DIRAC server installation

DIRAC Project

- ▸ What is installed ?
- ▸ Installation procedure and tools
- ▸ Server installation area structure
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- ▸ Installation prerequisites
- ▸ Updating server installations
- ▸ Client installations
- ▸ Pilot installations

Software installation

- Universal dirac-install installer script
  - For installing DIRAC in the client, server and pilot environments

- Installing software consists in
  - Installing Python code
  - Installing binary codes according to the target platform
    - Different collections for client and server installations
  - Installing LCG/gLite bindings
    - Not absolutely necessary for the client installations
    - Necessary for the server installations

- Sizes of a single version installation
  - Client – 20MB downloadable, ~100MB on disk
  - Server – 100MB downloadable, ~500MB on disk

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Server software installation

- Installing under /vo/dirac (/opt/dirac):
  - Main subdirectories:
    - *versions* – this is where releases are installed each in a separate subdirectory
      - The current version is selected by /vo/dirac/pro link
      - Allows to quickly roll back a release in case of problems after update
    - *etc* – contains installation configuration and security credentials
    - *runit* – component working subdirectories
      - More on that later
    - *startup* – component startup links necessary for automatic component start at boot time
      - Used by the **runit** services running framework
    - *scripts* – links to all the commands in the <system>/scripts directories in a single PATH with .py extension dropped

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- In each <version> directory:
  - *DIRAC* directory
    - Python code
  - <platform> directory, e.g. *Linux-*
    - DIRAC binary code – PyGSI
    - External binary code
    - LCG/gLite software

Server software update

- Updating the server software consists in
  - Installing a new version in the /vo/dirac/versions directory
  - Readjusting *pro* and *old* links to point to the current and the previous versions respectively

- Each update brings in the whole software stack
  - If even come packages do not change
  - Suboptimal disk usage but less complexity in managing package dependencies

- Configuration data is not affected by the software updates

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Installation setups

▶ **Single-host all-in-one installation**

  ▶ Small installations

  ▶ Development, test installations

  ▶ Tutorial installations

▶ **Multi-host installations**

  ▶ Each DIRAC component can run on a separate host:

    ▶ Services, agents, databases

  ▶ Allows to flexibly balance the installations on a given hardware configuration

▶ **Multi-site installations**

  ▶ Installation hosts can be on different sites

  ▶ Important geographical redundancy for vital services

    ▶ Configuration, Failover request relay points

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Server installation in CC/Lyon

- 5 installation servers ccdirac01-05
  - **ccdirac01**
    - Security sensitive services
      - Configuration master
      - ProxyManager
      - SecurityLogging
  - **ccdirac02**
    - WMS system
  - **ccdirac03**
    - DMS system
  - **ccdirac04**
    - StorageElement, Sandbox services
  - **ccdirac05**
    - Web portal
- The services distribution can change in the future
  - Transparent to the clients, a matter of reconfiguration

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Server installation in CC/Lyon, 2

- MySQL database provided as an external service by CC

- Reusing the same service as was used for *dirac.in2p3.fr* installation so far

  - More powerful MySQL installation might be needed in the future

- Status

  - The services are installed and running

  - The clients of the *dirac.in2p3.fr* installation are transparently using the new installation

    - Keeping the initial database service state

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Client installation

- **Client installation has a simpler directory structure**
  - No multiple versions kept
  - Each update rewrites the previously installed software
    - The client configuration is preserved
- **Clients working with the DIRAC CC/Lyon service are installed with**
  - > dirac-install –V FranceGrid
    - Other aliases: gridfr, formation
  - The client configuration installed this way is pointing to the Configuration Service in CC/Lyon
- **The client for DIRAC at CC/Lyon is available on ccali**
  - Environment is set by executing *dirac_env*

Pilot installation

- **Pilots are installing the client DIRAC software**

  - Using standard dirac-install with –V flag to bring predefined defaults

- **Pilots are configured to install LCG/gLite binaries**

  - Redundant on EGI sites

    - Still more reliable than relying on local installations

  - Needed on non-grid sites

- In the tutorial full server installations will be performed by students

- Individual virtual hosts per 2 students

  - Hosts prerequisites are prepared

- All-in-one installations

  - Local MySQL database server

  - Local Web Portal

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