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# gLite 3.1. Практический курс пользователя. 3. Data Management

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# Data Management

## 1. Примеры передачи файлов в Sandbox

**Executable="runJava.sh";**

**InputSandbox={"\$HOME/jobInput/runJava.sh",  
"\$HOME/jobInput/hello.java"};**

**Arguments="Grid";**

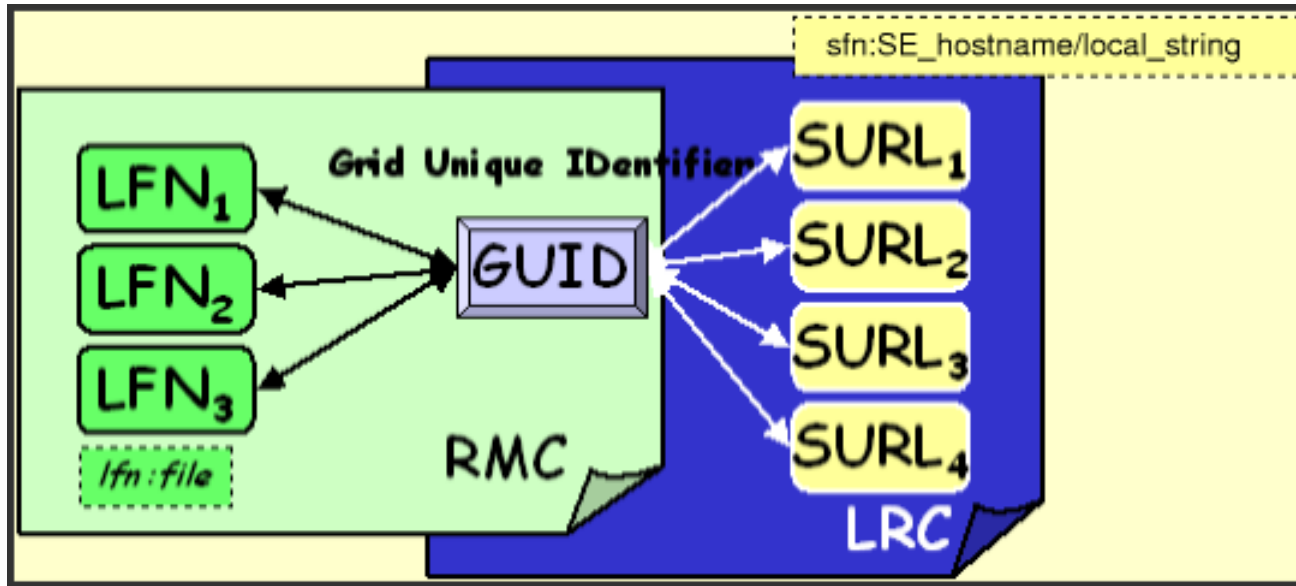
**Requirements=other.GlueCEUniqueID=="lcgce01.jinr.ru:2119/jo  
bmanager-lcgpbs-atlas";**

**StdOutput="std.out";**

**StdError="std.err";**

**OutputSandbox={"std.out", "std.err"};**

## 2. Файлы в gLite



### 3. Имена файлов в gLite 3.1

*В gLite 3.1. используется каталог LFC, LCG File Catalogue*

- *Grid Unique Identifier (GUID)*

*guid:<40\_bytes\_unique\_string>*

*guid:38ed3f60-c402-11d7-a6b0-f53ee5a37e1d*

- *Logical File Name (LFN)*

*lfn:grid/atlas/myDir/myFile*

- *Storage URL (SURL) or PFN*

*<sfm|srm>://<SE\_hostname>/<string>*

*sfm://<SE\_hostname>/<SE\_Accsespoint><VO\_path><filename>*

*sfm://tbed0101.cern.ch/data/dteam/file1*

*(SRM использует виртуальную файловую систему).*

*srm://srm.cern.ch/castor/cern.ch/grid/dteam/does/file1*

- ***Transport URL (TURL)*** is a valid URI with the necessary information to access a file in a SE: `<protocol>://<some_string>`  
`gsiftp://tbed0101.cern.ch/data/dteam/doe/file1`

## 4. Информация по SE

```
lxpub04:~ > lcg-infosites --vo atlas all nousedspace
```

lfc-atlas-test.cern.ch

se2.itep.ru

lcgce.ijs.si

seitep.itep.ru

lxfs04.jinr.ru

**Установить переменную для LFC-сервера**

```
lfc-infosites --vo dteam lfc
```

```
prod-lfc-shared-central.cern.ch
```

```
LFC_HOST='lfc-infosites --vo dteam lfc'
```

## 5. LCG File Catalog (LFC)

Environment:

```
LFC_HOST=`/opt/lcg/bin/lcg-infosites --vo atlas lfc`
```

```
LCG_CATALOG_TYPE=lfc;
```

