



# LHC COMPUTING GRID

## INTRODUCTION TO LCG-2 MANUAL INSTALLATION GUIDE

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<i>Author(s):</i>	Antonio Retico, Antonio.Retico@cern.ch
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*Abstract: This document contains general information about manual installation of LCG2 middle-ware. It is the start point for site administrators to access more specific documents dealing with the subject*

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## 1. OBJECTIVES OF THIS DOCUMENT

This document is addressed to Site Administrators in charge of LCG2 middleware installation and configuration.

Its purpose is to provide links to the existing technical documents as well as general guidelines to their correct use.



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## 2. GENERAL INFORMATION

This section includes general information on the LCG2 manual installation and configuration guides. In the next sub-sections the following topics will be dealt with:

- Which guides are available
- Overall description of the contents

### 2.1. AVAILABLE GUIDES

Guides are currently available for the installation of the following LCG nodes:

- Worker Node
- User Interface
- Computing Element
- Classical Storage Element
- Resource Broker
- LCG-BDII
- Proxy Server

### 2.2. CONTENT OF A GUIDE

A Manual Installation Guide for a LCG node includes:

- Guide in PDF format
- RPM lists
- Scripts to download RPMs

Two different methods are supported for software installation

- Centrally managed installation using the Debian *apt-get* tool
- Manual installation using the Red Hat *rpm* tool.

The **first method** is simple and straightforward. Node-specific meta-packages define and hide the list of rpms to be installed. Dependencies among rpms, in particular, are easily managed by the *apt-get* tool. This may help if a site is running a customized version of Red Hat and the administrator prefer not to solve dependencies manually.

On the other side, the installation using *apt-get* gives to site administrators poor control on installation and on the way the dependencies are solved.



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In order to install using *apt-get* please refer to the following document:

<http://www.cern.ch/grid-deployment/gis/aptDB/>

The **second method** gives to site administrators full control on the installation, because it is based on an explicitly declared set of rpms to be installed on top of Red Hat 7.3.

On the other hand, the installation procedure is slower and needs each unmanaged dependency to be manually solved.

In order to install with this manual method administrators will need the complete set of installation tools, namely:

**Guide in PDF format** The file <NODE>.pdf contains detailed instructions to install the LCG software on the top of Linux RedHad 7.3 and to configure all the services to be run on that specific node type.

All the tools, lists and documents needed at this aim are described in details by this file.

Generic site configuration (network services, ports, etc.) are mostly dealt with within the configuration of the entailing Grid services. For an exhaustive and up-to-date overview of firewall configuration, anyway, you should refer to the instructions reported in the release notes.

Several configuration examples are provided as well.

A change history reports the location and nature of recent changes occurred in the guide.

Furthermore, the last section of the guide usually deals with the steps needed in order to upgrade the node installation and configuration from the previous release (when it is applicable). The upgrade of the node is supported only between two consecutive release of the software (CVS tags). Nodes running with an older version should be reinstalled from scratch.

**RPM lists** The RPM lists provided are shaped to allow an installation without conflicts on the current standard distribution of Linux RH7.3.

Sites which use customized versions of RH may encounter dependencies or conflicts to be handled locally.

Two main sets of RPM lists are provided with the guide.

A first set deals with the installation of the LCG software on the bare RH7.3, the second one concerns the upgrade of the installation from the previous release. Both sets includes, in short, lists of RPMs to be installed, removed, forced and so on.

For a complete description of the content and use of the provided RPM lists, please refer to the node-specific guide

<NODE>.pdf.

**Scripts to download RPMs** Shell scripts are provided to download from the LCG mirror site at CERN the packages documented in the RPM lists.

For a complete reference of the download scripts and their use please refer to the node-specific guide

<NODE>.pdf.



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### 3. GENERAL NOTES ABOUT THE USE OF THE GUIDES

If on the node which is going to be installed there is the previous release of LCG middleware running, the easiest way to proceed is to try and apply the upgrade procedure (this procedure, when available, is described into a dedicated Appendix in the file <NODE>.pdf).

If you experience problems doing the upgrade please report us. It would be useful (to the site as well as to us) that in this case you try and run the complete procedure, in order to have a working machine and to gather as much information as you can on the specific problem.

If you are running a software release which is older than the one marked by the previous CVS tag, there is no alternative than the one to run the complete installation and configuration procedure.



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## 4. ACCESS

The whole series of LCG manual installation guides can be accessed starting from the web site

<http://www.cern.ch/grid-deployment/gis/release-docs/MIG-index.html>

This page publishes tagged versions of the installation guide for all available node types.



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## 5. CONTACTS

The persons to contact for questions and suggestions concerning the described set of documents are:

- Antonio Retico <Antonio.Retico@cern.ch>
- Alessandro Usai <Alessandro.Usai@cern.ch>
- Guillermo Diez-Andino Sancho <Guillermo.Sancho@cern.ch>
- Oliver Keeble <Oliver.Keeble@cern.ch>