

Gatlet Administration Manual

An administration manual for grid portals based
on Gatlet and GridSphere

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User Management

One common aspect of portals is the management of users. Portals are usually created for users and provide personalized information to them. User data is mandatory for security issues like authentication and authorization. The current version of Gatlet is using GridSphere as portlet container that is shipped with a user management.

The following chapter will give you a short overview about the User Account Manager and the Role Manager of GridSphere that builds together the user management for Gatlet based portals. For a deeper look we recommend to read the GridSphere Documentation (<http://docs.gridsphere.org/>).

User Account Manager

Within the User Account Manager you can create/edit/delete/disable user's that can access the portal. Here you can find two views: "Display Users" and "Edit User Information".

Display Users View

This list shows all users that are managed by the portal.

The screenshot shows the 'User Account Manager' interface. At the top, there's a title bar 'User Account Manager'. Below it, the main heading is 'Display Users'. There's a link 'Create a New User 1'. Below that, there's a search area with 'Users per page' set to 10, 'Email contains:' field, 'in organization:' field, and a 'Display' button. Below the search area is a table with the following columns: 'Select', 'Edit User', 'User Name', 'Email Address', 'Organization', 'Total logins', and 'Last login'. The table contains several rows of user data. At the bottom of the table, there's a pagination bar showing 'Page 1 out of 68' and a list of page numbers from 1 to 68. Below the pagination bar are two buttons: 'Delete User(s)' and 'Send Email'.

Figure 1 User Account Manager: Display Users

1: Click on this link to go to the *Edit User Information* view and create a new portal user.

2: Display button: A click on this button refreshes the user table. The displayed users can be filtered by their email address or the organization they belong to.

3: Delete User(s) button: A click on this button will remove all selected users from the portal.

4: Send Email button: A click on this button will send a notification mail to the selected users.

Edit User Information View

This view gives you the ability to create new or edit existing user data. An important field is the CERTIFICATE where you have to insert the Distinguish Name (DN) of the user's certificate. Based on the DN the user can login to the portal with his certificate that is stored in his browser. Alternatively he can use a username and password to login. Both can be entered in this view.

A portal user can be a member of several roles. Select the suitable checkboxes to assign a role to a user (see Role Management). The roles can be used to restrict access of tab/portlets.



Edit User Information	
User Name	Foo
First Name	Foo
Last Name	Bar
Email Address	foo@bar.de
Organization	Earth
Disable account?	<input type="checkbox"/>
<input checked="" type="checkbox"/>	USER
<input type="checkbox"/>	ADMIN
<input type="checkbox"/>	VO_/astrogrid
<input type="checkbox"/>	VO_/dgtest
<input type="checkbox"/>	VO_/bwgrid
<input type="checkbox"/>	VO_/kerndgrid

Figure 2 User Account Manager: Edit User Information

Role Manger

GridSphere is using the concept of roles for authorization. By default, GridSphere provides two roles: USER and ADMIN. Generally every user receives the USER role, while the portal administrator has the role of ADMIN. A Role Manager portlet is accessible to portal administrators for creating/deleting roles and assigning roles to users. The Layout Manager portlet allows every layout component to be assigned a required role, ensuring that only users with the particular role may have access to the portlet, content, menu item, etc.

In grid computing VOs are used to group users, which share common concerns and requirements. The relationship of VOs and Users are important for the operation of grid services because it defines which user can access which grid resources.

Because portal users are managed by GridSphere there must be a way to map these users to the VOs they belong to. For each VO a GridSphere role has to be created. The GridSphere role must start with the prefix **VO_** otherwise Gatlet will not recognize it as a VO.

Example: *VO_/bwgrid* must be the role name for the VO bwGrid.

Display Roles View

This view shows all roles (respectively VOs) managed by GridSphere. Here you can also choose, which roles are automatically assigned to a new use (“Make default”).

