eGee

Hands on session:
gLite Data Management services

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Browsing the contents of a directory

```
glite-catalog-ls [-h][-q][-s SERVICE][-V][-v][-c]
    [-d][-g][-l][-R][-S][-t][-u][-x] LFN...
```

where LFN (Logical File Name) is the absolute path of the file/directory to list

Main Options:

-l request long output

-v increase the verbosity level

-R request recursive listing

-s sort by size

-t sort by modification time

-g print GUIDs in the long listing

-h print a short help

-s SERVICE specifies the service endpoint to use

-d list the directory node itself instead of its contents

Example: `$glite-catalog-ls -l /tcaland`

```
-pdrwl-gs--r-l-g---------       792   2005-10-20 12:52:20
    /tcaland/helloworld.jdl
-pdrwl-gs--r-l-g---------     25890k 2005-09-15 11:53:44
    /tcaland/madagascar.mov
-pdrwl-gs--r-l-g---------       237   2005-10-20 12:52:37
    /tcaland/runshell.jdl
-pdrwl-gs--r-l-g---------        38   2005-10-20 12:51:04
    /tcaland/runshell.sh
```

Meaning of the flags:

- The first letter shows the type of the entry: '**-**' for regular files, '**d**' for directories, '**l**' for symbolic links and '**v**' for virtual directories.

- It follows 3 series of 8 flags, respectively for the owner, the group and others: **p** indicates the permission to change attribute, while **d** gives rights to delete the entry. It follows permissions to **r**ead, **w**rite, **l**ist, e**x**ecute. The last two flags are reserved for metadata use, and so are currently unused. They will give the rights to **g**et or **s**et the metadata.

Directory creation

```
glite-catalog-mkdir [-h][-q][-s SERVICE][-V][-v]
   [-p][-c] DIR...
```

Where **DIR** is the name of the directory to create (in LFN format)

`-p` create missing parent directory

`-c` copy the permission of the parent directory

Example: `glite-catalog-mkdir /tcaland2`

Deleting a directory

```
glite-catalog-rmdir [-h][-q][-s SERVICE][-V][-v]
   DIR...
```

The specified directory must be empty or the command will fail

Example: `glite-catalog-rmdir /tcaland2`

```
glite-catalog-stat [-h][-q][-s SERVICE][-V][-v][-r] LFN...
```

Lists all information the file catalog has about a file or directory. It includes LFN, GUID, owner/group with basic permission, list of ACLs (if any), SURL for every replica.

Example: `glite-catalog-stat /tcaland/runshell.sh`

```
LFN:         /tcaland/runshell.sh
 Created:      2005-10-20 12:51:04.000
 Modified:     2005-10-20 12:51:04.000
 Size:         38
 Type:         File
 Expires:      Never
GUID:          004c3024-7697-1357-9128-c1ced08dbeef
 Created:      2005-10-20 12:51:08.000
 Modified:     2005-10-20 12:51:08.000
 Size:         38
 Checksum:     00000000
 Status:       0
 User:         /C=IT/O=INFN/OU=Personal Certificate/L=Catania/CN=Tony Calanducci
 Group:        egee-group
 User rights:  pdrwl-gs
 Group rights: --r-l-g-
 Other rights: --------
 Replicas:
  srm://aliserv6.ct.infn.it:8443/srm/managerv1?SFN=/dpm/ct.infn.it/home/gilda/tcaland/runshell.sh
     Master replica
     Created:      2005-10-20 12:51:04.000
     Modified:     2005-10-20 12:51:04.000
```

Locate files matching a specified pattern in the specified directory

```
glite-catalog-find [-h] [-q] [-s SERVICE] [-V] [-v] [-n
    LIMIT] PATTERN DIR...
```

Where

– **-n** *LIMIT* return no more than *LIMIT* results. The default is 100

– *PATTERN* is the file name pattern to look for. Recognized wildcards are **?** matching any character, and * matching any string. If you use wildcards chars, PATTERN should be single-quoted.

