Site Report for LIP

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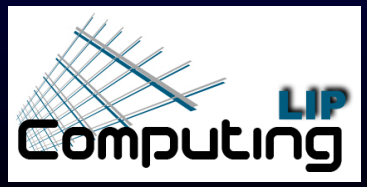
Laboratório de Instrumentação e Física Experimental de Partículas

LIP

HEPiX Fall 2009



Outline

Outline

Who we are

The sites

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1. Who we are
   - The Lab
   - The Team
2. The sites
   - The federation
   - Lisbon
   - Coimbra
   - NCG

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- A scientific and technical association of public utility.
- Research in the fields of:
  - Experimental High Energy Physics.
  - Associated Instrumentation.
  - Astroparticles.
  - Radiation Detection Instrumentation.
  - Data Acquisition and Data Processing.
  - Advanced Computing.
  - Applications to other fields, in particular Medical Physics.
- Developed in the framework of large collaborations:
  - CERN
  - ESA
  - SNOLAB
  - GSI
  - NASA
  - AUGER

LIP

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- LIP has currently two branches: Lisbon and Coimbra.
- LIP has about 170 people, out of which 70 hold a PhD degree and many are academic staff at local universities.

The Advanced Computing Team

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Responsible for all computing activities:

- Local Infrastructure.
- Local User Support.
- GRID and Global User Support.
- R&D in Advanced Computing.

The Advanced Computing Team

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LIP Computing

The federation

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Supports	Core Services	# Cores	Storage	Batch System	Overbooking
ATLAS, CMS, OPS, DTEAM, SWETEST, INTEUGRID, AUGER, COMPASS, Local Users	WMS MyProxy	458 (GRID) 68 (Local)	200TB (GRID) 25TB (Local) (LUSTRE)	SGE	12/8

Redundancy: core network services & grid services (XEN VM).

LIP-Lisbon

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WNs	Storage
HP DL160 G5	Dell PE 1950
Intel Xeon	Dell PV MD1000
E5472 3.0GHz	15x1TB SATA

LIP-Coimbra

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Supports	Core Services	# Cores	Storage	Batch System	Overbooking
ATLAS OPS DTEAM SWETEST	-	176 (GRID+Local) (FS)	150TB (GRID) 40TB (Local) (LUSTRE)	TORQUE MAUI	NO

Redundancy: core network services.

LIP-Coimbra

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Intel Xeon	Dell PV MD1000
E5472 3.0GHz	15x1TB SATA

NCG-INGRID-PT

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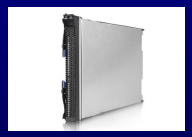
Supports	Core Services	# Cores	Storage	Batch System	Overbooking
ATLAS	WMS	1300	280TB	SGE	12/8
CMS	MyProxy		(LUSTRE)		
OPS	TopBDII				
DTEAM	VOMS				
SWETEST	LFC				
INGRID VOs					
IBERGRID VOs					

Redundancy: core network services & grid services (XEN VM).

NCG

WNs	Storage
IBM Blade LS22 AMD Opteron 2356 2.3GHz	IBM x3650
IBM Blade HS21 Intel Xeon L5420 2.5GHz 	IBM EXP 3000 12x1TB
HP Blade DL460C Intel Xeon X5550 2.5GHz	

Note: One IBM Blade HS21 has Infiniband to support HPC.

Room

. . .	Lisbon	Coimbra	NCG
Area(m^2)	40	62	370

Power

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. . .	Lisbon	Coimbra	NCG
Electrical Power (kW)	160	200	1000
Protected Power (kVA)	20+60	40(LIP)+80	3*200+Diesel Generator

AC

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. . .	Lisbon	Coimbra	NCG
Power (kW)	4*22	4*40	2x375
Freecooling	N	Y (Independent System)	Y (on chillers)