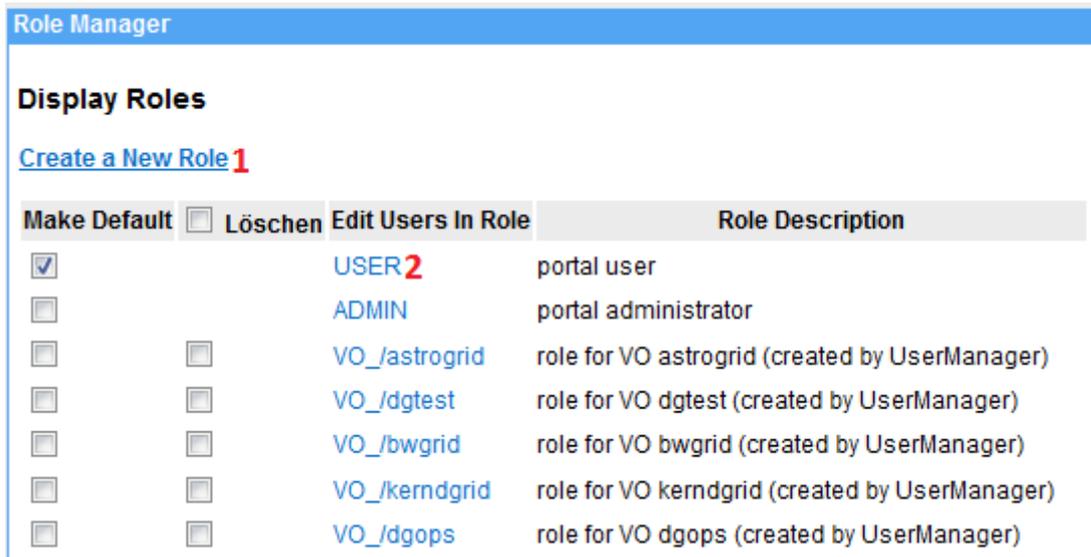


Figure 3 Role Manager : Display Roles

- 1: Create new Role Link: A click on this link will direct you to the “Edit Role Information View”
- 2: Edit Users in Role Link: A click on this link will direct you to the “Edit Users with Role View”

Edit Role Information View

View for creating a new role. If you want to create a new VO use the prefix **VO_** in the role name.

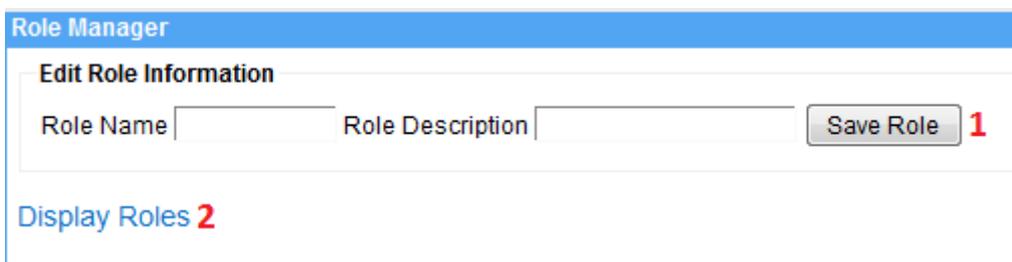


Figure 4 Role Manager: Edit Role

- 1: Save Role button: A click on this button saves the role name and description.
- 2: Display Roles Link: A click on this link will lead back to the *Display Roles View*

GridSphere -> Gatlet Data Synchronization

GridSphere and Gatlet are two independent frameworks. A grid portal built on top of these two frameworks (as this documentation is about) is loosely coupled and reaches a good extensibility, maintainability and testability. The loose coupling is reached by limited usage of GridSphere libraries in Gatlet and by the usage of two separate databases.

As mentioned earlier the administration of portal users is done by the User Account Manager and the Role Manager of GridSphere. All user data and role mappings will be initially stored in the GridSphere database.

Gatlet is a framework for accessing grid resources. The access to these resources is restricted to users with a valid grid certificate. Authentication and authorization are important aspects in grid computing and they are based on user data. Gatlet is shipped with its own database where grid users, VOs, clusters and relationships among them are persisted.

In fact that Gatlet has no user management there must be an approach how the framework can obtain the user data from Gridsphere. Currently a Synchronizer will do this job by comparing the two databases.

As you can see in the graphic below, the synchronizer will copy users, roles and user-role relationship from GridSphere to the Gatlet database. The synchronization of roles and VOs is based on the name of the role. The role "VO_/bwgrid" will be transformed to the unique VO name "/bwgrid". The synchronization of users is based on the users ID used in GridSphere. Gatlet will only contain users that have used a Gatlet portlet. If a new user logs in, then Gatlet will create him in the Gatlet user database and then immediately synchronize it. Gatlet offers the attribute AuxiliaryID, which holds the unique id of the GridSphere user. The synchronizer will also check every time all roles (respectively VO) memberships of a GridSphere user and adjust them in Gatlet.

