



Centre de Calcul de l'Institut National de Physique Nucléaire et de Physique des Particules

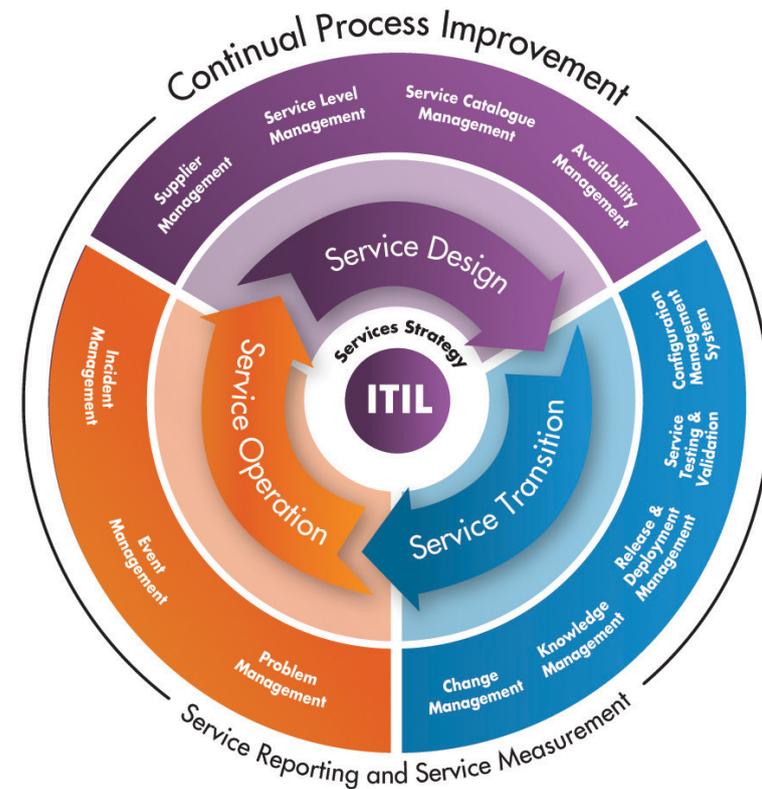
# ITIL best practices at CC-IN2P3

NCSA / CCIN2P3 video conference on January 22nd, 2016

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- About ITIL
- ITIL @ CCIN2P3
  - How it started
  - What we did
- Feedback

- « ITIL advocates that IT services are aligned to the needs of the business and support its core processes. [...] »
- Best practices
  - A lot of common sense
  - Usually things we do without knowing it's “quality”
  - Describes a service life cycle
    - 5 phases
    - 26 processes and 4 functions
- However, it's mainly theory
  - Requires pragmatism to match the existing environment (people and habits)
  - There is no wonderful tool that does everything by itself



- November – December 2009
  - First ITIL V3 Foundation trainings (14 people)
- 2010
  - 10 more (a total of 24 out of 50 computing engineers)
  - First actions in the Operation team
    - We welcomed Dr. Holger Marten from KIT ([Karlsruher Institut für Technologie](#))
      - External view on our Service Desk and IT Operation Control
    - First need was to improve
      - Event and Incident management
      - Internal and external communications
      - We created a Control Room with one staff for Service Desk and one other for IT Operation Control
  - Designation of a Quality manager
    - Propose actions directly to the steering committee
    - Communicate on the quality activity (or related)
- It was the start of ITIL oriented work

- **Trainings**
  - Suggest people to have at least the “ITIL Foundation” training
    - Share the same vocabulary : otherwise it's a real difficulty
    - Understand what we are doing
    - See the importance they have in the service quality
    - Total of 34 computing engineers trained and 23 remaining (non permanent)
  - Creation of a group of 3 people with higher level trainings
    - 2 have the four “capabilities” modules
    - Share ideas on what could/should/must be done
    - Suggest a pragmatic approach to do it
- **Planing an internal seminar on ITIL for 2016**
  - Talk about what we did and what's next

- Some tasks and projects done and in progress
  - Control room improvement
  - Event, Incident and Problem Management
  - Change management process
  - Creation of a Configuration Management Data Base (CMDB)
  - Service Catalog
  - Business continuity
  - Identity Management
  - ... and all the daily work of **everybody**

