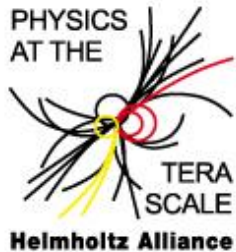


dCache administration workshop

Installation session

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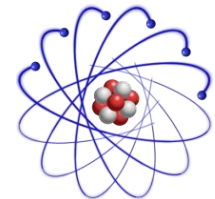


Wikipage for this course

- For the installation of dCache you will need to execute many commands.
- Therefore a detailed step-by-step manual can be found in the GKS Wiki:
 - <http://wiki.scc.kit.edu/gridkaschool/index.php/DCache>
 - [http://wiki.scc.kit.edu/gridkaschool/index.php/Installing_dCache_\(2012\)](http://wiki.scc.kit.edu/gridkaschool/index.php/Installing_dCache_(2012))

Table of content

- We will follow the general main phases for every installation:
 1. Perform the *installation*.
 2. Change the *configuration* of your setup according to your needs.
 3. *Validate* that what you have done is working properly.
- Everything discussed in this chapter is already prepared on the provided machine, should be in your registration details.
- The procedure described in this workshop is based on Scientific Linux 6.2, but should be applicable to any Red-Hat Linux derivative.



Prerequisites – Part A

- ④ dCache is a software written completely in JAVA.
 - ④ Thus dCache can run on any operating system that supports JVMs.
 - ④ Also we are mostly independent from the operating system!
- ④ So dCache can be run, it needs the Java Runtime Environment (JRE) at least of version 1.7.0.
- ④ It is recommended to use the Sun Java Development Kit (JDK) at latest patch level.
 - ④ Allows usage of some extra features for diagnostic purpose.



Prerequisites – Part B and Preparations

- ① Some dCache components use databases (e.g. SRM, PNFS, Billing).
- ① Although dCache may be configured to use other, it is recommended to install PostgreSQL (version 9.2 or higher).
- ① At least these rpms are needed and are on the image provided in /root/
 - ① postgresql
 - ① postgres-server
 - ① postgres-libs

PostgreSQL



Installation

- ④ Every dCache-rpm (and the sources) can be found at dCache.org.
- ④ For this workshop all relevant dCache installation packages are deposited in /root/
- ④ Since we will be using one machine for the whole workshop, you will be installing the dCache client packages together with the server package.

Configuration – PostgreSQL

- ④ After PostgreSQL is installed, the databases are owned by the newly added user postgres.
- ④ Because of this root is underprivileged in handling the PostgreSQL databases. In fact, root does not have any right to connect to any database.
- ④ Thus the configuration about the databases is to be carried out as user postgres.

Configuration – dCache

- ① Initial configuration of dCache is done by means of flat files:
 - ② `/etc/dcache/dcache.conf`

The central configuration file, that ideally should be nearly identical on all nodes of the dCache setup.
 - ③ `/etc/dcache/layouts`

Layout files are the place to define the actual topology for the dCache services/domains *on this node* and are gathered in this directory.
 - ④ `/usr/share/dcache/defaults`

This directory is filled with files defining the default settings for all dCache services, as they are shipped by dCache.org.

Do not modify these files, as they will be replaced by subsequent updates!

Configuration – dCache

- Once we have created our own layout file and made dCache using it, we have to define the topology of our setup with regards to which *dCache domain* has to host which *dCache service*.
- dCache will store its data in so-called *pools*, which are defined in the same way as every other domain/service of dCache: in the layout file.
- Some more settings regarding *Java* – especially its usage of memory – are generally beneficial.

Starting dCache

- ④ First, check on the syntax of the configuration files.
 - ④ `dcache check-config`
- ④ If no errors are reported, start dCache.
 - ④ `dcache start`
- ④ You can check on the (presumed) status of the dCache components.
 - ④ `dcache status`
- ④ To get a list of what dCache is configured to run on this host.
 - ④ `dcache services`



GKS-Wiki

[\(Finally\) Starting dCache](#)

Validation

- ④ The dCache *web interface* is an easy way to get basic (status) information about your running dCache.

GKS-Wiki

Varia → [dCache's web service](#)


- ④ Sometimes it is useful to *mount* the file system view of the dCache *namespace* in your local file system hierarchy.

GKS-Wiki

Varia → [Export of namespace file system](#)

- ④ For doing data import/export some further configurations are required, which you will learn about in the next sessions.

Last words

- 
- Thank you for your attention and participation!
 - Are there any questions or problems left?