

# IN2P3 Computing Center

- Computing, Storage & Network
- Services
- Next coming

# Batch Computing (1)

- Linux OS:
  - RedHat 6.1: ~70 proc
  - RedHat 7.2: ~830 proc
- Linux Hardware:
  - 192 proc PIII 750 MHz, 1 GB mem, 8 GB
  - 192 proc PIII 1 GHz, 1 GB mem, 8 GB
  - 144 proc PIII 1.4 GHz, 2 GB, 60 GB
  - 392 proc PIV 2.4 GHz, 2 GB, 110 GB

# Batch Computing (2)

- Solaris 2.7/2.8: 42 proc Sun Ultra 60
- AIX 4.3.3/5.1: 19 cpu

Next:

- Try blades and opteron proc
- Life of Red Hat ? (Debian ?)
- Pb of version ?

# Batch Computing (3)

1 unique batch scheduler (BQS) for 40 groups, 2700 users, 3 platforms, 6 OS, 6 hardwares.

All the farm is accessible by everybody. No dedicated cpu's.

# Batch Computing (4)



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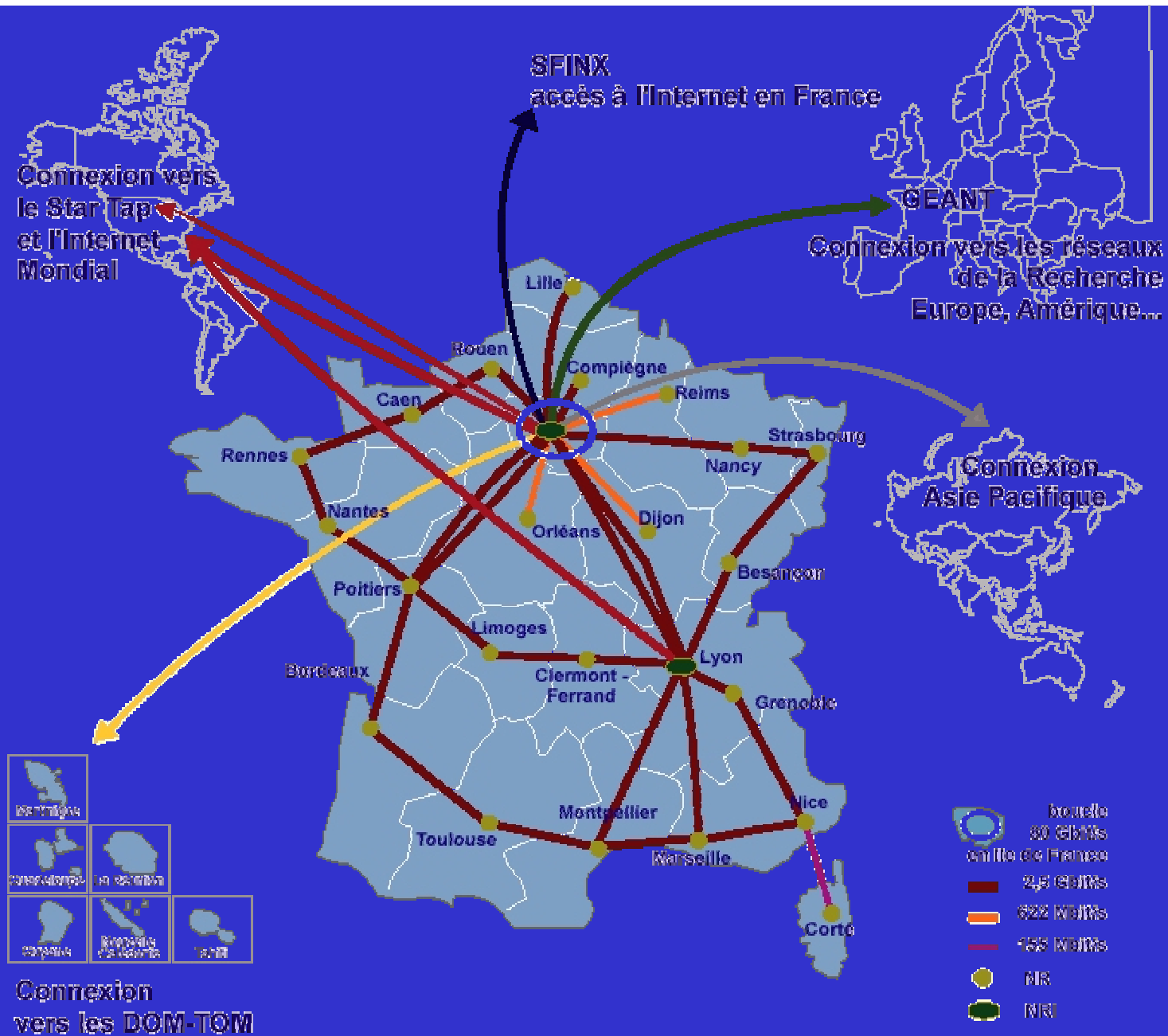
# Storage (1)

