-prod	☑	☑	☑	STARTED
postelDir...		file:////home/adminprod/postel	/postel-directory	☑	☑	☑	STARTED
postelSt...	all control on dev and prod ...	file:///home/adminprod/DATA/storag...	/postel-storage-all	☑	☑	☑	STARTED
storage	A storage for miscelanous d...	file:///home/adminprod/DATA/storage	/storage	☑	☑	☑	STARTED
storage_...		file:///home/adminprod/jeoBrowser/...	/datastorage_medias	☑	☑	☑	STARTED
storageE...		file:///home/adminprod/echange-sito...	/echange-sitools	☑	☑	☑	STARTED

Figure 22: Data storage panel

This panel allows the administrator to create a data storage access in order to put online his data from the file system.

1. Create a data storage



Name:	My data
Description:	Location of my data for my experiment
Local Path:	file:///home/malapert
Public Url:	
Url attachment:	/data
Deeply Accessible:	☑
Listing:	☑
Modifiable:	□

Figure 23: Data storage creation

To create an access to data storage, click on **Create**, please fill the following fields and click on **OK**:

- Name: name of your data storage
- Description: description of your data storage

- Local Path: directory that you want to put online. The path must start by *file://*. In addition, you can create an access to the user storage on a specific directory in the installation path of SITools2 by the use of *file:// {$ROOT_DIRECTORY}.*
- Public URL: this field is only needed if you use a proxy on top of SITools2
- URL attachment: part of the URI starting by '/' to access the data. The full relative URI is the following */sitools/datastorage/user<URL attachment (must start by /)>*
- Deeply Accessible: When the box is checked, the subfolders are then accessible
- Listing: When the box is checked, the server's response provides the contain of a specific directory
- Modifiable: When the box is checked, it is possible to delete or to add files in a directory by using PUT method

Edit a data storage

Select data storage element, click on **Edit**, change the values and click on **OK**.

Delete a data storage

Select data storage element, click on **Delete** to remove only the access to data storage.

Enable a data storage

Select data storage element, click on **Enable** to start the data access service.

Disable a data storage

Select data storage element, click on **Disable** to stop the data access service.

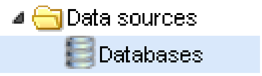
Authorizations

It is possible to set permissions for each created data storage. Select a data storage item and click on **Disable**. Then click on **Authorizations**. The authorization panel is displayed and can be configured (see Security management).

Custom Filter

The data storage access can be configured according to a business need, which could be unknown for SITools2. In this case, your own implementation of your data storage access can be used. For more information, see the developer guide.

3. Data Sources management


Data sources

Databases

To create a JDBC data source, you must click on **Databases**. A panel is displayed as illustrated below. In the same way, a MongoDB data source can be created by clicking on MongoDB.

The Figure 24 states the main different actions that the administrator can do on the administration page.

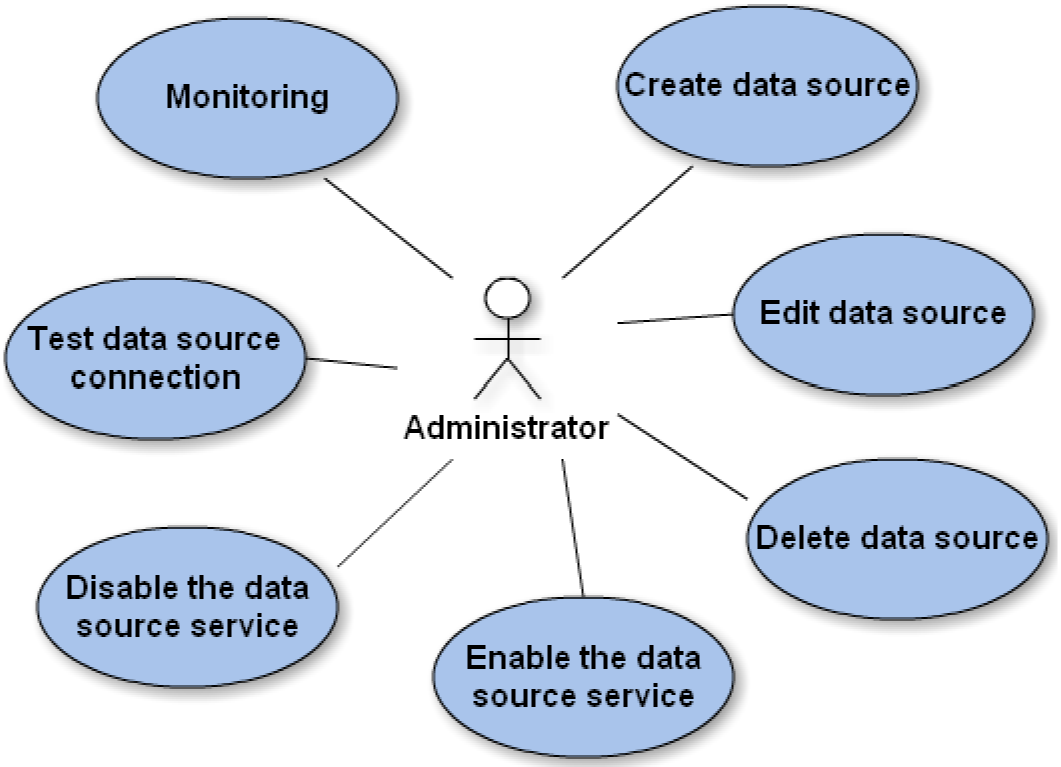
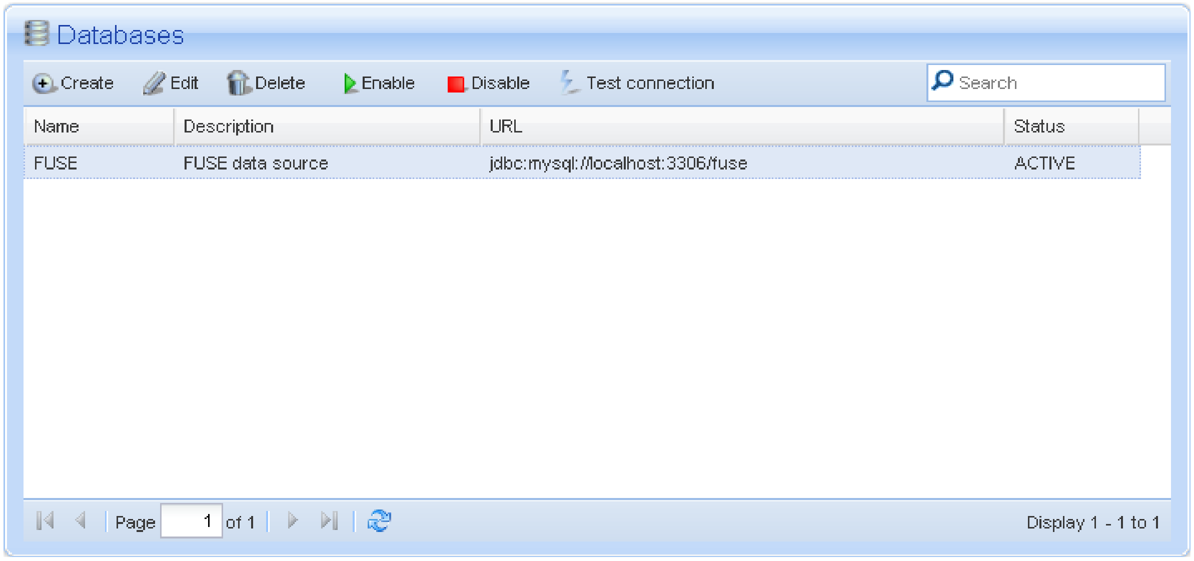

Monitoring
Create data source
Edit data source
Test data source connection
Administrator
Delete data source
Disable the data source service
Enable the data source service

Figure 24: Data source actions



Name	Description	URL	Status
FUSE	FUSE data source	jdbc:mysql://localhost:3306/fuse	ACTIVE

Figure 25: Data sources panel

This panel allows to create a data source. This data source is then used to create datasets. In addition, the administrator can delete, edit, and enable/disable the service. At last, the administrator can test the database connection according to the configuration parameters.

1. Create a data source

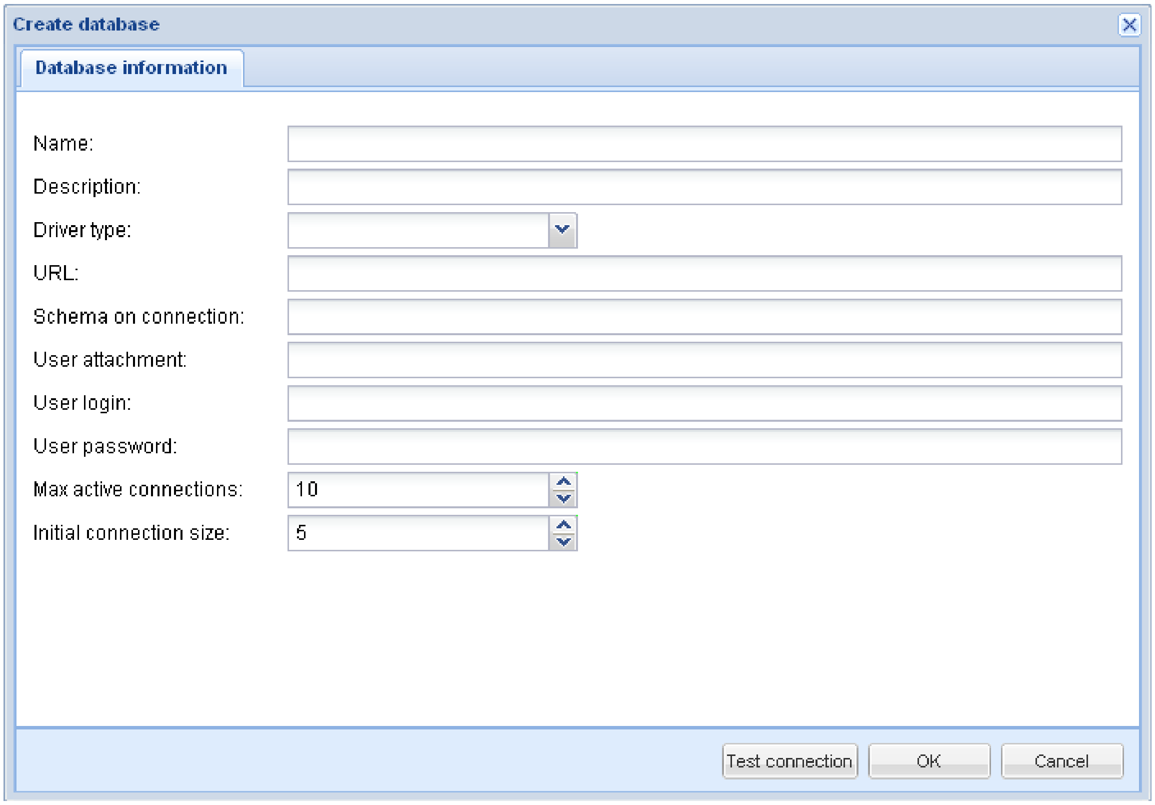
To create a data source, click on **Create**, fill the form and click on **OK**:

- Name: name of the data source
- Description: description of the data source
- Driver type: Select the JDBC driver. Until now, only MySQL and PostgreSQL databases are supported
- URL: JDBC connection to access the database (e.g. *jdbc:mysql://localhost:3306/<database_name>* for MySQL or *jdbc://postgresql://localhost:5432/<database_name>* for PostgreSQL)
- Schema on connection: this field is only required for PostgreSQL. It states the schema on which the dataset must access. When this field is not set, public schema is the default one.
- User attachment: URI to access the data source. This value is the URI to map database configuration. This URI is used by datasets for loading database

configuration. The full relative URL is the following /sitools/datasources/<url attachment>

- User login: login to access the database
- User password : password to access the database
- Max active connections: Number of maximum active connections in the pool
- Initial connection size: Number of initial connection in the pool

Note: The Max active connections and initial connection size fields must be in agreement with the configured parameters for the database.



Name:	
Description:	
Driver type:	
URL:	
Schema on connection:	
User attachment:	
User login:	
User password:	
Max active connections:	10
Initial connection size:	5

Figure 26: Data sources creation

Edit a data source

Select a data source, click on **Edit**, fill the form and click on **OK**.

Delete a data source

Select a data source, click on **Delete**. The access to the data source will be removed.

Warning: Whena datasourceis removed,the datasetsthat dependson this removeddatasourceare not deleted. Weallowthis mechanismto switcheasily fromdevelopmentdatabaseto productiondatabase.But these twodatabasestructuresmustbe exactlythe same.

Enable a data source

Select a data source, click on **Enable** to start the access to the data source.

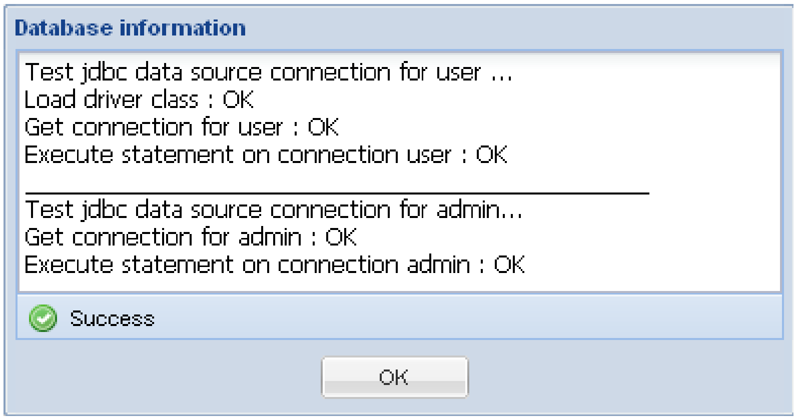
Disable a data source

Select a data source, click on **Disable** to stop the access to the data source

Warning: Whena datasourceis disabled,the datasetsthat dependson this datasourceare not accessibleeither.

Test connection

Select a data source and click on **Test connection** to test the connection of the configured data source. The following panel is display if succeeded.



```
Test jdbc data source connection for user ...
Load driver class : OK
Get connection for user : OK
Execute statement on connection user : OK
________________________________________________
Test jdbc data source connection for admin...
Get connection for admin : OK
Execute statement on connection admin : OK
```

Figure 27: data source connection status panel

Data source monitoring

It is also possible to monitor the pool of connection from a specific data source. There is yet no web user interface using this function. Nevertheless, monitoring function of a data source can be requested by means of CURL.

To get the list of available data sources from the archive facility, use the following command: curl -u login:password http://hostname:port/sitools/datasources

A response with the description of each data source is then provided. Get the Id of each data source and execute the following command: curl -u login:password http://hostname:port/sitools/datasources/monitoring

An equivalent response should be displayed:

```
{
 "success": true,
 "total": 11,
 "data": [
   "JDBC DataSource Monitoring",
   "--------------------------------------------------",
   "Url: jdbc:mysql://localhost:3306/cnes-fuse",
   "User: sitools",
   "DefaultCatalog: null",
   "InitialSize: 5",
   "NumActive: 0",
   "MaxActive: 10",
   "MaxIdl: 8",
   "MinIdl: 0",
   "NumIdle: 0"
 ]
}
```

4. Datasets management

Datasets are web services applications that are build from one data source. From a dataset, it is possible to create/configure a set of applications:

- Query forms
- Data processing service (called SVA)
- Converter to apply a transfer function from the elements stored in the database. The result of the converter can be then displayed on the client
- Open search service
- RSS service
- Dataset classification (called Graph)
- Semantic
- Dataview

As illustrated bellow, the Figure 28 states the main different actions that the administrator can do on the administration page.

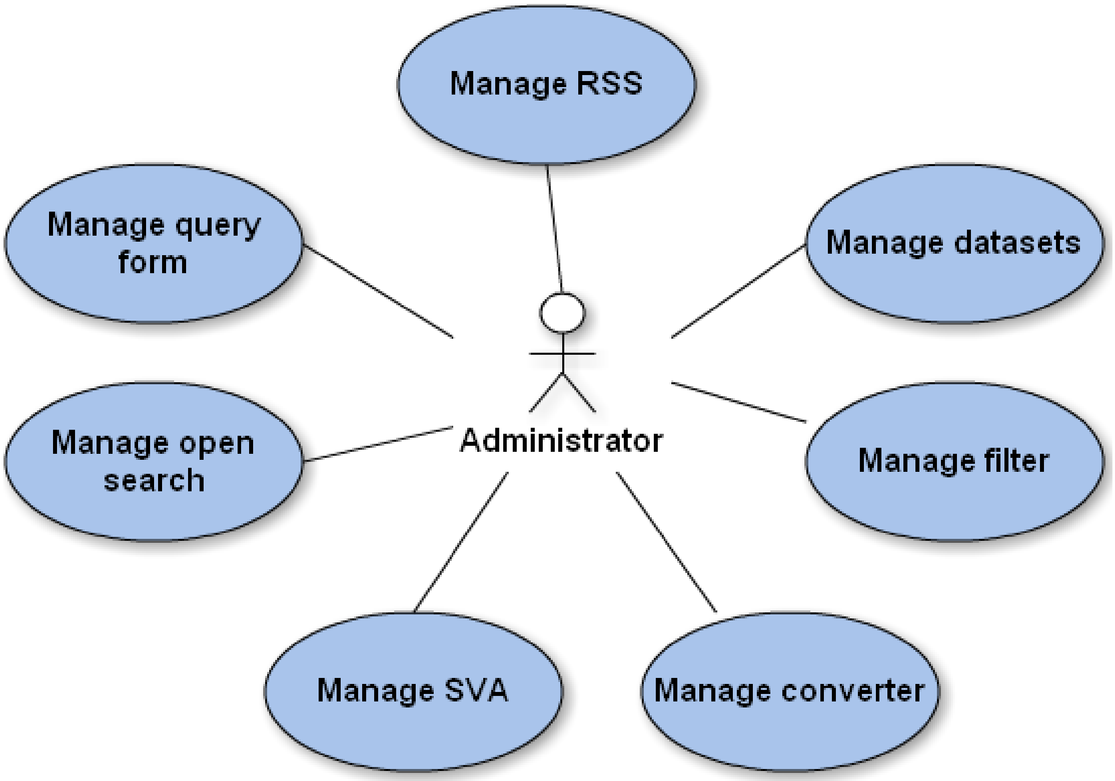
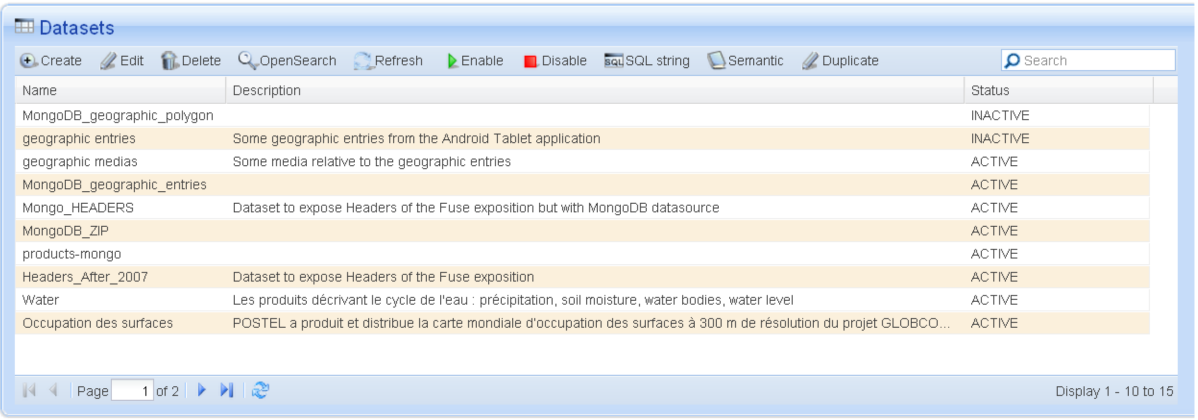


Figure 28: Dataset management actions

1. Dataset creation

This panel allows to create datasets from data sources. In addition, the administrator can delete, edit, and enable/disable the service. At last, the administrator can visualize the query to the database, refresh the dataset and create an open search service on the dataset.



