

# Sharing and Security

## Contents

- [Secure JobServer with https and Username/Password Authentication](#)
- [JobServer: TaskServers Administration to Enable Secure Communication](#)
- [TaskServer: JobServers to Enable Secure Communication](#)
- [JobServer: TaskServers to Change the Address from http to https](#)

The JobServer is designed to facilitate data exchange between the user interface and the TaskServer; it also allows you to get quick access to monitor the progress of your computations, even if you are away from the originating machine. You can equally share results and models with your coworkers.

The JobServer offers both insecure (http) and secure (https) communication. The latter requires you to install a proper SSL security certificate on JobServer and or TaskServer. There is a placeholder certificate included, which works to show functionality, but does not offer any security.

In addition to securing the communication, the JobServer can require usernames and password, and restricts each user to see and control his or her jobs.

If security reasons require you to keep results confidential, there are certain things to keep in mind when installing *MedeA*, including to limit access to the machines involved in generating and executing your calculations and secure the communication between those machines and require usernames.

Please keep in mind that if you forget the password to access the JobServer you wouldn't be able to access your results and calculations. In this case, you would need to back up the Jobs directory and MDJobs.db and reinstall JobServer.

## 1 Secure JobServer with https and Username/Password Authentication

The following section is for IT administrators and persons with a solid understanding of securing webserver.

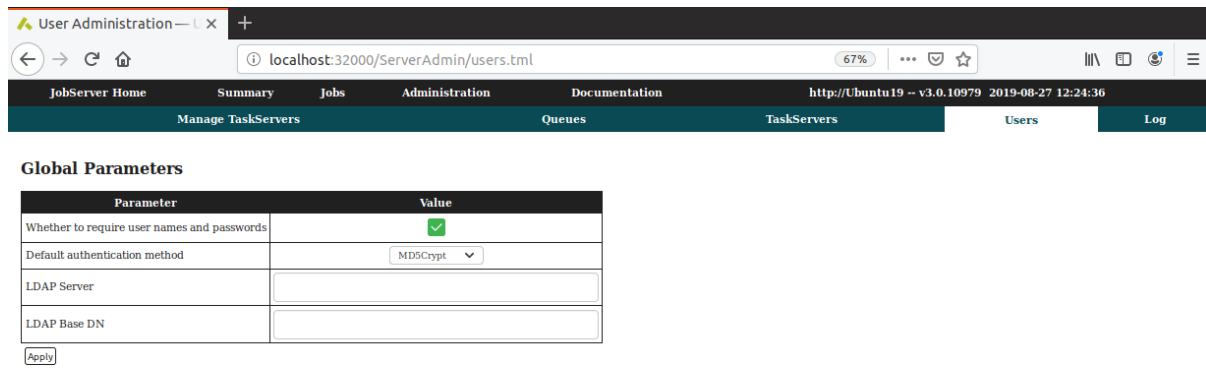
Before securing the JobServer, make sure that the installation works for more than one user and the queuing system integration is completed, which means each user needs at least on separate TaskServer. You can use the MDMaintenance program to set up multiple TaskServers from a shared directory and run as different user instances. Once this is sufficiently tested, you can continue to secure the *MedeA Environment* with the following steps:

- Obtain a valid SSL certificate and save on the JobServer as `MD/2.0/JobServer/certificates/JobServer.pem` and on each TaskServer as `MD/2.0/TaskServer/certificates/TaskServer.pem` folder. Each `.pem` file must contain a private key and a SSL certificate.
- Add usernames to JobServer
- Add usernames to TaskServer
- Turn on username/password authentication on JobServer
- Restart JobServer

- Turn on username/password authentication on TaskServer
- Restart TaskServer
- Edit List of TaskServer and switch address from http to https.
- In *MedeA* GUI change address of JobServer from http to https. The list of JobServer is found at **File** >> **Preferences** ... in the **JobServer** tab

## 1.1 JobServer: Users Administration to Define Authorized Users

Navigate to the User page of the JobServer (<http://localhost:32000/ServerAdmin/users.tml>).



