

The DIRAC EGI Workload Manager consists of several distributed services, agents and databases hosted at several hosts. Each of this components or group of components can potentially fail and are subject to the recovery tests.

In the table below, several recovery tests descriptions and results are collected.

Test case	Simulation	Recover time	Actions	Status
Service/Agent crash that can be caused by some transaction failure, software error or human error	Kill the component process	few seconds	The component is restarted automatically by the system monitoring facility	PASS
Host failure, for example due to a power cut	reboot dirac4.grid.cyfronet.pl server	few minutes	The host rebooting sequence contains an automatic restart of all configured DIRAC components by using supervisord.	PASS
Installed software corruption	reinstall DIRAC software stack from scratch	10 - 15 minutes	Manual intervention: running dirac-install installer tool; verify that all the components properly restart.	PASS
Configuration files loss or corruption, for example, due to a hard disk failure.	TODO: BackUps of the local configuration files in a database or on another server	few minutes	Replace the lost configuration with a backup copy.	PASS
DB corruption and/or crash	recover from dump	5 - 30 minutes	Manual intervention by the CYFRONET database service administrators	PASS

Tests debug:

1. Service/Agent crash:

To simulate the Configuration service crash, let's kill its process and see if the service resumes afterwards.

\$ ps -aux | grep Configuration

```
dirac 12525 0.0 0.0 112708 992 pts/0 S+ 11:17 0:00 grep --color=auto Configuration
dirac 21940 1.0 0.9 662532 74336 ? SI Mar05 12:36 python /opt/dirac/pro/DIRAC/Core/scripts/dirac-service.py
Configuration/Server /opt/dirac/pro/etc/Configuration_Server.cfg -ddd
dirac 21976 2.9 1.5 968232 125016 ? Rl Mar05 35:34 python
/opt/dirac/pro/WebAppDIRAC/scripts/dirac-webapp-run.py -S
OAuthDIRAC.WorkloadManagementSystem.Utilities,OAuthDIRAC.FrameworkSystem.Utilities,OAuthDIRAC.ConfigurationSystem.Utilities,WebApp.handler /opt/dirac/etc/web_WebAppDIRAC.cfg -ddd
dirac 26000 0.0 0.0 4228 456 ? Ss Jan29 20:29 runsv Configuration_Server
```

\$ kill -9 21940 && ps -aux | grep Configuration

```
dirac 12560 21.0 0.5 562252 46732 ? SI 11:18 0:01 python /opt/dirac/pro/DIRAC/Core/scripts/dirac-service.py
Configuration/Server /opt/dirac/pro/etc/Configuration_Server.cfg -ddd
dirac 12580 0.0 0.0 112708 992 pts/0 R+ 11:18 0:00 grep --color=auto Configuration
dirac 21976 2.9 1.5 968232 125016 ? Sl Mar05 35:36 python
/opt/dirac/pro/WebAppDIRAC/scripts/dirac-webapp-run.py -S
OAuthDIRAC.WorkloadManagementSystem.Utilities,OAuthDIRAC.FrameworkSystem.Utilities,OAuthDIRAC.ConfigurationSystem.Utilities,WebApp.handler /opt/dirac/etc/web_WebAppDIRAC.cfg -ddd
dirac 26000 0.0 0.0 4228 456 ? Ss Jan29 20:29 runsv Configuration_Server
```

\$ tail -f /opt/dirac/startup/Configuration_Server/log/current

```
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Loading Configuration/Server
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Trying to Configuration/Server from CS
defined path DIRAC/ConfigurationSystem/Service/ConfigurationHandler.py
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Found handler for
Configuration/Server: DIRAC/ConfigurationSystem/Service/ConfigurationHandler.py
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Loaded
DIRAC.ConfigurationSystem.Service.ConfigurationHandler
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] NOTICE: Loaded module Configuration/Server
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Initializing Configuration/Server
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Service URL is
dips://marosvn32.in2p3.fr:9135/Configuration/Server
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Found 1 initialization methods
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Initializing Monitoring Client
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity
Connections
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity Queries
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity CPU
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity MEM
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity
PendingQueries
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity
ActiveQueries
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity
RunningThreads
2020-03-06 11:18:10 UTC Configuration/Server/Monitoring [140244465973056] DEBUG: Registering activity MaxFD
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Executing initialization function
```