Network

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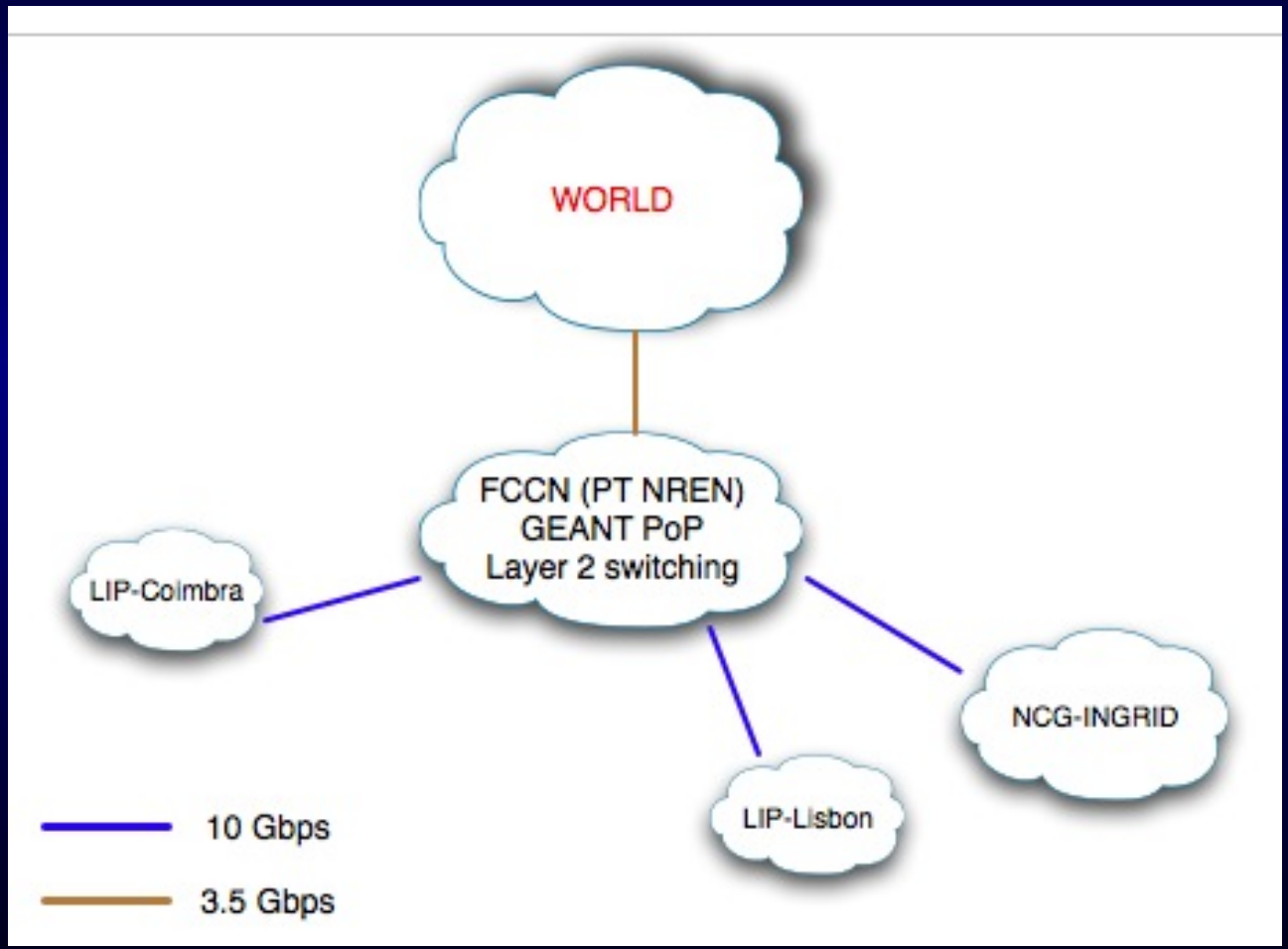