Parameter	Value
Whether to require user names and passwords	<input checked="" type="checkbox"/>
Default authentication method	MD5Crypt
LDAP Server	
LDAP Base DN	

Apply

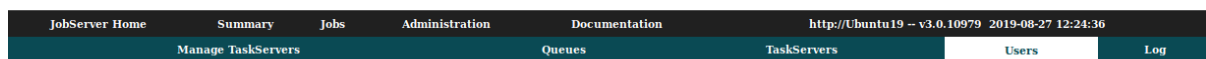
### JobServer "user" and password

This JobServer needs to communicate with the TaskServers that it uses. It will do so as the user 'Ubuntu19', using the password that you give below. You will need to add the user 'Ubuntu19' with the same password to the TaskServers using the JobServers page in each TaskServer's management section. Since this JobServer does not have an account with the TaskServer, you may need to access it directly using your browser. Typically TaskServers work on port :23000

"User" Name	Password	Change?
medea.local	****	<input type="button" value="Change"/>

### Users

User	Display Name	Active?	Authentication	Password	Administrator?	Change?
root	Administrator	<input checked="" type="checkbox"/>	MD5Crypt		<input checked="" type="checkbox"/>	<input type="button" value="Update"/>
		<input checked="" type="checkbox"/>	MD5Crypt		<input type="checkbox"/>	<input type="button" value="Add User"/>



The first section defines whether and how to require user names and passwords.

The authentication can be done via **md5crypt**, **apachecrypt**, or **LDAP**.

When requiring usernames, you must provide a shared entity to communicate between JobServer and TaskServers, that is the "JobServer" "user".

In the Users sections, you can add the users allowed to work on this JobServer; if not provided by LDAP, the usernames and passwords must be entered here.

### TaskServer: Users Administration to Define Authorized Users

Continue with defining users on the TaskServers. Navigate to the User page of the TaskServer (<http://localhost:23000/ServerAdmin/users.tml>).

TaskServer Home Tasks Administration JobServers Log

**Global Parameters**

Parameter	Value
Whether to require user names and passwords	<input type="checkbox"/>
Default authentication method	MD5Crypt
LDAP Server	
LDAP Base DN	

---

**TaskServer "user" and password**

This TaskServer needs to communicate with the JobServers that use it. It will do so as the user 'Ubuntu19', using the password that you give below. You will need to add the user 'Ubuntu19' with the same password to the JobServers using the TaskServers page in each JobServer's management section.

"User" Name	Password	Change?
medea.local	[Redacted]	<input type="button" value="Change"/>

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**Users**

User	Display Name	Active?	Authentication	Password	Administrator?	Change?
medea	medea	✔	MD5Crypt		<input type="checkbox"/>	<input type="button" value="Update"/>
root	Administrator	✔	MD5Crypt		✔	<input type="button" value="Update"/>
		✔	MD5Crypt		<input type="checkbox"/>	<input type="button" value="Add User"/>

TaskServer Home Tasks Administration JobServers Log

The first section defines whether and how to require user names and passwords.

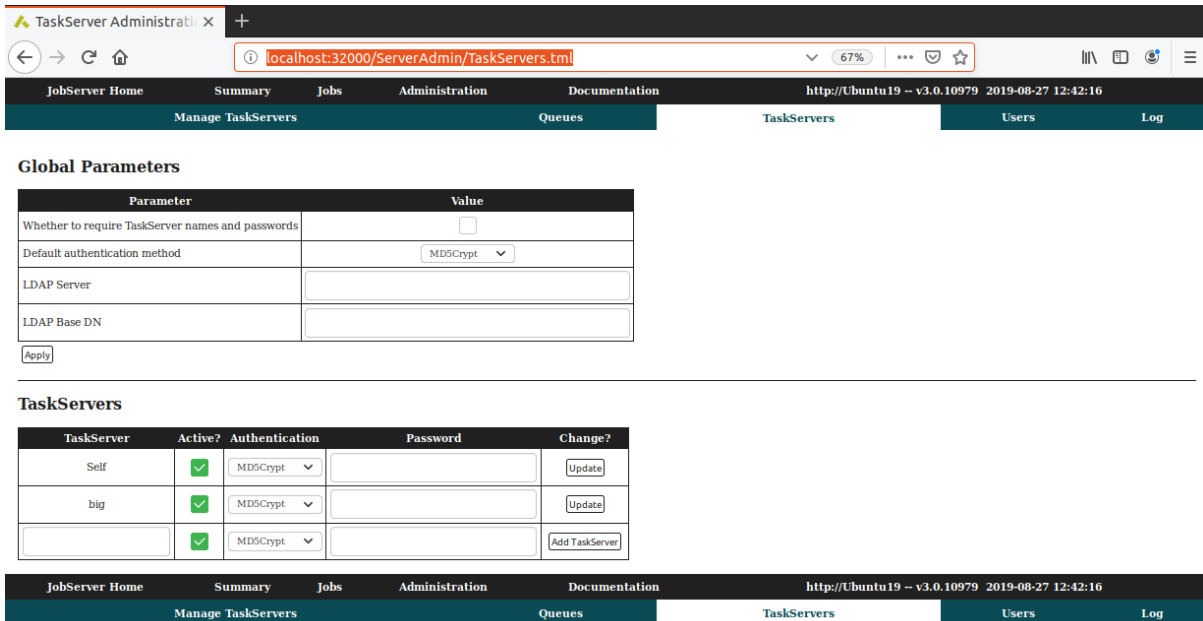
The authentication can be done via `md5crypt` , `apachecrypt` , or `LDAP` .