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Initializing Configuration Service URL is dips://marosvn32.in2p3.fr:9135/Configuration/Server

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] INFO: Starting configuration service as slave

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] DEBUG: Setting configuration refresh as automatic

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method commitNewData

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_commitNewData: [<type 'basestring'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method echo

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_echo: [<type 'basestring'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method forceGlobalConfigurationUpdate

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_forceGlobalConfigurationUpdate: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found auth rules auth_forceGlobalConfigurationUpdate: ['CSAdministrator']

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method getCommitHistory

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_getCommitHistory: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method getCompressedData

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_getCompressedData: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method getCompressedDataIfNewer

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_getCompressedDataIfNewer: [<type 'basestring'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method getVersion

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_getVersion: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method getVersionContents

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_getVersionContents: [<type 'list'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method ping

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_ping: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found auth rules auth_ping: ['all']

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method publishSlaveServer

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_publishSlaveServer: [<type 'basestring'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method refreshConfiguration

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_refreshConfiguration: [<type 'bool'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found auth rules auth_refreshConfiguration: ['CSAdministrator']

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method rollbackToVersion

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_rollbackToVersion: [<type 'basestring'>]

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found RPC method writeEnabled

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: |- Found type definition types_writeEnabled: []

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found FileTransfer method bulkFromClient

```

2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found FileTransfer method
bulkToClient
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found FileTransfer method
fromClient
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found FileTransfer method listBulk
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: + Found FileTransfer method toClient
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Action Connection is a meta action for
Message
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Meta action Connection props are []
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] VERBOSE: Initializing dips transport
dips://marosvn32.in2p3.fr:9135/Configuration/Server
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] DEBUG: Using certificate
/opt/dirac/etc/grid-security/hostcert.pem
Using key /opt/dirac/etc/grid-security/hostkey.pem
2020-03-06 11:18:10 UTC Configuration/Server [140244465973056] ALWAYS: Listening at
dips://marosvn32.in2p3.fr:9135/Configuration/Server

```

2. Host failure:

To simulate a host failure, let's reboot it and see if all services are working after that.

```
$ dirac-admin-sysadmin-cli -o /DIRAC/Security/UseServerCertificate=no -H dirac4.grid.cyfronet.pl
```

```
Pinging dirac4.grid.cyfronet.pl...
```

```
[dirac4.grid.cyfronet.pl]> show status
```

System	Name	Module	Type	Setup	Installed	Runit	Uptime	PID
1	ResourceStatus	ResourceManagement	ResourceManagement	service	Setup	Installed	Run	5782758 17435
2	ResourceStatus	ResourceStatus	ResourceStatus	service	Setup	Installed	Run	5782758 17434
3	REST	OATokenStore	OATokenStore	service	Setup	Installed	Run	3100811 16188
4	DataManagement	EiscatFileCatalog	FileCatalog	service	Setup	Installed	Run	5782758 17386
5	DataManagement	FileCatalog	FileCatalog	service	Setup	Installed	Run	5782758 17404
6	DataManagement	StorageElement	StorageElement	service	Setup	Installed	Run	5782758 17403
7	DataManagement	StorageElementProxy	StorageElementProxy	service	Setup	Installed	Run	5782758 17405
8	DataManagement	TestFileCatalog	FileCatalog	service	Setup	Installed	Run	5782759 17378
9	DataManagement	TrainingStorageElement	StorageElement	service	Setup	Installed	Run	5782758 17406
10	Framework	Monitoring	Monitoring	service	Setup	Installed	Run	5782758 17402
11	Framework	Plotting	Plotting	service	Setup	Installed	Run	5782758 17407
12	Framework	SystemAdministrator	SystemAdministrator	service	Setup	Installed	Run	347623 22041
13	Accounting	DataStore	DataStore	service	Setup	Installed	Run	120496 20211
14	Accounting	ReportGenerator	ReportGenerator	service	Setup	Installed	Run	5782759 17380
15	Configuration	Server	Server	service	Setup	Installed	Run	5782759 17375
16	WorkloadManagement	PilotMonitorAgent	PilotMonitorAgent	agent	Setup	Installed	Run	1 23352
17	WorkloadManagement	StatesAccountingAgent	StatesAccountingAgent	agent	Setup	Installed	Run	20630 29102
18	RequestManagement	CleanReqDBAgent	CleanReqDBAgent	agent	Setup	Installed	Run	93573 5520
19	RequestManagement	RequestExecutingAgent	RequestExecutingAgent	agent	Setup	Installed	Run	3110768 27545

```
$ reboot
```

```
$ dirac-admin-sysadmin-cli -o /DIRAC/Security/UseServerCertificate=no -H dirac4.grid.cyfronet.pl
```

```
Pinging dirac4.grid.cyfronet.pl...
```

```
[dirac4.grid.cyfronet.pl]> show status
```

