European OpenAFS Conference 2009

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European OpenAFS Conference 2009

Where?

European OpenAFS Conference 2009

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Here!

European OpenAFS Conference 2009

Location Details

- **The second European OpenAFS conference will be hosted by the "Department of Computer Science and Automation" of the University "Roma Tre"**
  - Less than five kilometers (few minutes with underground) from Colosseum!
  - The lecture hall is equipped with WiFi connection for participants, a projector, and a PC for presentations

European OpenAFS Conference 2009

When and What?

European OpenAFS Conference 2009

Save the Date

- **Last three days of September**
  - **Starting on Monday the 28th at 9:00**
  - **Till Wednesday the 30th at lunch time**

SEP 2009 28 **Introduction, Site Reports**

SEP 2009 29 **Advanced Topics**

SEP 2009 30 **Outlook**

European OpenAFS Conference 2009

Who?

European OpenAFS Conference 2009
Who should attend?

- Novices and experienced AFS System administrators to exchange their knowledge and report use cases

- People interested in AFS

- People looking for the right distributed file system

European OpenAFS Conference 2009

How?

European OpenAFS Conference 2009
How to join?

- Fill out and send via fax the following form:
  - http://www.dia.uniroma3.it/~afscon09/registration/form.pdf

- Conference Fee: 0 €

- Optional:
  - Lunch: 5-10 €
  - Dinner: ~25 €
  - Social events: ~15 € (Bus Tour, Visit to Basilica S.Paolo)

European OpenAFS Conference 2009

Contacts

- Website:

  http://www.dia.uniroma3.it/~afscon09/

- Email:

  afscon09@dia.uniroma3.it

European OpenAFS Conference 2009
Organization

- **University "Roma Tre"**
  - **Department of Computer Science and Automation**
  - **http://www.dia.uniroma3.it/**

- **INFN**   **http://www.infn.it/**

- **CASPUR**   **http://www.caspur.it/**

- **ENEA**   **http://www.enea.it/**

University "Roma Tre"

- ## One of the 3 bigger state universities in Rome
  - About 40.000 students and 1.500 employees

- ## DIA: Department of Computer Science and Automation
  - Part of the School of Engineering
  - About 850 students and 33 employees

AFS @ dia.uniroma3.it

- Using AFS since foundation of the department

- Cell vn.uniroma3.it
  - OpenAFS + Kerberos V + NIS
  - 3 file servers, 300 volumes, 200 users, 100GB
  - Started as glue for various UNIX dialects on Transarc AFS, today using RedHat and Scientific Linux

- Cell dia.uniroma3.it
  - OpenAFS + Kerberos V + OpenLDAP
  - 5 file servers, 1100 volumes, 250 users, 200GB
  - Laboratories
 - Based on Debian and Nexenta servers plus Ubuntu clients

# Italian National Institute of Nuclear Physics
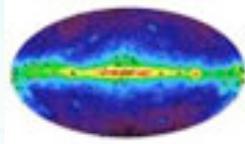
PARTICLE PHYSICS   **ASTROPARTICLE PHYSICS**   **NUCLEAR PHYSICS**   **THEORETICAL PHYSICS**   **TECHNOLOGY RESEARCH**
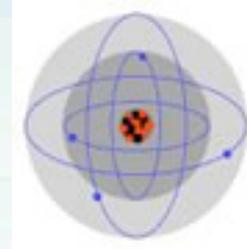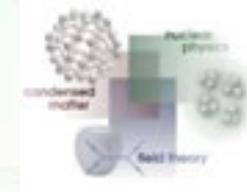
- The INFN is an organization dedicated to the study of the fundamental constituents of matter, and conducts theoretical and experimental research in the fields of subnuclear, nuclear, and astroparticle physics. These activities are conducted in close collaboration with the academic world.

- Staff (31/12/2008):1865 persons (~600 physicists)

- More than 3690 affiliates from Universities, 2000 final-year students

INFN Structure

- 4 National Laboratories
  - Frascati, Legnaro, Gran Sasso and Catania

- 19 Sections linked to Physics Department of Universities

- 7 Associated Sites

- 1 National Networking Center
  - CNAF(Bologna)

- Sections build experiments in national and international laboratories and do data analysis

- History of AFS in INFN
  - First AFS (pi.infn.it) cell in Pisa since 1994
  - National AFS cell (infn.it) since 1995
  - Other AFS cells: LNF, Lecce, KLOE, LNGS, Bari

AFS @ INFN: Usage Summary

Cell Name	Auth	FS	Volumes	Users	TB
ba.infn.it	K5	2	306	302	0.4
le.infn.it	K5	5	1429	923	5.3
lnf.infn.it	K5	7	2109	1299	14.5
lngs.infn.it	K5	2	811	729	0.4
pi.infn.it	KA	6	1529	1213	0.9
kloe.infn.it	KA	2	319	200	14.7
infn.it	K5	19	2465	1607	6.4
Total (7 cell)		43	8968	6273	42.6

- XAUTH available between K5 cells
- Many users belong to two or more cells.

CASPUR

- Inter-University Consortium for the Application of Super-Computing for Universities and Research
- Cell caspur.it has been the first AFS cell in Italy
- Mainly used as SW repository (~3TB) and for user home directories
- Caspur manages ~10 special purpose AFS cells and provides support on AFS to universities and research institutes

ENEA

- ENEA is a public agency operating in the fields of energy, the environment and new technologies to support the Country's competitiveness and sustainable development.

