LHC COMPUTING GRID

EDG-REPLICA-MANAGER WRAPPER SCRIPT

MANUALS SERIES

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Abstract: *Information on the edg-replica-manager Wrapper Script (replaced by lcg-utils).*

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Files

Software Products	User files
PDF	http://grid-deployment.web.cern.ch/grid-deployment/eis/docs/edg-rm-wrapper.pdf
HTML	http://grid-deployment.web.cern.ch/grid-deployment/eis/docs/edg-rm-wrapper.html

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1. INTRODUCTION

1.1. ACKNOWLEDGMENTS

This work received support from the following institutions:

- Istituto Nazionale di Fisica Nucleare, Roma, Italy.

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REFERENCES

[R1] LCG-2 User Guide
      https://edms.cern.ch/file/454439//LCG-2-UserGuide.html

[R2] User Guide for the EDG Replica Manager 1.5.x
      http://edg-wp2.web.cern.ch/edg-wp2/replication/docu/r2.1/edg-replica-manager-userguide.pdf

[R3] EDG Tutorial – Handout for Participants for EDG Release 2.x
      http://edms.cern.ch/document/393671

1.2. OVERVIEW

NOTE: Up to the LCG release 2.3.0, the `edg-replica-manager` Java command (also in abbreviated `edg-rm` form) provided the same functionality than the current lcg_utils offer (as described in [R1]). For performance reasons, the `edg-rm` was dismissed in favor of the lcg_utils, and is not distributed anymore since release 2.3.1. The current `edg-replica-manager` command is just a wrapper script around lcg_utils. In this way, it ensures the performance and functionalities of lcg_utils, mantaining the interface of the old Java CLI.

A detailed description about the usage of the Replica Manager CLI can be found in [R2] and [R3].

Only the most important Replica Manager functionalities have been *wrapped*.

2. USAGE

Management commands

```
copyAndRegisterFile   cr,creg   Put a local file into Grid Storage and
                                register it in the Catalog
replicateFile         rep       Replicate an existing file to a certain Grid
                                Storage, update Catalog
deleteFile            del       Delete a file from Storage and remove entry
                                from Catalog
getTurl               gt        Get a TURL given a SURL and a protocol.
```

Catalog commands

```
registerFile          rf        Register a file in the catalog
unregisterFile        uf        Unregister a file from the catalog
listReplicas          lr        List all replicas of a logical file name
listGUID              lg        List the GUID of a known LFN or SURL
addAlias              aa        Add a new alias to GUID mapping
removeAlias           ra        remove an alias to GUID mapping
```

File transfer commands

```
copyFile              cp        Copy a file. Use this to copy a file to local
                                store by specifying an LFN as the source and a
                                local destination.
```

The general form of a `edg-rm` invocation is the following:

```
$ edg-rm <general_options> <cmd_name> <cmd_arguments> <cmd_options>
```

where the `<general_options>` refer to `edg-rm`, `<cmd_name>` is the particular command or action that the RM must perform, and `<cmd_arguments>` and `<cmd_options>` refer to that command. Most commands have both an extended and an abbreviated name form.

NOTE: If the above described order is not followed (general options before the command name, and particular options after it) the general and command-specific options may be mixed, resulting in a fail of the command.

The `--vo <vo_name>` option specifies the virtual organization of the user. This option is mandatory.

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3. EXAMPLES

Some usage example are given below. For clarity reasons, the commands introduced by the user are leaded by a '$' symbol, and the answers of the shell are usually preceded by '>' (unless the difference is obvious).

Example 3.0.1   (Uploading a file from the UI to the Grid)

In order to upload a file to the Grid, i.e., to transfer it from the local machine to a Storage Element where it must reside permanently, the `CopyAndRegister` (`cr`) command may be used (in a machine with a valid proxy):

```
$ edg-rm --vo dteam cr file:///home/antonio/file1 -l lfn:my_alias1
> guid:6ac491ea-684c-11d8-8f12-9c97cebf582a
```

where the only argument is the local file to be uploaded (a fully qualified URI) and the `-l` option indicates an LFN for it. The command returns the unique GUID for the file.

If the `-d <destination>` option is included, then the specified SE (which must be known in advance) is used as the destination for the file. Without the `-d` option, a default SE is chosen automatically.