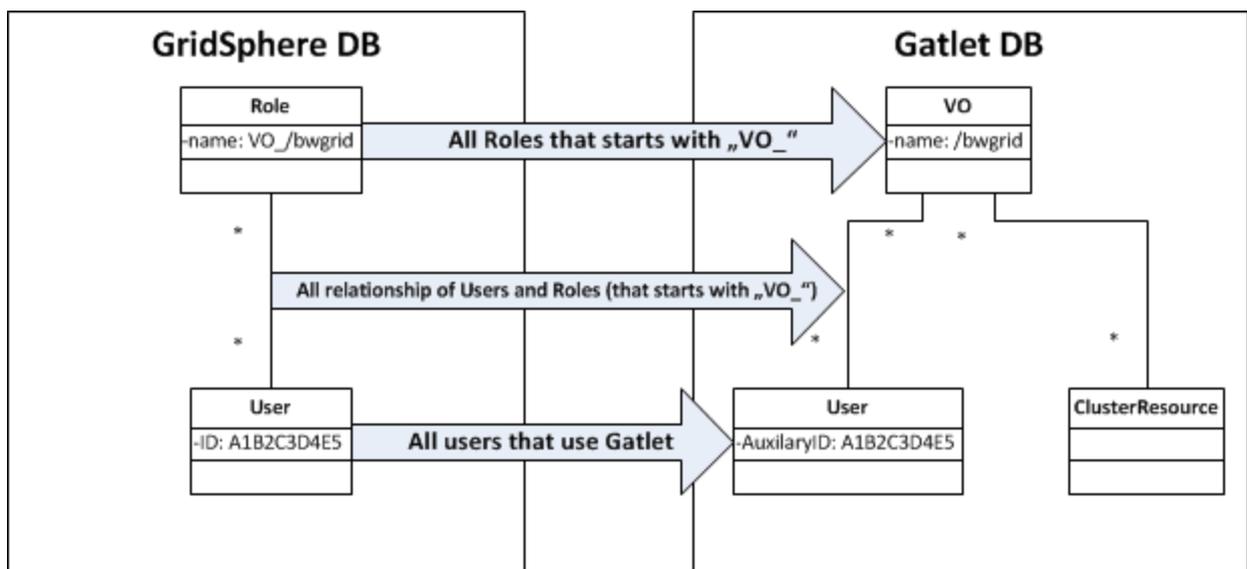


Figure 5 GridSphere to Gatlet Synchronizer

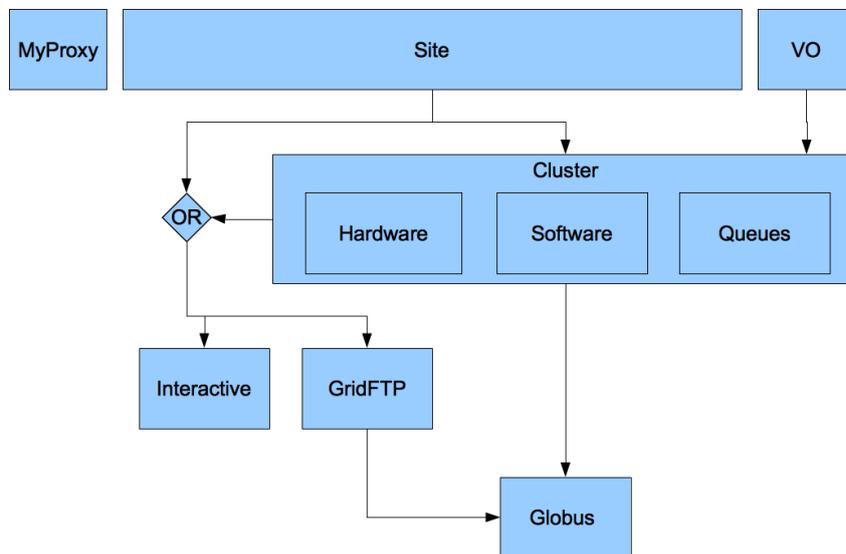
Because the synchronizing process costs performance and time the synchronizer is running only in the following situations:

- after the portal start

- on a repetitive based on a configurable time interval.
- triggered by the portal administrator (see Configuration portlet)
- triggered when a portal user has been logged in the first time to the portal

Resource Management

The grid resource management is done in Gatlet. Gatlet is using a hierarchical resource structure. In the first row are the resources that are not depending on any other resource (MyProxy, Site, VO). The resources will be introduced in this section. In the second row is the Cluster resource. A Cluster resource is always assigned to a Site and you can assign multiple VOs. In the third row are the Interactive and the GridFTP resource. They can be either assigned to a Site or to a Cluster. Usually they are assigned to a Cluster, but, e.g. for a central storage that doesn't belong to one cluster, they can be assigned to a Site. Finally in the last row is the Globus resource. A Globus resource is always assigned to a Cluster and it also needs a GridFTP resource.



Site

A Site is an institution, which comprises a computing center that offers resources for the grid. A Site can run multiple clusters and Gatlet use this type of resource to map existing grid structures to the internal database:

Table 1 Site parameters

Available	Marks this site and its sub resources as useable for the user
Label	The name of the site
Description (en)	Some further information about the site in English
Description (de)	Some further information about the site in German

Cluster

A cluster is a group of linked computers, working together closely thus in many respects forming a single computer. A cluster offers specific **Hardware** and **Software** to the user. Incoming jobs are appended and scheduled by a set of **Queues**, which are managed by a local resource manager (LRM). For authorization issues a cluster is mapped to a set of Virtual Organizations (**VOs**). A grid user must be a member of at least one of these VOs to gain access to the cluster.

Table 2 Cluster parameters

Available	Marks this site as useable for the user
Label	The name of the site
Description (en)	Some further information about the site in English
Description (de)	Some further information about the site in German

Cluster/Hardware

You can define the hardware components for mapping the available hardware. If you have a heterogeneous cluster you can define multiple hardware entries. (They are later assigned to the available queues.)