Network & Storage

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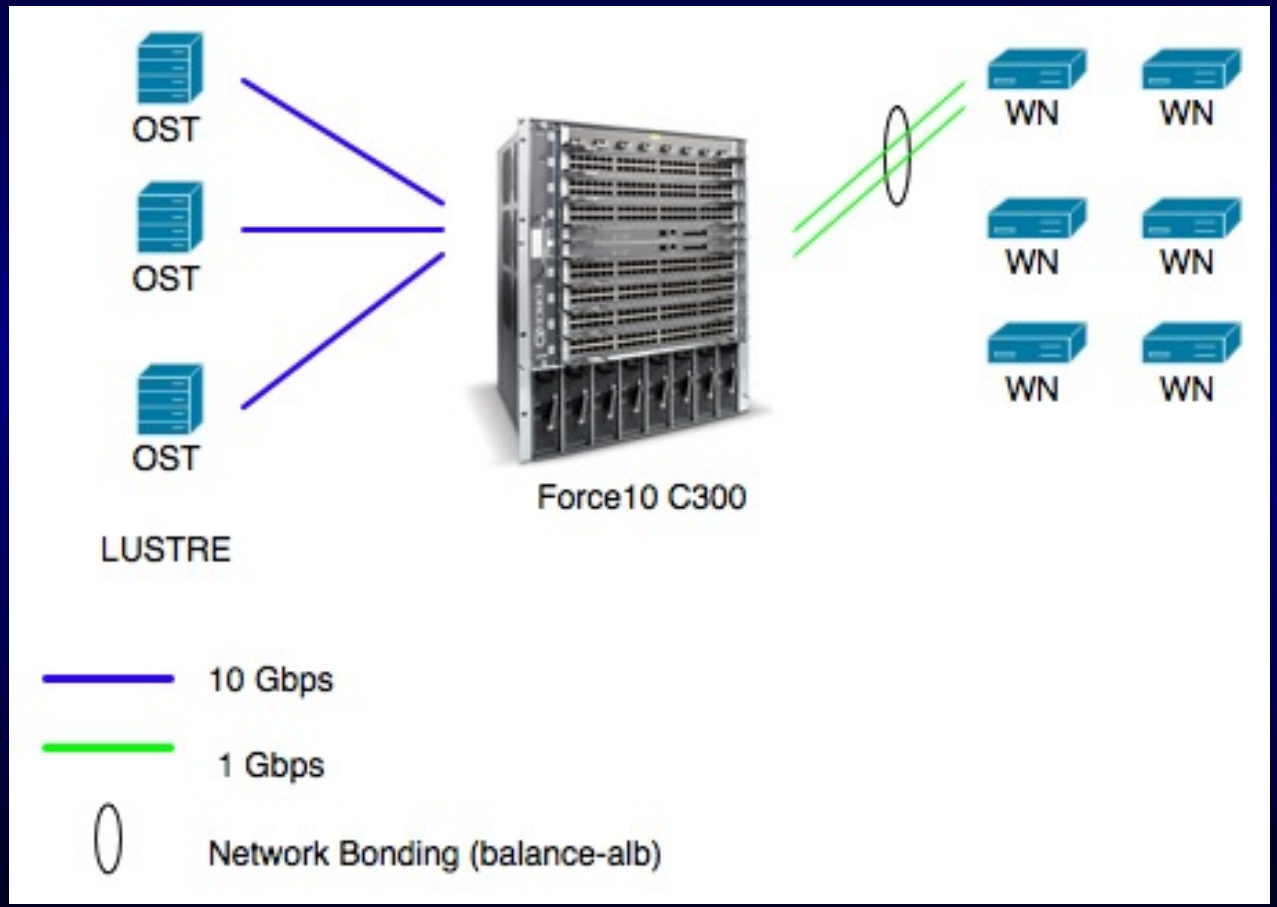

Monitoring

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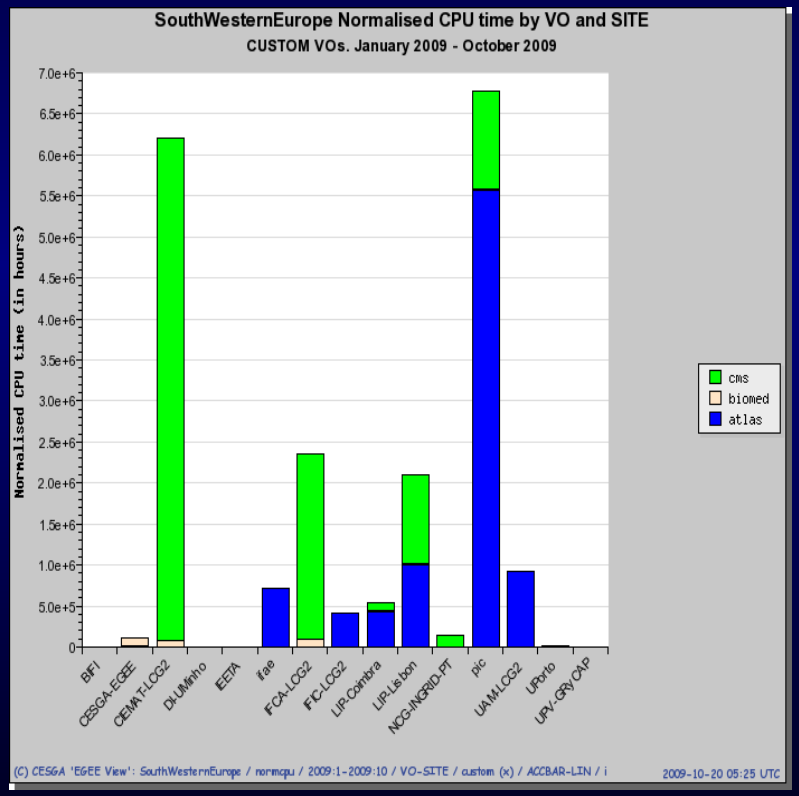
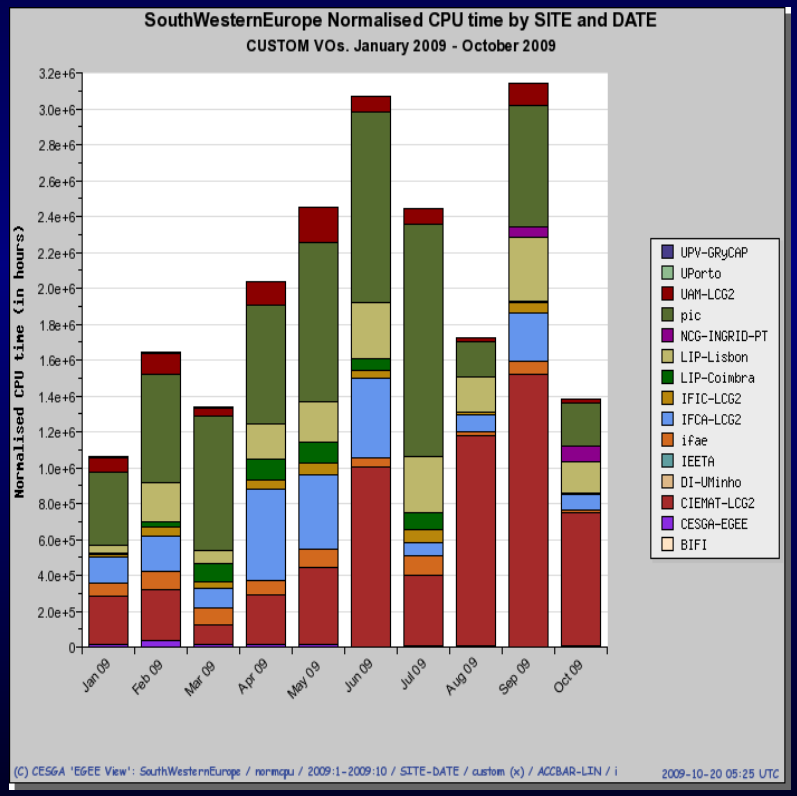
	Lisbon	Coimbra	NCG
Systems	Nagios, Ganglia, Cacti	Nagios, PNP4Nagios	Nagios, Ganglia, Cacti
Services	Environment Network Storage Grid	Environment Network Storage Grid	Environment Network Storage Grid

