



GRID activities in Latin America and ROC-LA

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Outline

- GRID in Latin America
- ROC-LA
- Conclusions

GRID in Latin America

(as in the EGI accounting portal - only gLite sites)

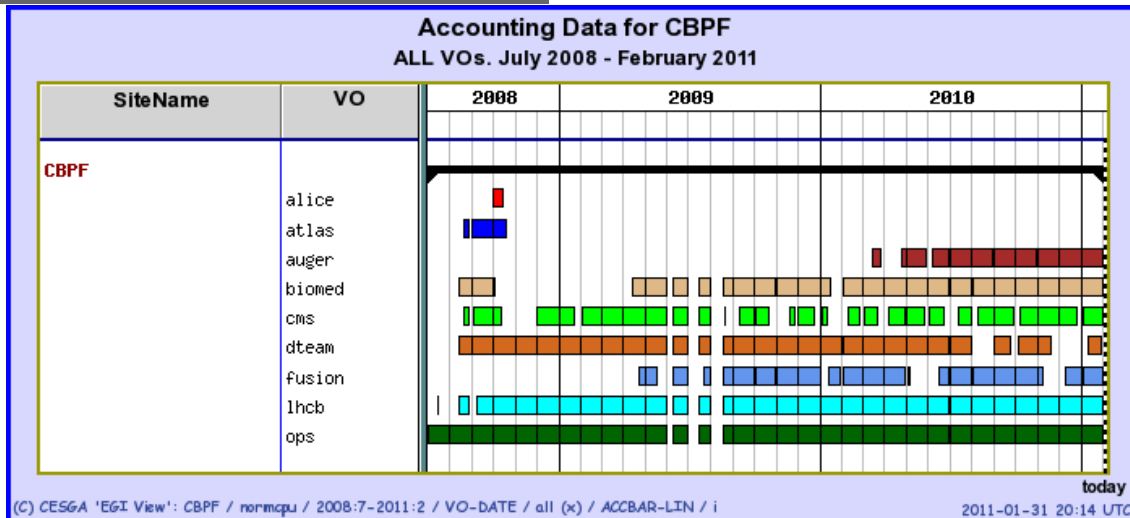
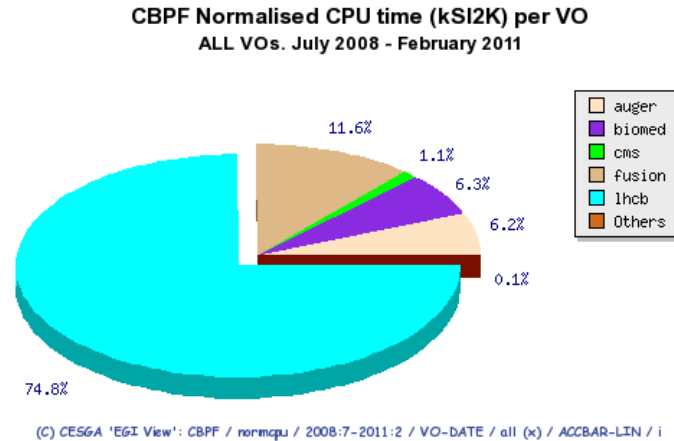
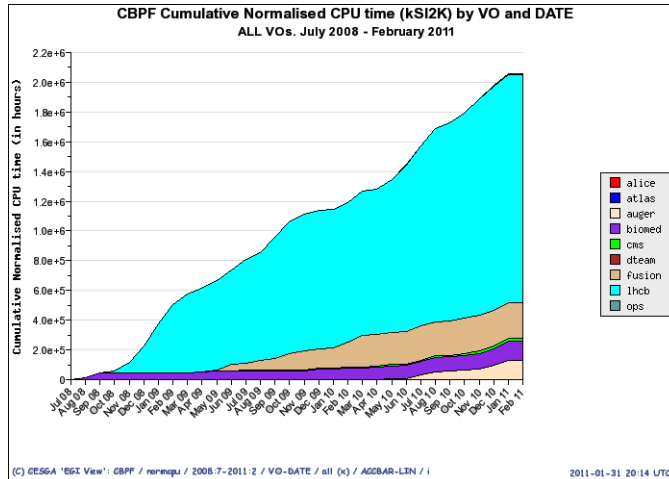