- Control Room
  - Objectives
    - Make support team closer to the operations
    - Have a better view of ongoing incidents to improve ticket handling
      - Give a more accurate information to the users
      - Have a better reactivity
    - Have a Single Point of Contact (SPOC) for users and also internally
    - Have a more reliable information transfer with the on duty engineer
  - Try to fulfill some ITIL functions :
    - Service Desk
    - IT Operational Control
- We had to change our ticketing system
  - Mandatory tool for our users and Service Desk
  - We changed because
    - We wanted new features (see backup slides for details)
    - Difficult to develop in our old homemade tool

- Dashboard of our ticketing system (OTRS)

Fulltext-Search

Dashboard Customers Tickets FAQ Statistics
Q

### Dashboard

**Escalated Tickets**

My locked tickets (0) | My watched tickets (0) | My responsibilities (0) | **Tickets in My Queues (0)** | All tickets (14)

|      | AGE | SERVICE TIME | UPDATE TIME | TITLE | OWNER | LOCK | TICKET# | TYPE | STATE | QUEUE |
|------|-----|--------------|-------------|-------|-------|------|---------|------|-------|-------|
| none |     |              |             |       |       |      |         |      |       |       |

**Reminder Tickets**

My locked tickets (0) | My watched tickets (0) | My responsibilities (0) | **Tickets in My Queues (4)** | All tickets (15)

|                            | TICKET#                          | AGE       | PENDING TILL | CUSTOMERNAME     | TITLE   | STATE            | LOCK   | OWNER            |
|----------------------------|----------------------------------|-----------|--------------|------------------|---|------------------|--------|------------------|
| <input type="checkbox"/>   | <a href="#">2015120111000016</a> | 52 d 0 h  | -11 d 2 h    | Isabelle Lhenry  | Account cleaning                                | on hold          | unlock | Frederic Azevedo |
| <input type="checkbox"/> ☆ | <a href="#">2015101511000093</a> | 98 d 17 h | -47 d 19 h   | Michel Obolensky | Suppression fichiers obsolètes dans /sps/dchooz | on hold          | lock   | Xavier Canehan   |
| <input type="checkbox"/>   | <a href="#">2015101411000068</a> | 99 d 17 h | -87 d 1 h    | Xavier Canehan   | destruction du compte Kuna                      | waiting customer | unlock | Xavier Canehan   |
| <input type="checkbox"/> ☆ | <a href="#">2015101411000031</a> | 99 d 20 h | -87 d 1 h    | Xavier Canehan   | incident interne fermeture elnimr               | waiting customer | unlock | Xavier Canehan   |

**New Tickets**

My locked tickets (0) | My watched tickets (0) | My responsibilities (0) | **Tickets in My Queues (0)** | All tickets (1)

|      | TICKET# | AGE | TITLE |
|------|---------|-----|-------|
| none |         |     |       |

**Open Tickets / Need to be answered**

My locked tickets (0) | My watched tickets (0) | My responsibilities (0) | **Tickets in My Queues (4)** | All tickets (40)

|                            | AGE       | UPDATE TIME | CUSTOMERNAME       | TITLE                                     | OWNER          | LOCK   | TICKET#                          | TYPE    |
|----------------------------|-----------|-------------|--------------------|---|----------------|--------|----------------------------------|---------|
| <input type="checkbox"/> ☆ | 19 m      | 174 h 40 m  | Delphine leyril    | ouverture de compte                       | Admin OTRS     | unlock | <a href="#">2016012211000059</a> | request |
| <input type="checkbox"/> ☆ | 17 h 21 m | 171 h 38 m  | Jean-Michel Barbet | Demande de prolongation de compte CCIN2P3 | Admin OTRS     | unlock | <a href="#">2016012111000088</a> | request |
| <input type="checkbox"/> ☆ | 23 h 56 m | 151 h 3 m   | Etienne Testa      | Rapport mensuel "activité de groupe"      | Admin OTRS     | unlock | <a href="#">2016012111000033</a> | request |
| <input type="checkbox"/> ☆ | 3 d 23 h  | 94 h 1 m    | Jean Jacquemier    | Fermeture du groupe Geant4                | Xavier Canehan | lock   | <a href="#">2016011811000031</a> | request |