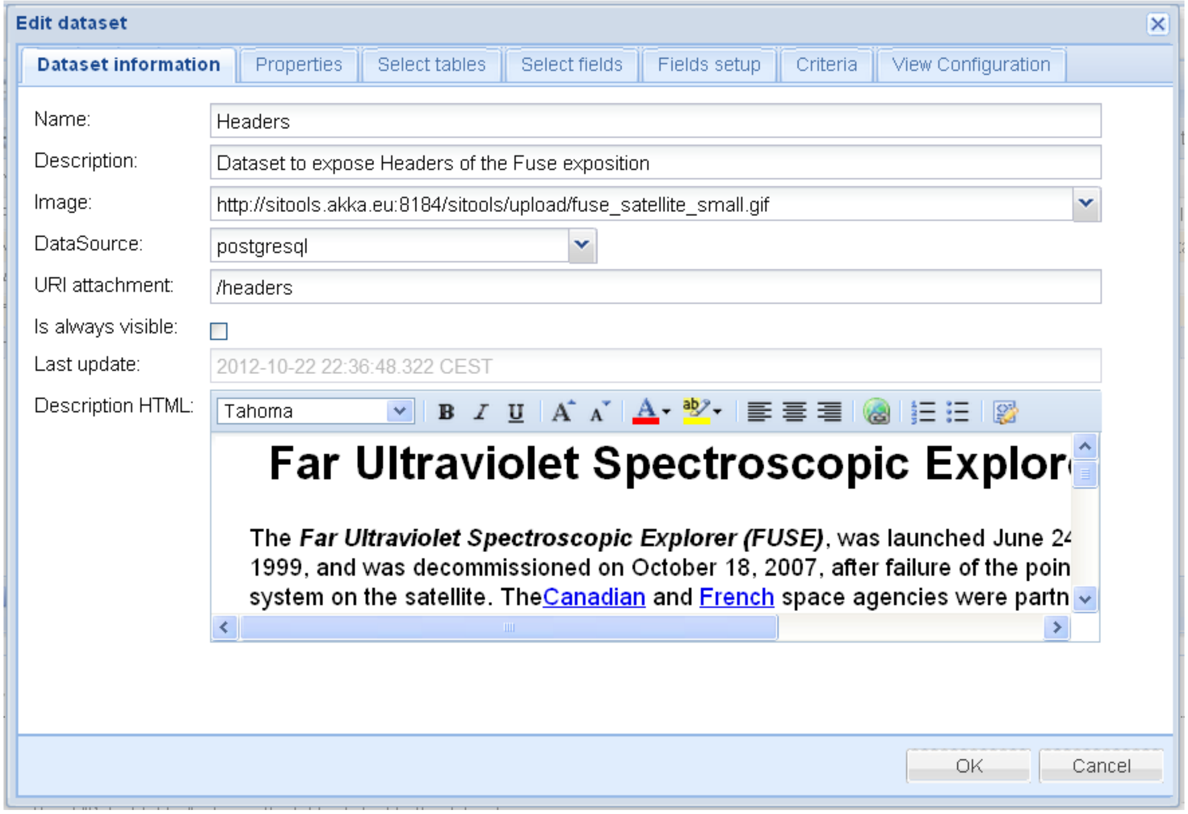
Name	Description	Status
MongoDB_geographic_polygon		INACTIVE
geographic entries	Some geographic entries from the Android Tablet application	INACTIVE
geographic medias	Some media relative to the geographic entries	ACTIVE
MongoDB_geographic_entries		ACTIVE
Mongo_HEADERS	Dataset to expose Headers of the Fuse exposition but with MongoDB datasource	ACTIVE
MongoDB_ZIP		ACTIVE
products-mongo		ACTIVE
Headers_After_2007	Dataset to expose Headers of the Fuse exposition	ACTIVE
Water	Les produits décrivant le cycle de l'eau : précipitation, soil moisture, water bodies, water level	ACTIVE
Occupation des surfaces	POSTEL a produit et distribue la carte mondiale d'occupation des surfaces à 300 m de résolution du projet GLOBCO...	ACTIVE

Figure 29: datasets panel

1. Create a dataset

To create a dataset, click on **Create**. A panel is then displayed on the **Dataset Information** tab. Provide a:

- Name: name of the dataset
- Description: description of the dataset
- Image: an image that states the dataset. This image will be displayed on the client side
- Data source: Select a data source from which the dataset will be created
- User attachment: Set the URI where the access of the dataset is located (e.g /datasets/mydataset)
- Is always visible: This is security parameter. When this parameter is marked, it means everybody will be able to see this dataset even if he cannot access it. When this parameter is not marked, only people having the right access is able to see and access the dataset
- Last update: The date is set automatically either when a dataset is activated or when refresh button is clicked. This date is automatically put in the header's response.
- Description HTML: This description is displayed on the graph
- DatasetView: The graphical component that will be used to display the results on the web client



Name: Headers

Description: Dataset to expose Headers of the Fuse exposition

Image: http://sitools.akka.eu:8184/sitools/upload/fuse_satellite_small.gif

DataSource: postgresql

URI attachment: /headers

Is always visible: □

Last update: 2012-10-22 22:36:48.322 CEST

Description HTML:

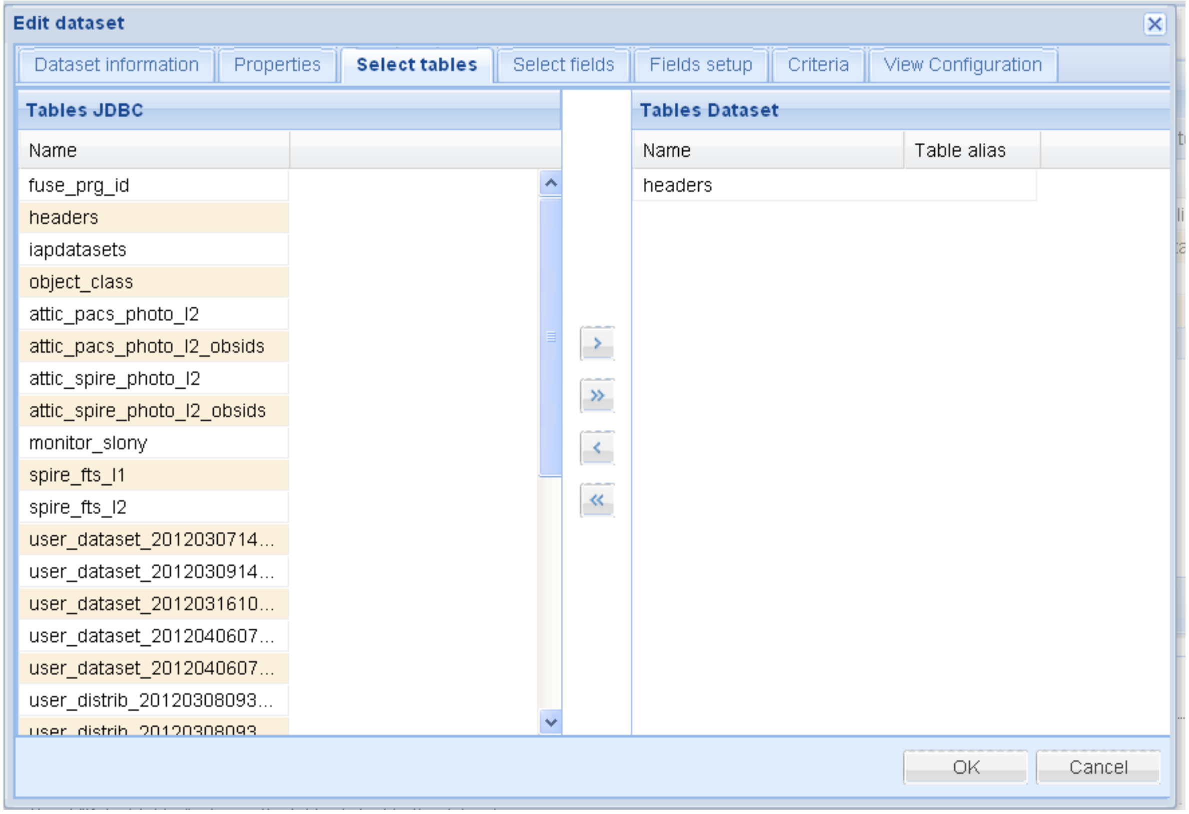
Far Ultraviolet Spectroscopic Explor

The ***Far Ultraviolet Spectroscopic Explorer (FUSE)***, was launched June 24 1999, and was decommissioned on October 18, 2007, after failure of the poin system on the satellite. TheCanadian and French space agencies were partn

Figure 30: Dataset creation panel

Once the data source is set, click on **Properties** tab, the list of general properties that describes the dataset. These properties could be used for Multi-Dataset search.

After the properties set, click on **Select tables** tab, the list of tables from the data source is displayed on the left side. The right side is the dataset definition. Select one of several tables and click on **>** to transfer these tables in the dataset definition. At this instant, these tables are displayed on the right side. You can also use **>>** to use all tables in the dataset definition view. A join definition is necessary when the dataset definition view has more than one table. This join definition will be configured on the **criteria** tab. In addition, you can use **<** or **<<** to remove tables from the dataset definition view.



Tables JDBC

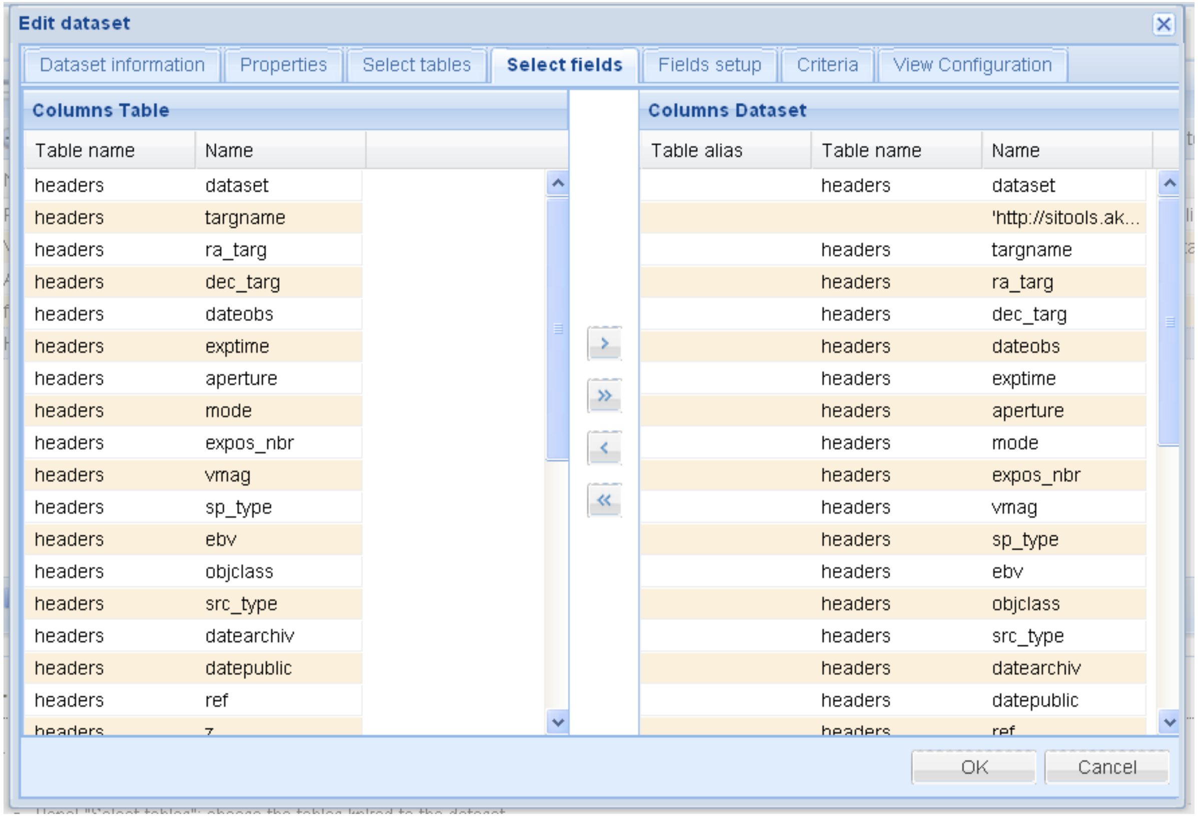
Name
fuse_prg_id
headers
iapdatasets
object_class
attic_pacs_photo_l2
attic_pacs_photo_l2_obsids
attic_spire_photo_l2
attic_spire_photo_l2_obsids
monitor_slony
spire_fts_l1
spire_fts_l2
user_dataset_2012030714...
user_dataset_2012030914...
user_dataset_2012031610...
user_dataset_2012040607...
user_dataset_2012040607...
user_distrib_20120308093...
user_distrib_20120308093

Tables Dataset

Name	Table alias
headers	

Figure 31: Dataset creation panel

Once tables for the dataset are defined, click on **Select fields** to display attributes from the selected tables on the left side. The right side states the list of attributes of the dataset. You can add some attributes by selecting columns on the left side and clicking on **>**. Then click on **Fields setup** tab.



Columns Table

Table name	Name
headers	dataset
headers	targname
headers	ra_targ
headers	dec_targ
headers	dateobs
headers	exptime
headers	aperture
headers	mode
headers	expos_nbr
headers	vmag
headers	sp_type
headers	ebv
headers	objclass
headers	src_type
headers	datearchiv
headers	datepublic
headers	ref
headers	z

Columns Dataset

Table alias	Table name	Name
	headers	dataset
		'http://sitools.ak...
	headers	targname
	headers	ra_targ
	headers	dec_targ
	headers	dateobs
	headers	exptime
	headers	aperture
	headers	mode
	headers	expos_nbr
	headers	vmag
	headers	sp_type
	headers	ebv
	headers	objclass
	headers	src_type
	headers	datearchiv
	headers	datepublic
	headers	ref

Figure 32: Dataset creation panel

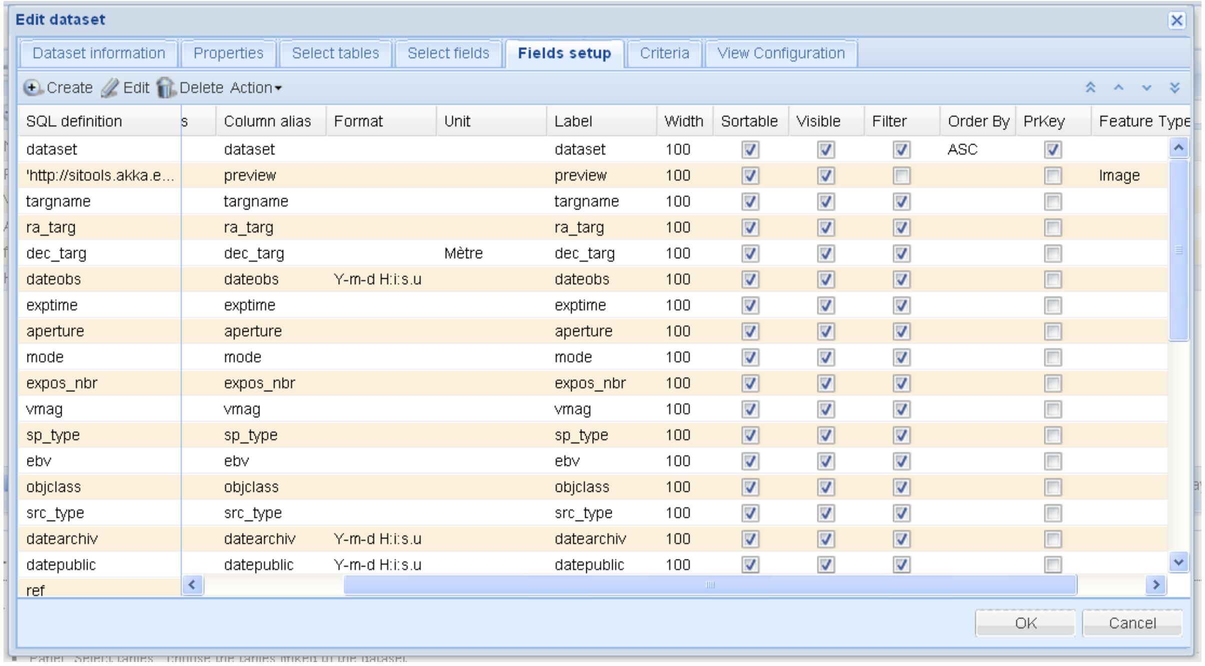
The **Fields setup** tab contains the list of dataset's attributes as well as actions on these attributes. Description of each field:

- SQL definition: column name in the SQL meaning,
- Table Name: Table name in the SQL meaning
- Table alias: Table alias in the SQL meaning (e.g. SELECT <col1> FROM <table> <tableAlias>)
- Column alias: column alias in the SQL meaning (e.g. SELECT <col1> ALIAS <alias1> FROM <table>),
- Format: date template using Ext-JS date template (cf: http://docs.sencha.com/ext-js/3-4/#!/api/Date)
- Unit: Unit of the attribute according to a unit dimension
- Label: label that is displayed on the web client for column,
- Width: display width of the column on the client,

- Sortable: provide the possibility to sort this column on the client,
- Visible: display by default the column on the client
- Filter: provide the possibility to filter this column on both client and server
- OrderBy: Choose columns that will be sorted in the SQL meaning.
- PrKey: unique identifier of a record in the database
- FeatureType: action that will be rendered on the client for each cell of the column

In addition, the buttons called **Create**, **Edit** and **Delete** allows handling of new attributes:

- Create: this action allows creating a new attribute. An attribute can be either SQL or VIRTUAL. An SQL attribute is defined by an SQL language where as VIRTUAL definition must be filled by a converter.
- Edit: edit an attribute
- Delete: delete an attribute
- Action: provide the possibility to set an unit to attributes according to unit dimension



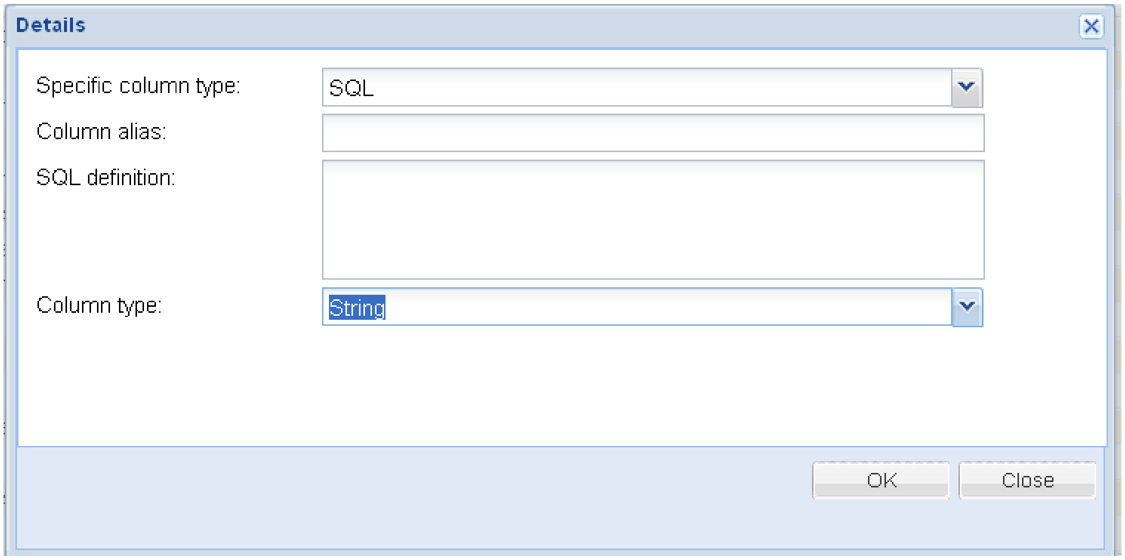
SQL definition	s	Column alias	Format	Unit	Label	Width	Sortable	Visible	Filter	Order By	PrKey	Feature Type
dataset		dataset			dataset	100	☑	☑	☑	ASC	☑	
'http://sitools.akka.e…		preview			preview	100	☑	☑	□		□	Image
targname		targname			targname	100	☑	☑	☑		□	
ra_targ		ra_targ			ra_targ	100	☑	☑	☑		□	
dec_targ		dec_targ		Mètre	dec_targ	100	☑	☑	☑		□	
dateobs		dateobs	Y-m-d H:i:s.u		dateobs	100	☑	☑	☑		□	
exptime		exptime			exptime	100	☑	☑	☑		□	
aperture		aperture			aperture	100	☑	☑	☑		□	
mode		mode			mode	100	☑	☑	☑		□	
expos_nbr		expos_nbr			expos_nbr	100	☑	☑	☑		□	
vmag		vmag			vmag	100	☑	☑	☑		□	
sp_type		sp_type			sp_type	100	☑	☑	☑		□	
ebv		ebv			ebv	100	☑	☑	☑		□	
objclass		objclass			objclass	100	☑	☑	☑		□	
src_type		src_type			src_type	100	☑	☑	☑		□	
datearchiv		datearchiv	Y-m-d H:i:s.u		datearchiv	100	☑	☑	☑		□	
datepublic		datepublic	Y-m-d H:i:s.u		datepublic	100	☑	☑	☑		□	
ref												

Figure 33: Dataset creation panel

Note: Unique identifier generation: When we need to join several tables together, we need to create ourselves an unique identifier. Please create a new SQL attribute and write the definition (for PostgreSQL, it could be primaryKeyTable1||primaryKeyTable2)

As illustrated on the Figure 34, it possible to create new attributes in the dataset. This attribute is not physically created in the table but it is generated by the SQL request by using functions available in relational database system. In other words, this syntax depends on your relational database system.