Table 3 Hardware parameters

Name	The name of the hardware
CPU architecture	The CPU architecture (e.g. x86_64, i686)
CPU SSE	The CPU SSE Version (e.g. sse2, sse3, sse4_1)
CPU vendor	The CPU vendor (e.g. Intel, AMD)
CPU model	The CPU model (e.g. Xeon, Opteron)
CPU code name	The CPU code name (e.g. Harpertown, Nehalem)
CPU version	The CPU version (e.g. E5440, X5560, 875)
CPU clock speed [MHz]	The CPU clock speed in MHz (e.g. 2830 for 2.83 GHz per core)
Main Memory Size [MiB]	The size of the main memory of a node in MiB (e.g. 16,384 for 16 GiB RAM)
OS family	The operation system family (e.g. Linux)
OS name	The name of the operating system (e.g. Scientific Linux)
OS version	The version of the operation system (e.g. 5.5)
Physical cores per node	The number of physical cores per node (real cores, not the virtual cores given through hyper threading, e.g. 8)
Logical cores per node	The number of logical cores per node (real cores and the virtual cores given through hyper threading, e.g. 16)
total number of nodes	The total number of nodes with this hardware
local disk size [MiB]	The available local (node) disk size in MiB (e.g. 102,400 for 100 GiB node local hard disk)
local disk tmp dir	The path to the temporary directory on the local disk (e.g. /tmp)
local swap size [MiB]	The available (node) swap size in MiB (e.g. 16,384 for 16 GiB node local swap size)

Cluster/Software

Indicates the software that if available on the cluster. This information is used for filtering the queues. So if a portlet developer sets a software as job requirement, then the user will only see queues, where the requested software is available.

Table 4 Software parameters

Software	The software category, name, version. Please use here the module concept: category/software/version e.g.: * chem/gaussian/g09 * compiler/intel/11.1
Access rules	The access rules for the software, e.g.

	VO="/bwgrid" DN="/C=DE/O=GermanGrid/*.*
--	--

Cluster/Queues

Here you can define the queues that should be available for the users. You should only define queues, that are useable by the users (for example you should not define the fork queue to avoid a high load on the front end server).

Table 5 Queue parameters

Local resource manager	The local resource manager (scheduler, e.g. PBS)
Queue name	The real name of the queue (e.g. batch, user). This value is used, when submitting the job.
Label	The human readable name of the queue (e.g. single node, multi node, short, normal)
Target queue	The target queue is the queue, where the job should probably end in. It is used to reference the status of the queue.
min. CPU time [[d:hh:]mm[:ss]]	The minimum CPU time (e.g. 1:00:00 for 1 day)
max. CPU time [[d:hh:]mm[:ss]]	The maximum CPU time (e.g. 7:00:00 for 7 days)
min. wall time [[d:hh:]mm[:ss]]	The minimum wall time (e.g. 1:00:00 for 1 day)
max. wall time [[d:hh:]mm[:ss]]	The maximum wall time (e.g. 7:00:00 for 7 days)
min. nodes per job	The minimum number of nodes per job (e.g. 2)
max. nodes per job	The maximum number of nodes per job (e.g. 8)
max. queued jobs per user	The maximum number of queued jobs in this queue per user (e.g. 100)
max. running jobs per user	The maximum number of running jobs in this queue per user (e.g. 10)
Scheduling policy	The scheduling policy within this queue (e.g. fairshare, FIFO, unknown)
Access rules	The access rules for the queue e.g. VO="/bwgrid" DN="/C=DE/O=GermanGrid/*.*
Assigned hardware	Hardware accessible by this queue
Assigned software	Software available with this queue

Cluster/VOs

Indicates the VOs that are allowed to use the cluster. A user must be in at least one VO that is assigned here that he will see this cluster.

MyProxy

MyProxy is open source software for managing X.509 Public Key Infrastructure (PKI) security credentials. The MyProxy resources are used for security issues needed by the Globus Toolkit and gLite Middleware services.

Table 6 MyProxy parameters

Available	Marks this resource as useable for the user
Label	The name of the MyProxy resource
Description (en)	Some further information about the MyProxy on English
Description (de)	Some further information about the MyProxy on German

Host	The hostname or IP of the resource (e.g. myproxy.lrz-muenchen.de)
Port	The port to which the resource is listening (e.g. 7512)

VO

In Grid computing, a Virtual Organization (VO) refers to a dynamic set of individuals and/or institutions defined around a set of resource-sharing rules and conditions. All these virtual organizations share some commonality among them, including common concerns and requirements, but may vary in size, scope, duration, sociology, and structure.

The VO is a central resource type and their instances are reference by clusters. The Gatlet user is commonly a member of at least one VO. The knowledge of the user VOs and the knowledge of the VOs assigned to a cluster can be used to show the user only that resource that fits to his VOs.