- Event and incident Management
  - The process is not completely defined
  - However we have some rules and procedures
    - To log events in one accessible place
    - To give information how to catch meaningful events and to monitor services
      - Event handling made using Collectd, ElasticSearch and Kibana
      - Monitoring made using Nagios
    - To recommend actions to be taken on given events or incidents
  - The control room is the SPOC for incidents handling
    - Registers the incident and keep a log until closure
    - Has the experience and the knowledge to evaluate impact
- Problem management
  - We don't have so many Problem (in ITIL terms)
  - For now, real problems were dealt without written process

- Change management process
  - We have a change process for major changes
    - We have 4 possible scheduled outages per year
    - For changes with “big” impact
    - For all services, including facility management (chillers, power supply lines, ...)
    - We start collecting the needs 1 month before the outage
      - Analyze the impact on other services and on the user
      - Approve the maintenance requests (with the management if needed)
      - Establish a planning
      - Approve the planning with the management and steering committee
      - Have a final review after the outage
  - Process is to be fully defined to include the other changes
    - Working on a pragmatic way to do it
    - Has to be effective and efficient

- Home development for scheduled outages

**GOA CC-IN2P3** Accueil Arrêts Configuration AZEVEDO Frédéric

Bienvenue administrateur Frédéric

**Info arrêt**

|                              |   |
|------------------------------|---|
| Date de clôture des demandes | 03/09/2015                                |
| Date préparation 1           | 08/09/2015                                |
| Date préparation 2           | 16/09/2015                                |
| Prochain arrêt               | Du 22/09/2015 08:00 au 22/09/2015 18:00   |
| Date bilan                   | 24/09/2015                                |
| Gestionnaires                | AZEVEDO Frédéric (backup: POULAT Suzanne) |
| Responsable comm             | CARDENAS Yonny (backup: BOUVET David)     |

DÉPOSEZ UNE DEMANDE DE TÂCHE  
**Déposer**

TEMPS AVANT CLÔTURE  
**Expiré**

TEMPS AVANT ARRÊT  
**Expiré**

TOUTES LES TÂCHES  
**29**

**Tâches de l'arrêt**

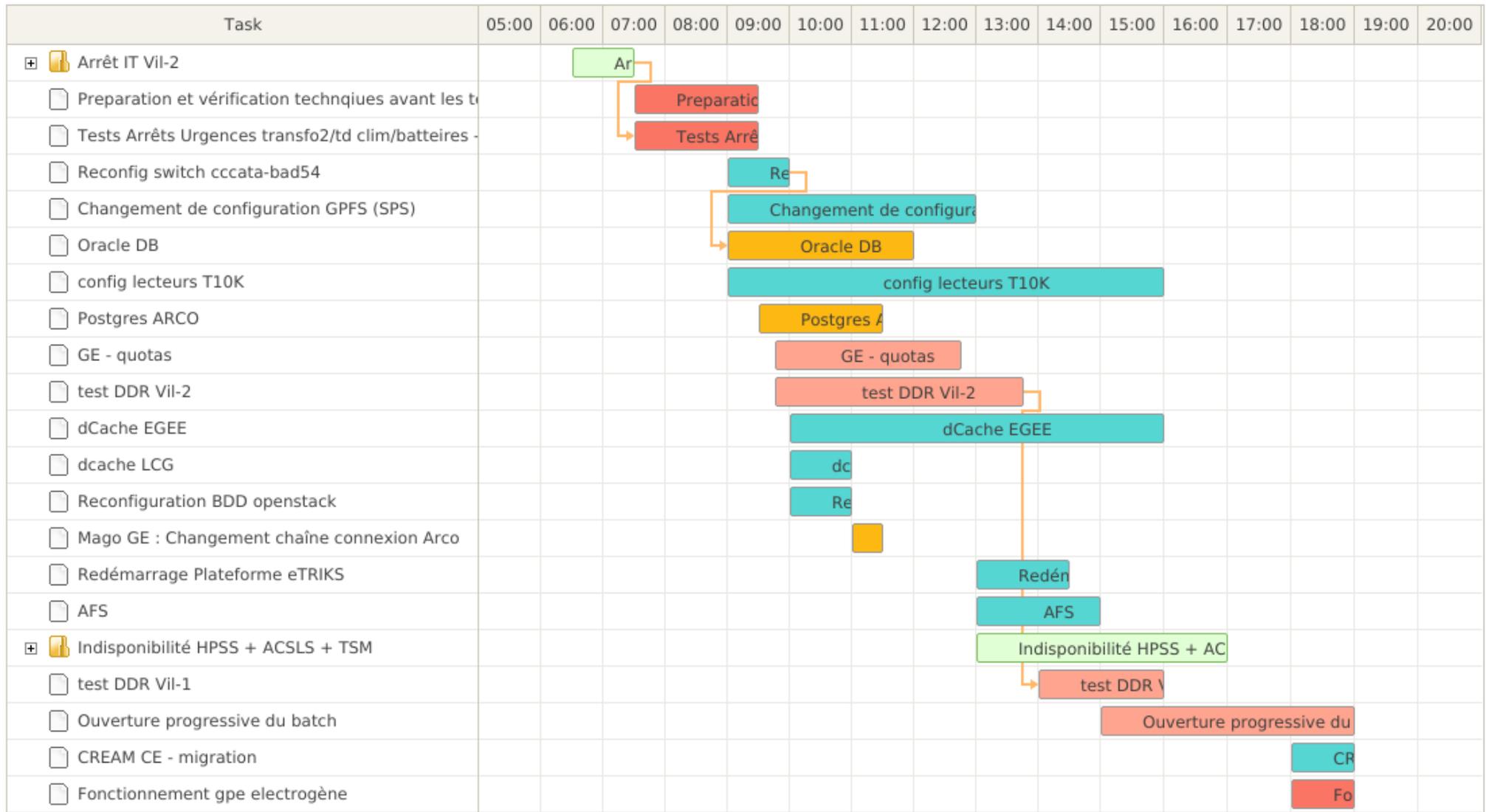
Tout Dev Réseau Stockage Système Exploitation Support Services généraux Actions

