



# Quattor@CERN

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For CERN IT-FIO/FD

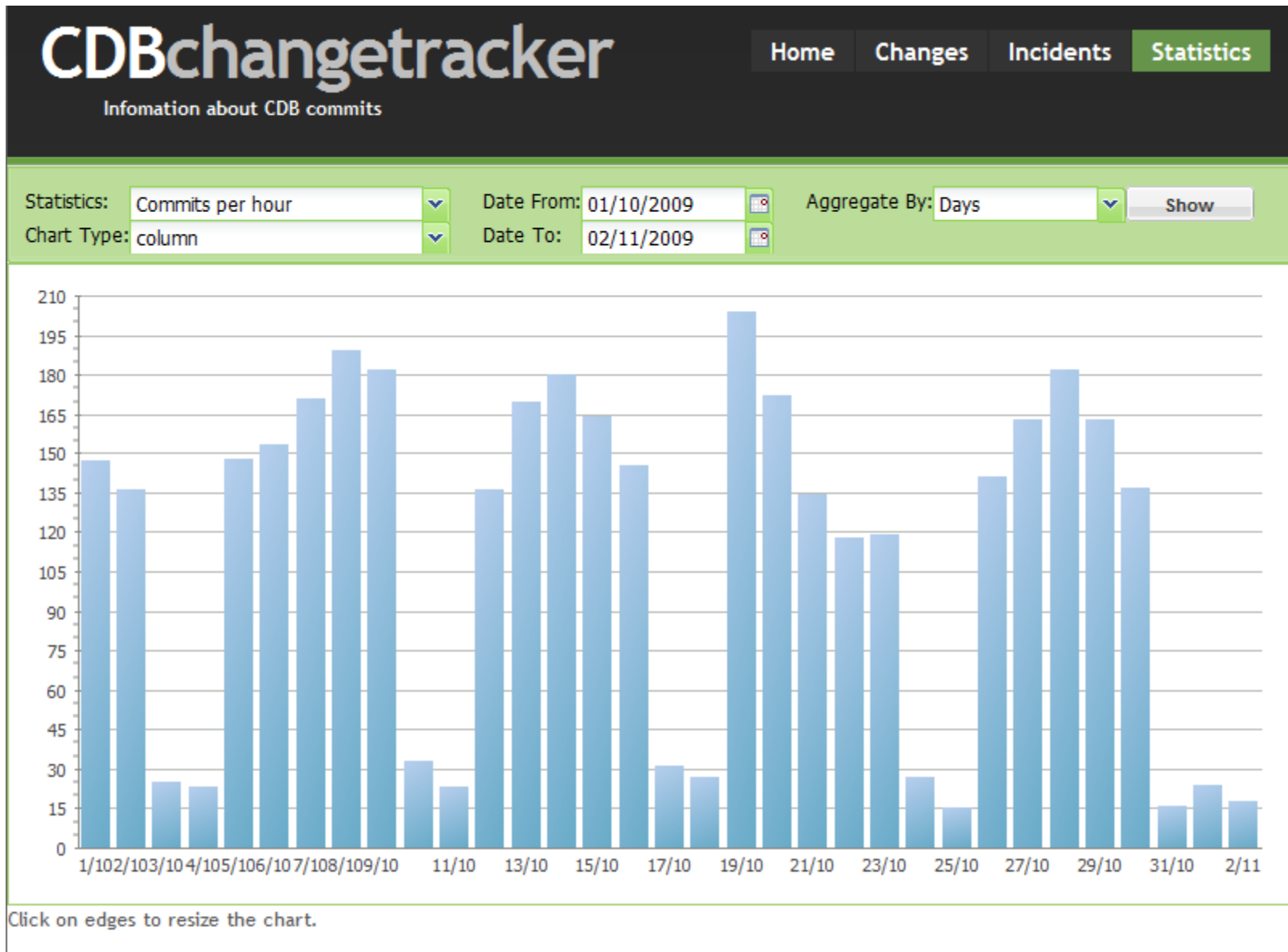
Quattor Workshop in Brussels  
November 4-5 2009



# Deployment status overview

- Main Instance Setup (“CERN CC”):
  - 7800 object profiles
    - +300 wrt March 2009, xml.db: 47MB
  - cdb-2.2.0-3
    - New: “CDBchangetracker”
      - see next slides: work by Martin Petras, technical student for 6 months)
    - Implemented by Ian Schillebeeks, summer student(still to be tested and deployed ):
      - “grep” functionality for cdbop
      - .xml parsing script for cleanup of repository/\* .tpl templates from unused packages
  - panc-8.2.10-1 (v8 since April 2009)
    - Number of CDB users: 74 acl groups (+10), /var/lib/cdb/auth/cdb.acls: ~15000 lines (=)
    - 8 supported platforms: rhes3,rhes4,rhes5,slc4,slc5,oracle VM (x x86\_64, i386 )
- Moving to new hardware (slc5) next Monday (performance x4)

