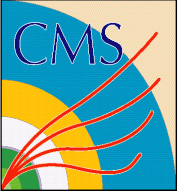


## Session II: Farm management for CMS online machines

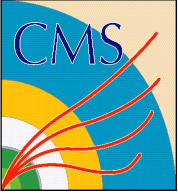
Juan Antonio Lopez Perez PH/CMD



# Contents

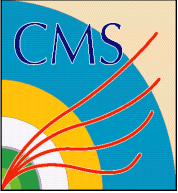


- Farm management in CMS
- Installations
- Current status & Documentation



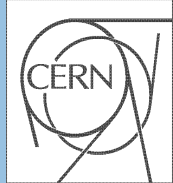
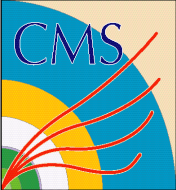
# Farm management in CMS

- Most machines running different flavours and versions of **Scientific Linux CERN**.
  - Also some **Windows** machines, managed using IT's **CMF** (Computer Management Framework).
- Most machines at the private CMS online network.
  - Organised in clusters for its management using Quattor templates.
- OS, kernel, drivers, software packages and configuration managed using **Quattor**.



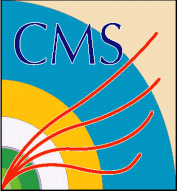
# Farm management in CMS

- **Quattor** (<http://www.quattor.org>) is a system administration tool for automated installation, configuration and management of clusters and farms
  - Quattor involves:
    - Configuration Database (CDB)
    - Configuration Components
    - Software packages
  - **SWRep** (Software Repository Server) is used to create and manage a software package repository
  - There exist also a **Web Template Viewer**



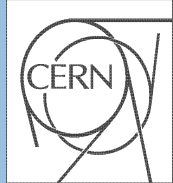
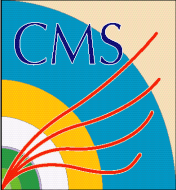
# Farm management in CMS

- We installed our own Quattor CDB server at the private CMS online network.
  - Installed/configured a SWRep
    - ➔ With CMS online specific packages as well as replicas of IT's SLC and Quattor repositories.
  - Installed/configured a Web Template Viewer
- Used IT's infrastructure for some testing and desktop machines on public network.
- Having support from IT's LinuxFC.
  - <https://uimon.cern.ch/twiki/bin/viewauth/CNIC/>
  - Software environment based on Quattor



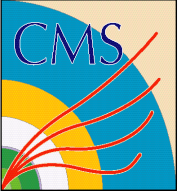
# Installations

- new nodes installed using **PXE** and **kickstart**
  - Used our own PXE for the private network.
  - It requires the registration of the machines on Quattor CDB (also on AIMS if using LEAF Tools)
- reinstallations fast and automated using PXE, kickstart and Quattor
  - possibility of putting the machine on a previous state or to copy configurations using Quattor



# Installations

- machines registered in Quattor using IT's **LEAF Tools** (LHC-Era Automated Fabric)
  - Set of scripts to automate typical Quattor tasks
  - Part of the ELFms (Extremely Large Fabric management system) as well as Quattor.
    - Outdated documentation at the web site
      - look at the doc distributed with the RPM
  - Required to make a **wrapper script**
  - Used LEAFAddHost to create/manage quattor templates of a large amount of machines.
    - see talk given at LFC meeting on 14 Dec



# Current status & Documentation



- One server with our own CDB and SWRep
  - failovers planned but not yet implemented
- 130 Quattor-managed machines
- Several OS installed and managed
  - SLC3 32bits, SLC4 32bits, SLC4 64bits
- Documentation wrote in Twiki
  - <https://twiki.cern.ch/twiki/bin/view/CMS/QuattorDoc>
- Talk given at the LFC meeting on 14 Dec
  - <https://twiki.cern.ch/twiki/pub/CMS/QuattorDoc/LFCm>