GRID in Latin America

CBPF

- Starting date: August 2008
- 344 cores + 128 to be installed
- 24 Tb storage + 120 Tb to be installed
- Staff: 3 computing technicians - full time dedication
- Aug. 2008 to Sep. 2009 → depending of ROC-CERN
- Sep. 2009 on → depending of ROC-LA
- Main VO: LHCb (Tier2 of LHCb)
- Other VOs: CMS, Auger, Fusion, Biomed
- About 2×10^6 1K.SI2K.hours CPU time run since Aug. 2008 (source: EGI accounting portal)
- Expected: 1000 cores until 2012 (about 10% of Tier 2 CPU cores in LHCb)

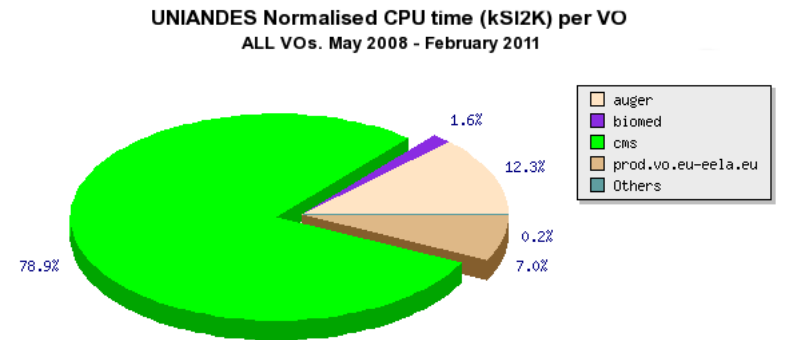
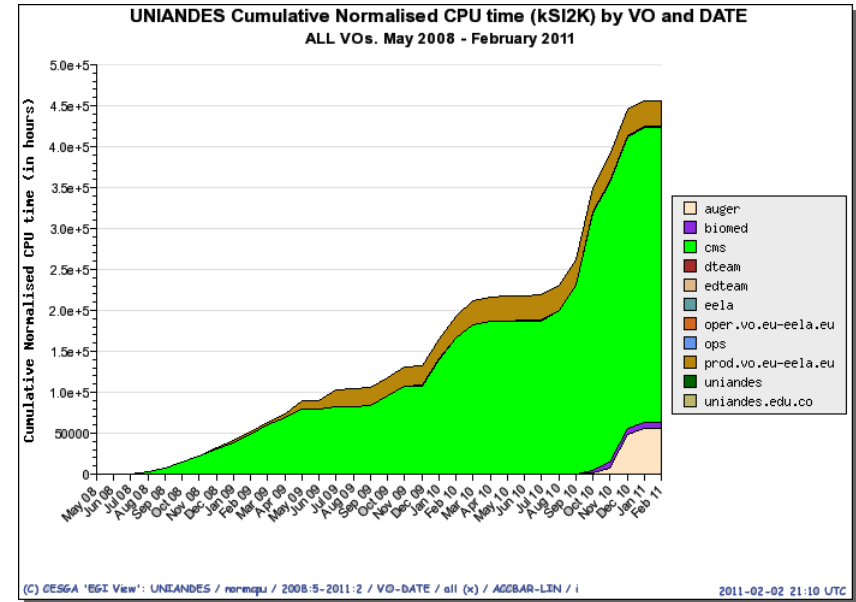
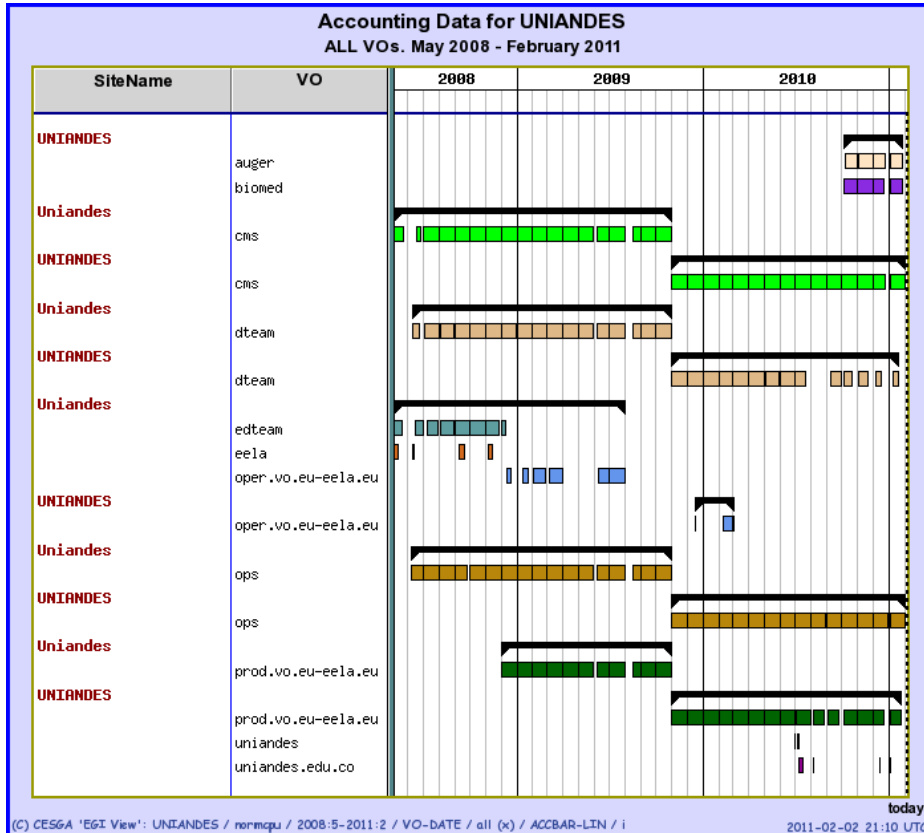
CBPF