50

| DATE       | DÉBUT | FIN   | LIBELLÉ                     | NOTIF | ETAT     |  |
|------------|-------|-------|-----------------------------|-------|----------|--|
| 22/09/2015 | 06:30 | 07:30 | Arrêt Plateforme eTRIKS [+] |       | Terminée |  |
| 22/09/2015 | 06:30 | 07:00 | Arrêt batch [+]             |       | Terminée |  |
| 22/09/2015 | 06:30 | 07:30 | Arret aserv [+]             |       | Terminée |  |

# ITIL @ CCIN2P3 – What we did and plans

## Plannification de l'arrêt



Pas modérée DEV INFRA OPE SGX

- Configuration Management Data Base (CMDB)
  - Project started Oct. 2012 and ongoing
  - Related to the Service Asset and Configuration Management ITIL process (SACM)
  - We need a gathered view of all the existing configuration items (CI) from all services
    - Each service has his own CI and their relations stored somewhere
      - Excel file, flat file, data base, ...
    - We are gathering these informations into one place
    - But we keep the original files and the way people work with them
  - We are building a system to be able to visualize the impact of a component failure (machine, network, storage component, ...)
  - Major difficulties
    - Make people understand it's important and we need it
    - Find available human resources

- Cmdbuild interface

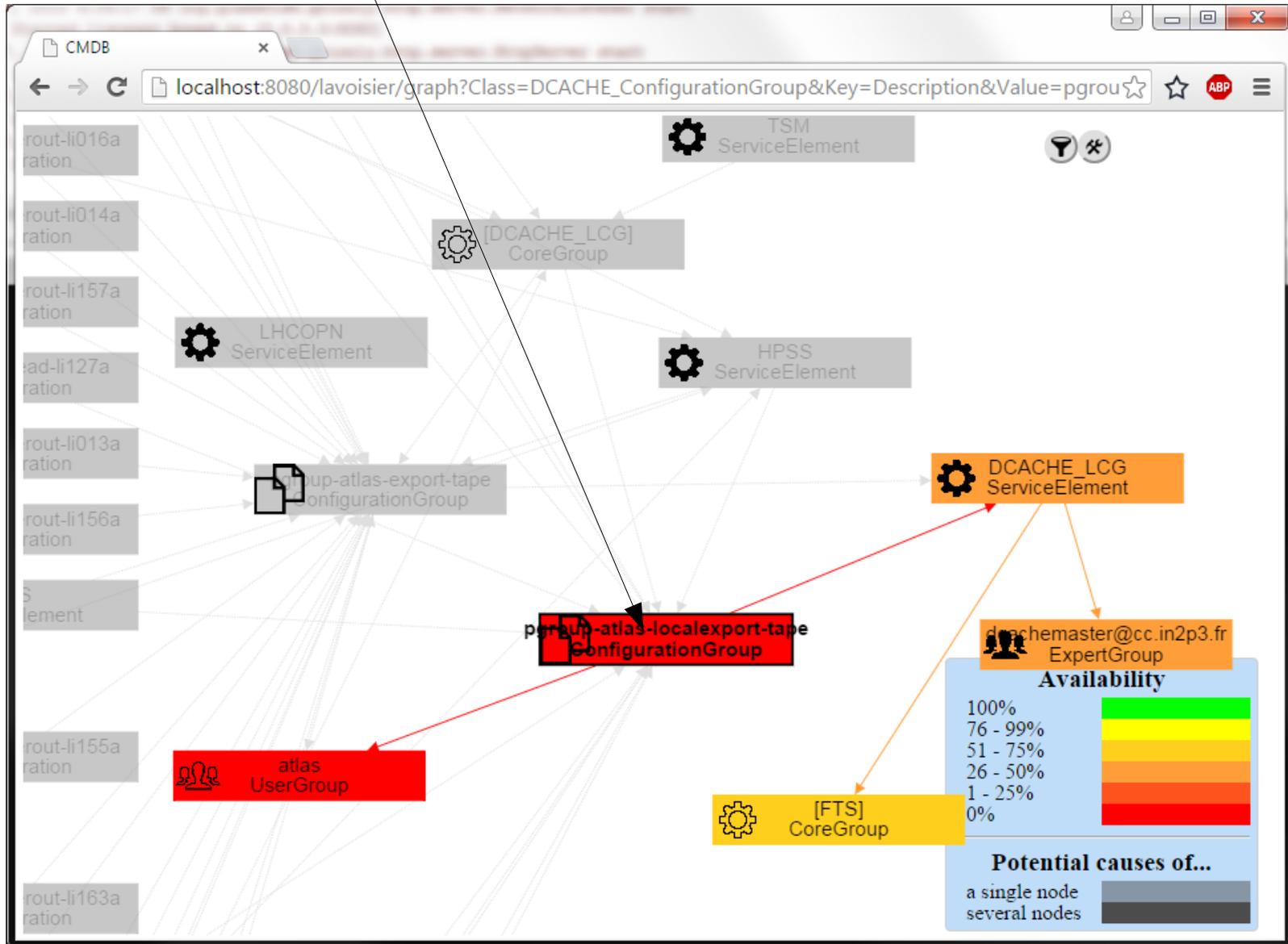
The screenshot displays the CmdBuild web interface in a Mozilla Firefox browser. The browser's address bar shows the URL `cccmdbuild/cmdb/management.jsp`. The interface includes a top navigation bar with the user name `Vamvakopoulos Emmanouil` and group `SuperUser`. A left sidebar contains a 'Class List' with categories like Automatic, Configuration, Hardware, and Server. The main content area is titled 'List - Server' and contains a table of server records. Below the table, there are navigation controls and a detailed view of a server card.

| Code           | Description | Disabled | Created | Usage   | WarrantyPeriod (month) | Rack         | SmurfStatus | SmurfUsage | OperatingSystem | ChangeMessage           | Type |
|----------------|-------------|----------|---------|---------|------------------------|--------------|-------------|------------|-----------------|-------------------------|------|
