



Quattor tutorial Introduction

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Introduction



- ◆ Agenda page
- ◆ Laptop registration issues?
- ◆ Notes:
 - You will **work in pairs** during the practical exercises (limited dvp nodes)
 - Use only **one laptop per pair please**
 - limited power bars!
 - Potentially limited wireless network!!!
 - Laptops will be required only for terminal (SSH) connections
 - No need to install any quattor software unless you really want to :-)
- ◆ There are less practical exercises than theory slides ;-(
- ◆ Your feedback will be most welcome for improvements!
- ◆ *Who did the homework?*



Quattor in CERN context: ELFms



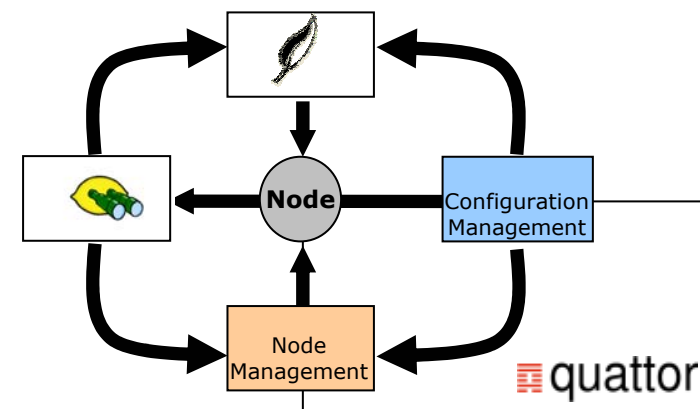
ELFms stands for 'Extremely Large Fabric management system'

Subsystems:

◆  **quattor** : configuration, installation and management of nodes

◆  : system / service monitoring

◆  : hardware / state management



◆ ELFms manages and controls most of the nodes in the CERN CC

- ~2300 nodes out of ~ 3000
- Multiple functionality and cluster size (batch nodes, disk servers, tape servers, DB, web, ...)
- Heterogeneous hardware (CPU, memory, HD size,..)
- Supported OS: Linux (RH7, RHES2.1, RHES3 / Scientific Linux 3 – IA32&IA64) and Solaris (9)



Improvements wrt EDG-LCFG



- ◆ New and powerful configuration language
 - True hierarchical structures
 - Extendable data manipulation language
 - (user defined) typing and validation
- ◆ SQL query backend
- ◆ 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
 - Clearly defined interfaces and protocols
 - Mostly independent modules
 - "light" functionality built in (eg. package management)
- ◆ Improved scalability
 - Enabled for proxy technology
 - NFS mounts not necessary any longer
- ◆ Enhanced management of software packages
 - ACL's for SWRep
 - Multiple versions installable
 - No need for RPM 'header' files
- ◆ Last but not least...: **Support!**
 - EDG-LCFG is frozen and obsoleted (no ports to newer Linux versions)
 - **LCFG -> EDG-LCFGng -> quattor**



Differences with ASIS/SUE



ASIS:

- ◆ Scalability
 - HTTP vs. shared file system
- ◆ Supports native packaging system (RPM, PKG)
- ◆ Manages all software on the node
- ◆ `real` Central Configuration database
- ◆ (But: no end-user GUI, no package generation tool)

SUE:

- ◆ Focus on configuration, not installation
- ◆ Powerful configuration language
 - True hierarchical structures
 - Extendable data manipulation language
 - (user defined) typing and validation
 - Sharing of configuration data between components now possible
- ◆ Central Configuration Database
- ◆ Supports unconfiguring services
- ◆ Improved dependency model
 - Pre/post dependencies
- ◆ Revamped component support libraries



Differences with ROCKS



- ◆ Rocks: better documentation, nice GUI, easy to setup
- ◆ Design principle: reinstall nodes in case of configuration changes
 - No configuration or software updates on running systems
 - Suited for running long production jobs? Efficiency on batch nodes, upgrades / reconfigs on 24/24,7/7 servers (eg. gzip security fix, reconfig of CE address on WN's)
- ◆ Assumptions on network structure (private,public parts) and node naming
- ◆ No indication on how to extend the predefined node types or extend the configured services
- ◆ Limited configuration capacities (key/value)
- ◆ No multiple package versions (neither on repository, nor simultaneously on a single node)
 - Eg. different kernel versions on specific node types
- ◆ Works only for RH Linux (Anaconda installer extensions)



Welcome Back!



- ◆ Please sit at the same place as yesterday!
- ◆ We will continue working in pairs, connecting to the same nodes as yesterday.
- ◆ If you don't remember your node name, check the handouts.
- ◆ If you don't have the handouts anymore... come and talk to us.



 quattor

<http://quattor.org>