quattor – summary for WP6

German Cancio

CERN/IT

http://quattor.org

DataGrid is a project funded by the European Commission
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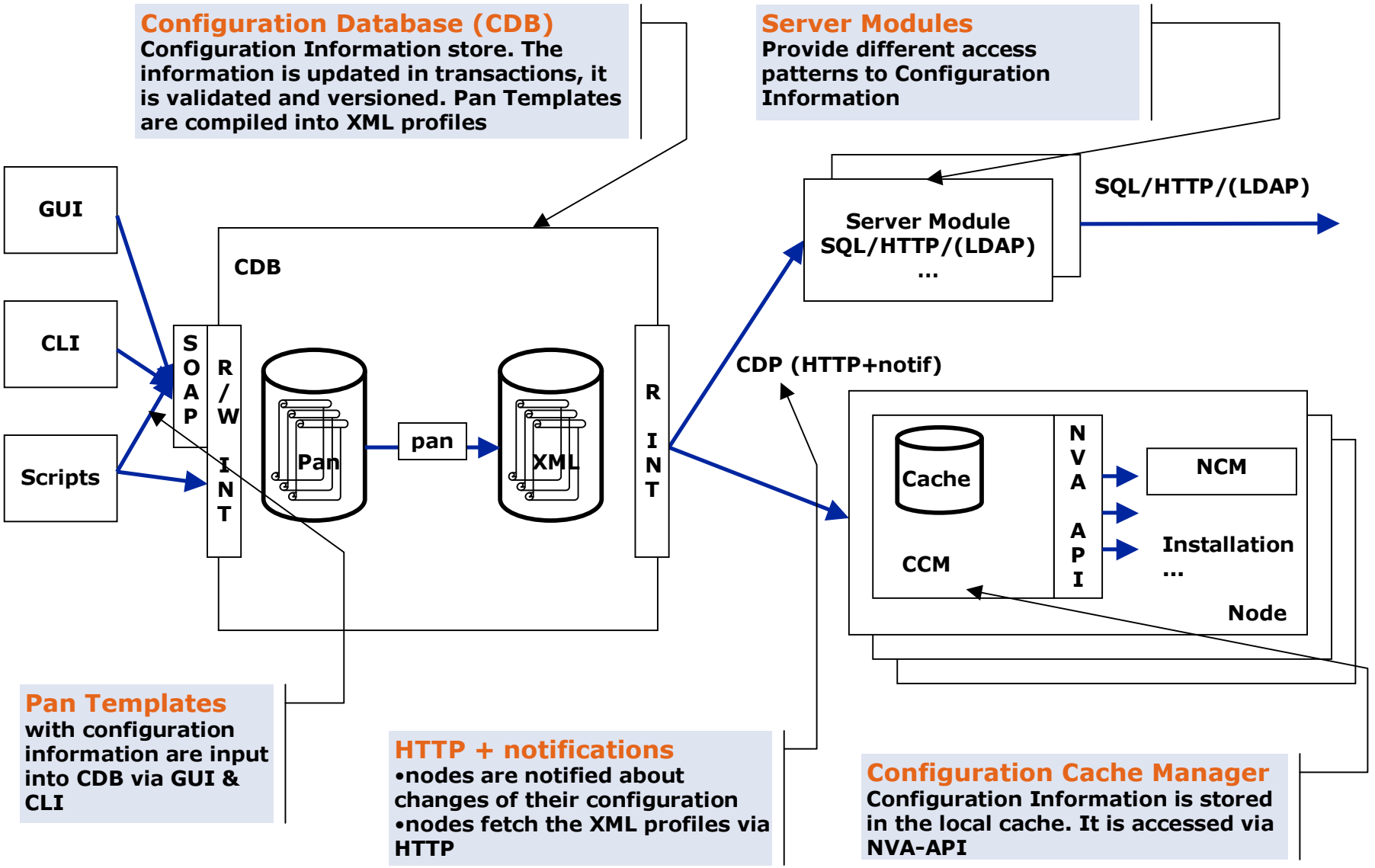
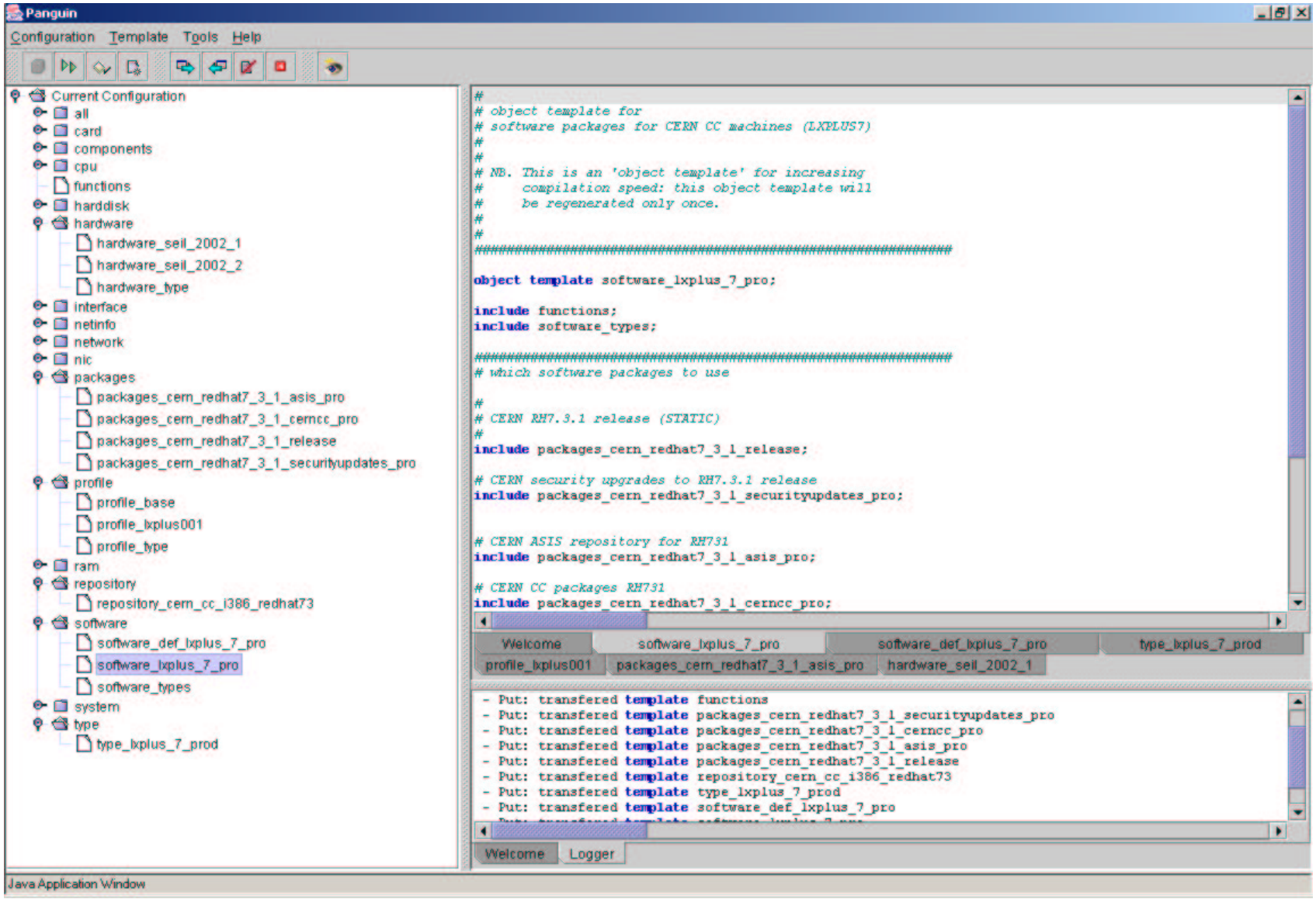
quattor architecture - overview