| HH25F1J        | apcextra    | No       |         | telecom |                        | laboratoires | Test        | telecom    |                 |                         |      |
| 527V55J        | apcznets    | No       |         | telecom |                        | laboratoires | Test        | telecom    |                 |                         |      |
| 127V55J        | borextra    | No       |         | telecom |                        | laboratoires | Test        | telecom    |                 |                         |      |
| NNG00113010626 | cadsupport  | No       |         | telecom |                        | Telecom ...  | Test        | telecom    |                 |                         |      |
| 9825F1J        | caextra     | No       |         | telecom |                        | laboratoires | Test        | telecom    |                 |                         |      |
| G17V55J        | caeznets    | No       |         | telecom |                        | laboratoires | Test        | telecom    |                 |                         |      |
| 1233FMM0AN     | ccacsls1    | No       |         | acsls   | 48                     | Robotique 1  | Up          | acsls      |                 |                         |      |
| 1233FMM05U     | ccacsls2    | No       |         | acsls   | 48                     | Robotique 1  | Up          | acsls      |                 | preparation arret lundi |      |
| 9110-10-0225A  | ccacsls3    | No       |         | server  |                        |              | Test        | server     |                 | preparation arret lundi |      |
| 9110-10-0221A  | ccacsls4    | No       |         | server  |                        |              | Test        | server     |                 | preparation arret lundi |      |
| G3WCM4J        | ccadodb01   | No       |         | telecom |                        | Adonis 00    | Test        | telecom    |                 |                         |      |
| 24WCM4J        | ccadodb02   | No       |         | telecom |                        | Adonis 00    | Test        | telecom    |                 |                         |      |