– *DIR* Name of the directories where to look for files matching *PATTERN*.

- Example: `glite-catalog-find '*world.jdl' /tcaland`

  `/tcaland/helloworld.jdl`

Enabling Grids for E-sciencE

```
glite-put <localfilename> <lfn> [-m <mode>][-s <gliteio_url>]
```

where <localfilename> is the name of the local file you want to upload and <lfn> is the logical file name you want to assign to that file.

- **glite-put** is part of the glite-io client CL tools. It will contact the local glite-IO server to accomplish its works. It also interacts with FireMan interfaces to register the new entry into the catalog.

Example: `glite-put hostname.jdl /tcaland/myjob.jdl`

```
[glite_put] Total 0.00 MB      |====================| 100.00 % [0.0 Mb/s]

Transfer Completed:

  LFN                      : /tcaland/myjob.jdl
  GUID                     : 002b06c4-795e-1357-a628-c1ced08dbeef
  SURL                     :
   srm://aliserv6.ct.infn.it:8443/srm/managerv1?SFN=/dpm/ct.infn.it/home/gilda/t
   caland/myjob.jdl
  Data Written [bytes]     : 202
  Eff.Transfer Rate[Mb/s]  : 0.000076
```

`glite-get <lfn> <localfilename> [-s <gliteio_url>]`

Copies the given file from the local Storage Element to the given local file.

- <lfn> is the logical file name of the file you want to download and <localfilename> is the name of the destination local file
- -c <config> use an alternativi config file, overriding the glite-io-client configuration

Example: `glite-get /tcaland/myjob.jdl hostname2.jdl`

Transfer Completed:

```
LFN             : /tcaland/myjob.jdl
GUID            : 002b06c4-795e-1357-a628-c1ced08dbeef
SURL            : srm://aliserv6.ct.infn.it:8443/srm/managerv1?SFN=/dpm/ct.infn.it/home/gilda/tcaland/myjob.jdl
Data Written [bytes]   : 0
Eff.Transfer Rate[Mb/s] : 0.000000
```

`glite-rm <lfn> [-s <gliteio_url>]`

Removes the given file from your local Storage Element and delete the corresponding entry in the File Catalog

Example: `glite-rm /tcaland/myjob.jdl`

Unlink Completed:

```
File        : /tcaland/myjob.jdl
Time [s]    : 4.471000
```

Exercise:

- **Create a local text file containing whatever information you like**

- **Give a look inside the file catalog: verify a /trieste directory exists**

- **Create under the /trieste folder a dir with your surname**

- **Upload the previously created file into your own directory**

- **Give a look to the details of the just uploaded file**

- **Download your text file using a different local name**

- **Remove it from the SE and unregister the entry in catalog and verify its deletion**

```
glite-catalog-chmod [-h][-q][-s SERVICE][-V] [-v] [-R]
    MODE LFN...
```

change basic permissions on files/directories in the catalog.

– -R used to recursively process subdirectories

– MODE is a list of modification descriptions, commas separated. Each modification permission is made up of subject spec, operation spec, list of bits to change:

▪ subject specification: one or more among the following **[u,g,o,a]** (user(u), group(g), other(o), everyone(a)

▪ operation specification: **+** (add), **-** (remove), **=** (set equal)

▪ available bits:

- *p - allow to change the permissions*
- *d - delete the entry*
- *r - read the file*
- *w - write to the file*
- *l - list contents*
- *x - execute*
- *g - get the meta data of the file*
- *s - set the meta data of the file*

- **glite-catalog-stat /trieste/viminfo**

```
…

User rights:      pdrwl-gs

Group rights:     --r-l-g-

Other rights:     --------

…
```

- **glite-catalog-chmod a+w /trieste/viminfo**

  Add writing permission to all users. Other permission bits are unaffected

```
…

User rights:      pdrwl-gs

Group rights:     --rwl-g-

Other rights:     ---w----

…
```