# Commits per Day



# Who has changed What, When, Why



CDBchangetracker

[Home](#)
[Changes](#)
[Incidents](#)
[Statistics](#)

Information about CDB commits

User:     Date: << Any >>      With incidents only    [Expand all](#) [Collapse all](#)  
 Template:     Start Date:        
 Host:     End Date:

Results: 0 - 20 of 15318    << < Page: 1 > >>    Page size: 20 [50](#) [100](#)

ID	time	user	session	comment	templates	ci:hosts	
	15479	2009-11-02 10:53:13	timbell	cwGKiGmzTk	New consoleclient ncm component and agetty alarm	preprod/pro_software_packages_defaults_cc.tpl prod/pro_monitoring_metrics_agetty.tpl ... ...	lbsq1230 lbsq1231 ... ...
	15478	2009-11-02 10:51:38	swrepmirror	DjJfE91Pjz	/usr/bin/swrep-soap-mirror-cdbupdate cron job on swreprsv	repository/cern_cc_i386_ovm.tpl repository/cern_cc_i386_rhes3.tpl ... ...	
	15477	2009-11-02 10:36:16	jwojcies	B7RovWtTja	adjusted to PDB needs	profiles/profile_itrac515.tpl	itrac515

CDBchangetracker

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Information about CDB commits

**Change**

User:

Template:

Host:

**Reported**

User:

Start Date:

End Date:

**Modified**

User:

Start Date:

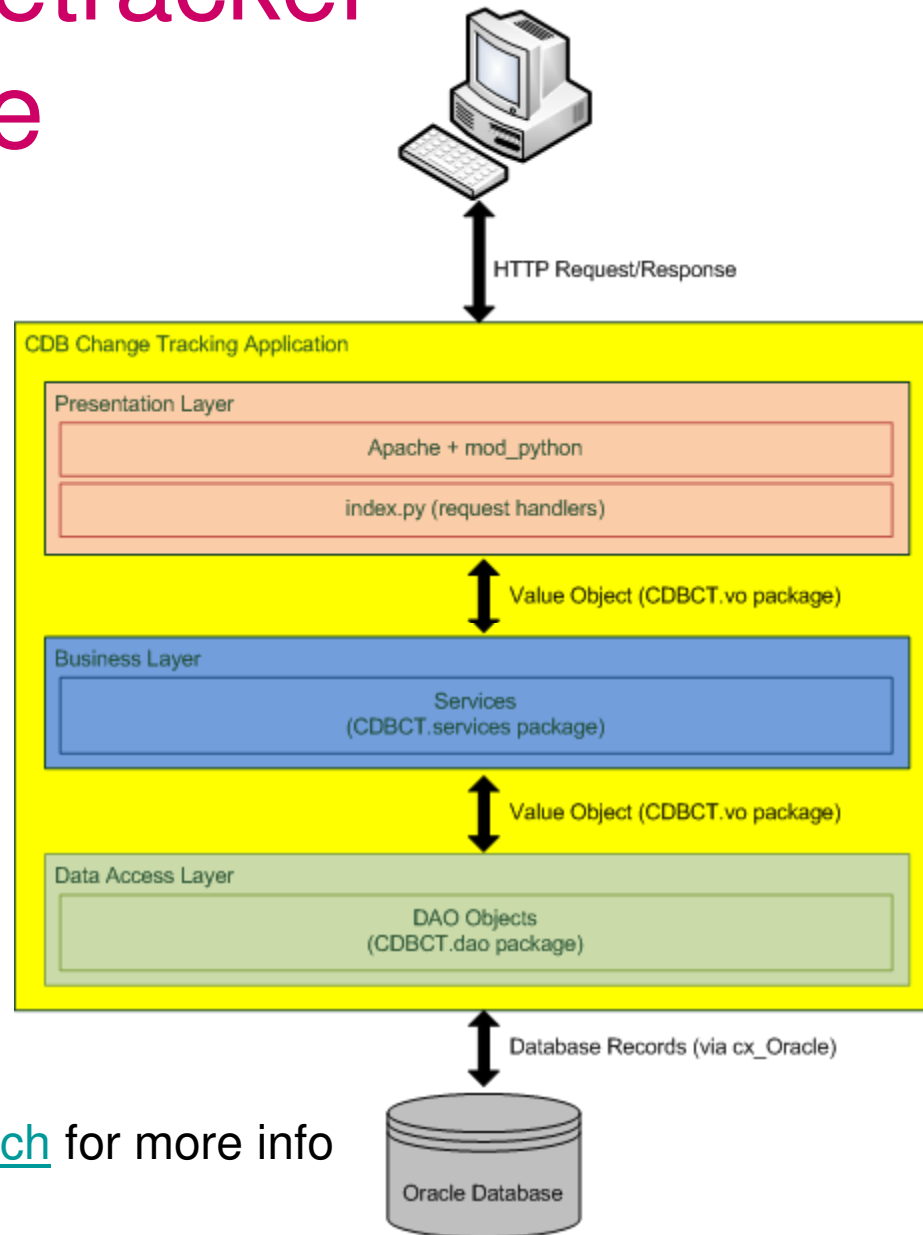
End Date:

Results: 0 - 2 of 2    << < Page: 1 > >>    Page size: 20 [50](#) [100](#)

ID	description	link	reported	modified	change
144	test 3	<a href="http://extjs.com/deploy/dev/docs/">http://extjs.com/deploy/dev/docs/</a>	2009-07-23 17:42:12 / mpetras		4656
42	Forgot to upgrade xroot	<a href="https://twiki.cern.ch/twiki/bin/view/FIOgroup/InterventionPlanning-2009-07-08">https://twiki.cern.ch/twiki/bin/view/FIOgroup/InterventionPlanning-2009-07-08</a>	2009-07-08 00:00:00 / mmarques	2009-07-22 15:09:11 / 127.0.0.1	3889

Results: 0 - 2 of 2    << < Page: 1 > >>    Page size: 20 [50](#) [100](#)

# CDBchangelotracker Architecture



Contact [mmarques@cern.ch](mailto:mmarques@cern.ch) for more info

# Related CERN Activities

- Virtualization
  - Using now Hyper-V
    - Clients are Quattor-managed (“VO boxes”).
    - Production deployment by ~ end of November 2009
    - See Hepix2009 presentation by Juraj Sucik (CERN): “**Evolution of virtual infrastructure with Hyper-V**”  
<http://indico.cern.ch/contributionDisplay.py?contribId=22&sessionId=11&confId=61917>
  - Setting up of an “Ixcloud” cluster
    - using Xen and OpenNebula or Platform/VMO
    - Plans to use KVM
    - cloning Quattor-created VM images
    - see Hepix2009 presentation by Ulrich Schwickerath (CERN): “**Batch virtualization project at CERN**”  
<http://indico.cern.ch/contributionDisplay.py?contribId=32&sessionId=6&confId=61917>
    - and by Tony Cass (CERN): “**A Vision for Virtualisation in WLCG**”  
<http://indico.cern.ch/contributionDisplay.py?contribId=7&sessionId=11&confId=61917>

# Related CERN Activities (cont'd)

- Hardware Inventory DB (CDB2SQL)

- CDB Quattor schema extended:

- `final variable HW_TYPES = 'air cooled rack | water cooled rack | switch | router | rps | power distribution | kvm | disk array | enclosure | server | rms | pdu | ups | temperature sensor | ventilation unit | brush | filler panel | kvm switch | robot | fibre channel switch'`
    - `type structure_hardware_base = { "`
      - `[...]`
      - `#ADDED:`
      - `"type" ? string with match(self, HW_TYPES) || error("hardware type must be one of: "+HW_TYPES)`
      - `"psu" ? structure_psu`
      - `"shape" ? structure_shape`
      - `"u_position" ? long #position of the object, in units of U, in the rack };`
    - `type structure_psu = {`
      - `"number" : long(0..10) #number of power supply units available`
      - `"critic" : long(0..10) #number of psu connected to the critical power supply`
      - `"physics" : long(0..10) #number of psu connected to the physics power supply`
      - `};`
      - `type structure_shape = {`
        - `"formfactor" : long(0..60) #Height of a box in units of U`
        - `"depth" : long(0..) #Depth of a box in centimeters };`