<code>lfc-chmod</code>	Change access mode of a LFC file/directory.
<code>lfc-chown</code>	Change owner and group of a LFC file/directory.
<code>lfc-mkdir</code>	Create directory
<code>lfc-rename</code>	Rename a file/directory
<code>lfc-rm</code>	Remove a file/directory
<code>lfc-ls</code>	List file/directory entries

## 5.1 Примеры

```
lxpub04:~ > lfc-ls /grid/dteam/VGalakt
```

```
dir1
```

```
dir2
```

```
dir3
```

```
dir4
```

```
Gridcom
```

```
lxpub04:~ > lfc-ls -l /grid/dteam/VGalakt
```

drwxrwxr-x	2	19138	2688	0 Jul 18 2006	dir1
drwxrwxr-x	4	19138	2688	0 Jul 18 2006	dir2
drwxrwxr-x	3	19138	2688	0 Jul 18 2006	dir3
drwxrwxr-x	3	19138	2688	0 Jul 18 2006	dir4
drwxrwxrwx	1	19139	2688	0 Jul 17 2006	gridcom

```
lxpub04:~ > lfc-ls -d /grid/dteam/VGalakt  
/grid/dteam/VGalakt
```

```
lxpub04:~ > lfc-ls -l -d /grid/dteam/VGalakt  
drwxrwxr-x  5 19138  2688          0 Jul 17  2006 /grid/dteam/VGalakt
```

```
lxpub04:~ > lfc-rm /grid/dteam/VGalakt/DTEST  
/grid/dteam/VGalakt/DTEST: Is a directory
```

```
lxpub04:~ > lfc-rm -r /grid/dteam/VGalakt/DTEST
```

```
lxpub04:~ > lfc-ls -l /grid/dteam/VGalakt/gridcom/GridCom.java
-rw-rw-rw- 1 19139 2688          45640 Jul 17 2006
  /grid/dteam/VGalakt/gridcom/GridCom.java
```

```
lxpub04:~ > lfc-ls -l /grid/dteam/VGalakt/gridcom/
-rwx-rwx-rw- 1 19139 2688          45640 Jul 17 2006 GridCom.java
```

```
lxpub04:~ > lfc-chmod 666
  /grid/dteam/VGalakt/gridcom/GridCom.java
```

```
lxpub04:~ > lfc-ls -l /grid/dteam/VGalakt/gridcom/
-rw---rw--rw- 1 19139 2688          45640 Jul 17 2006 GridCom.java
```

## 6. LCG Data Management Client Tools

The LCG Data Management tools (usually called `lcg-utils`) allow users to copy files between UI, CE, WN and a SE, to register entries in the File Catalog and replicate files between SEs.

**lcg-cp** Copies a Grid file to a local destination (**download**).

**lcg-cr** Copies a file to a SE and registers the file in the catalog (**upload**).

**lcg-del** Deletes one file (either one replica or all replicas).

**lcg-rep** Copies a file from one SE to another SE and registers it in the catalog (LFC or LRC) (**replicate**).

## 6.1. UPLoad - загрузка файла из UI в glite SE

```
lxplus218] ~/glite > lcg-cr --vo dteam -v -d srm-dteam.cern.ch  
file:/afs/cern.ch/user/v/vgalakti/glite/monitor.dat
```

Using grid catalog type: lfc

Using grid catalog : prod-lfc-shared-central.cern.ch

Using LFN : /grid/dteam/generated/2008-05-26/file-f5540f36-bce2-46ed-9610-7f7b4d51aec1

Using SURL : srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-  
results/generated/2008-05-26/filee9c8f008-eb62-4810-b7c8-f25988466e99

srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-results/generated/2008-05-  
26/filee9c8f008-eb62-4810-b7c8-f25988466e99:

Source URL: file:/afs/cern.ch/user/v/vgalakti/glite/monitor.dat

File size: 138206

VO name: dteam

Destination specified: srm-dteam.cern.ch

Destination URL for copy: gsiftp://lxfsra3002.cern.ch:2811//castor/cern.ch/grid/dteam/S2-  
test-results/generated/2008-05-26/filee9c8f008-eb62-4810-b7c8-f25988466e99

Alias registered in Catalog: lfn:/grid/dteam/generated/2008-05-26/file-f5540f36-bce2-46ed-  
9610-7f7b4d51aec1

138206 bytes 146.69 KB/sec avg 146.69 KB/sec inst

Transfer took 2020 ms

srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-results/generated/2008-05-  
26/filee9c8f008-eb62-4810-b7c8-f25988466e99:

Destination URL registered in Catalog: srm://srm-  
dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-results/generated/2008-05-  
26/filee9c8f008-eb62-4810-b7c8-f25988466e99

7/21/2008  
glite 3.1. Data Management  
**guid:b7166b98-15d0-4aa7-b879-81ec3634e703**

## 6.1.1. Короткая форма

```
[lxplus218] ~/glite > lcg-cr --vo dteam -d srm-dteam.cern.ch  
file:/afs/cern.ch/user/v/vgalakti/glite/monitor.dat
```

```
srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-  
results/generated/2008-05-26/file866b2917-ad38-4642-  
b223-275abccb8c88:
```

```
srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-  
results/generated/2008-05-26/file866b2917-ad38-4642-  
b223-275abccb8c88:
```