Tabelle 7 VO parameters

Available	Marks this VO as useable for the user
Label	The name of the VO (e.g. /aerogrid)
Description (en)	Some further information about the VO in English
Description (de)	Some further information about the VO in German

VOMS

VOMS is a system for managing authorization data within multi-institutional collaborations. VOMS provides a database of user roles and capabilities and a set of tools for accessing and manipulating the database and using the database contents to generate Grid credentials for users when needed.

Gatlet uses these credentials for accessing resources of the gLite middleware. The VOMS defines for each VO a specific port where the authorization data can be retrieved.

Tabelle 8 VOMS parameters

Available	Marks this VOMS as useable for the user
Label	The name of the VOMS (e.g. dgrid-voms.fzk.de)
Description (en)	Some further information about the VOMS in English
Description (de)	Some further information about the VOMS in German
Host	The hostname or IP of the resource (e.g. dgrid-voms.fzk.de)
Port	The port to which the resource is listening (e.g. 8080)
Distinguished Name	The distinguished name of the VOMS (e.g. /O=GermanGrid/OU=FZK/CN=host/dgrid-voms.fzk.de)

VO-Port mapping

The VOMS defines for each managed VO a separate port. A VO -Port mapping must be defined.

GridFTP

The aim of GridFTP is to provide a more reliable and high performance file transfer for Grid computing applications. GridFTP is an extension of the File Transfer Protocol for use with Grid computing.

GridFTP resources are referenced by middleware resources for pre-/poststaging of job files.

Available	Marks this GridFTP as useable for the user
Label	The name of the resource
Description (en)	Some further information about the GridFTP in English
Description (de)	Some further information about the GridFTP in German
Host	The hostname or IP of the resource (e.g. aprilia.izbi.uni-leipzig.de)
Port	The port to which the resource is listening (e.g. 2811)
Site/Cluster	The site or cluster to which the server belongs

SRM

The Storage Resource Management (SRM) is a specification for middleware components whose function is to provide dynamic space allocation and file management. This specification is implemented by a set of vendors like dCache or CASTOR. The Storage Resource Management (SRM) offers a third party transfer protocol between different endpoints which is used by Gatlet to access the storage resources and read and write files there.

Globus

The Globus Toolkit is an open source toolkit for building computing grids developed and provided by the Globus Alliance.

WMS

Workload Management Service

Interactive

This type of resource provides a GSI-SSH daemon. A user can connect with a proxy certificate to an interactive resource with a standard GSI-SSH client like GSI-SSHTerm. Gatlet is shipped with a GSI-SSHTerm applet and provides out of the box access to this resources.

Resource Portlet

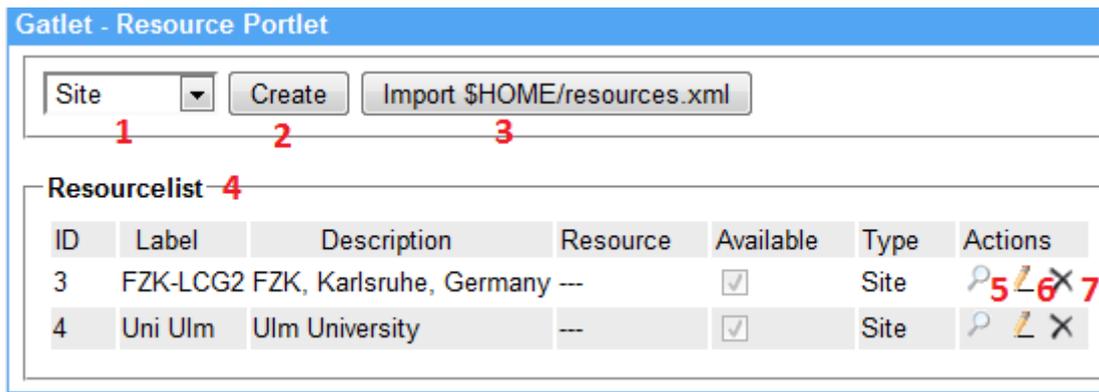
The grid is based on resources. There are several resource types (see chapter resource types) which are supported by Gatlet. With the Resource Portlet the administrator has a tool to create, update and view instances of the mentioned resource types.

The portlet consist of two views.

- A **Main View** where the administrator get access to the different types of resources.
- The **Detail View** where all attributes to a specific resource instance are shown. With this view the portal administrator create new instances of a resource type or edit an existing resource.

Main View

In the "Main View" you will see a list with all resources (4) of the selected type (1).



@TODO Update picture: Resourcelist --> resource list

1: Resource Type Selector: Shows all types of resources that are handled by Gatlet. A selection will refresh the resource list (5)

2: Button Create: Switch to the detail view of the selected resource type. The detail view is in creation mode. The administrator can enter data for a new instance of the selected resource type.

3. Imports a list of resources from an xml file. The file must be available in the home folder of the user that has started the portal server (see Import Resources)

4. Resource list table: Shows all instances of the selected resource type. All columns are sortable by a click on their title.