- **glite-catalog-chmod go-pdwxs,u+ws /trieste/viminfo**
  - Revokes permission setting, delete, write, execute and metadata modification rights from everyone except the file's owner, and grants write and metadata modification rights to the file's owner.

```
…
User rights:      pdrwl-gs
Group rights:     --r-l-g-
Other rights:     --------
…
```

Enabling Grids for E-sciencE

```
glite-catalog-setacl [-h][-q][-s SERVICE] [-
V][-v][-r]{-m ACL...} LFN...
```

Is used to add or modify the ACL of files and directories.

- **-r** used to recursively process subdirectories
- **-m ACL** Add or modify an existing ACL entry. ACL entries have the form of PRINCIPAL:PERMISSION

Example:

```
glite-catalog-setacl -m '/C=IT/O=GILDA/OU=Personal
   Certificate/L=INFN Catania/CN=Tony
   Calanducci/Email=tony.calanducci@ct.infn.it:dw'
   /trieste/viminfo
```

Grant to the owner of the above certificates deletion and write permission on /trieste/viminfo catalog entry.

- `glite-catalog-getacl [-h] [-q] [-s SERVICE] [-V] [-v] [-r] LFN...`

Can be used to inspect the ACLs for the given file or directory.

Also `glite-catalog-stat` will show ACLs if present

Example:

```
$ glite-catalog-getacl /trieste/viminfo
# LFN: /trieste/viminfo
# User: /C=IT/O=GILDA/OU=Personal
Certificate/L=TRIESTE/CN=TRIESTE01/Email=roberto.barbera@ct.infn.it
# Group: egee-group
# Base perms: user pdrwl-gs, group --r-l-g-, other --------
/C=IT/O=GILDA/OU=Personal Certificate/L=INFN Catania/CN=Tony
Calanducci/Email=tony.calanducci@ct.infn.it:-d-w----
```

Enabling Grids for E-sciencE

- **Upload a file and register it into /trieste/your_surname directory**
- **Check its permission, taking attention on group permission**
- **Grant group member deletion right**
- **Ask you left neighbor to try deleting your uploaded file (use glite-catalog-rm for that)**
- **Once he is done, check if the file is still there**
- **Upload another file in the same dir and ask this time to your right neighbor his DN (Distinguished Name also called Subject. You can get it from voms-proxy-info output).**
- **Authorize him to delete the last uploaded file**
- **Ask him to delete it and after verify its deletion**

Enabling Grids for E-sciencE

Summary of the Fireman Catalog commands

glite-catalog-ls	**List file/directory entries in a directory**
glite-catalog-mkdir	**Create a directory**
glite-catalog-mv	**Rename a file/directory**
glite-catalog-rm **glite-catalog-rmdir**	**Remove a file/directory**
glite-catalog-getreplica	**Get all replicas associated with a file/GUID**
glite-catalog-touch **glite-catalog-create**	**Create a new entry in the catalog/update the modification time**
glite-catalog-find	**Find entries based on their name pattern**
glite-seindex-list	**List all SEs having a replica of the given files**

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Summary of the Fireman Catalog commands

glite-catalog-chmod **glite-catalog-setacl** **glite-catalog-setdefacl** **glite-catalog-setdefperm**	**Change access mode of the Fireman file/directory. Set the ACL, the default ACL and the default permission**
glite-catalog-stat **glite-catalog-getguid**	**List the details of a file – all attributes, replicas. Or just the associated GUID.**
glite-catalog-setattr **glite-catalog-getattr** **glite-catalog-setschema**	**Set/get metadata attribute and set the metadata schema of a given directory**
glite-catalog-getacl **glite-catalog-getdefacl**	**Get file/directory access control lists and default ACL**
glite-catalog-symlink	**Make a symbolic link to a file. Directory symlinks are not supported by design.**