This attribute may be useful when the administrator needs to link his metadata included on the relational database to files located on the file system. In other words, this feature enables to create a URI to a file, based on metadata included in relational database.



Details

Specific column type: SQL

Column alias:

SQL definition:

Column type: String

Figure 34: Dataset creation panel

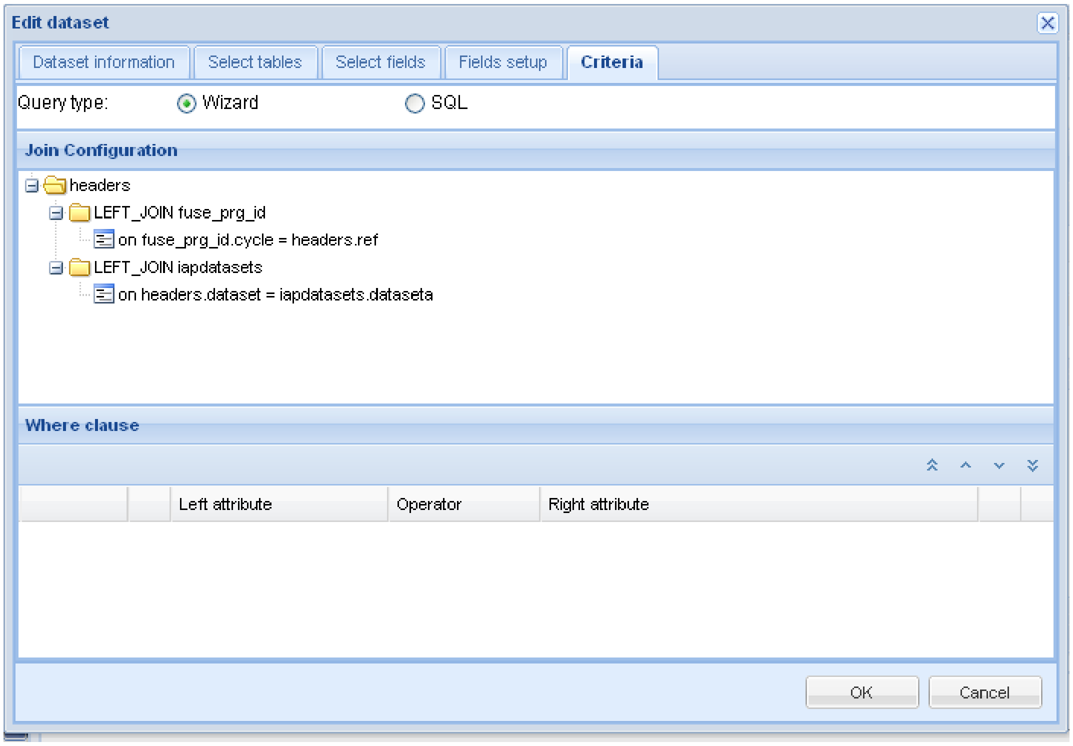
Column type is only used with MongoDB.
The different FeatureType are the followings:

- Image: when an attribute is set to image, a submenu is displayed to configure the image behaviour with the following options: "use no Thumbnail", "use automatic thumbnail from image", "use thumbnail from column".
- URL: when an attribute is set to URL, a submenu is displayed to configure the URL with the following options:

    - localURL: An URL starting with "/". This is useful to link the metadata to files
    - externalUrl (view in new tab): A full URL starting with "http". When a user click on it, the URL is opened in a new tab of the browser.
    - externalUrl (view in desktop): A full URL starting with "http. When a user click on it, the URL in the current tab of the browser.
- datasetLink: Create a link between two datasets. when an attribute is set to image, a submenu is displayed to configure the datasetLink behaviour with the following options:
    - Text: on the web client, a text is displayed on the cell's value and go to the same value in the target dataset than the current cell's value.
    - Icon: The same feature than the Text with the exception that an icon is displayed instead of the text
- Other: the attribute is not visible in the client but it is visible for services and services configuration

Once attributes are set up, click on **Criteria** tab. This panel is divided in two parts: a wizard subpanel and an SQL subpanel.

- The Wizard subpanel, as illustrated below, allows to constraint the dataset on one or more attributes (For instance, it is possible to create a constraint according to the time.) and to create the join relationship. Then, click on **OK** to validate the dataset



Edit dataset

Query type: ● Wizard ○ SQL

Join Configuration

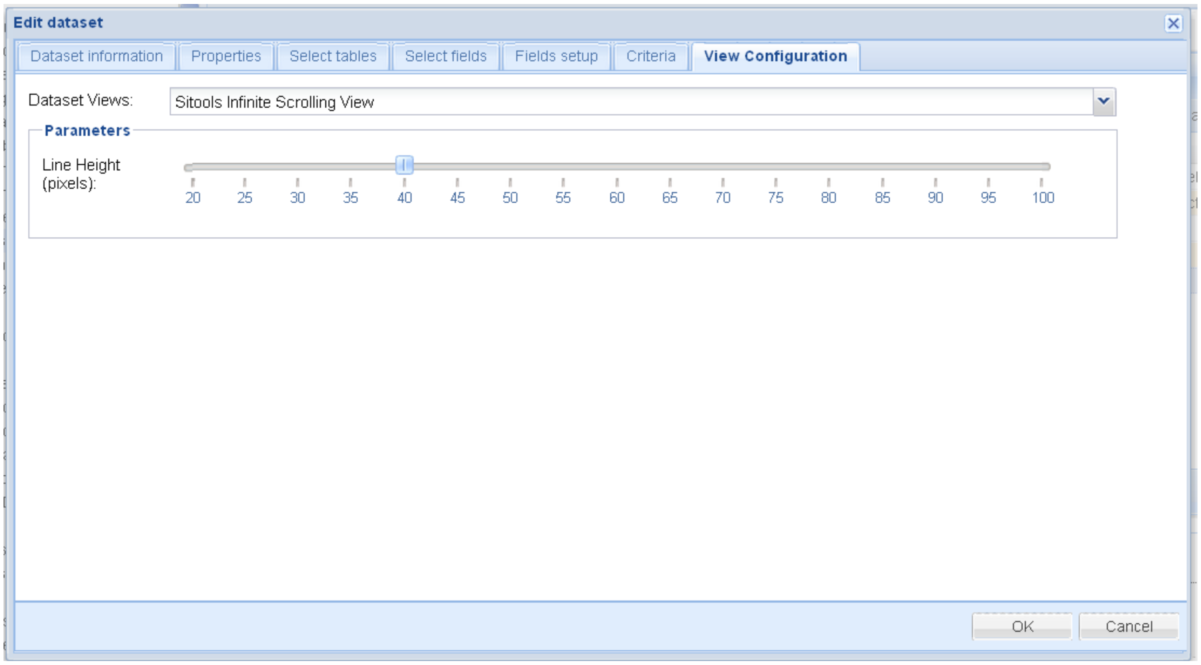
```
headers
  LEFT_JOIN fuse_prg_id
    on fuse_prg_id.cycle = headers.ref
  LEFT_JOIN iapdatasets
    on headers.dataset = iapdatasets.dataseta
```

Where clause

		Left attribute	Operator	Right attribute		

Figure 35: Dataset panel creation

The SQL definition can also be written by the user. Write the SQL string from "FROM".



Edit dataset

Dataset Views: Sitools Infinite Scrolling View

Parameters

Line Height (pixels): 40

Figure 36: Dataset view configuration panel

The **view Configuration** tab is used to select the Dataset view which will display the dataset in the client interface. It is also used to parameterize this dataset view. For instance for the Sitools infinite Scrolling View (also called livegrid) it is possible to select the height of each line of the grid.

Edit a dataset

Select a dataset, click on **Disable**, click on **Edit**, fill the form and click on **OK**. Then, you will need to enable the dataset.

Delete a dataset

Select dataset, click on **Delete** to remove it.

Warning: In this current version, it is better to remove at first the elements that depend on the dataset such as SVAs, converters and query forms.

Open search

See open search management

Enable a dataset

Select a dataset and click on **Enable**. The service is then available.

Disable a dataset

Select a dataset and click on **Disable**.

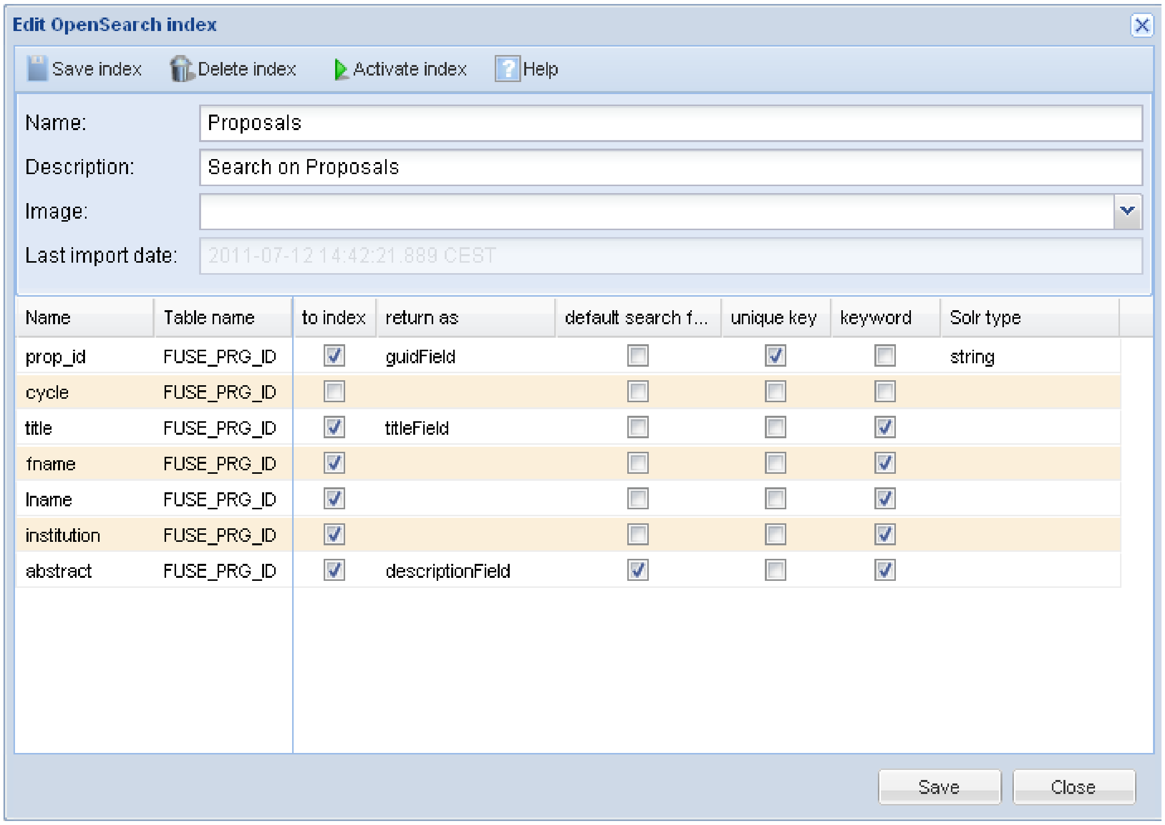
SQL string

Select a dataset and click on **SQL string**. Then, a panel is displayed with the SQL string that represents the query.

Semantic

This feature allows the administrator to add semantic to a dataset by using the dictionaries. To add semantics, click on **Semantic**. A panel is displayed where the administrator can map each dataset's attribute to dictionary's concepts. A concept is a set of attributes in a dictionary. When the administrator clicks on **Default dictionary**, the description of each dictionary's concept is displayed on the web client. The other dictionary can be used for other applications. For instance, it is possible to associate two dictionaries to one dataset: one for human that is composed of a textual description and a last one for interoperability systems (virtual observatory, …)

2. Open search management



Name:	Proposals
Description:	Search on Proposals
Image:	
Last import date:	2011-07-12 14:42:21.889 CEST

Name	Table name	to index	return as	default search f...	unique key	keyword	Solr type
prop_id	FUSE_PRG_ID	☑	guidField	☐	☑	☐	string
cycle	FUSE_PRG_ID	☐		☐	☐	☐	
title	FUSE_PRG_ID	☑	titleField	☐	☐	☑	
fname	FUSE_PRG_ID	☑		☐	☐	☑	
lname	FUSE_PRG_ID	☑		☐	☐	☑	
institution	FUSE_PRG_ID	☑		☐	☐	☑	
abstract	FUSE_PRG_ID	☑	descriptionField	☑	☐	☑	

Figure 37: Open search panel

Open search is a standard that allows publishing of search results in a format suitable for syndication an aggregation.

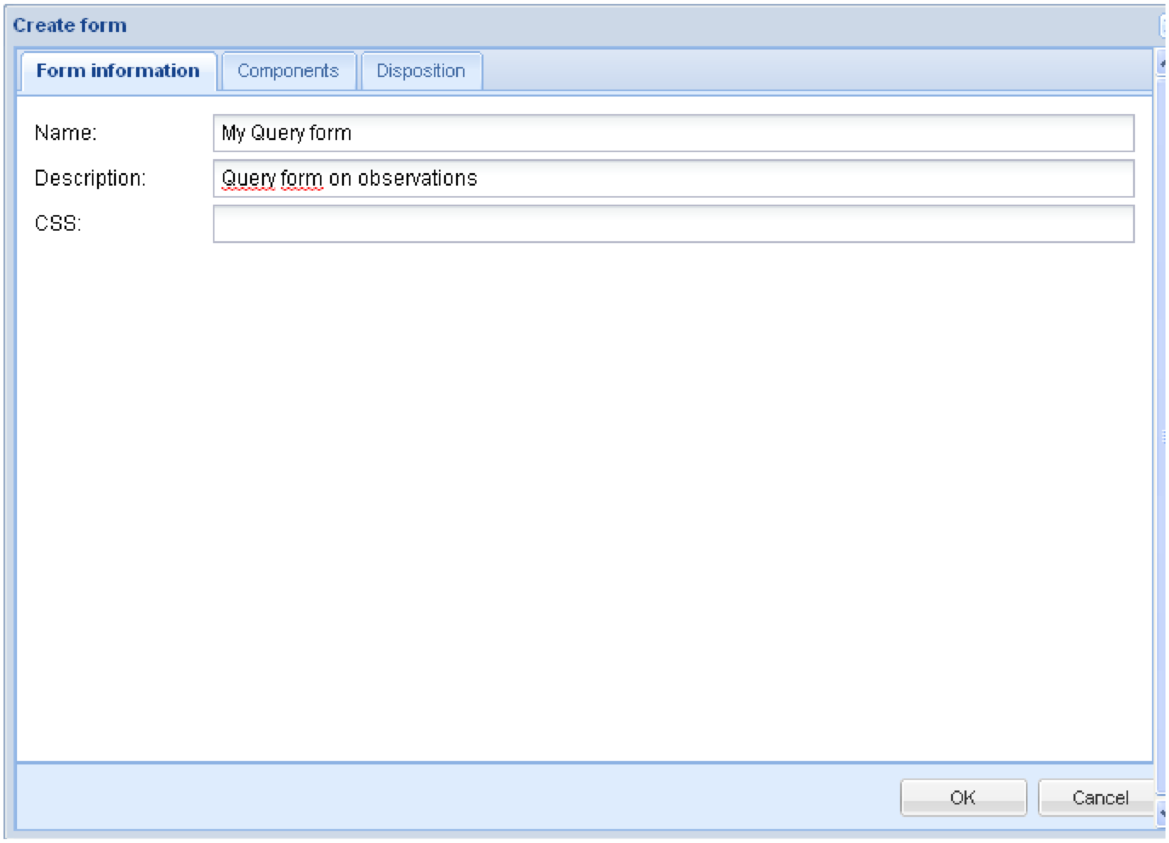
When a dataset is configured, it is easy to create an open search service by configuration as illustrated in Figure 37. The administrator needs to:

- Index columns from which the search capability is performed
- Select a unique key and to set SolrType to string. This key must be the primary key of the dataset
- Select on which columns the search by auto completion term will be performed by the user. For this, **keywords** must be checked

- Select the column where the **default search** is applied.
- Select the mapping between columns and RSS elements (it is required to set at least guidField for the primary key).

It is highly recommended to have a mapping with the following elements of the open search standard: guidField, titleField and descriptionField.

3. Query form management



Name: My Query form

Description: Query form on observations

CSS:

Figure 38: Query form creation

From the dataset, it is also possible to create several query forms. Click on **query forms** and select the dataset for which you want to build your query form. Then click on **Create** and fill the form. Select a graphical component for each whished attribute. Next, use drag and drop capability for both moving and resizing graphical components. The query form on the client side will be exactly presented as you designed it in the administration panel. Then, click on **OK** to validate.

4. Data processing service (Dataset services)

Dataset services are services that can be attached to a dataset. They can be added to Sitools2 as plug-in module extensions. At the following URL, you will find a tutorial explaining how to configure a dataset service: http://sitools2.sourceforge.net/tuto/sva.html.

A dataset service can be used for two different purposes depending on the dataset service implementation:

- Either data processing on selected data by a user on the web client
- Or data processing based on both the dataset where the dataset service is attached and parameters in the HTTP request

In one case, the dataset service has a strong relationship with the web client and in the other case the dataset service is an independent service.