5. View Button: Click on the loupe to change to the detail view of the resource. The detail view is opened in view mode so no modifications are allowed.

6. Edit Button: Click on the pencil to change to the detail view of the resource. The detail view is opened in edit mode so the user can make changes on the resource.

7. Delete Button: Click on the cross to delete the resource. The portlet shows a dialog where the user must confirm the deletion.

Detail View

The detail view has three modes:

- view mode (shows the details read-only)
- edit mode (you can change the resource details)
- creation mode (you create a new resource)

View Mode

The view mode shows a resource in the read-only mode. The user cannot make changes to any of the resource parameters.

Gatlet - Resource Portlet

MyProxy Resource Details:

Available*:	<input checked="" type="checkbox"/>
Label*:	<input type="text" value="myproxy.lrz-muenchen.de"/>
Description (en):	<input type="text"/>
Description (de):	<input type="text"/>
Host*:	<input type="text" value="myproxy.lrz-muenchen.de"/>
Port:	<input type="text" value="7512"/>

Fields with * are required. **1**

1: Back Button: A click on the back button will lead the user back to the Main View.

Edit Mode

The edit mode shows a resource in editable mode. The user can make changes to any of the resource parameters. Mandatory fields are marked with a *. If the user leaves one of them blank an error message will occur during saving. An error message will also occur if an invalid value is entered in an input field.

Gatlet - Resource Portlet

MyProxy Resource Details:

Available*:

Label*:

Description (en):

Description (de):

Host*:

Port:

Fields with * are required.

1 2 3

1: Back Button: A click on the back button will lead the user back to the Main View.

2: Save Button: A click on the save button will store the values of the input fields into the database. The portlet will change to the main view.

3: Delete Button: A click on this button will delete the resource. The portlet shows a dialog where the user must confirm the deletion.

Creation Mode

In the creation mode a new resource instance can be created. All input fields are editable and predefined with standard values. Mandatory fields are marked with a *. If the user leaves one of them blank an error message will occur during saving. An error message will also occur if an invalid value is entered in an input field.

Site Resource Details:

Available*:

Label*:

Description (en):

Description (de):

Fields with * are required.

1 **2**

1: Back Button: A click on the back button will lead the user back to the Main View.

2: Save Button: A click on the save button will store the values of the input fields into the database. The portlet will change to the main view.

Naming Conventions for labels

We recommend that you use a convention for labeling your grid resources. The label is shown to the portal user at several places. Such a label should contain first the resource type, a label and the location to provide the user as much information as possible. Gatlet is only using the defined label, because we want to avoid very long labels when concatenating the label (e.g. Uni Ulm/bwGRiD cluster/Globus server). It's better to use one significant label (e.g. Globus bwGRiD Ulm) that contains all information.

@TODO Beispiele überarbeiten

E.g.: MyProxy Server Ulm, MyProxy Server Munich

e.g.: Site Uni Ulm, Site HS Esslingen, ...

e.g.: Cluster bwGRiD Ulm, Cluster bwGRiD Esslingen, ...

GridFTP bwGRiD Ulm, GridFTP bwGRiD Esslingen, ...

Import resources

All resources can be imported from an xml file within the Gatlet Resource Portlet to the Gatlet database. For a closer look on the structure of the xml we refer to view the Schema Definition. Currently the file has to be stored in \$USER_HOME/resources.xml of the portal server.

Each resource has its unique id (UUID). When importing an xml file with the resources, the resources are referenced by this unique id. So you can re-import the file multiple time and this will only reset/update the corresponding resources.

@TODO Referenz auf XSD/DTD oder eine Besispieldatei

Example of a resource import file:

- same structuring (Site/Cluster/resources):

```
<?xml version="1.0" encoding="UTF-8"?>
<gatletResourceDescription>
  <siteResource id="2863489e-7dda-4d4f-a28b-4642ec896007">
    <available>true</available>
    <label>Site Uni Ulm</label>
    <description><![CDATA[UlM University]]></description>
    <description_de><![CDATA[Universität UlM]]></description_de>
  </siteResource>
  <clusterResource id="059a7dff-4705-44c0-8db0-581da76fe70a">
    <available>true</available>
    <label>Cluster bwGRiD Ulm</label>
    <description><![CDATA[...]]></description>
    <description_de><![CDATA[...]]></description_de>
  </clusterResource>
  <hardwareResource id="341c3542-7663-4570-96ad-582691646e37">
    <name>HW Harpertown-2.8</name>
  </hardwareResource>
  ...
</gatletResourceDescription>
```

```
</hardwareResource>  
<gridFtpResource id="a017e273-fc51-4160-85f6-f396c252e842">  
  ...
```

Configuration Portlet

This portlet is the place where you can make changes to the runtime behavior of Gatlet. These changes will be saved in a configuration file which is located in the home directory of the user that starts the portal (\$USER_HOME/.gatlet/gatlet.properties). You can also edit this file manually to make changes to the runtime of Gatlet.

