

# Grid Configuration Monitoring (GCM) User Guide

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March 10, 2009

## Abstract

This paper is the user guide of *Grid Configuration Monitoring* (GCM) developed at CERN for the *Worldwide LHC Computer Grid* (WLCG). It describes how to install, configure and use each component.

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# 1 Introduction

The aim of this work is to collect information about the configuration of the WLCG production grid infrastructure. It does this by providing a program that runs with a grid job that gathers information about a worker node and its environment. See the documentation of the *Worker Node Client*. [4]

A server [3] retrieves these information, so called *Tests* and stores them in an oracle database using *Django*. Finally this web application visualizes the data for statistical purposes or to help to resolve problems. Figure 1 illustrates the whole layout.

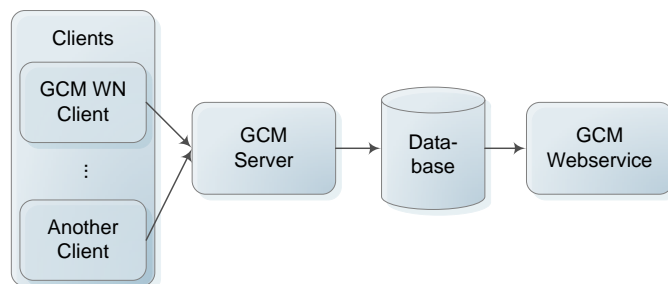


Figure 1: Layout of *Grid Configuration Monitoring* programs

## 2 Installation Instructions

### 2.1 Get the Source Code

You can download the source code using the following command:

```
svn checkout http://www.sysadmin.hep.ac.uk/svn/grid-monitoring/trunk/gcm gcm
```

### 2.2 Install using Make

To install the software you need to change into the top-level directory of GCM. Then you can use **Make** to install it using:

```
make install DESTDIR=/path/to/gcm
```

When you do not specify `DESTDIR` it will be installed into `$GCM_HOME`. If `$GCM_HOME` is not set it will install into `/opt/glite` by default.

### 2.3 Install using RPM

You can also install the software using RPMs. By default they will install into `/opt/glite`. Of course you need to create them first:

```
make rpm
```

Now all RPM files were created in the directory `rpm`. Then you can use the following command to install them in the right order:

```
make rpmi
```

If you want to uninstall them use:

```
make rpmu
```

## 2.4 Dependencies

Some of the programs need other tools. So it is necessary to install them beforehand.

- **The Client** needs nothing but `python ≥ 2.0.1`
- **The Server** needs:
  - `python ≥ 2.3.4` [6]
  - `cxOracle ≥ 4.3.1` [1] (and proper configured oracle client)
  - `django ≥ revision 9832` [2] (aggregation support)
- **The Web Portal** needs:
  - `python ≥ 2.3.4` [6]
  - `cxOracle ≥ 4.3.1` [1] (and proper configured oracle client)
  - `django ≥ revision 9832` [2] (aggregation support)
  - `pygments ≥ 1.0` (aggregation support) [5]

## 3 Execution

From now on `$GCM_HOME` specifies the installation directory you used in step 2. Each application has its own executable located in `$GCM_HOME/bin`:

- **grid-cm-client-wn** is the client which will be installed on a *Worker Node*. Running `grid-cm-client-wn -h` will show you all available options.
- **grid-cm-server** is the server which will receive all *Test* results and store them into the database. Running `grid-cm-server -h` will show you all available options.
- **grid-cm-db** is the *Django* equivalent of `django-manage.py` which should be used with commands like `syncdb` or `reset`.

- **grid-cm-web** is also a *Django* equivalent of `django-manage.py`. The difference to `grid-cm-db` is which `settings.py` will be loaded. That is why you should not use database commands with `grid-cm-web`. To start the development server use:

```
grid-cm-web runserver 0.0.0.0:8163
```

## 4 Configuration

The server and *Worker Node Client* has its own configuration file located in `$GCM_HOME/etc`:

- **grid-cm-client-wn.conf** is used to configure the *Worker Node Client*.
- **grid-cm-server.conf** is used to configure the server.

Details on how to use those configuration files can be found in their corresponding documentations [3] [4].

The database and the *Web Portal* will be configured using *Django's* `settings.py`. They are located in:

- `$GCM_HOME/lib/python/gcm/db/settings.py`
- `$GCM_HOME/lib/python/gcm/web/settings.py`

## 5 References

- [1] cxTools. cxoracle. <http://cx-oracle.sourceforge.net/>.
- [2] Django. Django - the web framework for perfectionists with deadlines. <http://www.djangoproject.com/>.
- [3] T. Low. Grid configuration monitoring - server and database documentation. See <https://twiki.cern.ch/twiki/bin/view/EGEE/WorkerNodeConfiguration#Documentation>.
- [4] T. Low. Grid configuration monitoring - worker node client documentation. See <https://twiki.cern.ch/twiki/bin/view/EGEE/WorkerNodeConfiguration#Documentation>.
- [5] Pygments. Pygments. <http://pygments.org/>.
- [6] Python. Python programming language. <http://www.python.org/>.