System	Name	Module	Type	Setup	Installed	Runit	Uptime	PID
--------	------	--------	------	-------	-----------	-------	--------	-----

1	ResourceStatus	ResourceManagement	ResourceManagement	service Setup Installed Run	3043	998
2	ResourceStatus	ResourceStatus	ResourceStatus	service Setup Installed Run	3043	999
3	REST	OATokenStore	OATokenStore	service Setup Installed Run	3044	944
4	DataManagement	EiscatFileCatalog	FileCatalog	service Setup Installed Run	3044	965
5	DataManagement	FileCatalog	FileCatalog	service Setup Installed Run	3043	1046
6	DataManagement	StorageElement	StorageElement	service Setup Installed Run	3043	979
7	DataManagement	StorageElementProxy	StorageElementProxy	service Setup Installed Run	3044	943
8	DataManagement	TestFileCatalog	FileCatalog	service Setup Installed Run	3044	964
9	DataManagement	TrainingStorageElement	StorageElement	service Setup Installed Run	3043	980
10	Framework	Monitoring	Monitoring	service Setup Installed Run	3043	989
11	Framework	Plotting	Plotting	service Setup Installed Run	3043	995
12	Framework	SystemAdministrator	SystemAdministrator	service Setup Installed Run	3044	952
13	Accounting	DataStore	DataStore	service Setup Installed Run	3043	1000
14	Accounting	ReportGenerator	ReportGenerator	service Setup Installed Run	3043	1002
15	Configuration	Server	Server	service Setup Installed Run	3043	982
16	WorkloadManagement	PilotMonitorAgent	PilotMonitorAgent	agent Setup Installed Run	1	25117
17	WorkloadManagement	StatesAccountingAgent	StatesAccountingAgent	agent Setup Installed Run	3043	983
18	RequestManagement	CleanReqDBAgent	CleanReqDBAgent	agent Setup Installed Run	3043	981
19	RequestManagement	RequestExecutingAgent	RequestExecutingAgent	agent Setup Installed Run	3044	978

3. Database restore:

To simulate database recovery, let's create a new database from the last backup, restart the ProxyManager service using that database and see if the service can read our restored database.

```
mysql> show databases;
```

```
+-----+
| Database |
+-----+
| information_schema |
| AccountingDB |
| ComponentMonitoringDB |
| EiscatFileCatalogDB |
| FTSDb |
| FileCatalogDB |
| InstalledComponentsDB |
| JobDB |
| JobLoggingDB |
| MPIJobDB |
| NotificationDB |
| OATokenDB |
| OAuthTokensDB |
| PilotAgentsDB |
| ProxyDB |
| ReqDB |
| ResourceManagementDB |
| ResourceStatusDB |
| SandboxMetadataDB |
| StorageManagementDB |
| SystemLoggingDB |
| TaskQueueDB |
| TestFileCatalogDB |
| TransformationDB |
```

```
| UserProfileDB      |
| VirtualMachineDB  |
+-----+
26 rows in set (0.01 sec)
```

\$ dirac-admin-users-with-proxy

...

* alitov

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : wenmr_user
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : wenmr_pilot
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_user
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_pilot
not after : 2020-12-08 14:21:33
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_egi_user
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : eiscat_pilot
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : eiscat_common
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : dirac_user
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : dirac_admin
not after : 2020-12-08 14:21:32
persistent : False
```

-

```
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : bitp_user
not after : 2020-12-08 14:21:33
```

```
persistent : False
-
DN       : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group    : bitp_pilot
not after : 2020-12-08 14:21:32
persistent : False
```

...

\$ dirac-admin-get-proxy alitov training_user

```
Username alitov has more than one DN registered
0 /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
1 /O=EGI/OU=AAI-Pilot/O=EGI Foundation/CN=Andrii Lytovchenko -hXsyo-lfs-2HPDj
Which DN do you want to download? [default 0]
```

Proxy downloaded to //proxy.alitov.training_user

mysql> show databases;

