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Read-only LFC replica check list

This page is aimed to help you setting up a read-only LFC replica server for LHCb.

Check list

Site	Oracle DB	Enable Streams	LFC machine	LFC installation	Open ports	Test by LHCb
CNAF	OK	OK	OK	OK	OK	OK
Nikhef / SARA						
PIC						
FZK						
IN2P3						
RAL	OK	OK	OK	OK	OK	OK

Oracle DB

Oracle needs to be available at your site.

Enable Streams

You need to setup Oracle Streams at your site to receive the data coming from CERN.

Check the documents provided by Eva Da Fonte Perez.

LFC machine

Dedicate a machine to the LFC service. See What kind of machine for the minimal requirements.

The LFC server is a read-only **replica** of the CERN primary LFC server, used by LHCb for failover. Thus, there is no need for redundancy (i.e. several LFC servers with DNS load-balancing).

LFC installation

Pre-requisites

Oracle Client

The LFC installation via YAIM will not work unless `oracle-instantclient-basic` and `oracle-instantclient-sqlplus` are installed on the LFC machine.

```
$ rpm -qa | grep oracle
```

NOTE: you don't need `oracle-instantclient-jdbc` or `oracle-instantclient-devel` and can safely ignore the corresponding warnings in YAIM.

Oracle version

If your Oracle version is different from **10.2.0.1**, you need to change it in `/etc/sysconfig/lfcdaemon` (after creating it):

```
$ cp /etc/sysconfig/lfcdaemon.templ /etc/sysconfig/lfcdaemon
```

```
$ grep oracle /etc/sysconfig/lfcdaemon
...
# - Oracle Home :
export ORACLE_HOME=/usr/lib/oracle/10.1.0.4/client
```

tnsnames.ora

A `tnsnames.ora` file containing the LFC database description should be present under `/etc` or `/home/lfcmgr/.tnsadmin`. It can be any other directory provided it is defined in `/etc/sysconfig/lfcdaemon` **uncommented**:

```
$ more /etc/sysconfig/lfcdaemon
...
# - Directory where tnsnames.ora resides :
export TNS_ADMIN=/another/directory
```

ldconfig

The Oracle library path appears in `/etc/ld.so.conf` and `/sbin/ldconfig` has been run.

```
$ grep oracle /etc/ld.so.conf
/usr/lib/oracle/10.2.0.1/client/lib

$ /sbin/ldconfig
```

read-only LFC

Your LFC should be started as **read-only**, thus you need to change the `/etc/sysconfig/lfcdaemon` file:

```
$ grep READONLY /etc/sysconfig/lfcdaemon
...
RUN_READONLY="yes"
```

disable virtual ids automatic creation

Your LFC should be started so that the **automatic creation of virtual ids is disabled**:

In LFC version 1.6.7-1 and 1.6.7-2, this is missing from the `/etc/sysconfig/lfcdaemon` and `/etc/init.d/lfcdaemon` files.

- So, replace your `/etc/init.d/lfcdaemon` file with this one [?](#)
- And check this `sysconfig` file [?](#), and merge it with your own `sysconfig` file. Disable the virtual ids automatic creation:

```
RUN_DISABLEAUTOVIDS="yes"
```

After starting the LFC, make sure that the `-n` option appears:

```
$ service lfcdaemon start
$ ps aux | grep lfcdaemon
lfcmgr  29457  0.0  1.6 235372 4440 ? Ssl  14:51   0:01 /opt/lcg/bin/lfcdaemon -n -t 20 -c /o
```

Installation via YAIM

Check the YAIM guide

LFC Admin Guide

To become familiar with LFC service, Tier-1 administrators are encouraged to read the LFC admin guide

These slides might also be helpful

The important part is to start the LFC server as read-only

For help with the LFC server installation, please contact the LFC support team

Open ports

Ports 5010, 8085 and 2170 need to be open to the outside world. See this section of the LFC admin guide.

Test the LFC

- Test that the LHCb data has actually been replicated to your site and is visible in the LFC:

```
$ lfc-ls /grid/lhcb
SAM
SFT
blouw
cnaf-stress
data
...
```

- Test that the server has been started in **read-only** mode:

```
$ lfc-mkdir /grid/lhcb/hello
cannot create /grid/lhcb/hello: Read-only file system
```

- Contact Roberto Santinelli to test your freshly installed LFC server. He will be able to test your installation as a member of the LHCb VO.

Troubleshooting

Could not establish context

The user sees:

```
$ lfc-ls /grid/lhcb
/grid/lhcb: Could not establish context
```

And the `/var/log/lfc/log` LFC server log shows:

```
09/14 09:03:54 23479,0 Cns_serv: Could not establish security context:
_csec_get_voms_creds: Cannot find certificate of AC issuer for vo lhcb !
```

The solution is to install `lcg-vomscert-4.5.0-1`, which creates the `/etc/grid-security/vomsdir` directory and its content.

Could not get virtual id

The user sees:

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```
$ lfc-ls /  
Could not get virtual id: Internal error !  
/: No user mapping
```

And the `/var/log/lfc/log` LFC server log shows:

```
09/14 13:45:48 25609,0 Cns_get_usrinfo_by_name: OPEN CURSOR error:  
ORA-00980: synonym translation is no longer valid
```

The problem is that the `Cns_groupinfo` and `Cns_userinfo` tables are not replicated to Tier1s. This should be fixed. They cannot be created locally, because the ACLs won't be the same between the different LFC replicas, and there won't be consistency . For more details, ask Roberto... 😊

-- SophieLemaitre - 10 Dec 2007

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