INFN Site Report

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INFN Sites

- 4 National Laboratories: Frascati, Legnaro, Gran Sasso and Catania
- 19 Sections linked to Physics Department of Universities
- 7 associated sites
- 1 National Networking Centre: CNAF(Bologna)

INFN Activities and People

- Staff: 1920 persons (~600 physicists)
- more than 2000 affiliates from Universities
- 2000 final-year students
- external researchers
- Sections build experiments in national and international laboratories and do data analysis

Computing activities

- On-line computing
- Montecarlo production
- Data analysis
- Theorical calculations on dedicated computers (APE)
- Central computing services for program development, mailing and all major networking services
- CAD/CAM
- Desktop computing

Current Environment

- Digital: AXP (~400) - VAX (~600)
- HP: ~234
- SUN: ~110
- IBM: ~100
- MAC: ~1000
- PC: ~300 (steadily growing)
- X-terminals

INFNet - the INFN network

- Nationwide network of INFN fully integrated with GARR Backbone (GARR connects the most important national research and academic institutes)
- Based on leased lines from 64 Kbps to 2 Mbps
- Plan to migrate within this year to a new broadband network called GARR-B based on a national ATM infrastructure
- International lines:
  - CERN - 8 Mbps
  - USA(ESnet) - 1.5 Mbps
  - USA(MCI) - 2 Mbps
  - Europanet - 2 Mbps (until the end of April)
- INFN is now testing the 34 Mbps italian POP of TEN-34 (Trans European Network - based on ATM); since the end of April it will be operational to connect GARR/INFNet to all european sites

Distributed File System: AFS

- Pisa adopted AFS in 1994
- the spread of AFS in the other sections of INFN began in July 1995
- now there are 2 AFS cells: pi.infn.it, infn.it
  - 15 servers with some 150 GB of disk
  - ASIS/CERNlib collection regularly mirrored from CERN
  - growing R/W space (home directories, software for experiment)
  - more servers this year
  - collaboration with CASPUR

INFN DCE/DFS WG

- Working group which began its activity in September 1996
- Initial aim was examining and improving knowledge about this product and particularly about DFS
- This group exposed its first steps and initial testbed project during the last INFNet Workshop held in Catania (October 1996)
- Testbed consisted of bringing up DCE cells in 5 INFN sites (Firenze, Napoli, Pisa, Roma and Trieste) on different hardware platforms such as HP,IBM and Digital
- Cells were registered in DNS so they can be visible by DCE GDA of foreign cells
- Use of NTP server as time provider to DTS system
- There was a great displeasure from the present lack of support of LFS (Local File System) in Digital and HP DFS releases (only UFS supported)
- DFS access to ASIS will be considered

Summary

- The choice of computer types and operating systems is generally driven by needs of the research groups
- Many researchers are moving quickly to object-oriented programming
- The growing interest for Windows NT, not only for desktop computing, and for Linux are dramatically increasing the purchase of PCs
- Ever-growing role of distributed file systems is evident (WAN scalability, better integration, security)