In the following section the different parameters will be explained in detail.

Gatlet - Admin Config Portlet

Global Gatlet Configuration

Gatlet information	
Gatlet version:	3.0
Gatlet deploy directory:	gatlet
Server/pathes	
Portal server host:	
HTTP port:	8080
TrustedCAs file:	C:/Users/bozic/trustedCAs
Server certificate file:	
Server certificate key file:	
GAT adaptor path:	d:/projekte/GAT_gatlet/lib/adaptors
Automatic resource disabling:	<input checked="" type="checkbox"/>
Proxy configuration	
Use Proxy:	<input type="checkbox"/>
Proxy host:	
Proxy port:	
NTP time check	
last time check:	February 9, 2011 10:10:06 AM CET
last time diff:	0.01480 s
NTP Server:	1.rhel.pool.ntp.org
NTP Port:	123
Check interval [min]:	5
Max. variance [s]:	10
Threading	
Max. parallel running job submits:	3
Max. parallel running resource status updates:	3
Resource status update interval [min.]:	5
Job refresh timeout [s]:	5
User File Timeout [s]:	30

Figure6 Configuration Portlet

1: Synchronize database button: A click on the back button will start a synchronization of Gatlet and GridSphere. Gatlet has no own user management. The framework is using this feature from GridSphere where the portal users are saved in a portal database. The VOs are also saved as roles in the database. Additionally the relationship between VOs and Users are managed in the GridSphere database too. To use the latest user and VO data in the Gatlet portlets start synchronization.

2: run NTP check Button: Is used to check the synchronization of the portal server's time with the time of NTP Server. A precise server time is important because GAT is working with certificates, which have a limited lifetime. See NTP time check parameters for further details.

3: Save Button: A click on this button will save the configuration settings.

Table 9 Configuration Portlet: Gatlet Information

Gatlet version	Version information of running Gatlet.
Gatlet deploy directory	Prints the folder in the application server

Table 10 Configuration Portlet: Server/Security settings

Portal server host	Prints the fully qualified portal server.
HTTP port	The HTTP port of the webserver (used to load the applets via the HTTP connection instead of using HTTPS connection to avoid the empty "select certificate" window of Java).
Trusted CAs file	The path to the keystore containing the trusted CAs (public keys of the root certificates that are accepted by the portal)
Server certificate file	Path to the portal server certificate file. This file is used (together with "Server key file") to access the MyProxy servers (some MyProxy will only create credentials if the portal server has an authorized certificate). This file must be in PEM format.
Server key file	Path to the portal server certificate key file. This file is used (together with "Server certificate file") to access the MyProxy servers (some MyProxy will only create credentials if the portal server has an authorized certificate). This file must be in PEM format and it must not have a password.
GAT adaptor path	An absolute path to the GAT adaptors directory. By default its located in <code>#{GAT_LOCATION}/lib/adaptors</code> .
Automatic Globus resource disabling	Here you enable/disable the automatic Globus resource disabling if the resource is not answering/enabling if the resource is answering again.

Table 11 Configuration Portlet: Proxy configurations

Use Proxy	Indicates if the portal server is behind an http proxy.
Proxy host	The host name or IP of the proxy server.
Proxy port	The port of the proxy server.

Table 12 Configuration Portlet: NTP time check settings

Last time check	Shows the timestamp of the last NTP check.
Last time diff	Shows the last time difference between the portal server and the remote NTP server.

NTP Server	The NTP host name or IP for time checks.
NTP Port	The NTP server port for time checks.
Check interval [min]	Specifies the NTP check interval: the time between two NTP time checks (in minutes).
Max. variance [s]	Specifies the maximum variance for the time difference between the portal server and the remote NTP server in seconds.

Threading

Table 13 Configuration Portlet: Threading settings

Max. parallel running job submits	Specifies the number of jobs that can be submitted parallel by the portal. Be careful with this parameter. A value chosen to low can create a bottleneck and a long queue with waiting jobs. A value chosen to high will adopt too many system resources.
Max. parallel running resource status updates	Specifies the number of parallel job status updates that can be handled by the portal. Be careful with this parameter. A value chosen to low can create a bottleneck and a long queue with waiting jobs. A value chosen to high will adopt too many system resources.
Resource status update interval [min]	Specifies the interval for resource status checks. Currently refreshing the status of Globus Installations via MDS
Job refresh timeout [s]	Specifies the time after that the job refresh will be continued in background. So the user must not wait (e.g. for a timeout) until he can continue. The portal will show a “refreshing” icon and, after the refresh is finished, the result of the refresh.
User File Timeout [s]	Specifies the file time out when the user accesses a remove file (e.g. in the File Browser Portlet). If the timeout is reached, the user will get an error message that the resource is currently not answering an he should try it later.

Resource Monitor Portlet

The Resource Monitor Portlet provides information about the status of Globus resources. This information contains the status of the queues available at the resources with the date of the last successful status.

