

# CC-IN2P3

# Le Centre de Calcul

ONE computing centre for  
IN2P3-CNRS & DSM-CEA  
(HEP, Astropart., NP,..)

National : 18 laboratories,  
40 experiments,  
2500 people/users

International : Tier-1 / Tier-A  
status for several US, CERN  
and astrop. experiments



45 people



0,5 PBytes  
Data Bases,  
Hierarchical storage

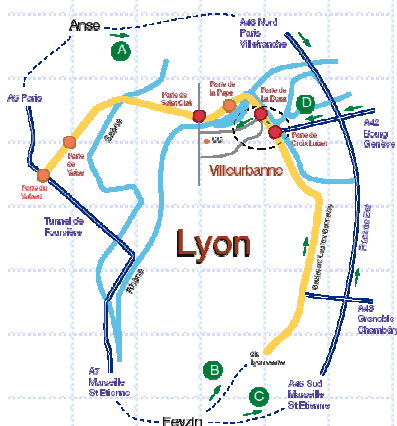


~ 700 cpu's, 20 k SI-95  
40 TB disk



Network & QoS.  
Custom services "à la carte"

Budget:  
~ 6-7 M €/year  
Plus ~ 2 M € for personnel



# Mid-term Plans

## Hardware

HARDWARE	Mid 1999	Mid 2000	Mid 2001	2002	2003	2004
CPU (K SI-95)	2	10	20	40	80	160
Disk (TB)	7	20	40	55	80	120
Mass Storage (TB)	50	100	200	400		
of which HPSS storage (TB)	0		50	200		

## FTE evolution

Personnel at CC has increased by 25% in 2 years (2000-2002) from 38 to 47.

But majority of experiment's support for computing is located in the 18 labs and so far there had been very few people attached to specific experiments (0-2). Support, software & Development at CC-IN2P3 are made as much as possible as a general facility.

## Networking evolution

Point-to-point private link LYON-CERN : 155 Mbps now -> 0.5 G July 2002 -> ...

Access to GEANT from CERN, for the time being (could also access from Paris)

Member of USLIC consortium (0.3 G CERN-Chicago now -> 0.6 This month -> ...)

Lyon-Chicago VP link through Renater : 30M -> 100M Feb 02 (Esnet limited at 50)

## Certification authority, status & plans

- Currently we accept certificates issued by all the Certificate Authorities trusted by the DataGRID project (=11). Karlsruhe will soon join this group.
- We plan to continue accepting certificates issued by the national Certificate Authority (CNRS) which is delivering certificate for french people but also for other institutions not having a national authority (Taiwan, Hungary, non-french Babar,...)

## Authorization & registration procedures in use and security issues

Authorization is based on which group the grid-user is being mapped to, and policy is the following:

- Individuals needing to interactively connect to our services, need to apply for a personal account, through the appointed representative of his/her experiment.
- Individuals needing to use our services exclusively through the grid, will use a shared account for job execution. This account is a member of the group of the experiment this individuals belongs to. In this way, he/she has the needed authorizations to access data & resources for the experiment.
- In practice, 20-25% of resources in 2001 were used by non-french users

## Plans for GRID middleware deployments

We have deployed DataGRID software, which is a gateway to the production environment.

All the installed computing power and storage capacity is available for grid-users. We plan to continue in this direction for LCG, provided that this does not disrupt the production environment.

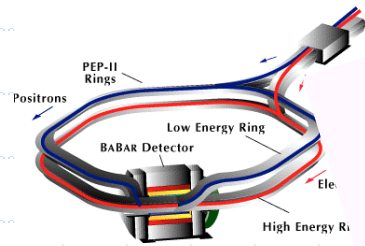
## Involvement in GRID middleware projects

We are involved up to one's ears into EDG (Datagrid)

We are involved in the french GRID programme(s).

We participate to several "minor" projects with bio-informatics and biology.

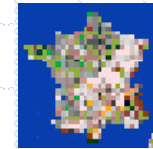
# Tier A



## SLAC



# BABAR



Two centres are trying to work as one:

- Data not duplicated,
- internationalization,
- transparent access, etc..

"Physicists have indeed foreseen to test the GRID principles starting first from the Computing Centres in Lyon and Stanford (California). A first step towards the ubiquity of the GRID."

Pierre Le Hir  
**Le Monde**  
12 april 2001