1. Associate a dataset service to a dataset

Select the dataset on which you want to add a dataset service and click on **Add**. Then, select a dataset service class and click on **Field mapping** tab. Fill the form:

- Label: label that will be displayed on the web client
- Purpose: main aim of the service
- Behavior of the result: the result is opened in the current tab or in the new one

Then, fill in the parameters in the grid **Parameters mapping**. This allows the administrator to configure the resource. Some resource may not have parameters, this will depend whether the resource needs to be configured. A parameter to configure can have different types:

- PARAMETER_INTERN: this is a constant of the program that the administrator must fill in **Value** column. Depending on the resource configuration it can be a free text value or a value to choose between some given choices.

- PARAMETER_ATTACHMENT: this is template of URL which will be used to attach the resource to its application.

- PARAMETER_USER_INPUT: this is a parameter that can be override by the user when requesting the service. The administrator can set a default value and tell whether or not to allow the user to override it by clicking the updatable checkbox.

PARAMETER_USER_GUI: this is a parameter used only on the client side before querying the resource. For instance to display a warning if too many lines has been selected for an order resource.Some parameters are always set in a resource those are:

- url : the main resource attachment.
- methods : the list of HTTP methods allowed for this resource.
- filename : if the aim of the resource is to download a file, this is the name of the file which will be downloaded by the user. If not, let this parameter blank.
- Image : this image will be displayed on the web client close to the label

Some resource can be used in asynchronous way, in that case some other parameters are always set:

- runTypeAdministration : The type of execution of the resource. Administrator can choose between 4 values :
    - TASK_FORCE_RUN_SYNC: The resource is always executed in a synchronous way
    - TASK_FORCE_RUN_ASYNC: The resource is always executed in an asynchronous way
    - TASK_DEFAULT_RUN_SYNC: The resource is executed in a synchronous unless the user overrides this value with the parameter runTypeUserInput (see below)
    - TASK_DEFAULT_RUN_ASYNC: The resource is executed in an asynchronous unless the user overrides this value with the parameter runTypeUserInput (see below)
- runTypeUserInput: Set this parameter to updatable to let the user choose the type of execution.

> The developer should set methods and runTypeAdministration parameters by default. So, you should not change these default values.

Then click on **OK** for deploying the resource.

Edit a dataset service

Select a dataset service in the list and click on **Edit**. Then, edit the SVA panel and click on **OK**.

Delete a dataset service

Select a dataset service in the list and click on **Delete**. The configuration parameters are deleted and the SVA is not attached anymore to the dataset.

Enable the dataset service

Select a dataset service and click on **Enable**. The SVA is automatically attached to a dataset and it is ready for use.

Disable the dataset service

Select a dataset service and click on **Disable**. The SVA is off and it cannot be used.

5. News

The administrator can create some RSS streams at several levels: project and dataset.

6. Converter

From a dataset, the administrator can convert a value coming from the database to another one. The configuration is quite similar to data service configuration.

1. Associate a converter to a dataset

Select the dataset on which you want to add a converter and click on **Add**. Then, select a Converter class and click on **Field mapping** tab. Some converter may not have parameters, this will depend whether the converter needs to be configured. A parameter to configure can have different types:

- PARAMETER_INTERN: this is a constant of the program that the administrator must fill in **Value** column.
- PARAMETER_IN: this is the input value coming from the attribute of dataset that must be set in **Attached column** column.
- PARAMETER_OUT: this is the output value in an existing attribute of the dataset. This attribute can be a real column of the SQL table or a created attribute (see Figure 34: Dataset creation panel). The attribute must be set by clicking on **Attached column** column.
- PARAMETER_INOUT: This is the input as well as output of the function. The value coming from the attribute of the dataset will be automatically replaced by a new one. The attribute must be set by clicking on **Attached column** column.

Edit a converter

Select a converter in the list and click on **Edit**. Then, edit the converter panel and click on **OK**.

Delete a converter

Select a converter in the list and click on **Delete**. The configuration parameters are deleted and the converter is not attached anymore to the dataset.

Enable the converter service

Select a converter and click on **Enable**. The converter is automatically attached to a dataset and it is ready for use.

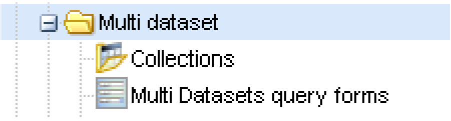
Disable the converter service

Select a converter and click on **Disable**. The converter is off and it cannot be used.

7. Dataset service

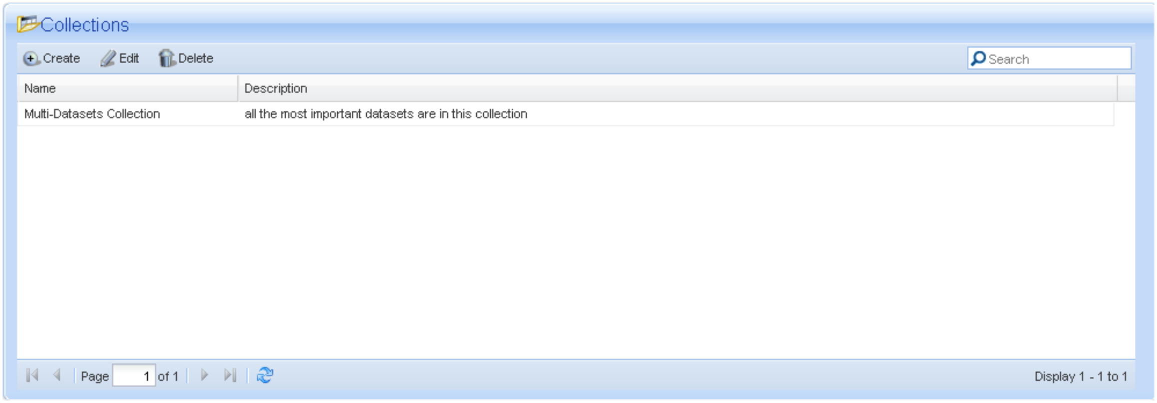
This feature allows the administrator to attach resources to a dataset. These resources are used by the web client but they can be useful in some cases.

5. Multi-Datasets management



Multi datasets is a collection of several datasets.

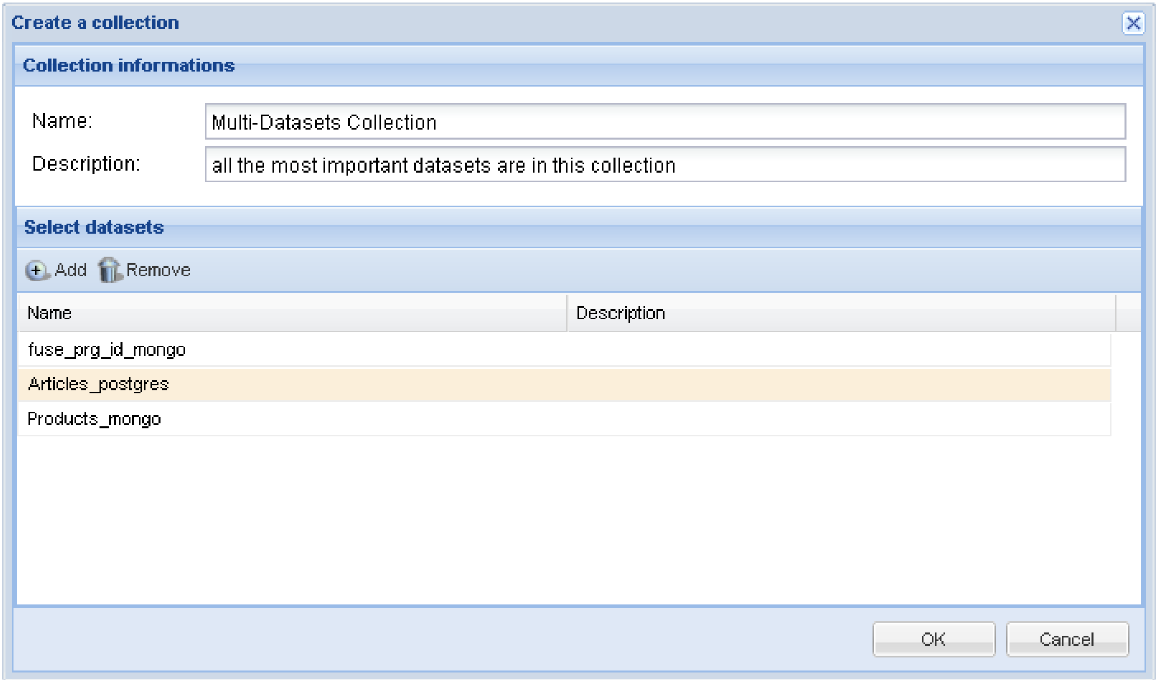
- *Collection:* Create a new collection containing various datasets.
- *Multi Datasets query forms:* Create a new multi datasets form for a specific project.



Name	Description
Multi-Datasets Collection	all the most important datasets are in this collection

Figure 39: Collection panel

1. Create a collection



Name: Multi-Datasets Collection

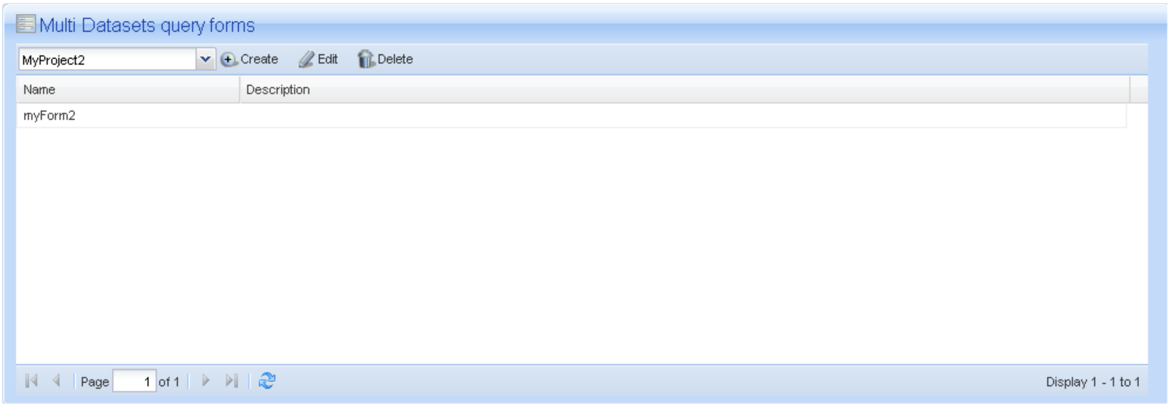
Description: all the most important datasets are in this collection

Name	Description
fuse_prg_id_mongo	
Articles_postgres	
Products_mongo	

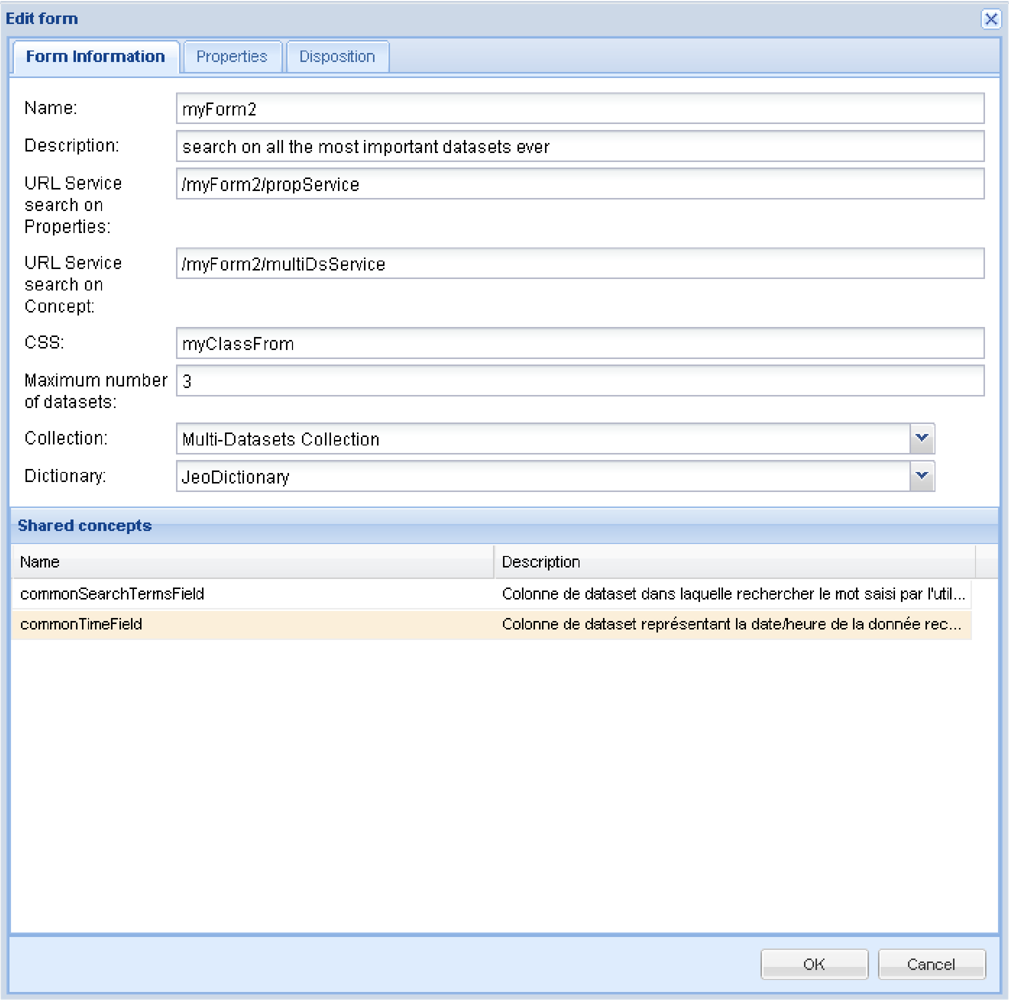
Figure 40: Collection properties

When you create a new collection, you will have to set up a name and description for this collection. Then you simply add several datasets.

Create a Multi Datasets query form



Name	Description
myForm2	



Name:	myForm2
Description:	search on all the most important datasets ever
URL Service search on Properties:	/myForm2/propService
URL Service search on Concept:	/myForm2/multiDsService
CSS:	myClassFrom
Maximum number of datasets:	3
Collection:	Multi-Datasets Collection
Dictionary:	JeoDictionary

Shared concepts

Name	Description
commonSearchTermsField	Colonne de dataset dans laquelle rechercher le mot saisi par l'util...
commonTimeField	Colonne de dataset représentant la date/heure de la donnée rec...

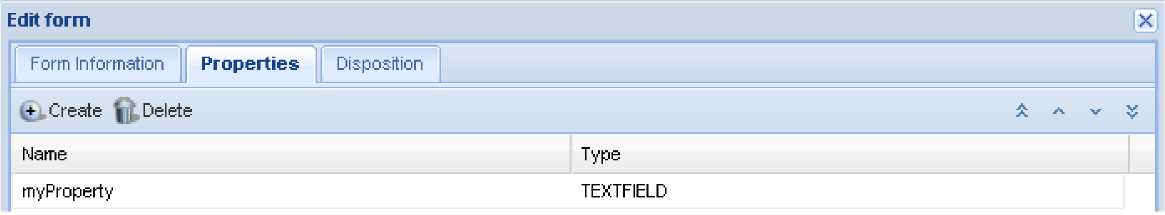
Figure 41: Multi-Datasets Form

The multi-datasets form is composed of several fields:

- *The form name and description*.
- *The properties and concepts url service (auto filled up)*.
- *A css class name*.
- *The maximum number of datasets to search on*.
- *The datasets collection previously create*
- *The dictionary (see Dictionary chapter : Part 2 chap 8)*

All the concepts shared by the datasets in the collection are displayed in the grid below the form.

There is no benefit to create a multi-datasets form if datasets don't share same concepts.



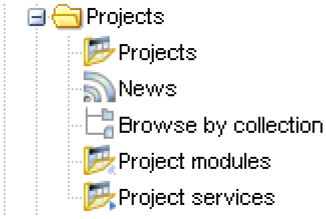
Name	Type
myProperty	TEXTFIELD

Figure 42: Multi-Datasets Form Properties

On the Tab properties, you can add properties defined on datasets. The user's first step will be to search on these properties in order to filter on datasets (act like a pre-search).

For the tab Disposition, see Part 1 chap 3.

6. Projects management



Project management menu is composed of four functions:

- Manage projects news: This function allows the administrator to create, edit and delete RSS stream
- Manage project: This function allows the administrator to design the web client and to select the service that he wants to give access.
- Manage collection: This function allows the administrator to display the datasets in a hierarchical way
- Manage modules: This function allows the administrator to select the visible modules in the project
- Manage services: This function allows the administrator to attach new services from the server side to a project from.

As illustrated bellow, the Figure 43 states the main different actions that the administrator can do on the administration page.

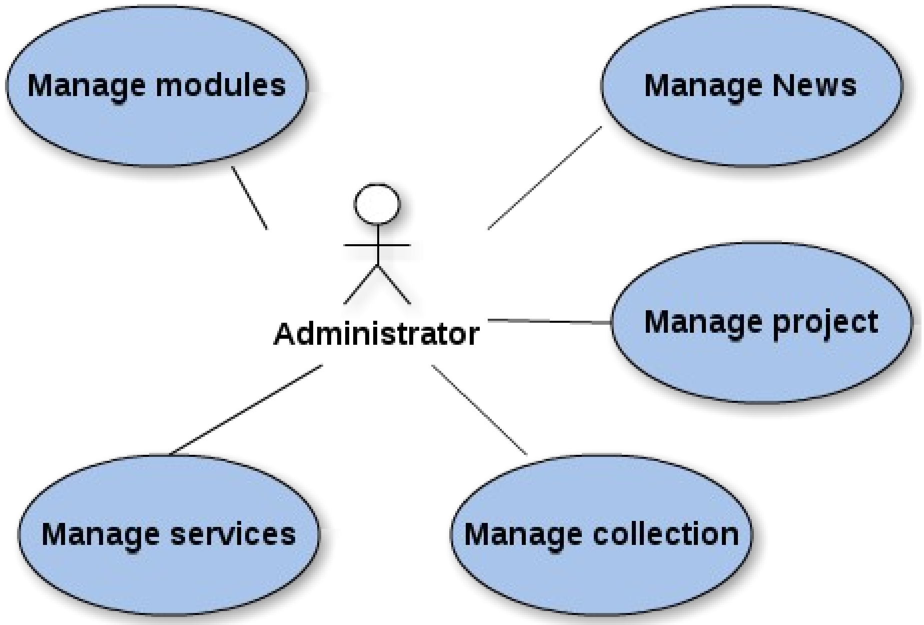
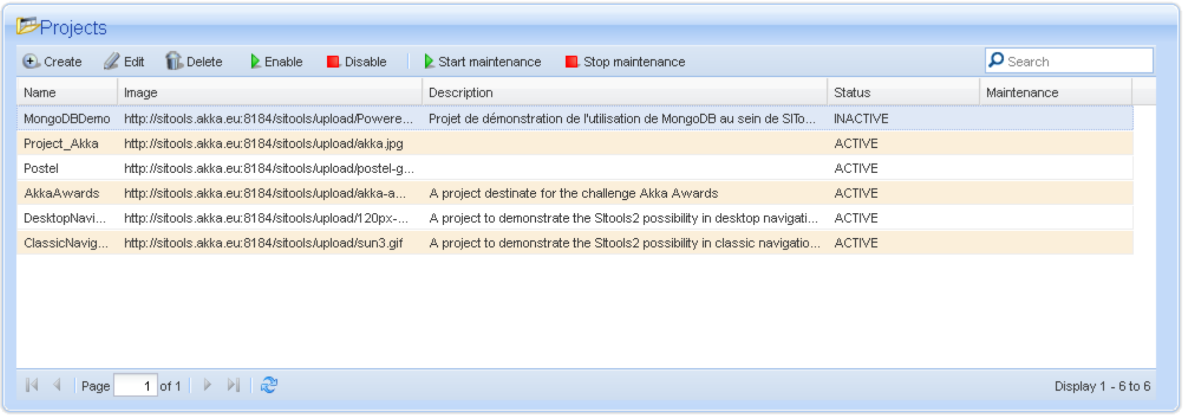