- 6 STK silos: 36 000 slots
  - STK 9840 at 20 GB (10 MB/s)
  - STK 9940b at 200 GB (20 MB/s)
  - SCSI & FC drives
- Robot DLT: 400 slots
  - DLT 4000
  - DLT 7000

# Storage (2)

~60 TB disk space (SCSI & FC) for:

- AFS
- HPSS Cache (total on tapes = 330 TB)
- Objectivity (total on tapes = 160 TB)
- Oracle (postgress, mysql)
- Xstage
- NFS





# WAN (2)

- Connection CC - Renater: 1 gbps
- Renater backbone: 2.5 gbps
- Peering Renater - Geant: 2.5 gbps
- Geant backbone: 10 gbps
- Geant – US (NY): 3 x 2.5 gbps
  - Peering ESNET: 622 mbps
  - Peering Abilene: 622 mbps

# WAN (3)

- CC - CERN: 1 gbps
- USLIC (star light): 622 mbps
- Peering USLIC - ESNET: 622 mbps
- CC-Renater-Startap 100 mbps

# Services (1)

- ~ 2700 accounts (national + international 15%)
- ~ 25 over 40 actives experiments (Hep, Nuc, Astro, Bio)
- Regional center for:
  - Babar
  - D0
  - LHC (x4)
  - Auger, Virgo, Eros, Snovae, ...

# Services (2)

- HPSS thru rfio 64 bits (330 TB). Reach 10 TB/day transfert rate.
- Bbftp (slac, fnal, jlab, bnl, cern) interfaced to hpss (rfio) & grid compliant.
- BQS (batch scheduler home made)
- GRID: edg/egee/lcg + ...
- Databases (Objectivity & Relational)
- SRB: data transfert for babar & cms
- SAM for D0

# Services (3)

- Mail, news, listserv, dns, ged, Web, LDAP, Webcast & streaming, in2p3 W2k domains, ...
- Visio-conferencing (MCU) IP & ISDN : project with IN2P3, CNRS, INSERM
- Virus filtering, looking for anti-spam

# Lyon spécifications

- No users on site
- No accelerator & experiment on site
- Support 40 experiments (~25 actives)
- All infrastructure is mutualized

But for grid: specific very small farms to not disturb production (soft development)

# Next coming (1)

- Cpu: ~400 proc (opteron ?)
- Disk: ~30 TB
- Tapes: 9940b drives & tapes (200 GB)
- Servers for objectivity, hpss, ...
- HPSS supporting SAN
- Network (LAN & SAN) is OK
- OS: sol 9, RH 7.3/8/9/10 ? Or other ?
- Kerberos 5

# Next coming (2)

- Load balancing for objectivity.
- Xrootd servers with load balancing.
- Tier 2 at Clermont-Ferrand ?