LaPalma: Data Services User Guide

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Introduction

This user guide for LaPalma Data Services is intended to provide the minimum amount of information needed by a new user on this system.

We hope you can find most of the information you need to use our data resources.

Please read carefully this document and if any doubt arises do not hesitate to contact our support group at res_support@iac.es

Resources overview

There is one data transfer node that provides access to the storage you have been granted. The features of this node are:

- 2 x Intel® Xeon® E5-2630 v4. Total amount of cores is 20

- 128 GB RAM
- 10Gb/s interface for incoming connections
- Access to parallel storage through 40Gb/s network
- Hostname: lapalma-dn1.iac.es

On the other hand, there is an accounting server that gives information about storage consumed. The hostname of this accounting server is lapalma-dn.iac.es and access is only provided to the project leader.

How to connect to data transfer node

Access to the data transfer node is based on SSH public-private key authentication.

You have to provide a public SSH key.

Next link can guide you in the process of creating an SSH key pair: https://www.ssh.com/academy/ssh/keygen#creating-an-ssh-key-pair-for-user-authentication

Please, generate a key of type ed25519 and set a strong passphrase:

- Linux/MacOS/Windows: ssh-keygen -t ed25519
- PuTTYgen: Type of key to generate: ED25519

Once you have created the SSH key pair, please send just the public key to res_support@iac.es .

Uploading / Downloading data

Available protocols for transferring data on the node are:

- sftp (read/write access with ssh-key)
- rsync (read/write access with ssh-key)
- ftp (anonymous, readonly and public service)

sftp and rsync protocol allow you to upload/download data, while ftp protocol is available for sharing data publicly available.

Once you are connected using your ssh-key the directory tree is:

username
|_ private
|_ projects
|_ pub

- "private" directory can only be accessed by the user.
- "projects" is a link to /storage/datanode/projects/<usergroup>/ where all members of the group can upload/download/remove data.
- "pub" is a link to /storage/datanode/pub/<usergroup>/. All members of the group can upload/download/remove data to this location and it is also publicly available, so **be careful to place sensitive data here**.

SFTP

If your username is "user1" you have to run the command below:

```
sftp user1@lapalma-dn1.iac.es
```

In case your ssh key is not stored at the default location you have to specify with argument "-i <filename>":

```
sftp -i <key filename> user1@lapalma-dn1.iac.es
```

Once you are connected to transfer node you will be able to:

- Change the working directory: "cd private" or "cd projects" or "cd pub"
- upload files: `put <file name>`
- download files: `get <file name>`
- create a directory: `mkdir <directory name>`
- delete files: `rm <file name>`
- delete a directory: `rmdir <directory name>`

Further information about sftp command is at: https://man.openbsd.org/sftp

If you do not want to type the password every time you connect to the transfer node, we encourage you to use an ssh agent: https://www.ssh.com/academy/ssh/agent.

RSYNC

This tool can synchronize the contents of a local directory and a remote directory.

An example of how to synchronize a remote directory is shown below:

```
rsync -a <local directory>/ user1@lapalma-dn1.iac.es:private/<remote directory>/
```

You can also synchronize a local directory with the contents of a remote location:

```
rsync -a user1@lapalma-dn1.iac.es:private/<remote directory>/ <local directory>/
```

Further information about rsync command is at:
https://download.samba.org/pub/rsync/rsync.1.

Just like with the sftp command, you can use the ssh agent with rsync:
https://www.ssh.com/academy/ssh/agent.

FTP

FTP service running on the transfer node does not require authentication. Just connect to the ftp server and all public data of projects will be available:

```
ftp lapalma-dn1.iac.es
Connected to lapalma-dn1.iac.es.
Name (lapalma-dn1.iac.es:<your local username>):
230 Anonymous user logged in
ftp> ls
group1
group2
group3
```

Once you are connected you can download data as shown below:

- One file: `get group1/<filename>`
- Multiple files: `mget group1/*`

If commands get stuck and there is no response then you have to set "passive" mode. In this case just type "passive":

```
ftp> passive
Passive mode: on; fallback to active mode: on.
```