Figure 43: Project actions

1. Project creation

The projects, defined on Figure 44: Project panel, will be displayed on the SITools2 portal with the following information:

- Project name
- Project description
- Project image



Name	Image	Description	Status	Maintenance
MongoDBDemo	http://sitools.akka.eu:8184/sitools/upload/Powere...	Projet de démonstration de l'utilisation de MongoDB au sein de SITo...	INACTIVE	
Project_Akka	http://sitools.akka.eu:8184/sitools/upload/akka.jpg		ACTIVE	
Postel	http://sitools.akka.eu:8184/sitools/upload/postel-g...		ACTIVE	
AkkaAwards	http://sitools.akka.eu:8184/sitools/upload/akka-a...	A project destinate for the challenge Akka Awards	ACTIVE	
DesktopNavi...	http://sitools.akka.eu:8184/sitools/upload/120px-...	A project to demonstrate the SItools2 possibility in desktop navigati...	ACTIVE	
ClassicNavig...	http://sitools.akka.eu:8184/sitools/upload/sun3.gif	A project to demonstrate the SItools2 possibility in classic navigatio...	ACTIVE	

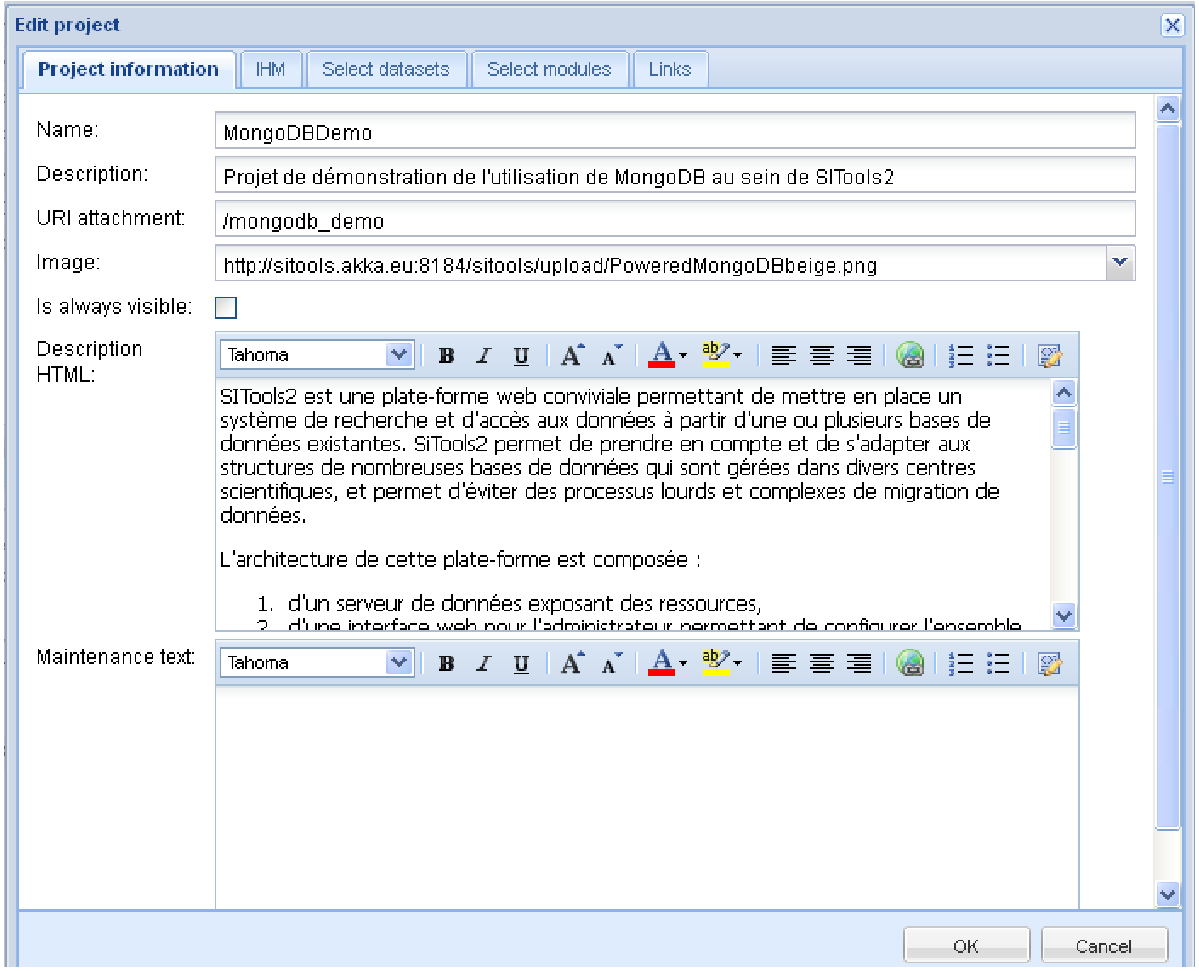
Page 1 of 1

Display 1 - 6 to 6

Figure 44: Project panel

To create a project, information is needed from administrator:

- Name of the project
- Description of the project that is displayed on the portal
- URI of the project
- Image of the project that is displayed on the portal
- HTML description that is displayed by description service
- Maintenance text that is displayed when the maintenance mode is activated.



Name: MongoDBDemo

Description: Projet de démonstration de l'utilisation de MongoDB au sein de SITools2

URI attachment: /mongodb_demo

Image: http://sitools.akka.eu:8184/sitools/upload/PoweredMongoDBbeige.png

Is always visible: □

Description HTML:

SITools2 est une plate-forme web conviviale permettant de mettre en place un système de recherche et d'accès aux données à partir d'une ou plusieurs bases de données existantes. SiTools2 permet de prendre en compte et de s'adapter aux structures de nombreuses bases de données qui sont gérées dans divers centres scientifiques, et permet d'éviter des processus lourds et complexes de migration de données.

L'architecture de cette plate-forme est composée :

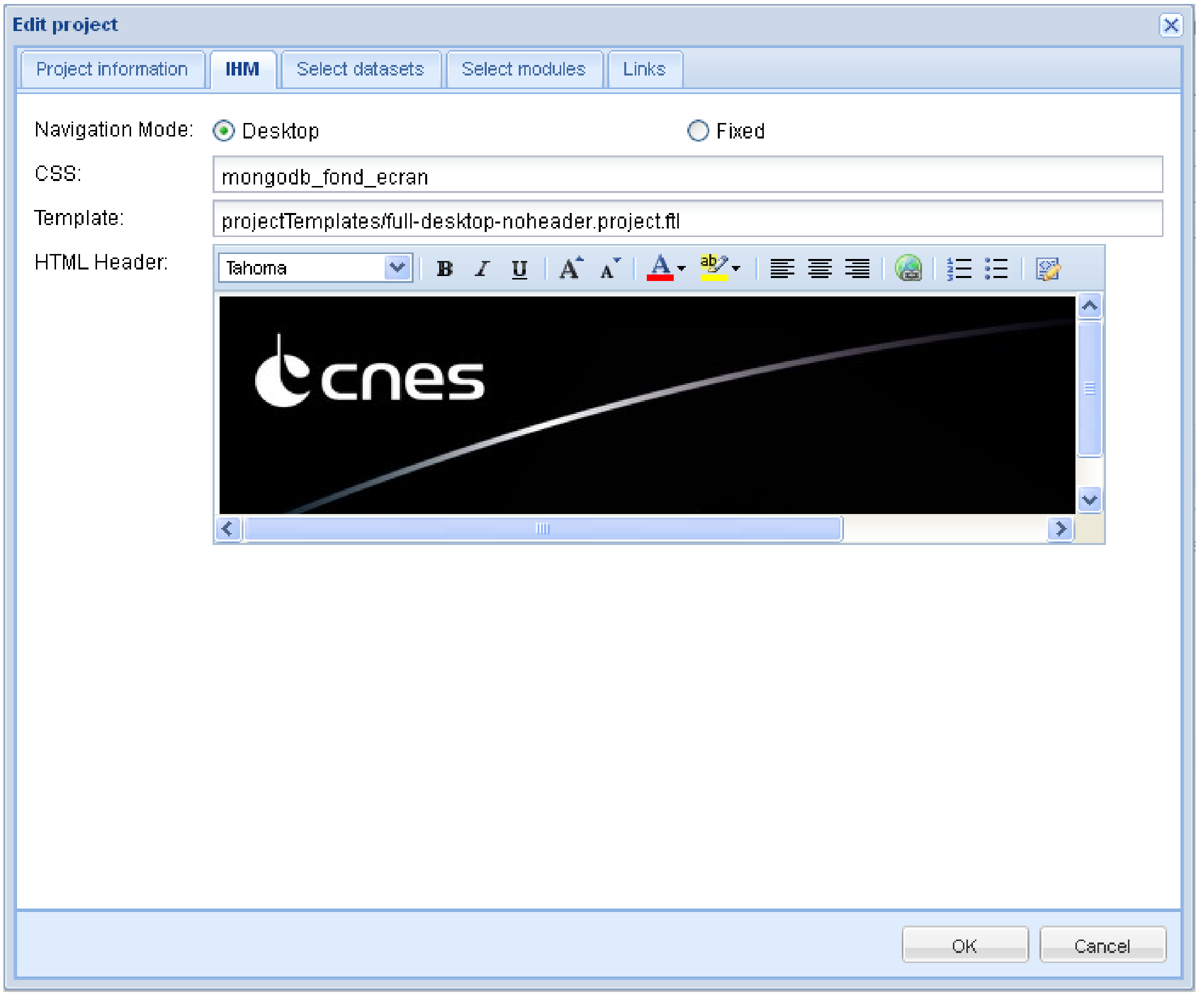
1. d'un serveur de données exposant des ressources,
2. d'une interface web pour l'administrateur permettant de configurer l'ensemble

Maintenance text:

Figure 45: Project creation panel

Next, the administrator needs to define the look 'n feel of the project:

- *Navigation mode:* in desktop mode, all windows use popup mode whereas in desktop mode, windows use incrusted mode
- *CSS:* CSS class. This class can be located in whatever CSS file
- Template: The path of the freemarker template file containing the structure of the project web page (the path is relative to the data/freemarker folder). This template defines a disposition of elements (<div>) in the main web page. Each element has a specific location (in the web page) that can be changed in the template.
- *HTML Header:* HTML header of the project web page



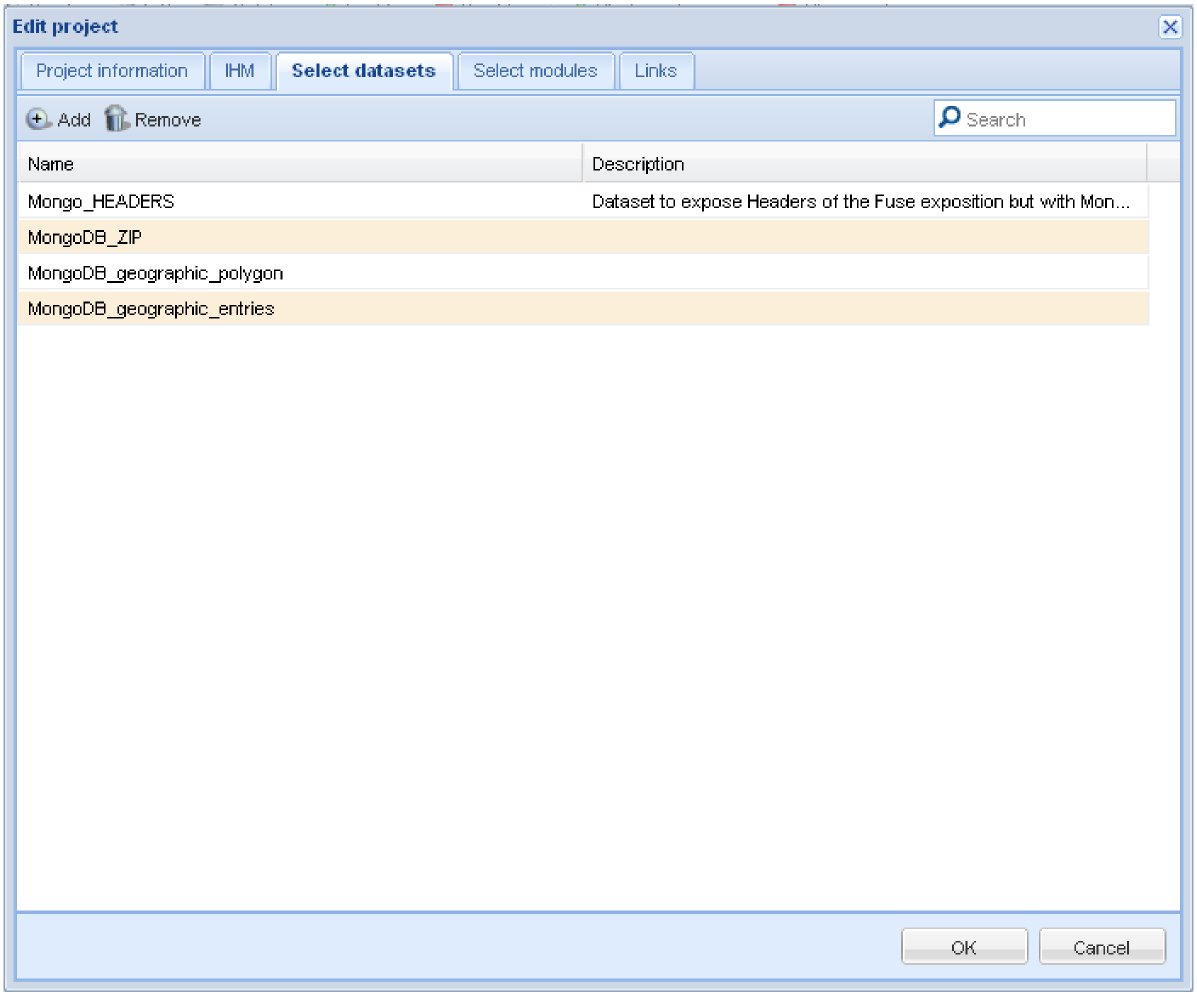
Navigation Mode: ● Desktop ○ Fixed

CSS: mongodb_fond_ecran

Template: projectTemplates/full-desktop-noheader.project.ftl

HTML Header:

Next, the administrator needs to add datasets in this project so that these datasets are visible through the web client



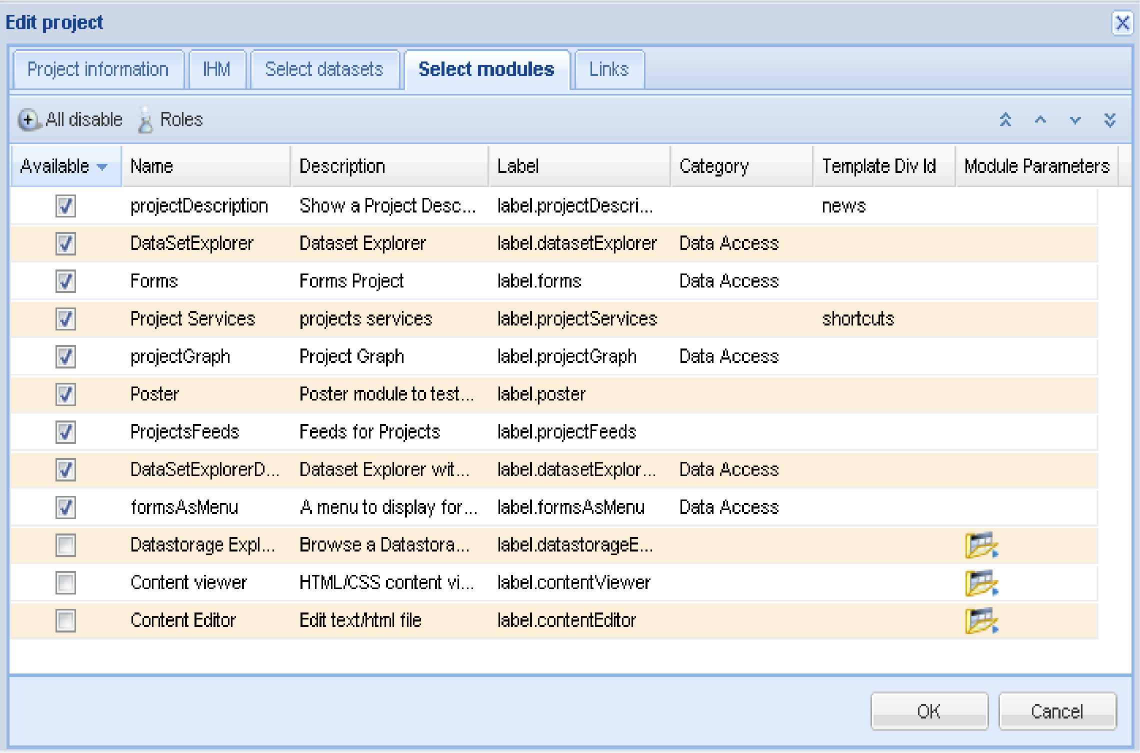
Name	Description
Mongo_HEADERS	Dataset to expose Headers of the Fuse exposition but with Mon...
MongoDB_ZIP	
MongoDB_geographic_polygon	
MongoDB_geographic_entries	

Figure 46: Project creation panel

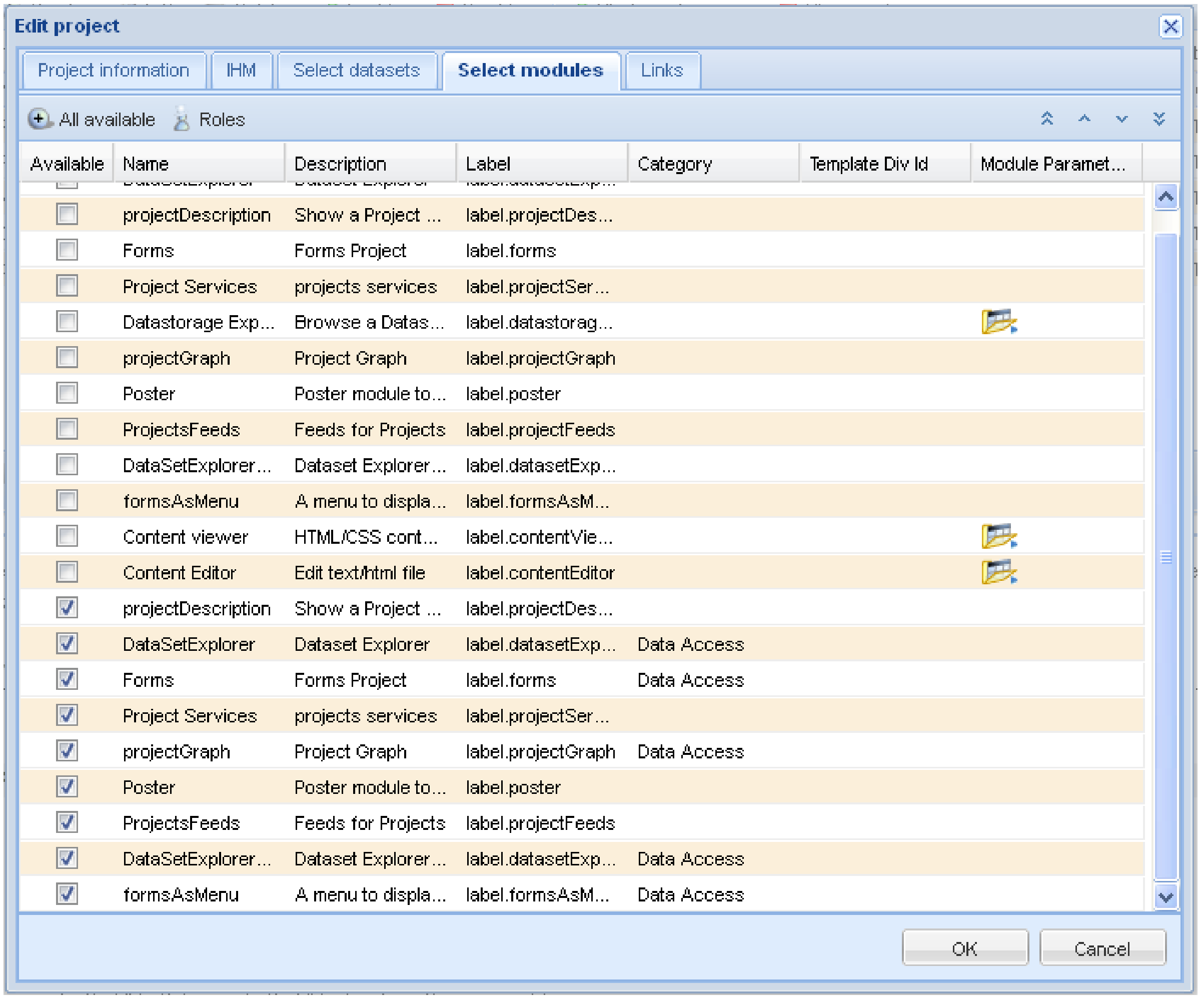
Once datasets are defined, the administrator needs to set up the modules that he wants to use in his project.