UNIANDES

- Starting date: July 2008
- 216 cores
- 16 Tb storage
- Staff: 2.5 computing technicians - full time dedication
- July 2008 to Sep. 2009 → depending of ROC-CERN
- Sep. 2009 on → depending of ROC-LA
- Main VO: CMS (Tier3 of CMS)
- Other VOs: Auger, Biomed, Uniandes, Uniandes.edu.co, oper.vo.eu-eela.eu, prod.vo.eu-eela.eu
- About 4.6×10^5 1K.SI2K.hours CPU time run since July 2008 (source: EGI accounting portal)
- Expected: +40 CPUs in 2011 + 20 Tb in 2011

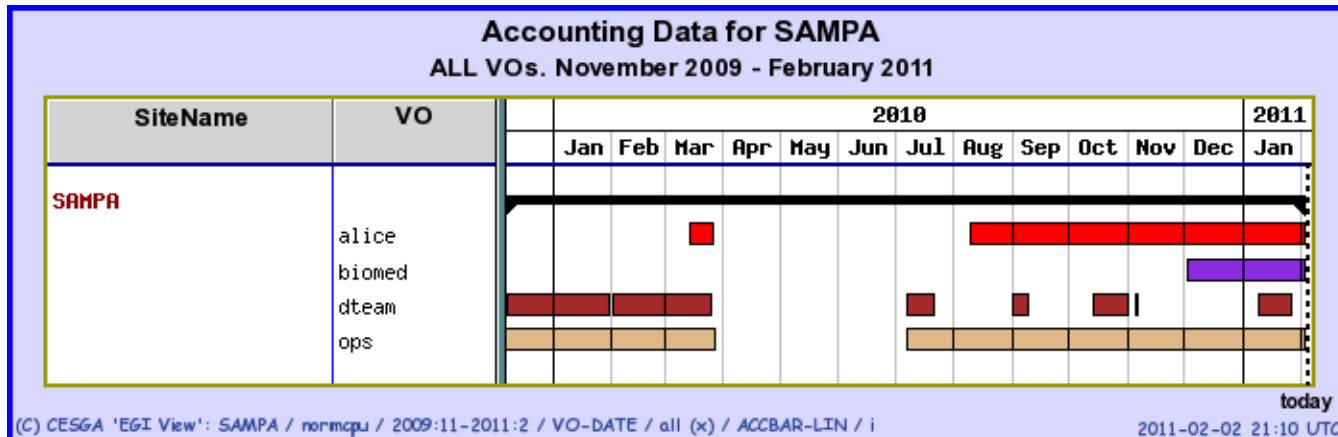
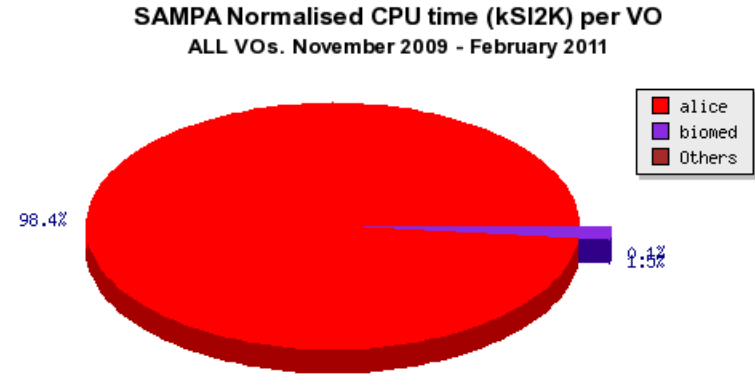
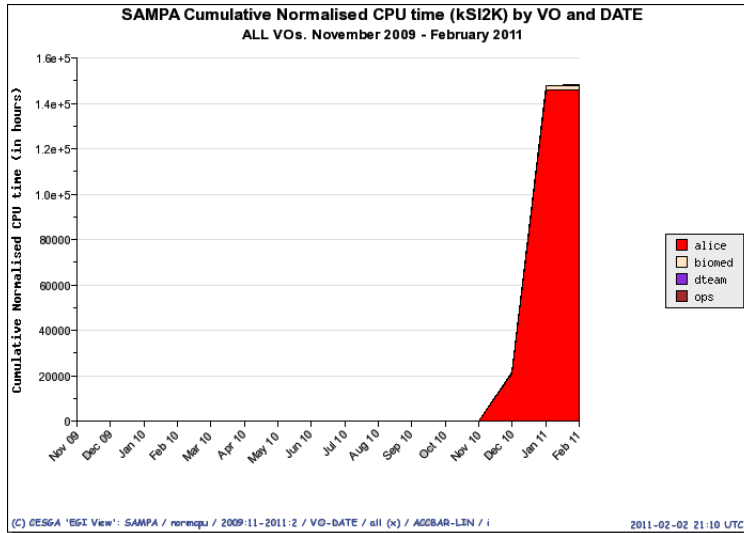
UNIANDES



SAMPA

- Starting date: December 2009
- 192 cores
- 1 Tb storage + 20 Tb to be installed
- Staff: 1 computing technician - full time dedication
- Created by ROC-LA
- Main VO: ALICE (Tier3 of ALICE)
- Other VOs: Biomed
- About 1.5×10^5 1K.SI2K.hours CPU time run since Dec. 2009 (source: EGI accounting portal)
- Expected: none during 2011