- The Agency's activities are carried out in the following four areas
  - Clean Energy
  - Technologies for the Territory
  - Technologies for the Future
  - Advanced Tecnology Applications.

- 12 research sites, 6 computer centers

ENEA-GRID & enea.it AFS cell

- ENEA Computational resources are integrated in a ENEA-GRID infrastructure:
  - http://www.eneagrid.enea.it

- Main resource is CRESCO HPC System
  - #125 in June 2008 Top500 list (17 Tflops, 300 hosts, 2700 cores x86_64)

- AFS is the data layer of the whole ENEA-GRID infrastructure
  - a single, WAN distributed, AFS cell enea.it
  - Kerberos 5 domain ENEA.IT
    - 1 KDC & 8 slaves + 1 Windows AD Domain Controller for Win authentication)

- Integrated with the GRID enabled resource manager LSF Multicluster

AFS @ ENEA

- Servers are WAN deployed over multiple sites (6)
- 8 DB servers (each one also is a K5 slave)
  - 3 on the main AFS site Frascati (Rome) which hosts the sync server
  - 5 are "clone" dbservers (on the other sites)
- 13 File servers
  - 10 TB in 3950 volumes
- At least one fileserver on each site
- ~ 600 AFS clients
- ~ 400 ENEA-GRID computing nodes and ~200 user clients
- AFS is used for:
  - user homes (~500 registered users), software, data
  - system file distribution (e.g. /etc/passwd)
  - collaborative data space (project management)
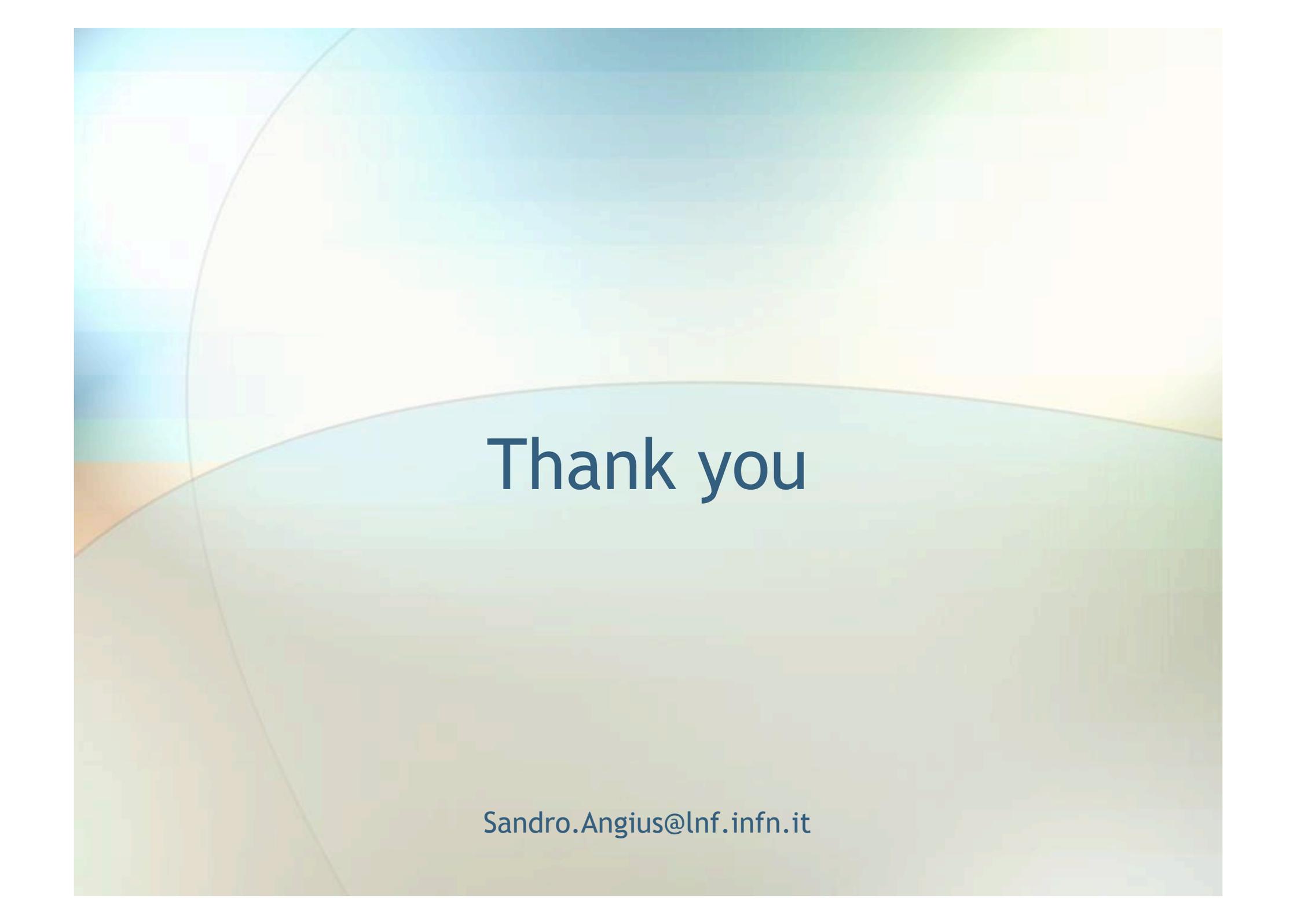
Thank you

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