When requiring usernames, you must provide a shared entity to communicate between JobServer and TaskServers, that is the "JobServer" "user".

In the Users sections, you can add the users allowed to work on this JobServer; if not provided by LDAP, the usernames and passwords must be entered here;

## 2 JobServer: TaskServers Administration to Enable Secure Communication

Navigate to the TaskServers page of the JobServer (<http://localhost:32000/ServerAdmin/TaskServers.tml>).



The screenshot shows the 'TaskServer Administration' interface. The browser address bar is `localhost:32000/ServerAdmin/TaskServers.tml`. The navigation menu includes 'JobServer Home', 'Summary', 'Jobs', 'Administration', 'Documentation', 'TaskServers', 'Users', and 'Log'. The 'TaskServers' section is active.

**Global Parameters**

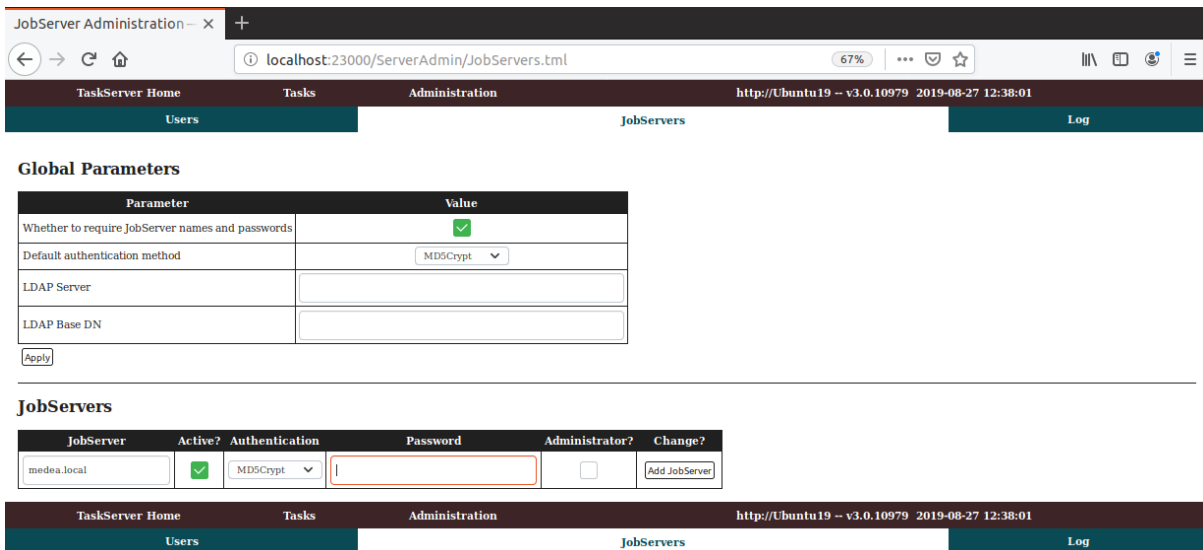
Parameter	Value
Whether to require TaskServer names and passwords	<input type="checkbox"/>
Default authentication method	MDSCrypt
LDAP Server	
LDAP Base DN	

**TaskServers**

TaskServer	Active?	Authentication	Password	Change?
Self	<input checked="" type="checkbox"/>	MDSCrypt		Update
big	<input checked="" type="checkbox"/>	MDSCrypt		Update
	<input checked="" type="checkbox"/>	MDSCrypt		Add TaskServer

### 3 TaskServer: JobServers to Enable Secure Communication

Navigate to the JobServers page of the TaskServer (<http://localhost:23000/ServerAdmin/JobServers.tml>).