**guid:26d3fee5-89b2-4abe-bdc5-13727755a557**

## 6.2 Создание alias (логического имени)

```
[lxplus218] ~/glite > lcg-aa --vo dteam guid:26d3fee5-89b2-4abe-bdc5-13727755a557 lfn:/grid/dteam/VGalakt/TEST/fupload
```

```
[lxplus218] ~/glite > lfc-ls /grid/dteam/VGalakt/TEST  
fupload
```

```
[lxplus218] ~/glite > lfc-ls -l /grid/dteam/VGalakt/TEST/fupload
```

```
lrwxrwxrwx 1 19139 2688 0 May 26 16:06  
/grid/dteam/VGalakt/TEST/fupload -> /grid/dteam/generated/2008-05-  
26/file-43c31b3f-bb85-4b93-a9ad-be0cddfa7710
```

```
[lxplus218] ~/glite > lcg-lg --vo dteam
```

```
lfn:/grid/dteam/VGalakt/TEST/fupload  
guid:26d3fee5-89b2-4abe-bdc5-13727755a557
```

### 6.3. Download – загрузка файла из SE в UI

```
[lxplus218] ~/glite > lcg-cp --vo dteam -t 100
```

```
lfn:/grid/dteam/VGalakt/TEST/fupload
```

```
file:/afs/cern.ch/user/v/vgalakti/glite/fdown
```

```
srm://srm-dteam.cern.ch/castor/cern.ch/grid/dteam/S2-test-results/generated/2008-05-26/file866b2917-ad38-4642-b223-275abccb8c88:
```

```
[lxplus218] ~/glite > ls -la ~/glite/fdown
```

```
-rw-r--r-- 1 vgalakti gr 138206 May 26 16:15 /afs/cern.ch/user/v/vgalakti/glite/fdown
```

## **7. Комплексный пример задачи для работы с файлами из SE**

### **7.1. Файл readGUID.jdl**

**Executable="readGUID.pl";**

**StdOutput="std.out";**

**StdError="std.err";**

**InputSandbox={"\$HOME/jobInput/readGUID.pl"};**

**OutputSandbox={"std.out","std.err"};**

**InputData={"guid:26d3fee5-89b2-4abe-bdc5-13727755a557"};**

**DataAccessProtocol={"gsiftp"};**

## 7.2. Файл readGUID.pl

```
#!/usr/bin/perl
```

```
# Copy the input data file to the WN local filesystem
```

```
system "lcg-cp --vo dteam guid:26d3fee5-89b2-4abe-bdc5-13727755a557  
file:`pwd`/values";
```

```
# Open it
```

```
open(file,'values');
```

```
# Read all the lines
```

```
@lines=<file>;
```

```
#Show the info
```

```
print "The values stored in the input data file are:\n";
```

```
print " @lines";
```

## 7.3. Передача задачи и получение результата

```
[lxplus226] ~/jobInput > glite-wms-job-submit -a readGUID.jdl
```

The job has been successfully submitted to the WMPProxy

Your job identifier is:

```
https://lb104.cern.ch:9000/A71OCUWIweypsB9_5B9sxQ
```

```
[lxplus226] ~/jobInput > glite-wms-job-status
```

```
https://lb105.cern.ch:9000/q0HClr_yiTSP_02eT07Kuw
```

```
*****
```

BOOKKEEPING INFORMATION:

Status info for the Job : [https://lb105.cern.ch:9000/q0HClr\\_yiTSP\\_02eT07Kuw](https://lb105.cern.ch:9000/q0HClr_yiTSP_02eT07Kuw)

Current Status: **Done (Success)**

Exit code: 0

Status Reason: Job terminated successfully

Destination: ce104.cern.ch:2119/jobmanager-lcglsf-grid\_dteam

Submitted: Tue May 27 13:57:27 2008 CEST

```
*****
```

```
[lxplus226]> glite-wms-job-output --dir $HOME/jobOutput  
https://lb105.cern.ch:9000/q0HClr_yiTsP_02eT07Kuw
```

Connecting to the service https://137.138.45.79:7443/glite\_wms\_wmproxy\_server

```
=====
```

JOB GET OUTPUT OUTCOME

Output sandbox files for the job:

https://lb105.cern.ch:9000/q0HClr\_yiTsP\_02eT07Kuw

have been successfully retrieved and stored in the directory:

**/afs/cern.ch/user/v/vgalakti/jobOutput**

```
=====
```

[lxplus226] > **ls -la \$HOME/jobOutput**

total 148

drwxr-xr-x 2 vgalakti gr 2048 May 27 13:49 .

drwxr-xr-x 63 vgalakti gr 8192 May 27 13:49 ..

-rw-r--r-- 1 vgalakti gr 0 May 27 14:05 std.err

-rw-r--r-- 1 vgalakti gr **141006** May 27 14:05 std.out

# BCE