He can define:

- *The label:* the display name of the module in the project. If the label begins with 'label.', then text will be **internationalized** in the files *gui.properties* and the considered text will have to be defined in this files. Ex: label.forms=My Label Form.
- *The Category:* Each module can be grouped into a category (kind of menu). In the following screenshot, these modules will be visible by clicking on 'Data Access' button.
- *The Template Div Id:* The div id to display the module in. Here, the projectDescription module will be displayed in a <div> which has 'news' as id. Same thing for the projectServices module.
- *The Module Parameters:* Each module can own specific parameters (height, width…) that can be customized by the administrator.



Available	Name	Description	Label	Category	Template Div Id	Module Parameters
☑	projectDescription	Show a Project Desc...	label.projectDescri...		news	
☑	DataSetExplorer	Dataset Explorer	label.datasetExplorer	Data Access		
☑	Forms	Forms Project	label.forms	Data Access		
☑	Project Services	projects services	label.projectServices		shortcuts	
☑	projectGraph	Project Graph	label.projectGraph	Data Access		
☑	Poster	Poster module to test...	label.poster			
☑	ProjectsFeeds	Feeds for Projects	label.projectFeeds			
☑	DataSetExplorerD...	Dataset Explorer wit...	label.datasetExplor...	Data Access		
☑	formsAsMenu	A menu to display for...	label.formsAsMenu	Data Access		
□	Datastorage Expl...	Browse a Datastora...	label.datastorageE...			✎
□	Content viewer	HTML/CSS content vi...	label.contentViewer			✎
□	Content Editor	Edit text/html file	label.contentEditor			✎



Available	Name	Description	Label	Category	Template Div Id	Module Paramet...
□	projectDescription	Show a Project ...	label.projectDes...			
□	Forms	Forms Project	label.forms			
□	Project Services	projects services	label.projectSer...			
□	Datastorage Exp...	Browse a Datas...	label.datastorag...			📂
□	projectGraph	Project Graph	label.projectGraph			
□	Poster	Poster module to...	label.poster			
□	ProjectsFeeds	Feeds for Projects	label.projectFeeds			
□	DataSetExplorer...	Dataset Explorer...	label.datasetExp...			
□	formsAsMenu	A menu to displa...	label.formsAsM...			
□	Content viewer	HTML/CSS cont...	label.contentVie...			📂
□	Content Editor	Edit text/html file	label.contentEditor			📂
☑	projectDescription	Show a Project ...	label.projectDes...			
☑	DataSetExplorer	Dataset Explorer	label.datasetExp...	Data Access		
☑	Forms	Forms Project	label.forms	Data Access		
☑	Project Services	projects services	label.projectSer...			
☑	projectGraph	Project Graph	label.projectGraph	Data Access		
☑	Poster	Poster module to...	label.poster			
☑	ProjectsFeeds	Feeds for Projects	label.projectFeeds			
☑	DataSetExplorer...	Dataset Explorer...	label.datasetExp...	Data Access		
☑	formsAsMenu	A menu to displa...	label.formsAsM...	Data Access		

2. News

The administrator can write RSS streams to inform user about news. SITools2 provide an application to create, edit or delete RSS news.

1. Create a RSS stream

To create a RSS stream for a specific project, select a project in the combo box and click on **Create**.

Then you will need to create a new RSS section: enter the title, the description, the link, the author name, the author email and the feed type. Then click on **Feed items** tab and click on Add to add items to your Feed: enter the title, the description, the link, the author name, the author email and both updated and published dates

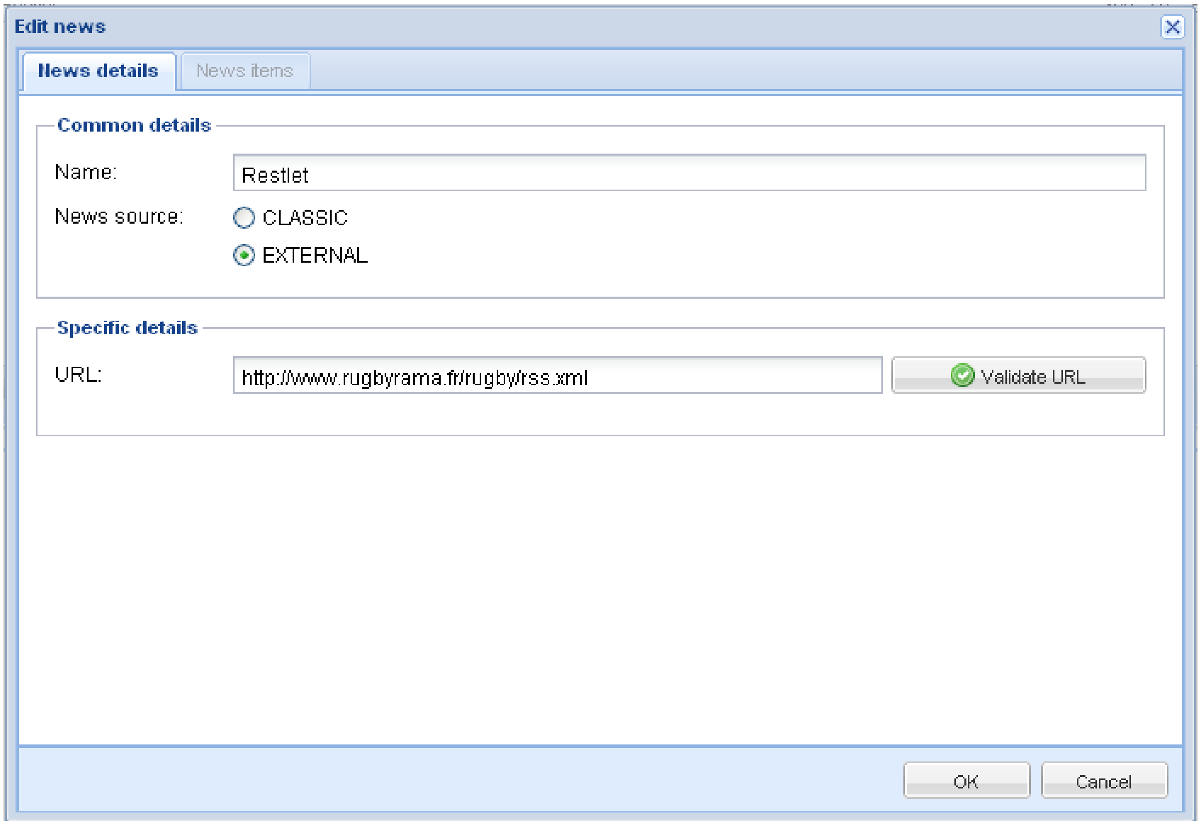
NB: It is also possible to use an external RSS flux and to display it the project web page.

Edit an item of the feed

Select an item and click on Edit. Then edit the different values

Delete an item from the feed

Select an item from the list and click on Delete.



Common details

Name: Restlet

News source: ○ CLASSIC ● EXTERNAL

Specific details

URL: http://www.rugbyrama.fr/rugby/rss.xml

Figure 47: Project RSS panel

3. Datasets Collection management

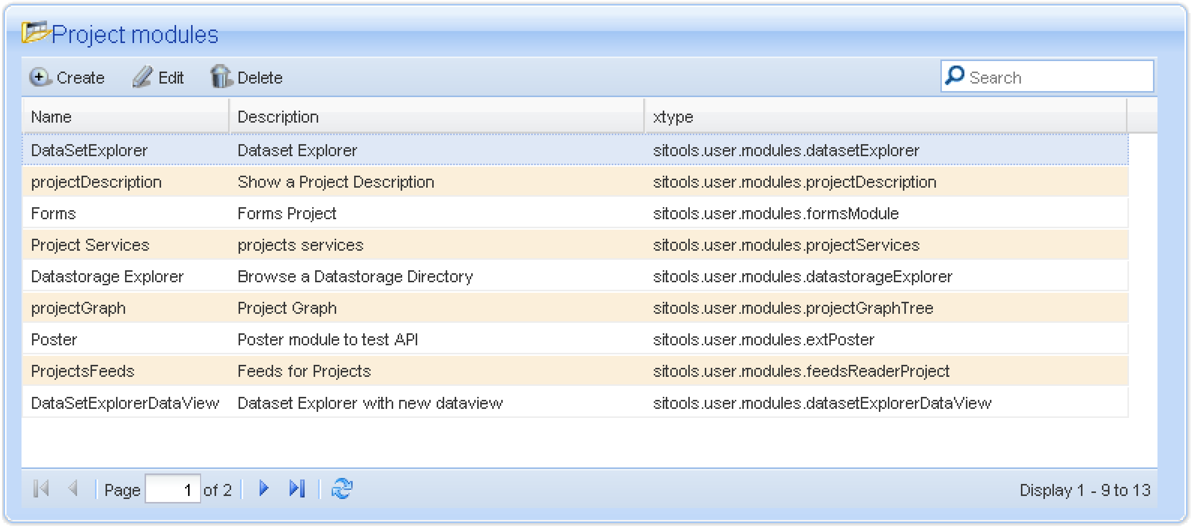
When a set of datasets is defined, you may want to display datasets in a hierarchical way. The graph feature lets the administrator create nodes and insert datasets into nodes. Thus, datasets can be presented to users in a hierarchical way (see tutorials).

4. Project's service

See the developer guide

5. Manage module

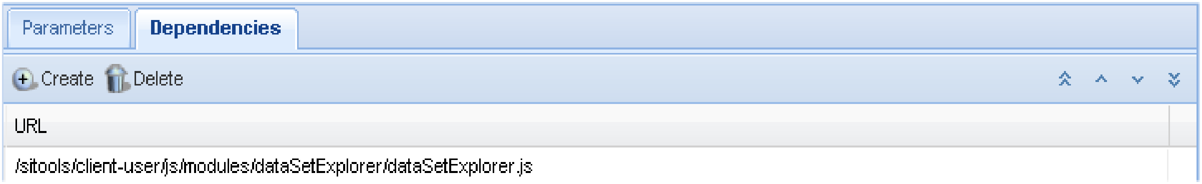
The administrator can import new JavaScript modules to use them in project definition.



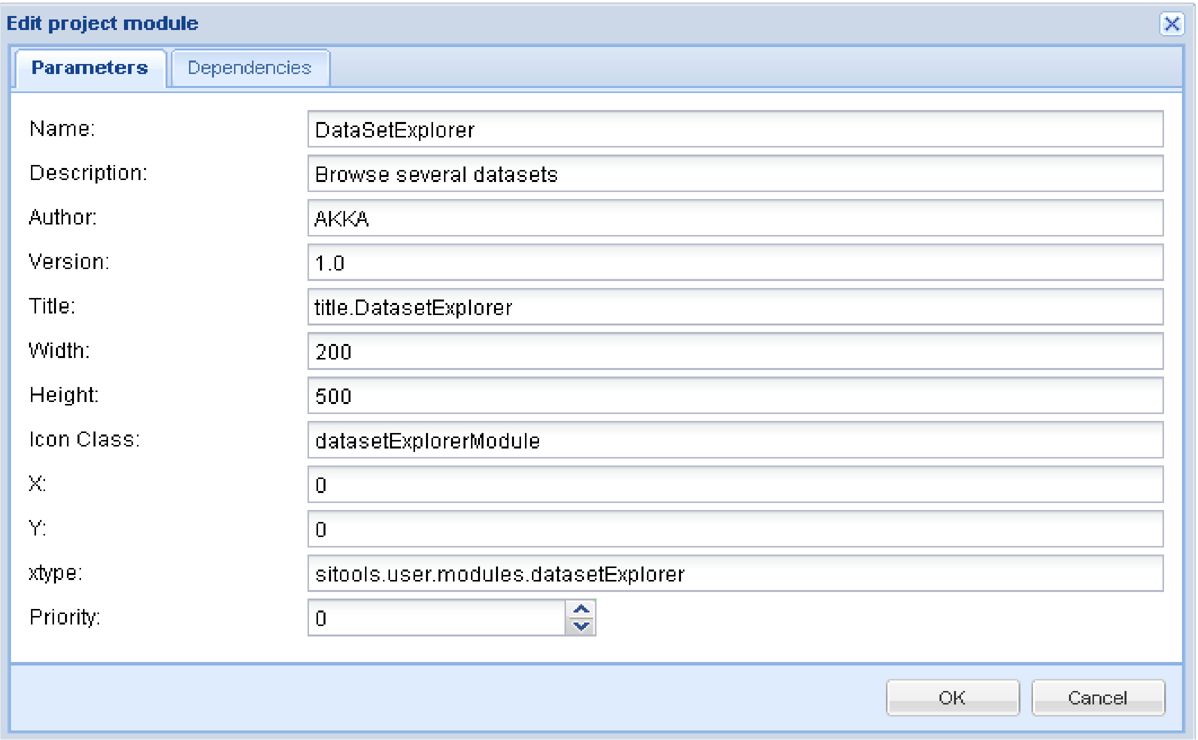
Name	Description	xtype
DataSetExplorer	Dataset Explorer	sitools.user.modules.datasetExplorer
projectDescription	Show a Project Description	sitools.user.modules.projectDescription
Forms	Forms Project	sitools.user.modules.formsModule
Project Services	projects services	sitools.user.modules.projectServices
Datastorage Explorer	Browse a Datastorage Directory	sitools.user.modules.datastorageExplorer
projectGraph	Project Graph	sitools.user.modules.projectGraphTree
Poster	Poster module to test API	sitools.user.modules.extPoster
ProjectsFeeds	Feeds for Projects	sitools.user.modules.feedsReaderProject
DataSetExplorerDataView	Dataset Explorer with new dataview	sitools.user.modules.datasetExplorerDataView

A project module is composed of:

- *A name:* The project module name (only visible in client-admin).
- *A description:* Used to help user to understand module utility.
- *An author and a version*.
- *A title (internationalized):* The display module title.
- *A size (width and height)*.
- *An icon class:* The css class name which contains the module icon link.
- *A position:* Module opening position in the web page (default to top left).
- *An xtype:* The javaScript Object name defined in the javascript file.
- *A priority:* The module priority load. Useful to extend other project module. By default: 0 is the most important.
- *Dependencies:* The files path (js or css) the module depends on.



URL
/sitools/client-user/js/modules/dataSetExplorer/dataSetExplorer.js



Name: DataSetExplorer

Description: Browse several datasets

Author: AKKA

Version: 1.0

Title: title.DatasetExplorer

Width: 200

Height: 500

Icon Class: datasetExplorerModule

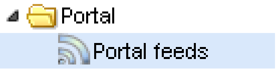
X: 0

Y: 0

xtype: sitools.user.modules.datasetExplorer

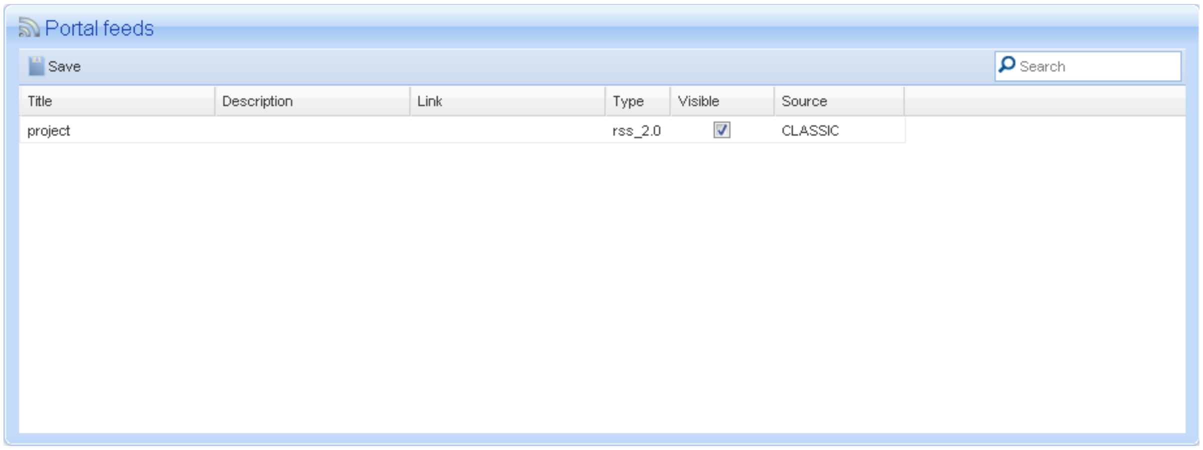
Priority: 0

7. Portal management



The portal contains a set of RSS streams that the administrator can decide to publish or not. The different RSS streams are:

- Project RSS
- Dataset RSS
- Open search RSS



Title	Description	Link	Type	Visible	Source
project			rss_2.0	☑	CLASSIC

Figure 48: Portal RSS panel

8. Dictionary management

A dictionary has been developed in SITools2 to add different kinds of semantics on metadata. From W3C 2003, the semantic web is the idea of having data on the web defined and linked in a way that can be used by machines not just for display purposes, but for automation, integration and reuse of data across various applications. In this current version of SITools2, there is no semantic application but some mechanisms are already set up.

Most of semantic applications are based on RDF format. RDF is a graph model that describes, in a formal way, the web resources and metadata. In RDF, a statement is called the subject, a verb is called the predicate and the remaining part is called the object. The association between subject, predicate and object is called triple.

In conventional relational databases, data is organized into table. In a well-designed table, all properties in a row define an object and depend on one cell: the primary key. Then elements in relational databases can be mapped such as:

- Each value of the column that has a primary key is equivalent to a subject
- The other values (URI or literal value) can be seen as object
- The predicate is a definition from the dictionary

In SITools2, the administration can create a dictionary concept. This function is in fact the definition of the number of attributes that the dictionary will have. Then, the administrator creates a dictionary based on this dictionary concept. Finally, the administrator can associate for each attribute of the dataset one or several definition coming from different dictionaries.