The screenshot shows the 'JobServer Administration' interface. The browser address bar is `localhost:23000/ServerAdmin/JobServers.tml`. The navigation menu includes 'TaskServer Home', 'Tasks', 'Administration', 'JobServers', 'Users', and 'Log'. The 'JobServers' section is active.

**Global Parameters**

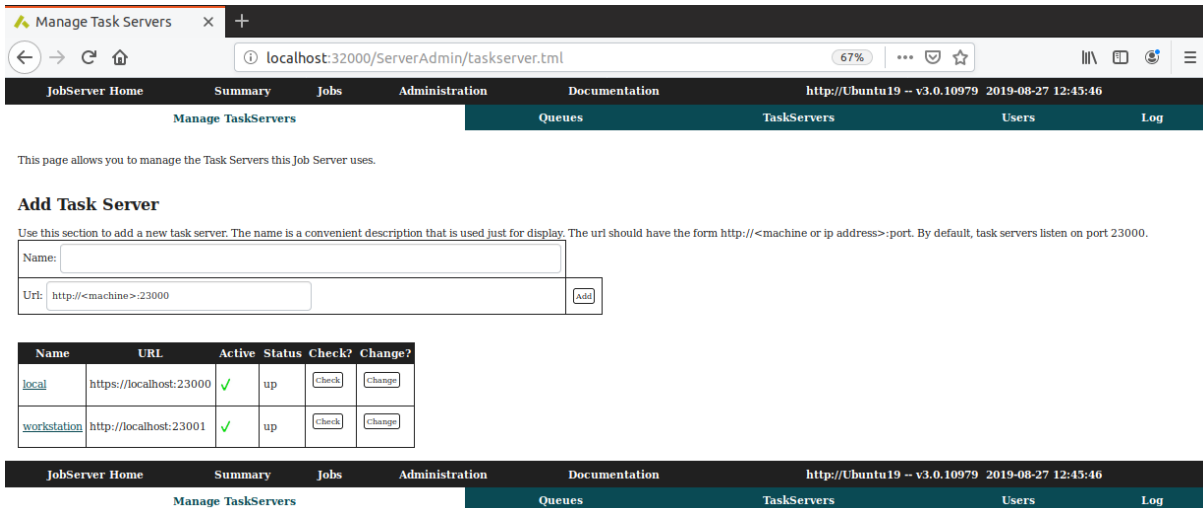
Parameter	Value
Whether to require JobServer names and passwords	<input checked="" type="checkbox"/>
Default authentication method	MDSCrypt
LDAP Server	
LDAP Base DN	

**JobServers**

JobServer	Active?	Authentication	Password	Administrator?	Change?
medea.local	<input checked="" type="checkbox"/>	MDSCrypt		<input type="checkbox"/>	Add JobServer

### 4 JobServer: TaskServers to Change the Address from http to https

Navigate to the TaskServers page of the JobServer (<http://localhost:32000/ServerAdmin/taskserver.tml>).



This page allows you to manage the Task Servers this Job Server uses.

### Add Task Server

Use this section to add a new task server. The name is a convenient description that is used just for display. The uri should have the form `http://<machine or ip address>:port`. By default, task servers listen on port 23000.

Name:

Url:

Name	URL	Active	Status	Check?	Change?
local	https://localhost:23000	✓	up	<input type="button" value="check"/>	<input type="button" value="Change"/>
workstation	http://localhost:23001	✓	up	<input type="button" value="check"/>	<input type="button" value="Change"/>

Replace the existing TaskServer by clicking on the **Change** button and change the address from e.g. `http://<machine>:23000` to `https://<machine>:23000`

If you prefer to keep a reference to the old, non-secure JobServer, add an additional entry (and don't forget to assign a queue when needed).

Deactivate inaccessible TaskServers to avoid waiting for timeouts each time the JobServer starts or update the status of know TaskServers.