Impact


SouthWesternEurope Normalised CPU time by VO and SITE
CUSTOM VOs. January 2009 - October 2009
Normalised CPU time (in hours)
7.0e+6
6.5e+6
6.0e+6
5.5e+6
5.0e+6
4.5e+6
4.0e+6
3.5e+6
3.0e+6
2.5e+6
2.0e+6
1.5e+6
1.0e+6
5.0e+5
0
cms
biomed
atlas
BIFI
CESGA-EGEE
CIEMAT-LCG2
DI-UMinho
IEETA
ifae
IFCA-LCG2
IFIC-LCG2
LIP-Coimbra
LIP-Lisbon
NCG-INGRID-PT
pic
UAM-LCG2
UPorto
UPV-GRyCAP
(C) CESGA 'EGEE View': SouthWesternEurope / normcpu / 2009:1-2009:10 / VO-SITE / custom (x) / ACCBAR-LIN / i
2009-10-20 05:25 UTC


SouthWesternEurope Normalised CPU time by SITE and DATE
CUSTOM VOs. January 2009 - October 2009
Normalised CPU time (in hours)
3.2e+6
3.0e+6
2.8e+6
2.6e+6
2.4e+6
2.2e+6
2.0e+6
1.8e+6
1.6e+6
1.4e+6
1.2e+6
1.0e+6
8.0e+5
6.0e+5
4.0e+5
2.0e+5
0
Jan 09
Feb 09
Mar 09
Apr 09
May 09
Jun 09
Jul 09
Aug 09
Sep 09
Oct 09
UPV-GRyCAP
UPorto
UAM-LCG2
pic
NCG-INGRID-PT
LIP-Lisbon
LIP-Coimbra
IFIC-LCG2
IFCA-LCG2
ifae
IEETA
DI-UMinho
CIEMAT-LCG2
CESGA-EGEE
BIFI
(C) CESGA 'EGEE View': SouthWesternEurope / normcpu / 2009:1-2009:10 / SITE-DATE / custom (x) / ACCBAR-LIN / i
2009-10-20 05:25 UTC

Current Concerns

- iSCSI deployment
- VM
- 10 Gbps
- Lustre
  - Upgrades
  - File replication (à la dCache) would be a nice feature.
  - OST management tools would be nice (rebalancing when new OSTs become available, OST substitution, ...).
- SToRM - ACLs
- Local/GRID file access (how to properly implement local user access to GRID storage).
- ATLASHOTDISK - to stripe or not to stripe!!!

Projects

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Responsabilities

- Site administration
- User support
- EGEE TPM
- SWE ticket management
- EGEE ROC management
- Core services management
- National Grid Coordination
- Security Coordination
- National CA operation
- Middleware deployment coordination
- Middleware testing & validation
- Dissemination & Training