- Configuration Management Infrastructure
  - **CDB** (Configuration Database)
  - **CCM** (Configuration Cache Manager)
  - Server Modules (SQL, XML Replication)
  - CDB-GUI/CLI
- Node configuration and Installation
  - **AII** (Automated Installation Infrastructure)
  - **NCM** (Node Configuration Manager)
  - Software Repository (**SWRep**)
  - Software Package Management Agent (**SPMA**)

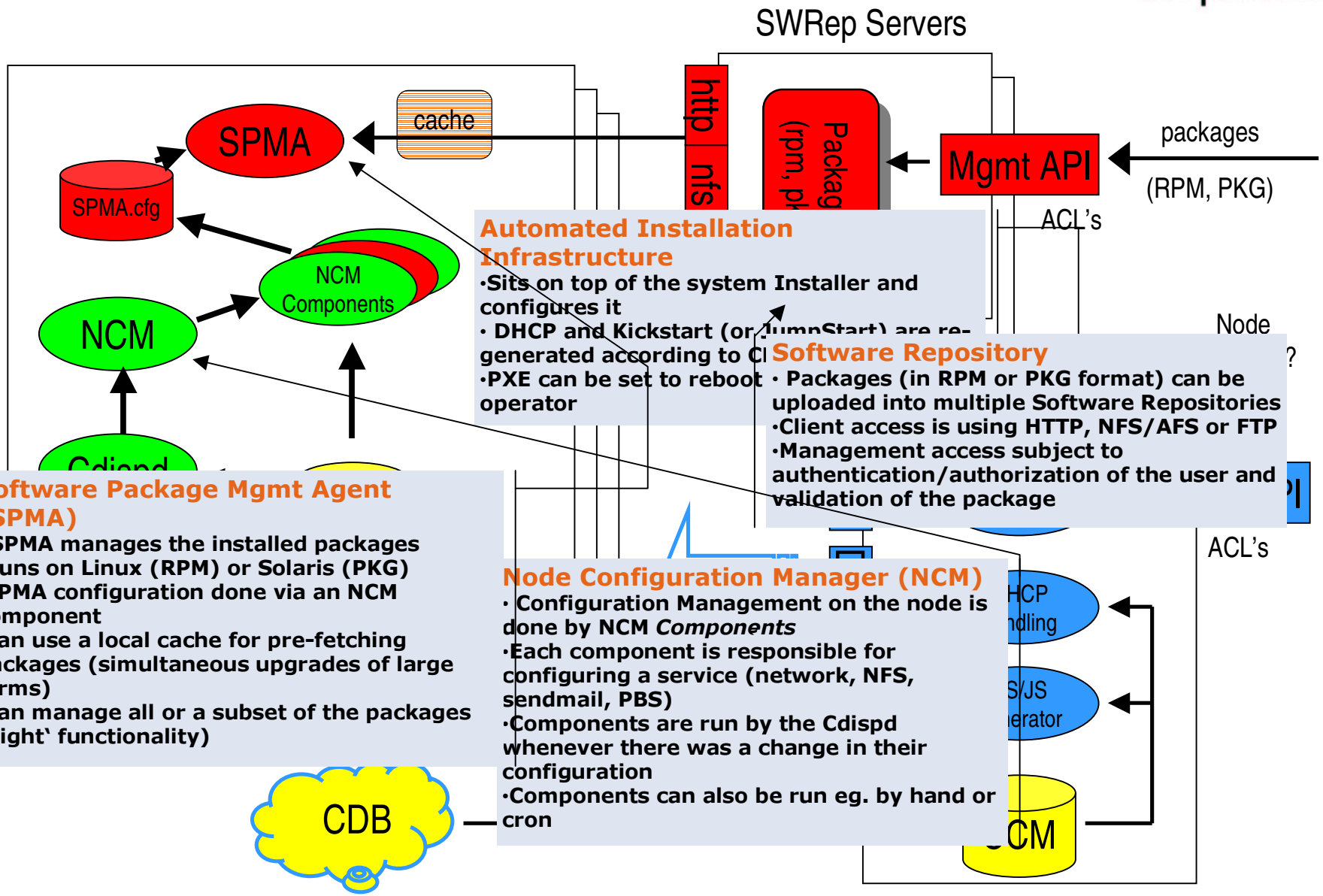
Config Mgmt Infrastructure Design



panguin GUI for managing/editing PAN templates



Node install / config design



Automated Installation Infrastructure

- Sits on top of the system Installer and configures it
- DHCP and Kickstart (or JumpStart) are re-generated according to CI
- PXE can be set to reboot operator

Software Repository

- Packages (in RPM or PKG format) can be uploaded into multiple Software Repositories
- Client access is using HTTP, NFS/AFS or FTP
- Management access subject to authentication/authorization of the user and validation of the package

Software Package Mgmt Agent (SPMA)

- SPMA manages the installed packages
- Runs on Linux (RPM) or Solaris (PKG)
- SPMA configuration done via an NCM component
- Can use a local cache for pre-fetching packages (simultaneous upgrades of large farms)
- Can manage all or a subset of the packages ('light' functionality)

Node Configuration Manager (NCM)

- Configuration Management on the node is done by NCM *Components*
- Each component is responsible for configuring a service (network, NFS, sendmail, PBS)
- Components are run by the Cdispd whenever there was a change in their configuration
- Components can also be run eg. by hand or cron

Status

- CDB and CCM:
  - Production release, used at CERN
  - SQL module being tested
- AII:
  - Beta version, needs more testing
- NCM:
  - First public release of framework
  - Pilot deployed at CERN – should replace SUE in next RH release
  - Base components started … but still far from having what is needed for installing an EDG testbed (>60 components)
- SWRep and SPMA:
  - Consolidated production version, used at CERN (>1300 nodes)
  - Beta plug-ins for Solaris

Differences with EDG-LCFG

- New and powerful configuration language
  - True hierarchical structures
  - Extendable data manipulation language
  - (user defined) typing and validation
- Ensure configuration consistency
  - Transactional checks
  - Internal version control
- Portability
  - Plug-in architecture -> Linux and Solaris
- Enhanced components
  - Sharing of configuration data between components now possible
  - New component support libraries
  - *Native* configuration access API (NVA-API)
- Stick to the standards where possible
  - Installation subsystem uses system installer
  - Components don't replace SysV init.d subsystem
- Modularity
  - Mostly independent modules
  - "light" functionality built in (eg. package management)
- Removed non-scalable protocols
  - NFS mounts not necessary any longer
- Enhanced management of software packages
  - ACL's
  - No 'header' files

- quattor homepage: http://quattor.org

- This morning's tutorial material: http://quattor.org/documentation/tutorials