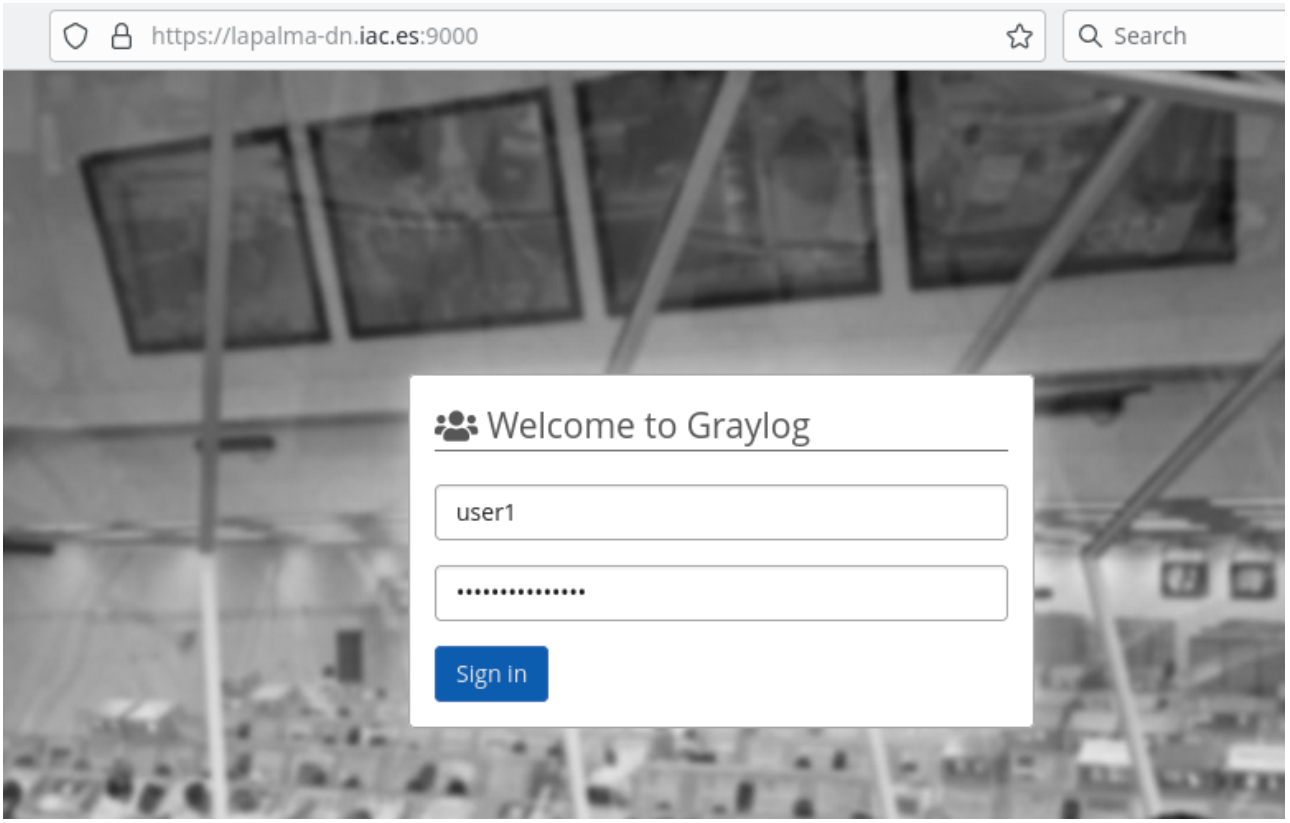
Accounting Information (only for project leader)

Connecting to accounting server

Open a web browser and type the following website address:

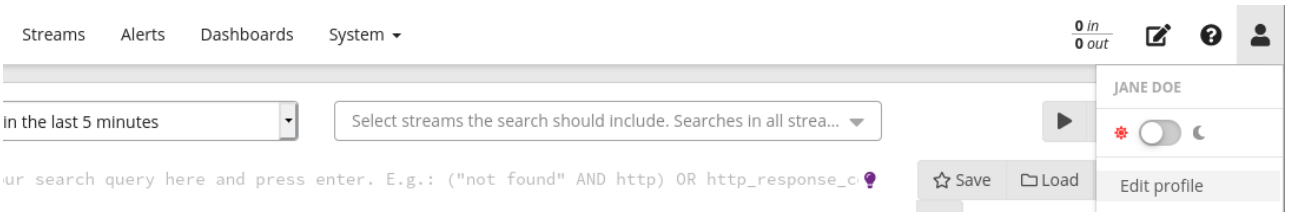
- https://lapalma-dn.iac.es:9000

Log in with your username and the initial password you have been provided:

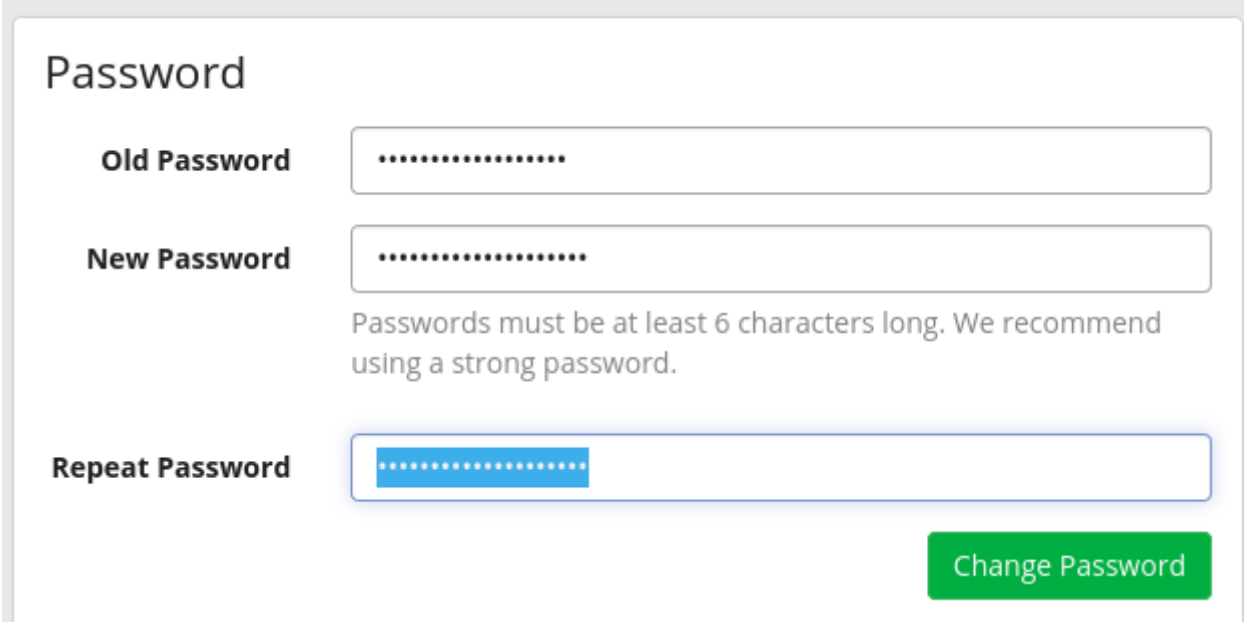


Changing your password

We encourage you to change your initial password. For doing so, click on “Edit profile”:

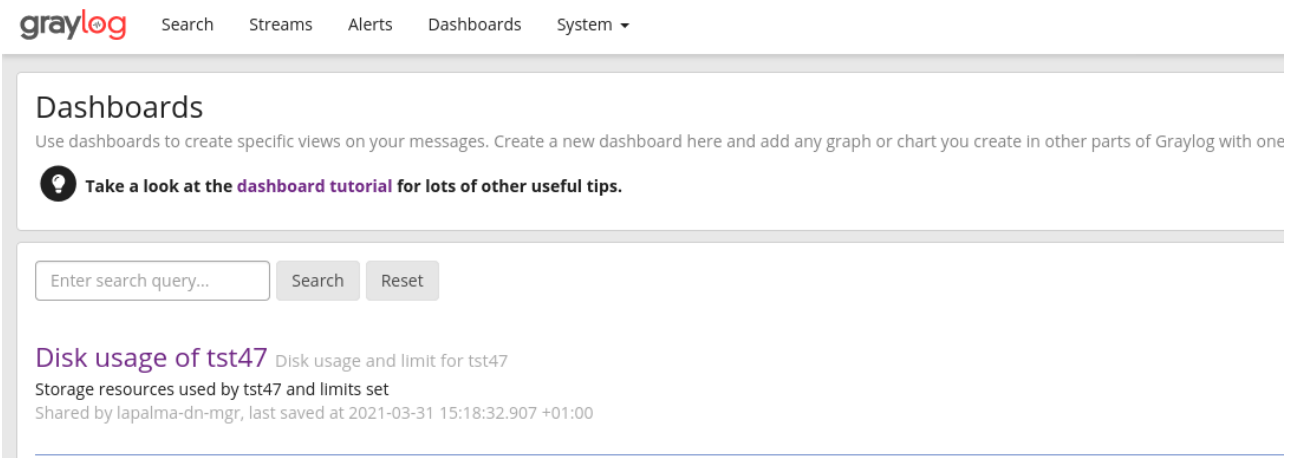


Type your current password and then your new one. Finally, click on “Change Password”:



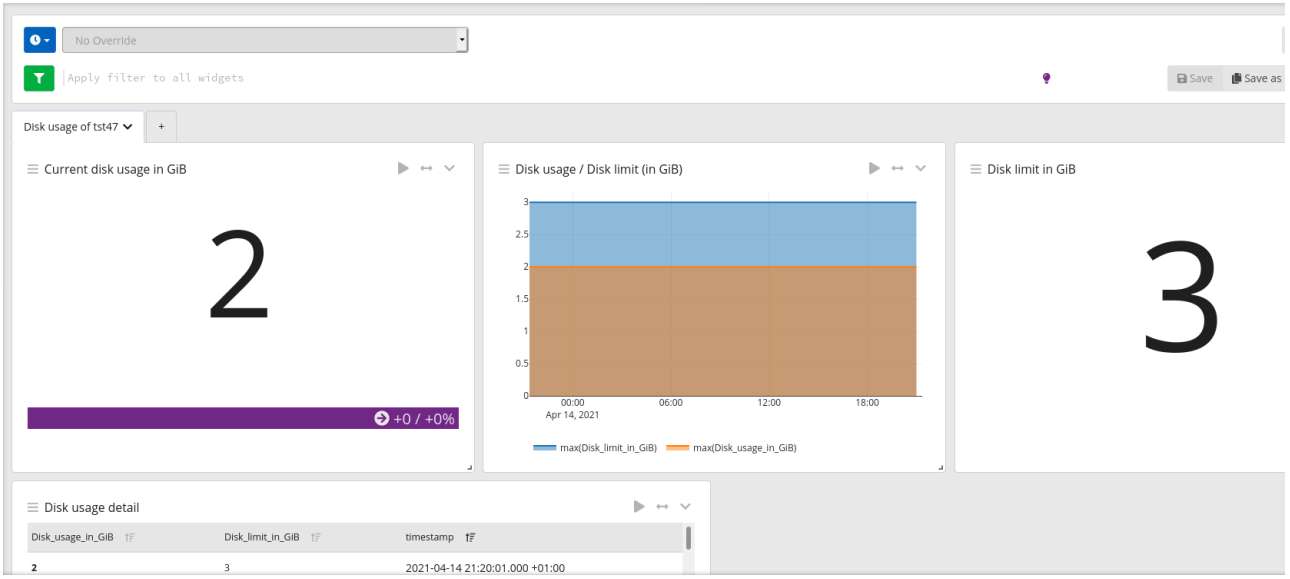
Accounting information

You can get information about the amount of space used clicking on "Dashboards" and then "Disk usage of <your group name>":



Once you have clicked you will obtain:

- Current disk usage in GiB
- Disk limit in GiB that is set for your group


No Override
Apply filter to all widgets
Save
Save as
Disk usage of tst47
+
Current disk usage in GiB
2
+0 / +0%
Disk usage / Disk limit (in GiB)
3
2.5
2
1.5
1
0.5
0
00:00
Apr 14, 2021
06:00
12:00
18:00
max(Disk_limit_in_GiB)
max(Disk_usage_in_GiB)
Disk limit in GiB
3
Disk usage detail
Disk_usage_in_GiB
Disk_limit_in_GiB
timestamp
2
3
2021-04-14 21:20:01.000 +01:00