An update mechanism takes care that continuously the queue status of all Globus resources will be refreshed. This will be done by an asynchronous task that asks the Monitoring and Discovery System (MDS) of the Globus resources. In the case that the MDS of a resource is not answering the associated Globus resource will be deactivated. This prevents that portal user will submit jobs to resources that are not available.

Ressourcen Monitor Portlet

44 Ressourcen gefunden

resource	Irm	queue	total CPUs	free CPUs	running jobs	waiting jobs	
gt4-fzk.gridka.de	PBS	dgiseq	9258	14	0	0	14. Februar 2011 15:55:15 MEZ
gt4-fzk.gridka.de	Fork	default	2	0	0	0	14. Februar 2011 15:55:15 MEZ
Globus Server Ulm	PBS	batch	no queue status available				
Globus Server Ulm	PBS	math	no queue status available				
Globus Server Ulm	PBS	long	2240	7	0	0	14. Februar 2011 15:55:16 MEZ
Globus Server Ulm	PBS	user	2240	7	0	0	14. Februar 2011 15:55:16 MEZ
Globus Server Ulm	PBS	matlab	2240	7	0	0	14. Februar 2011 15:55:16 MEZ
Globus Server Ulm	PBS	quick	2240	7	0	0	14. Februar 2011 15:55:16 MEZ
Globus Server Ulm	PBS	normal	2240	7	170	464	14. Februar 2011 15:55:16 MEZ
gridcluster	PBS	gditest	480	2	0	0	14. Februar 2011 14:04:22 MEZ
gridcluster	PBS	dgipar	480	2	0	0	14. Februar 2011 14:04:22 MEZ
gridcluster	PBS	gditest	480	2	0	0	14. Februar 2011 14:04:22 MEZ
gridcluster	PBS	dgiseq	480	2	416	0	14. Februar 2011 14:04:22 MEZ
gridcluster	PBS	ivs	480	2	0	0	14. Februar 2011 14:04:22 MEZ
aprilia	Fork	default	4	0	0	0	14. Februar 2011 14:04:22 MEZ
mardschana	Fork	default	no queue status available				
mardschana	PBS	batch	no queue status available				
mardschana	PBS	jb	no queue status available				
mardschana	PBS	express	no queue status available				

Figure 7 ResourceMonitor Portlet

Admin Job Portlet

The Admin Job Portlet gives administrators the ability to search job in the Gatlet database and show the job details (e.g. when user reports problems with a job).

Admin: Job Search

Search with Gatlet JobId

JobId: 1

General search

User: Status: Job name: Visibility:

2

Admin: Job Search

Search result

Gatlet JobId:	Job name:	Resource:	Scheduler:	Queue:	Job State:	Submission time:	Visible:	
4	GlobusTestJob2	gt4-fzk.gridka.de	---	dgiseq	DONE_SUCCESS	MEZ 2011-02-14 16:02	yes	Bozic, Stefan (/C=DE/O:
3	gLiteTestJob2	---	---	---	UNKNOWN	---	yes	Bozic, Stefan (/C=DE/O:
2	gLiteTestJob1	---	---	---	SCHEDULED	MEZ 2011-02-14 16:01	yes	Bozic, Stefan (/C=DE/O:
1	GlobusTestJob1	gt4-fzk.gridka.de	---	dgiseq	DONE_SUCCESS	MEZ 2011-02-14 16:01	yes	Bozic, Stefan (/C=DE/O:

1: Search for JobId button: Enter a valid jobId in the leading text field (e.g. if you see problem with a job in the log files or a user tells you, that a job has problems). Click the button to search for the job information corresponding to the given job id.

2: General search button: Click this button to search for user jobs that fits to the entered filter settings. The administrator has the possibility to filter for a specific user, job states, job names and type of visibility.

Appendix A: Gatlet Job states

Gatlet supports Globus and gLite and each middleware come with its own set of job states. To provide the user a middleware independent view on his jobs, Gatlet is hiding the specific states by transferring them to a Gatlet job model. See the table below which states are supported by Gatlet.

PRE_SUBMIT	initial state
SUBMITTING	Gatlet is preparing to submit the job.
SUBMITTING_ABORTED	Gatlet was unable to submit the job
INITIAL	Job has been submitted by Gatlet and has the state initial on the middleware
PRE_STAGING	Job is pre staging files
READY	Job has been assigned to a computing element but not yet transferred to it
SCHEDULED	Job is scheduled to the local resource manager (e.g. PBS) of the cluster
RUNNING	Job is running on the cluster
SUSPENDED	Job is suspended
POST_STAGING	Job is done and post staging files
CLEARED	output sandbox was transferred to the user or removed due to the timeout
SUBMISSION_ERROR	Error while job submission
ABORTED	Job was aborted from the server
CANCELED	Job was canceled by user
DONE	Job is finished with unknown result
DONE_SUCCESS	Job finished with success
DONE_FAILURE	Job finished with a failure
UNKNOWN	Job status is unknown