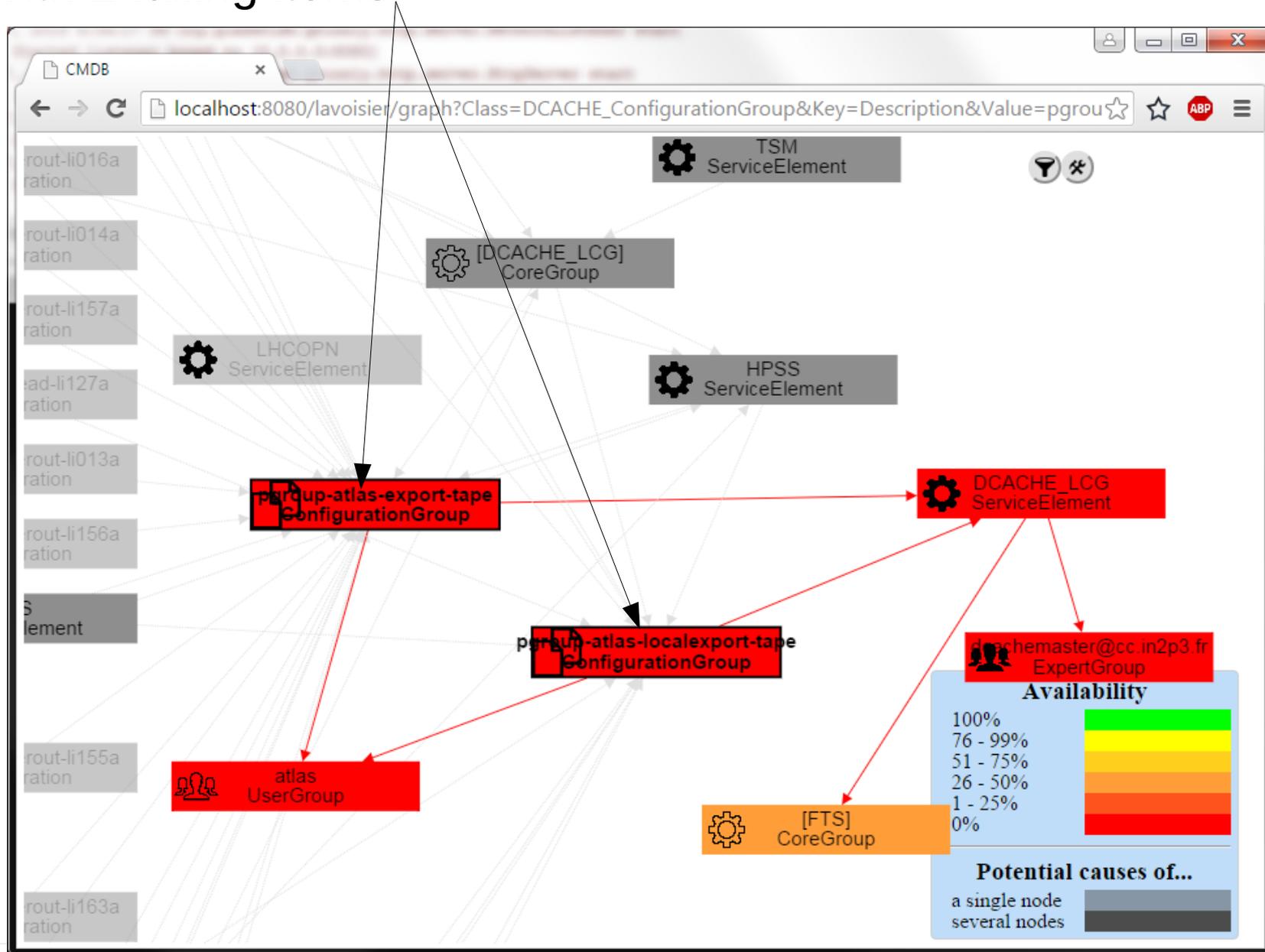
The detailed view of a server card shows the following information:

- CertName:**
- SmurfStatus:** Test
- SmurfUsage:** telecom
- OperatingSystem:**
- ChangeMessage:**
- Architecture:** x86 32 bit
- OSFamily:** Scientific Linux

- Impact analysis example (home development)
  - With 1 failing item



- Impact analysis example (home development)
  - With 2 failing items



- Service Catalog
  - Work started in 2012 and is still ongoing
  - Related to the Service Catalog Management ITIL process
  - Why ? Isn't it simple to list what we provide ?
    - Seems the answer is : no, it's not so simple :-)
  - Major difficulties
    - Make people understand it's important to have one
    - Make service owners help us describe their services

- Identity management
  - First look at the topic in 2009
  - Project continued in 2014 and ongoing
  - Related to the Access Management ITIL process
  - We are missing a global view of users accounts and access rights
  - We still are using command line on different systems to manage accounts creation and deletion
  - Major difficulties
    - Find human resources available

- Business continuity plan
  - We had a 2 day planned power outage in December 2012
    - We used it as a real use-case to
      - Identify critical services (update the existing one)
      - Ensure our power generator was powerful enough
  - Afterwards we continued to
    - Identify major risks (fire, flooding, epidemic disease, ...)
    - Estimate their “Business” Impact
  - Major difficulties
    - Make people understand it's important
    - Low probability but some CAN happen
    - Due to lack of human resource, we did not go further

- Define processes the way ITIL recommends it
- Finish the ongoing projects
  - Will help us to make a step forward
- Knowledge management
  - Main objective : reduce the number of knowledge sources !
    - Around 5 different sources of informations
    - Sometimes a document exists in different sources and the version is different
- Key Performance Indicators (KPI) on processes
  - By the book : should be the first thing to do (easy to say)
  - Much easier to do when processes, procedures, tools are in place.
  - Be able to put numbers and trends on the benefits we are feeling (reactivity, effectiveness, efficiency and user satisfaction)

- The management and steering committee **must support** quality related activities
- Major problems are related to the **perception** of people about quality
  - **Convince** them it's important and useful for everybody
  - Show them that they have a **major role** in it
  - **Trainings** can help
    - Have someone with concrete examples from private companies
- **Pragmatism** : otherwise it's a fail before starting (personal feeling)

- Where to begin ?
  - First question might be
    - What do I want to improve (or initiate) ?
  - For production site, “Service Operation” processes are really useful
  - For new services to be designed, let's focus on the “Service Design” processes
  - Indicators are important
    - But not so easy to define at beginning
    - Often felt as a way to control the job done

- ITIL in our collaboration
  - Can help for the services we will set up
    - On their design
      - If new services must be created, common design ?
    - On the way we will handle the changes in production
    - On the way they will be operated
      - Common procedures on common tasks could exist
        - Same escalation rules for an incident on a given service ?
  - Help each-other to improve our services
  - Share knowledge

- ITIL related : <https://www.axelos.com/best-practice-solutions/itil/what-is-itil>
- Ticketing system OTRS : <http://www.otrs.com/>
- Tool used for our cmdb tool : <http://www.cmdbuild.org/en>
- Identity management tool : <http://openidm.forgerock.org/>
- Tools used for event handling
  - Collectd : <https://collectd.org/>
  - Elasticsearch : <https://www.elastic.co/>
  - Kibana : <https://www.elastic.co/products/kibana>
- Monitoring tool is Nagios : <https://www.nagios.org/>

Questions ?

# BACKUP slides

# New features wanted in the ticketing system

- Define ticket types
  - Incident
  - Request for Change
  - Information request
- Follow/watch any ticket
- Manage tickets
  - Escalations
  - Statistics
- FAQ
- ITIL compliant product for
  - Change management
  - CMDB
  - Service Catalog
  - Service Level Management
  - Link ticket to any of these

