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)

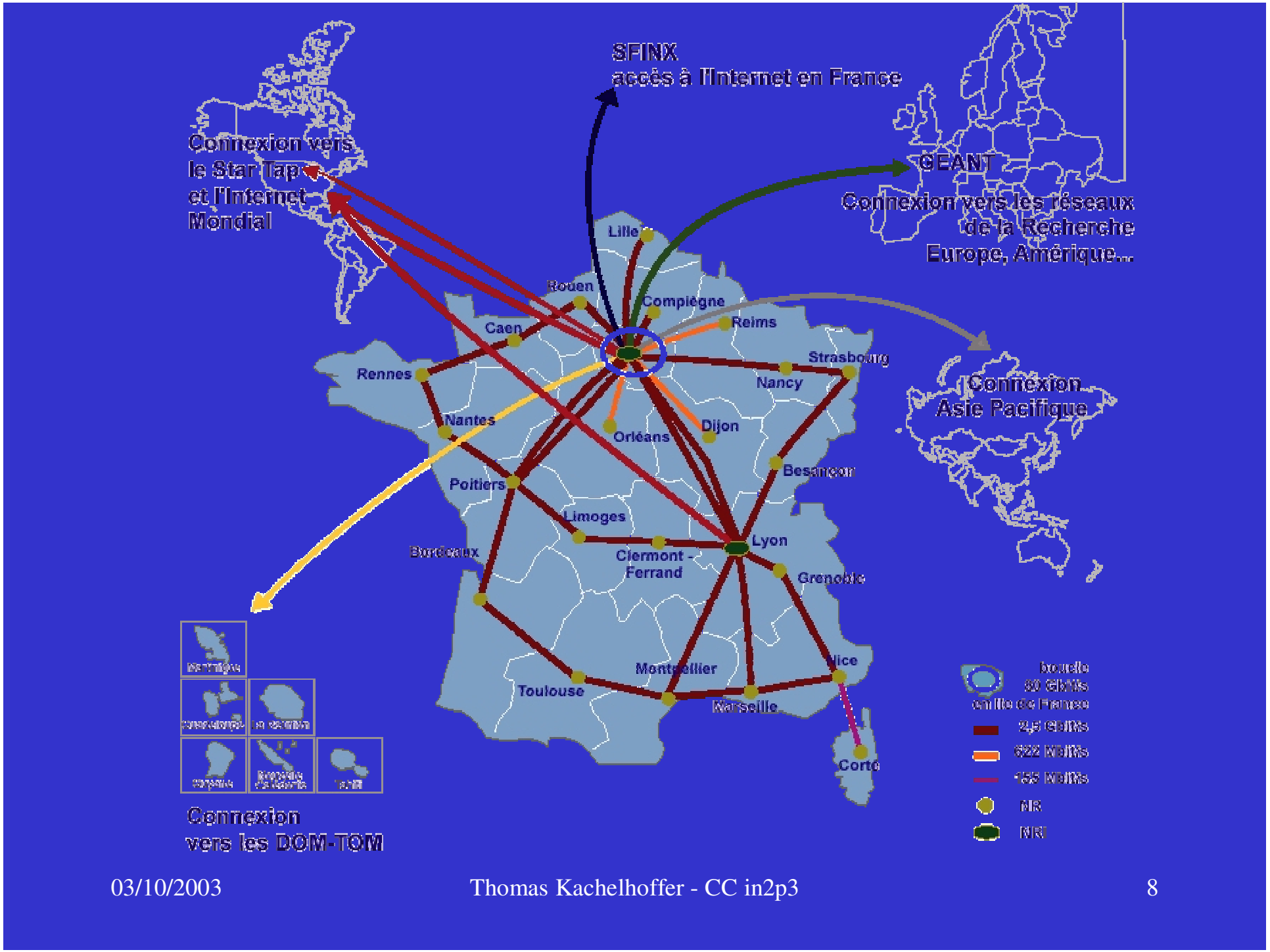
Storage (1)

- 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


SFINX
accès à l'Internet en France
Connexion vers
le Star Tap
et l'Internet
Mondial
GEANT
Connexion vers les réseaux
de la Recherche
Europe, Amérique...
Connexion
Asie Pacifique
Lille
Rouen
Compiègne
Reims
Caen
Strasbourg
Rennes
Nancy
Nantes
Dijon
Orléans
Besançon
Poitiers
Limoges
Lyon
Bordeaux
Clermont -
Ferrand
Grenoble
Nice
Montpellier
Toulouse
Marseille
Corte
Connexion
vers les DOM-TOM

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 ?