1. Dictionary concept management

- Create a template
    - Click on **Concept template** and click on **Create**
    - Fill the name and a description in the **Concept template information** tab
    - Click on **Concept properties** tab
    - Create attributes of your future dictionary

1. Edit a template

- Select a template item and click on **Edit**
- Changes any values and click on OK

Delete a template

Select a template item and click on **Delete**

2. Dictionary management

1. Create a dictionary

- Click on **Dictionary**
- Click on **Create**
- Select a defined **concept template**
- Fill the **dictionary information** tab
- Click on **Select concepts** tab
- Click on **Create** to define each attribute you need
- Click on **OK** to validate

Edit a dictionary

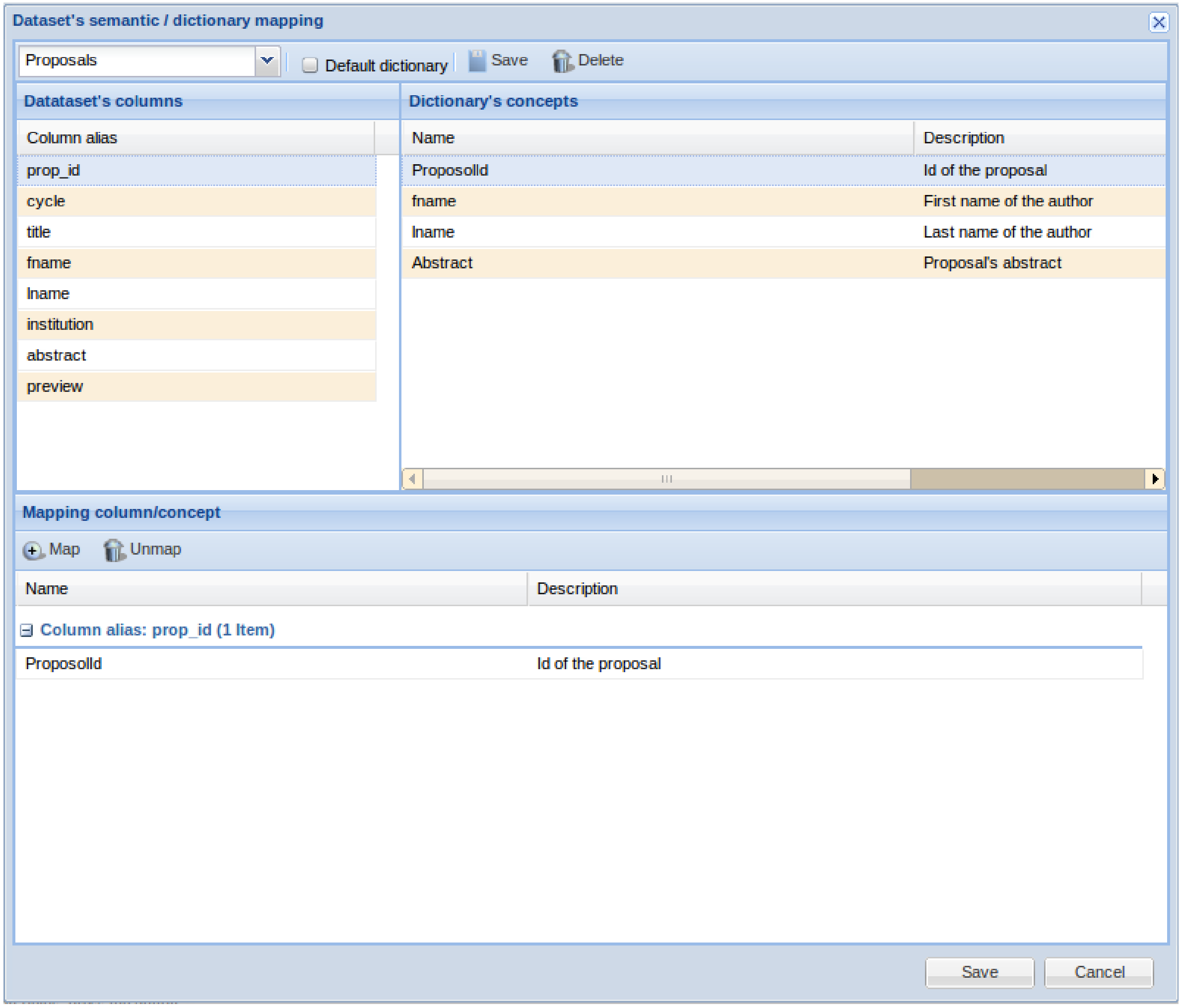
Select a dictionary item and click on **Edit**. Then change whatever you need (only **concepts templates** tab cannot be changed)

Delete a dictionary

Select a dictionary item and click on **Delete**.

3. Using dictionary

To use dictionary, select a dataset item and click on **semantic**. As illustrated on Figure 49: Mapping dictionary/attribute, a panel is displayed. Select the dictionary on the left corner at the top of the window. Then, map attribute of the dataset with dictionary element by selecting the attribute of the dataset on the left and the dictionary element on the right. Then, click on **Map** to map the two selected row. The mapping is then displayed on the bottom of the panel.



Dataset's semantic / dictionary mapping

Proposals □ Default dictionary Save Delete

Datataset's columns

Column alias
prop_id
cycle
title
fname
lname
institution
abstract
preview

Dictionary's concepts

Name	Description
ProposolId	Id of the proposal
fname	First name of the author
lname	Last name of the author
Abstract	Proposal's abstract

Mapping column/concept

Map Unmap

Name	Description
Column alias: prop_id (1 Item)	
ProposolId	Id of the proposal

Figure 49: Mapping dictionary/attribute

Once the dataset has semantic meaning, the semantic is stored in the dataset model. Then, it is possible to create some SVA using this mechanism to query the system as well as the meaning.

9. Units conversion

SITools2 handles automatic unit conversion. This unit conversion is based on a dimensional analysis. In the current version of SITools2, three unit systems are defined:

- Astronomical system
- Metric system (SI)
- US system (Non SI)

So, it is possible to convert automatically Kilometers to meters or other subunits of meters (and US unit as well) without coding. In some cases, we added some specific conversions for astronomical field: wavelength to frequency conversion based on celerity speed.

1. Supported units

- International System

Unit	Description	Symbol to set in SITools2
Ampere	The base unit for electric current quantities	A
Ampere_turn	The derived unit for magnetomotive force quantities	At
Becquerel	The derived unit for activity of a radionuclide	Bq
Candela	The base unit for luminous intensity quantities	cd
Celsius	The derived unit for Celsius temperature	\u00B0C or \u2103 or Celsius
Coulomb	The derived unit for electric charge, quantity of electricity	C

Farad	The derived unit for capacitance	F
Gram	The derived unit for mass quantities	g
Gray	The derived unit for absorbed dose, specific energy (imparted), kerma	Gy
Henry	The derived unit for inductance	H
Hertz	The derived unit for frequency	Hz or hertz
Joule	The derived unit for energy, work, quantity of heat	J
Katal	The derived unit for catalytic activity	kat
Kelvin	The base unit for thermodynamic temperature quantities	K
Lumen	The derived unit for luminous flux	lm
Lux	The derived unit for illuminance	lx
Meter	The base unit for length quantities	m
Mole	The base unit for amount of substance quantities	mol
Newton	The derived unit for force	N
Ohm	The derived unit for force	\u03A9
Pascal	The derived unit for pressure, stress	Pa
Radian	The unit for plane angle quantities	rad
Second	The base unit for duration quantities	s
Siemens	The derived unit for electric conductance	S
Sievert	The derived unit for dose equivalent	Sv
Steradian	The unit for solid angle quantities	sr
Tesla	The derived unit for magnetic flux density	T

Volt	The derived unit for electric potential difference, electromotive force	V
Watt	The derived unit for power, radiant, flux	W
Weber	The derived unit for magnetic flux	Wb

- SI prefixes

Unit	Description	Symbol to set in SITools2
Atto	Returns the specified unit multiplied by the factor 10^{-18}	a
Centi	Returns the specified unit multiplied by the factor 10^{-2}	c
Deci	Returns the specified unit multiplied by the factor 10^{-1}	d
Deka	Returns the specified unit multiplied by the factor 10^{1}	da
Exa	Returns the specified unit multiplied by the factor 10^{18}	E
Femto	Returns the specified unit multiplied by the factor 10^{-15}	f
Giga	Returns the specified unit multiplied by the factor 10^{9}	G
Hecto	Returns the specified unit multiplied by the factor 10^{2}	h
Kilo	Returns the specified unit multiplied by the factor 10^{3}	k
Mega	Returns the specified unit multiplied by the factor 10^{6}	M
Micro	Returns the specified unit multiplied by the factor 10^{-6}	\u00B5

Milli	Returns the specified unit multiplied by the factor 10^{-3}	m
Nano	Returns the specified unit multiplied by the factor 10^{-9}	n
Peta	Returns the specified unit multiplied by the factor 10^{15}	P
Pico	Returns the specified unit multiplied by the factor 10^{-12}	p
Tera	Returns the specified unit multiplied by the factor 10^{12}	T
Yocto	Returns the specified unit multiplied by the factor 10^{-24}	y
Yotta	Returns the specified unit multiplied by the factor 10^{24}	Y
Zepto	Returns the specified unit multiplied by the factor 10^{-21}	z
Zetta	Returns the specified unit multiplied by the factor 10^{21}	Z

- Non International System

Unit	Description	Symbol to set in SITools2
Electron volt		eV
Fluid dram		fl dr
Foot		ft
Liter		l
Miles per hour		mph

Minim		min
Oil barrel		bbl
Ounce	A unit of mass equal to `1 / 16 pound`	oz
Ounce liquid		fl oz
Tablespoon		Tbsp
Teaspoon		tsp
Ton		ton
Minute	The derived unit for duration quantities	i
Hour	The derived unit for duration quantities	h

- Astronomical system

Unit	Description	Symbol to set in SITools2
Angstrom	A unit of length equal to 10^{-10} m	ASCII code : 143
Arc degree	A unit of angle equal to 2*PI/360 rad	deg
Arc minute	A unit of angle equal to 1/60 Arc degree	‘
Arc second	A unit of angle equal to 1/60 Arc minute	“
Astronomical unit	A unit of length equal to 1.495978707E11 m	AU
Calendar year	A unit of time equal to 31536000 s	Y
Degree angle	A unit of angle equal to 2*PI/360 rad	°
Hour angle	A unit of angle equal to 2*PI/24 rad	Hr
Light year	A unit of length equal to 9.460730472580800E15 m	ly
Jansky		

Minute angle	A unit of angle equal to 1/60 Hour angle	min
Parsec	A unit of length equal to 3.085677581E16 m	pc
Second angle	A unit of angle equal to 1/60 Minute angle	sec
Sideral day	A unit of time equal to 86164.1 s	d
Sideral year	A unit of time equal to 3.155814954E7 s	y
Solar day	A unit of time equal to 86400 s	D
Solar luminosity	A unit of luminosity equal to 3.846E26 Watt	Lsol
Solar mass	A unit of mass equal to 1.988435E30 kg	Msol
Solar radius	6.955E8	Rsol

2. Unit Dimension

To handle unit, the first step is to create consistent physical dimension as Length, Time … Then, the administrator needs to create units in this dimension by the use of symbol in 1.

1. Create a physical dimension

- To create a physical dimension, click on **Dimensions**.
- Then, click on **Add**.
- Select the fr.cnes.sitools.units.helper.sitoolsUnitConverterHelper in **Dimension helper class** tab.
- Click on **Dimensions details** tab and fill the form (name and description).
- Select the a plug-in for a specific conversion (for instance, you need to convert frequency to wavelength, you can use the plug-in that will convert frequency to wavelength units by the use of speed of light)
- Click on **Select units** and create some units:

    - Name: the value of name will be displayed on the web client
    - Units: use the symbols that are defined in 1
  - Click on **OK**

Edit a phydical dimension

Select a dimension item and click on **Edit**. Then, the administrator can add/delete units.

Delete a physical dimension

Select a dimension item and click on **Delete**.

3. Using units in SITools2

1. General case

To use units, the administrator must set a unit to a dataset's attribute: he must disable the selected dataset. Then, he must click on **Fields setup** tab, select an attribute of the dataset and click on **Action>Assign unit**. Next, click on **Ok** and enable the dataset.
Then, the administrator must define a query form with a component having a unit. On the administration of the component, select a column where a unit is defined and select a dimension. Then valid your query form.
On the query form the different units of the selected dimension will be displayed.

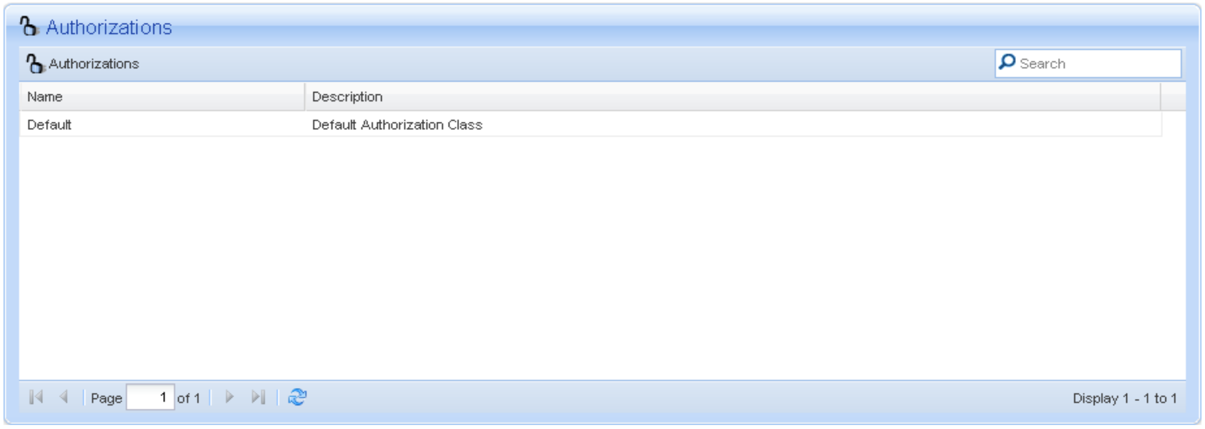
Specific case for cone search

If a cone search has a unit (SR parameter), we consider that right ascension and declination are expressed in decimal degrees.

10. Security management

In SITools2, application's security is handled according to role and HTTP method. By default (Figure 50), two roles are configured:

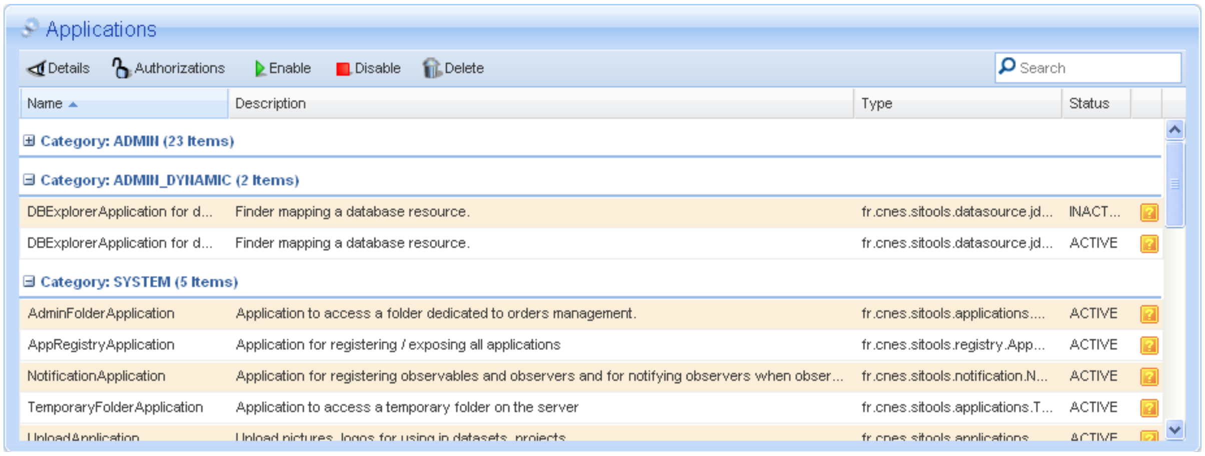
- Administrator: he can do everything
- Public: Public is a user without any account in the archive. He is only allowed to do GET.



Name	Description
Default	Default Authorization Class

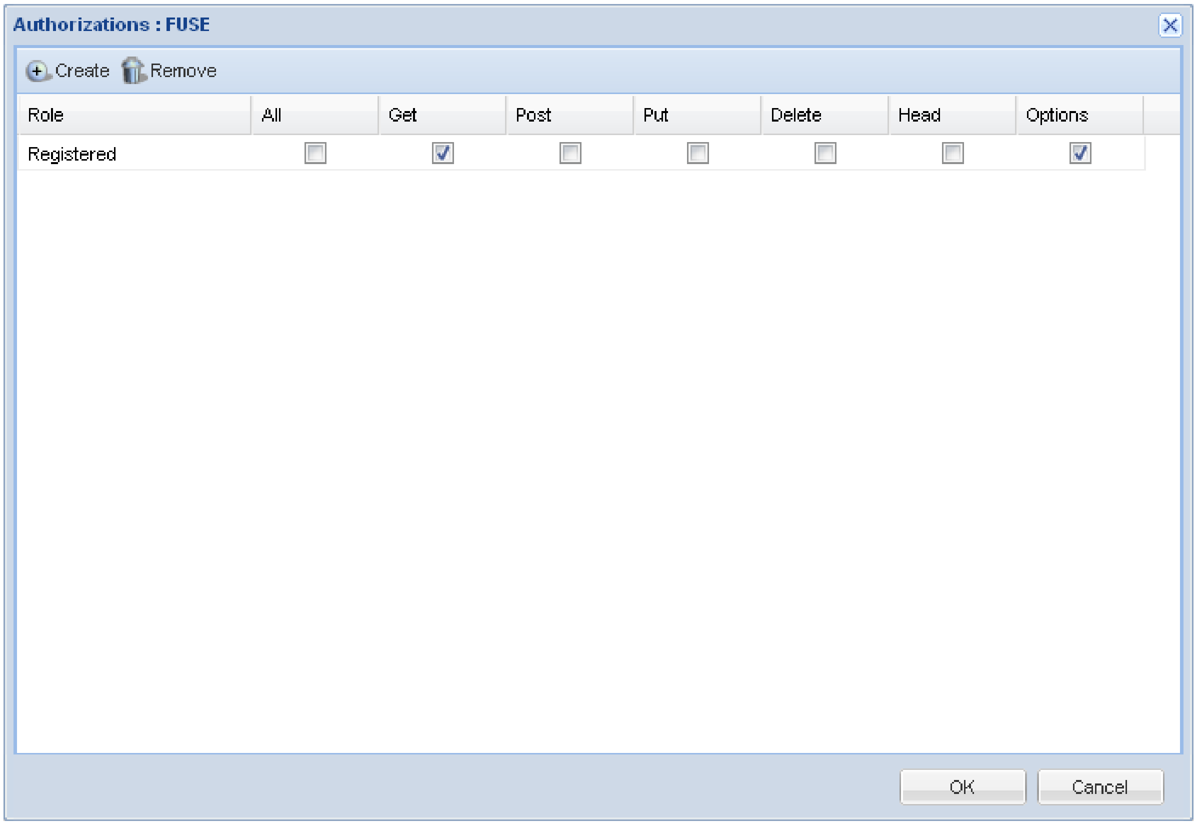
Figure 50: Authorization management panel

All applications are registered in a registry (Figure 51) panel. On this panel, the administrator can change permissions of whichever applications. Click on the question mark in order to look at the application API. From this API, the administrator will be able to define the HTTP methods (Figure 52) he wants to allow for a specific role.