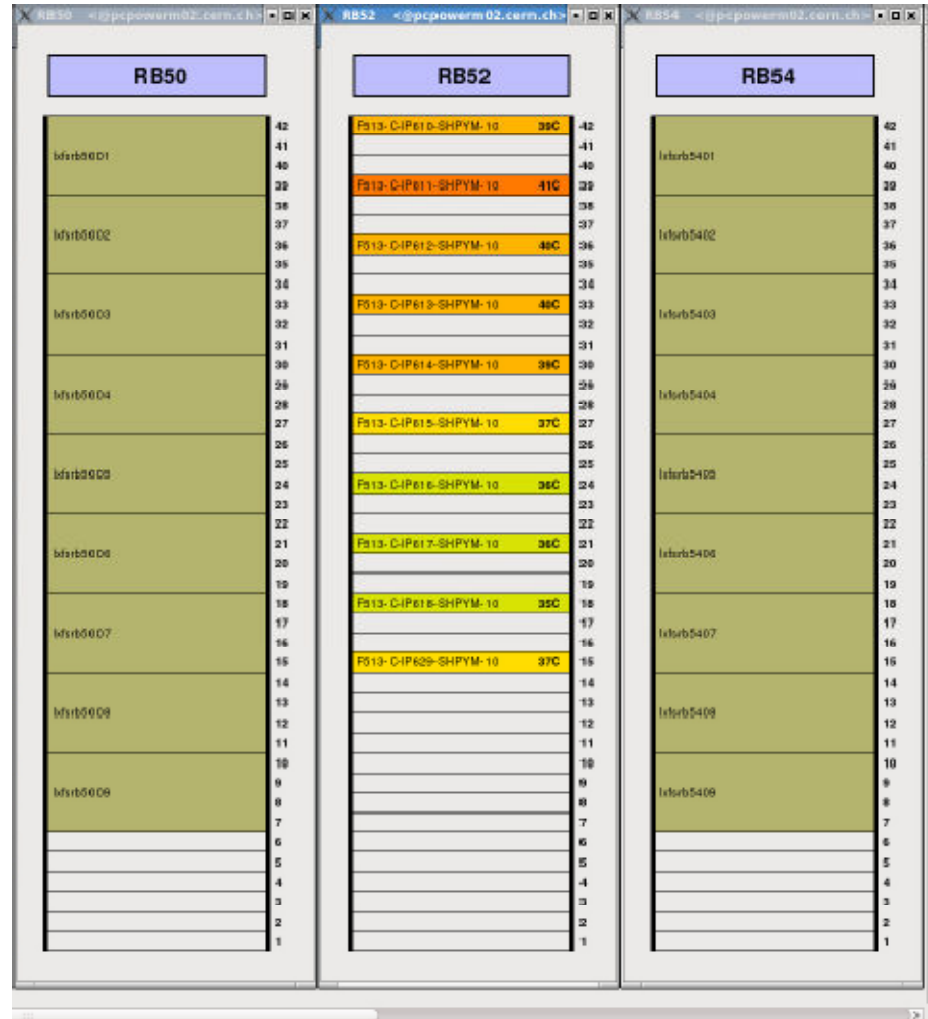
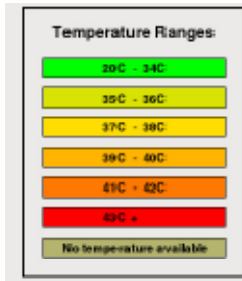
# Related CERN Activities (cont'd)

- “racks” profiles (not yet populated)

- `type structure_networkcabling = {`
  - `"switchname" : string`
  - `"switchport" : long`
  - `"netoutlet" : long`
  - `"clienthost" ? string`
  - `"clientserialnumber" ? string`
  - `"u_position" ? long };`
- `final variable POWER_CABLING_TYPES = 'white|green|barrette,no';`
- `type type_power_cabling = string with { match(self, POWER_CABLING_TYPES) || error("Power cabling must be one of: "+POWER_CABLING_TYPES); };`
- `type structure_pdufeed = {`
  - `"critic" ? string[]`
  - `"physics" ? string[] };`
- `type structure_position= {`
  - `"x_position" : long`
  - `"y_position" : long`
  - `"x_occupancy" : long`
  - `"y_occupancy" : long };`



- Request: visualize racks content with temperature information, identify hot spots (here for network switches)



# Related CERN Activities (cont'd)

- PrepareInstall
  - Support for LVM
  - Support for software raid configuration
- SMS (State Management System)
  - “duration” option used by /etc/init.d/sms-auto-notify (no alarm during reboot for kernel upgrades)
- LEMON
  - Working together with Morgan Stanley on federated Lemon instance support.
  - Improving DB schema in order to address performance issues
- SINDES
  - Porting to slc5
- CLUMAN
  - Functionalities:
    - Display clusters
    - Act on selected set of machines (for ex. Reboot)
  - Based on:
    - CDBSQL data for cluster composition
    - LEMON data
  - Technical details: contact [Marian.Babik@cern.ch](mailto:Marian.Babik@cern.ch)
  - See next slide

# Related CERN Activities (cont'd)