Example 3.0.2   (Replicating a file)

Once a file is stored on an SE and registered with the Replica Location Service, the file can be replicated using the `replicateFile` (`rep`) command, as in:

```
$ edg-rm --vo=dteam replicateFile guid:6ac491ea-684c-11d8-8f12-9c97cebf582a \
         -d wacdr002d.cern.ch
> sfn://wacdr002d.cern.ch/castor/cern.ch/grid/dteam/generated/2004-02-26/
filea778c4f6-687d-11d8-a111-c2fed1a6363a
```

where the file to be replicated can be specified using a LFN, GUID or even a particular SURL, and the `-d` option is used to specify the SE where the new replica will be stored (and, as with `CopyAndRegisterFile`. If this option is not set, then an SE is chosen automatically.

Example 3.0.3   (Listing replicas and GUIDs)

The Replica Manager allows users to list all the replicas of a file that have been successfully registeredin the File Catalog. For that purpose the `listReplicas` (`lr`) command is used:

```
$ edg-rm --vo=dteam lr lfn:my_alias1
> sfn://tbed0101.cern.ch/flatfile/SE00/dteam/generated/2004-02-26/
filea72eaedc-684b-11d8-8efc-fc10ad029740
> sfn://wacdr002d.cern.ch/castor/cern.ch/grid/dteam/generated/2004-02-26/
filea778c4f6-687d-11d8-a111-c2fed1a6363a
```

Again, LFN, GUID or SURL can be used to specify the file for which all replicas must be listed. The SURLs of the replicas are returned.

Reciprocally, the `listGUID` (`lg`) return the GUID associated with a specified LFN or SURL:

```
$ edg-rm --vo=dteam lg sfn://tbed0101.cern.ch/flatfile/SE00/dteam/my_file1
> guid:c06a92ee-6911-11d8-a453-d9c1af867039
```

Example 3.0.4 *(Copying files out of the Grid)*

The `copyFile` (`cp`) command can be used to copy a Grid file to a non-grid storage resource. This is useful to have a local copy of the file. The command accepts the LFN, GUID or SURL of the LCG-2 file as its first argument and a local filename or valid TURL as the second, as is shown in the following example:

```
$ edg-rm --vo dteam cp lfn:my_alias2 file:/home/antonio/file2
```

Example 3.0.5 *(Obtaining a TURL for a replica)*

For any given replica (identified by its SURL) the TURL for accessing it using a particular protocol can be obtained with the `getTurl` (`gt`) command. The arguments are the SURL of the file and the protocol to be used.

```
$ edg-rm --vo dteam getTurl \
sfn://tbed0101.cern.ch/flatfile/SE00/dteam/generated/2004-02-26/f1 gsiftp
> gsiftp://tbed0101.cern.ch/flatfile/SE00/dteam/generated/2004-02-26/f1
```

Example 3.0.6 *(Deleting replicas)*

Once a file is stored on a Storage Element and registered with a catalog, it can be deleted using the `deleteFile` (`del`) command. If a SURL is provided as argument, then that particular replica will be deleted. If a LFN is given instead, then the `-s <SE>` option must be used to indicate which one of the

replicas must be erased. The same is true if a GUID is specified, unless the `--all-available` option is used, in which case all replicas of the file will be deleted and unregistered.

The following commands:

```
$ edg-rm --vo=dteam del guid:adb8e950-bf7e-11d7-a29c-fbbda1b7a6d1 -s wacdr002d.cern.ch
```

and

```
$ edg-rm --vo=dteam del guid:adb8e950-bf7e-11d7-a29c-fbbda1b7a6d1 --all-available
```

remove, from the file system and the catalog, one particular replica and all available replicas of the file, respectively.

Example 3.0.7   *(Registering and unregistering Grid files)*

The `registerFile` command creates a new GUID-SURL mapping:

```
$ edg-rm --vo dteam rf sfn://tbed0101.cern.ch/flatfile/SE00/dteam/my_file1
> guid:c06a92ee-6911-11d8-a453-d9c1af867039
```

The `unregisterFile` (`uf`) command deletes a GUID-SURL mapping:

```
$ edg-rm -i --vo=dteam unregisterFile guid:d3e9071e-687b-11d8-b3fa-8c0b6b5cbb30 \
sfn://wacdr002d.cern.ch/castor/cern.ch/grid/dteam/my_test3
```

Example 3.0.8   *(Managing aliases)*

The `addAlias` (`aa`) command allows the user to create a new LFN-GUID mapping:

```
$ edg-rm --vo=dteam addAlias guid:c06a92ee-6911-11d8-a453-d9c1af867039 lfn:last_results
```

The `removeAlias` (`ra`) command allows the user to remove a LFN-GUID mapping:

```
$ edg-rm --vo=dteam ra guid:c06a92ee-6911-11d8-a453-d9c1af867039 lfn:last_results
```