Name	Description	Type	Status
⊞ Category: ADMIN (23 Items)			
⊟ Category: ADMIN_DYNAMIC (2 Items)			
DBExplorerApplication for d...	Finder mapping a database resource.	fr.cnes.sitools.datasource.jd...	INACT...
DBExplorerApplication for d...	Finder mapping a database resource.	fr.cnes.sitools.datasource.jd...	ACTIVE
⊟ Category: SYSTEM (5 Items)			
AdminFolderApplication	Application to access a folder dedicated to orders management.	fr.cnes.sitools.applications....	ACTIVE
AppRegistryApplication	Application for registering / exposing all applications	fr.cnes.sitools.registry.App...	ACTIVE
NotificationApplication	Application for registering observables and observers and for notifying observers when obser...	fr.cnes.sitools.notification.N...	ACTIVE
TemporaryFolderApplication	Application to access a temporary folder on the server	fr.cnes.sitools.applications.T...	ACTIVE
UploadApplication	Upload pictures, logos for using in datasets, projects	fr.cnes.sitools.applications	ACTIVE

Figure 51: Registered application panel



Role	All	Get	Post	Put	Delete	Head	Options
Registered	☐	☑	☐	☐	☐	☐	☑

Figure 52: Access Right panel

Part 3 Advanced configuration

1. Security

1. Crypting using openLDAP

Several algorithms are implemented in SITools2 to encrypt password in the relational database. The default on is DISGEST-MD5. Other possibilities are:

- NONE: the password is stored in clear in the relational database
- OPENLDAP-MD5: the password is stored using OPEN-LDAP algorithm

To choose your algorithm, edit your sitools.properties file in workspace/fr.cnes.sitools.core directory and change the Starter.AUTHENTICATION_ALGORITHM variable

2. IP filtering

To improve the security of SITools2, it is possible to restrict applications sorted by category (ADMIN, USER, SYSTEM, and SYSTEM_DYNAMIC) by an IP filtering. Set the following variables in the sitools.properties file in workspace/fr.cnes.sitools.core directory:

- Security.Intranet.net -> list of intranet domain network addresses (separated by a |)
- Security.Intranet.mask -> subnet mask common to network addresses

The other parameters follow the same pattern :

- SECURITY.Intranet.<*CATEGORY*> (where <CATEGORY> is an application category) : true to specify those all applications belonging to this category is in the Intranet domain, false otherwise.Security.Intranet.ADMIN
- Security.Intranet.USER
- Security.Intranet.SYSTEM
- Security.Intranet.SYSTEM_DYNAMIC
- Security.Intranet.ADMIN_DYNAMIC

- Security.Intranet.USER_DYNAMIC

3. Proxy

SITools2 also allows the configuration of a security proxy. Set the following variables in the sitools.properties file in workspace/fr.cnes.sitools.code directory:

- Starter.WITH_PROXY=false -> if false, nothing to change
- Starter.PROXY_HOST=proxy2.fr.akka.corp -> proxy server name
- Starter.PROXY_PORT=9090 -> proxy server port
- Starter.PROXY_USER=user -> user login
- Starter.PROXY_PASSWORD=******* -> user password
- Starter.NONPROXY_HOSTS=localhost -> Indicates the hosts (separated by a |) which should be connected too directly and not through the proxy server for calls coming from SITools2.

4. Cookie life time

In some cases, cookies are needed in the SITools2 web client. In order to avoid some security problems, the life time of the cookie is limited to 20 minutes. This value can be changed in the file: ./workspace/client-user/js/desktop/def.js.

2. Configuration

SITools2 have four configuration files:

- One for the server
- One for the administration web page
- Two for the client web page

1. Sitools.properties file

```
Starter.ROOT_DIRECTORY=/
Starter.component.protocol.HTTP.address=
Starter.HOST_DOMAIN=odysseus1.fr.akka.corp|localhost|127.0.0.1|192.16
Starter.PUBLIC_HOST_DOMAIN=http://localhost:8182
Starter.HOST_PORT=8182

--= REALM for authentication
Starter.AUTHENTICATION_DOMAIN=SITOOLS

--= Client HTTP authentication schema
--= HTTP_BASIC || HTTP_DIGEST
Starter.AUTHENTICATION_SCHEME=HTTP_BASIC

--= Prefered encryption algorithm for stored passwords (used in Secur
--= OPENLDAP-MD5 || DIGEST-MD5 || NONE
Starter.AUTHENTICATION_ALGORITHM=DIGEST-MD5

--= Cookie name storing the equivalent Authorization HTTP header.
--= used by client
Starter.AUTHENTICATION_COOKIE=hashCode

--= Client Info Agent for specialize returned representation of a for
standard html)
--= used by client
Starter.AUTHENTICATION_AGENT=Sitools

Starter.SECRET_KEY=SITOOLS
Starter.HOST_PORT_HTTPS=
Starter.HTTPS_keystorePath=.keystore
Starter.HTTPS_keystorePassword=restlet
Starter.SSL_STORE_DIR=/SSL
Starter.VERSION=0.9M5
Starter.appName=SItools2

--= configuration of the client application directories
Starter.APP_PATH=..
Starter.APP_CLIENT_ADMIN_PATH=/client-admin
Starter.APP_CLIENT_PUBLIC_PATH=/client-public
Starter.APP_CLIENT_PUBLIC_COMMON_PATH=
Starter.APP_CLIENT_PUBLIC_COTS_PATH=/../../cots
Starter.APP_CLIENT_USER_PATH=/client-user
Starter.APP_DEVELOPER_PATH=/fr.cnes.sitools.core
Starter.APP_DOCUMENTATION_PATH=/../documentation
Starter.APP_LOGS_PATH=/fr.cnes.sitools.core/logs

--= configuration of URLs for the client applications
Starter.APP_URL=/sitools
Starter.APP_CLIENT_ADMIN_URL=/client-admin
Starter.APP_CLIENT_PUBLIC_URL=
Starter.APP_CLIENT_PUBLIC_COMMON_URL=/common
Starter.APP_CLIENT_PUBLIC_COTS_URL=/cots
Starter.APP_CLIENT_USER_URL=/client-user
Starter.APP_DEVELOPER_URL=/developer
Starter.APP_DOCUMENTATION_URL=/documentation
Starter.APP_LOGS_URL=/logs

--= directory of all freemarker templates
Starter.TEMPLATE_DIR=/workspace/fr.cnes.sitools.core/conf/resources/t

--= storage directories for server applications
Starter.STORE_DIR=/data
Starter.APP_PROJECTS_STORE_DIR=/projects
Starter.APP_DATASETS_STORE_DIR=/datasets
Starter.APP_DICTIONARIES_STORE_DIR=/dictionaries
Starter.APP_DICTIONARIES_TEMPLATES_STORE_DIR=/templates
Starter.APP_ROLES_STORE_DIR=/roles
Starter.APP_FORMS_STORE_DIR=/forms
Starter.APP_INSCRIPTIONS_STORE_DIR=/inscriptions
Starter.APP_DATASOURCES_STORE_DIR=/datasources
Starter.APP_OPENSEARCH_STORE_DIR=/opensearch
Starter.APP_APPLICATIONS_STORE_DIR=/applications
Starter.APP_AUTHORIZATIONS_STORE_DIR=/authorizations
Starter.APP_SOLR_STORE_DIR=/solr
Starter.APP_ORDERS_STORE_DIR=/orders
Starter.APP_USERSTORAGE_STORE_DIR=/userstorage
Starter.APP_PORTAL_STORE_DIR=/portal
Starter.APP_FORMCOMPONENTS_STORE_DIR=/formComponents

Starter.APP_GRAPHS_STORE_DIR=/graphs
Starter.APP_NOTIFICATIONS_STORE_DIR=/notifications
Starter.APP_FEEDS_STORE_DIR=/feeds

# !!! plugins_*
Starter.APP_PLUGINS_APPLICATIONS_STORE_DIR=/plugins_applications
Starter.APP_PLUGINS_FILTERS_STORE_DIR=/plugins_filters
Starter.APP_PLUGINS_RESOURCES_STORE_DIR=/plugins_resources

# !!! views, filters, converters >>> datasets_*
Starter.APP_DATASETS_CONVERTERS_STORE_DIR=/datasets_converters
Starter.APP_DATASETS_FILTERS_STORE_DIR=/datasets_filters
Starter.APP_DATASETS_VIEWS_STORE_DIR=/datasets_views

Starter.APP_SVA_STORE_DIR=/svas
Starter.APP_SVA_TASK_STORE_DIR=/svas_tasks

Starter.APP_DATASTORAGE_STORE_DIR=/datastorage
Starter.APP_DIMENSION_STORE_DIR=/dimensions

--= root directory for user storage spaces
Starter.USERSTORAGE_ROOT=/storage

--= root directory for image ressources uploads...
```

```
Starter.APP_UPLOAD_DIR=/upload

--= storage directories for server applications for tests
Tests.STORE_DIR=/data/TESTS
Tests.REFERENCE_STORE_DIR=/workspace/fr.cnes.sitools.core/test/data

--= units exploration
Starter.APP_UNITS_URL=/units

--= dimensions management
Starter.APP_DIMENSIONS_ADMIN_URL=/units/admin

--= configuration of URLs for applications/resources server
Starter.APP_PROJECTS_URL=/projects
Starter.APP_DATASETS_URL=/datasets
Starter.APP_DICTIONARIES_URL=/dictionaries
Starter.APP_DICTIONARIES_TEMPLATES_URL=/templates
Starter.APP_ROLES_URL=/admin/security/roles
Starter.APP_FORMS_URL=/forms
Starter.APP_INSCRIPTIONS_ADMIN_URL=/inscriptions/admin
Starter.APP_INSCRIPTIONS_USER_URL=/inscriptions/user
Starter.APP_DATASOURCES_URL=/datasources
Starter.APP_SECURITY_URL=/admin/security
Starter.APP_OPENSEARCH_URL=/opensearch
Starter.APP_APPLICATIONS_URL=/applications
Starter.APP_AUTHORIZATIONS_URL=/authorizations
Starter.APP_SOLR_URL=/solr
Starter.APP_ORDERS_ADMIN_URL=/orders/admin
Starter.APP_ORDERS_USER_URL=/orders/user
Starter.APP_USERSTORAGE_URL=/adminstorage
Starter.APP_USERSTORAGE_USER_URL=/userstorage/{identifier}
Starter.APP_PORTAL_URL=/portal
Starter.APP_FORMCOMPONENTS_URL=/formComponents
Starter.APP_MAIL_ADMIN_URL=/admin/mail
Starter.APP_NOTIFICATIONS_URL=/notifications

# !!! converters >>> datasets_converters (impact client)
Starter.APP_DATASETS_CONVERTERS_PLUGINS_URL=/datasets_converters
Starter.APP_DATASETS_CONVERTERS_ROOT=/data/datasets_converters
Starter.APP_DATASETS_CONVERTERS_URL=/datasets_converters

# !!! filters >>> datasets_filters (impact client)
Starter.APP_DATASETS_FILTERS_PLUGINS_URL=/datasets_filters
Starter.APP_DATASETS_FILTERS_ROOT=/data/datasets_filters
Starter.APP_DATASETS_FILTERS_URL=/datasets_filters

# !!! views
Starter.APP_DATASETS_VIEWS_URL=/datasetViews

Starter.APP_FEEDS_URL=/feeds
Starter.APP_FEEDS_OBJECT_URL=/feedsObject

Starter.APP_UPLOAD_URL=/upload

Starter.APP_SVA_URL=/sva
Starter.APP_SVA_PLUGINS_URL=/sva
Starter.APP_SVA_ROOT=/data/svas

Starter.APP_DATASTORAGE_URL=/datastorage/user
Starter.APP_DATASTORAGE_ADMIN_URL=/datastorage/admin

Starter.APP_TMP_FOLDER_URL=/tmp
Starter.APP_USERRESOURCE_ROOT_URL=/userresource
Starter.APP_USERRESOURCE_SVATASK_URL=/{identifier}/svaTasks
Starter.APP_ADMIN_FOLDER_URL=/adminData

--= Discovered plug-ins classes
Starter.APP_PLUGINS_APPLICATIONS_URL=/plugins/applications

Starter.APP_PLUGINS_RESOURCES_URL=/plugins/resources
Starter.APP_RESOURCES_URL=/resources

Starter.APP_PLUGINS_FILTERS_CLASSES_URL=/plugins/filters/classes
Starter.APP_PLUGINS_FILTERS_INSTANCES_URL=/plugins/filters/instances


```

```
# deprecated > use Starter.APP_PLUGINS_RESOURCES_URL
#Starter.APP_RESOURCE_URL=/resources

Starter.APP_UNITS_URL=/units


--= Database for Users / Groups
Starter.DATABASE_DRIVER=org.postgresql.Driver
Starter.DATABASE_URL=jdbc\:postgresql\://odysseus2.silogic.fr\:5432/C
Starter.DATABASE_USER=sitools
Starter.DATABASE_PASSWORD=sitools
Starter.JDBC_FETCH_SIZE=1000
Starter.DATABASE_SCHEMA=sitools

--= Default LIMIT for SQL Requests on DataSets
AbstractDatabaseRequest.MAX_ROWS=500

--= proxy server configuration
Starter.WITH_PROXY=false
Starter.PROXY_HOST=proxy2.fr.akka.corp
Starter.PROXY_PORT=9090
Starter.PROXY_USER=user
Starter.PROXY_PASSWORD=*******
Starter.NONPROXY_HOSTS=localhost

--= default administrator server and email account configuration
Starter.mail.send.debug=true
Starter.mail.send.tls=false
Starter.mail.send.identifier=
Starter.mail.send.secret=
Starter.mail.send.server=smtp://smtp.silogic.fr
Starter.mail.send.port=
Starter.mail.send.encoding=UTF-8
Starter.mail.send.admin=jp.boignard@akka.eu

--= Application logs configuration
Starter.Logging.configFile=./conf/properties/sitools-logging.properti

```

```
--= Access logs configuration
Starter.LogService.outputFile=./logs/sitools-log-service.log
Starter.LogService.levelName=FINEST
Starter.LogService.logName=sitools.server
Starter.LogService.logFormat=
Starter.LogService.active=true

--= status service configuration
Starter.StatusService.HOME_REF=/client-user/index.html
Starter.StatusService.CONTACT_MAIL=jp.boignard@akka.eu
Starter.StatusService.TEMPLATE=status.ftl

--= Tunnel service GET ?method=OPTIONS/HEAD
Starter.TunnelService.MethodTunnel=true

--= Constants for Solr indexation
Solr.minSuggestNb=1
Solr.maxSuggestNb=10

--= Tunning Restlet connections
Starter.maxTotalConnections=16
Starter.maxConnectionsPerHost=8

--= Portal model parameters
Portal.name=Default portal
Portal.description=Default portal description
Portal.id=idPortal

--= Client index page
Starter.client-user.portalIndex=portalIndex.ftl
Starter.client-user.projectIndex=projectIndex.ftl

--= Temporary folder
Starter.APP_TMP_FOLDER_DIR=/tmp

--= Admin folder
Starter.APP_ADMIN_FOLDER_DIR=/adminData

```

```
--= Home directory folder for Sva
Starter.APP_SVA_ORDER_DIR=/svas_orders
Starter.APP_SVA_DIR=/svas_data_services

--= Default userstorage size, in Bytes
Starter.userStorageSize=100000000

--= Order Timestamp Pattern
Starter.orderTimestampPattern =yyyy-MM-dd_HH-mm-ss

--= TESTS

Tests.PGSQL_DATABASE_DRIVER=org.postgresql.Driver
Tests.PGSQL_DATABASE_URL=jdbc\:postgresql\://odysseus2.silogic.fr\:54
Tests.PGSQL_DATABASE_USER=sitools
Tests.PGSQL_DATABASE_PASSWORD=sitools
Tests.PGSQL_DATABASE_SCHEMA=sitools

Tests.MYSQL_DATABASE_DRIVER=org.gjt.mm.mysql.Driver
Tests.MYSQL_DATABASE_URL=jdbc\:mysql\://odysseus2.silogic.fr\:3306/cn
Tests.MYSQL_DATABASE_USER=root
Tests.MYSQL_DATABASE_PASSWORD=mysql

--= Feeds parameters
Starter.feed_nb_items_send=20

--= Plugins parameters
Starter.plugins.suppressWarning=false

--=Security parameters
Security.Intranet.net=192.168.1.0|127.0.0.0
Security.Intranet.mask=255.255.255.0
Security.Intranet.ADMIN=true
Security.Intranet.USER=false
Security.Intranet.SYSTEM=true
Security.Intranet.SYSTEM_DYNAMIC=true
Security.Intranet.ADMIN_DYNAMIC=true
Security.Intranet.USER_DYNAMIC=false
```

2. def.js file in client-admin/js directory

The different variables that can be configured are the following:

- DEFAULT_TIMEOUT: server request timeout in msec
- DEFAULT_TIMEBUF: time to wait before sending request
- DEFAULT_NBENTRY: number of request retries when a failure happens
- LOCALE: choice of language
- DEFAULT_DATE_FORMAT: the default date format
- DEFAULT_HELP_WIDTH: the width of the help window
- DEFAULT_HELP_HEIGHT: the height of the help window
- ADMIN_PANEL_HEIGH: Height of the administration panel
- ADMIN_PANEL_NB_ELEMENTS
- SHOW_HELP: active help by default
- COOKIE_DURATION
- SITOOLS_DATE_FORMAT : the default date format
- SITOOLS_DEFAULT_IHM_DATE_FORMAT
- JAVA_TYPES

3. def.js file in client-user/js directory

The different variables that can be configured are the following:

- DEFAULT_TIMEOUT: server request timeout in msec
- DEFAULT_TIMEBUF: time to wait before sending request
- DEFAULT_NBENTRY: number of request retries when a failure happens
- DEFAULT_WIN_WIDTH: the width of the window
- DEFAULT_WIN_HEIGHT: the height of the window
- DEFAULT_WINORDER_WIDTH
- DEFAULT_ORDER_FOLDER
- DEFAULT_PREFERENCES_FOLDER

- DEFAULT_LIVEGRID_BUFFER_SIZE: number of retrieved elements in the live-grid buffer
- WARNING_NB_RECORDS_PLOT
- URL_CGU: URL where Terms&Conditions document is located
- COOKIE_DURATION
- MULTIDS_TIME_DELAY
- SITOOLS_DEFAULT_PROJECT_IMAGE_URL
- DEFAULT_LOCALE
- SITOOLS_DATE_FORMAT
- SITOOLS_DEFAULT_IHM_DATE_FORMAT

4. sql2ext.properties in client-user/conf

To handle data type in the web client, we need to map data type coming from the relational database to ext-js data type. The sql2ext.properties file contains this list of mapping.

5. Supporting new languages

SITools2 supports English and French language. To support another one, the administrator will need to add a new directory in the client-public/res/18n.

3. Deployment

1. How to deploy on a server with the host name example.com without apache proxy

To open SITools2 on a server having the following properties:

- accessible on example.com
- the port number 8182 is opened
- there is no security proxy
- there is no apache in front of SITools2

You have to configure the following variables in sitools.properties:

- Starter.HOST_DOMAIN=example.com|localhost|127.0.0.1
- Starter.PUBLIC_HOST_DOMAIN=http://example.com:8182
- Starter.HOST_PORT=8182
- Starter.NONPROXY_HOSTS=example.com

2. How to deploy on a server with the host name example.com with apache proxy

To open SITools2 on a server having the following properties:

- accessible on example.com
- the apache proxy is opened on port 80 and make a redirection on 8182 for SITools2
- there is no security proxy

You have to configure the following variables in sitools.properties:

- Starter.HOST_DOMAIN=example.com|localhost|127.0.0.1
- Starter.PUBLIC_HOST_DOMAIN=http://example.com
- Starter.HOST_PORT=8182

- Starter.NONPROXY_HOSTS=example.com

4. Current limitations

In this version, some limitations have been identified. These limitations are known and they can cause problems. Nevertheless, we preferred to add new functionalities in the software rather than spend time to fix these problems. The list of limitations is the following:

- When dataset is removed or renamed, some applications depending on it might not updated
- The response time of the system is limited by the database system (databases must be tuned)
- HTTPS protocol has been implemented but not very well tested
- IPV6 is not supported for the filter on the administration web page access
- The output of the converter cannot be filtered
- Internet Explorer is not supported