```
+-----+
| Database          |
+-----+
| information_schema |
| AccountingDB       |
| ComponentMonitoringDB |
| EiscatFileCatalogDB |
| FTSDB              |
| FileCatalogDB      |
| FileCatalogDBRestored |
| InstalledComponentsDB |
| JobDB              |
| JobDBRestored      |
| JobLoggingDB       |
| MPIJobDB           |
| NotificationDB     |
| OATokenDB          |
| OAuthTokensDB      |
| PilotAgentsDB      |
| ProxyDB            |
| ProxyDBRestored |
| ReqDB              |
| ResourceManagementDB |
| ResourceStatusDB   |
| SandboxMetadataDB  |
| StorageManagementDB |
| SystemLoggingDB    |
| TaskQueueDB        |
| TestFileCatalogDB  |
| TransformationDB   |
| UserProfileDB       |
| VirtualMachineDB   |
+-----+
29 rows in set (0.01 sec)
```

[dirac2.grid.cyfronet.pl]> restart Framework ProxyManager

Framework_ProxyManager started successfully, runit status:

```
(' Framework_ProxyManager', ':', 'Run')
```

\$ tail -f /opt/dirac/startup/Framework_ProxyManager/log/current

```

2020-04-14 10:33:49 UTC Framework/ProxyManager [139793906050816] DEBUG: Trying to load
FrameworkSystem.DB.ProxyDB
2020-04-14 10:33:49 UTC Framework/ProxyManager [139793906050816] DEBUG: Trying to load
VMDIRAC.FrameworkSystem.DB.ProxyDB
2020-04-14 10:33:49 UTC Framework/ProxyManager [139793906050816] DEBUG: Trying to load
DIRAC.FrameworkSystem.DB.ProxyDB
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: =====
MySQL =====
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: User:      Dirac
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: Host:      149.156.9.42
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: Port:      3306
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: DBName:
ProxyDBRestored
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO:
=====
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: Purged 6 expired proxies
from ProxyDB_Proxies
2020-04-14 10:33:50 UTC Framework/ProxyManager/ProxyDB [139793906050816] INFO: Purged 3 expired proxies
from ProxyDB_VOMSProxies
2020-04-14 10:33:50 UTC Framework/ProxyManager [139793906050816] INFO: MyProxy: False
MyProxy Server: myproxy.cern.ch
2020-04-14 10:33:50 UTC Framework/ProxyManager [139793906050816] VERBOSE: + Found RPC method
completeDelegationUpload
2020-04-14 10:33:50 UTC Framework/ProxyManager [139793906050816] VERBOSE: |- Found type definition
types_completeDelegationUpload: [(<type 'int'>, <type 'long'>), <type 'basestring'>]
2020-04-14 10:33:50 UTC Framework/ProxyManager [139793906050816] VERBOSE: + Found RPC method
deleteProxy

```

\$ dirac-admin-users-with-proxy

...

* alitov

```

DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : wenmr_user
not after : 2020-12-08 14:21:32
persistent : False
-

```

```

DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : wenmr_pilot
not after : 2020-12-08 14:21:32
persistent : False
-

```

```

DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_user
not after : 2020-12-08 14:21:32
persistent : False
-

```

```

DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_pilot
not after : 2020-12-08 14:21:33
persistent : False
-

```

```

DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : training_eji_user
not after : 2020-12-08 14:21:32

```

```
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : eiscat_pilot
not after : 2020-12-08 14:21:32
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : eiscat_common
not after : 2020-12-08 14:21:32
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : dirac_user
not after : 2020-12-08 14:21:32
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : dirac_admin
not after : 2020-12-08 14:21:32
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : bitp_user
not after : 2020-12-08 14:21:33
persistent : False
-
DN      : /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko
group   : bitp_pilot
not after : 2020-12-08 14:21:32
persistent : False
```

...

\$ dirac-admin-get-proxy alitov training_user

Username alitov has more than one DN registered

0 /DC=org/DC=ugrid/O=people/O=BITP/CN=Andrey Litovchenko

1 /O=EGI/OU=AAI-Pilot/O=EGI Foundation/CN=Andrii Lytovchenko -hXsyo-lfs-2HPDj

Which DN do you want to download? [default 0]

Proxy downloaded to //proxy.alitov.training_user