SAMPA



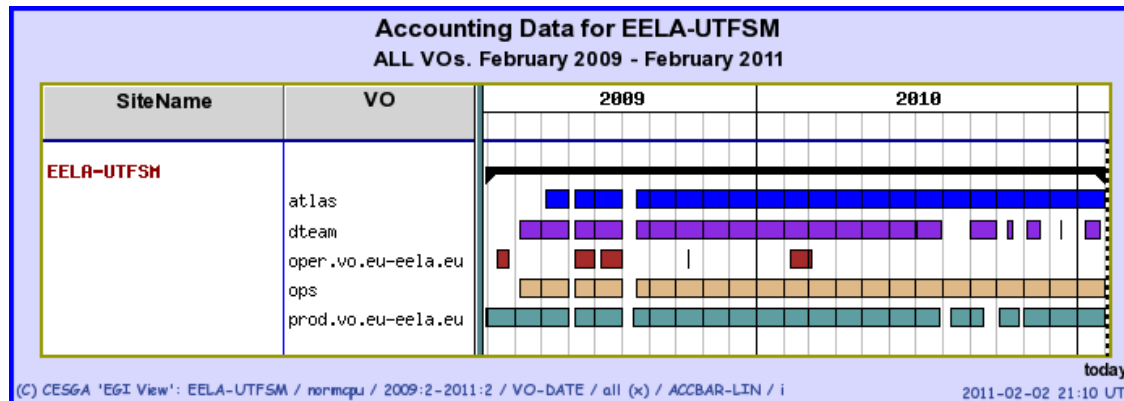
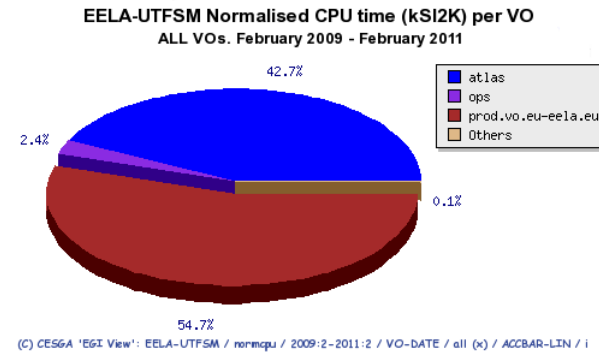
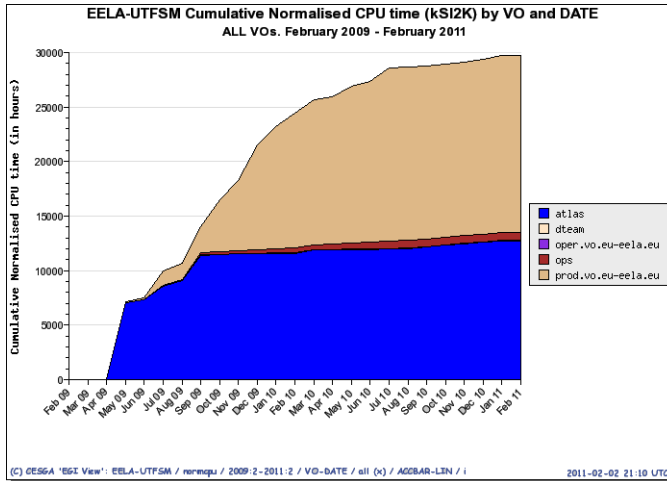
ICN-UNAM

- Starting date: April 2008
- 58 cores
- 30 Tb storage (1 Tb in GRID + 29 Tb local)
- Staff: 1 computing technician - full time dedication
- April 2008 to Sep. 2009 → depending of ROC-CERN
- Sep. 2009 on → depending of ROC-LA
- Main VO: ALICE (Tier3 of ALICE)
- Other VOs: ALICE, Auger, Biomed, oper.vo.eu-eela.eu, prod.vo.eu-eela.eu
- About 4×10^4 1K.SI2K.hours CPU time run since April 2008 (source: EGI accounting portal)
- Expected: 350 cores + 1-2 Pb of storage until 2012

EELA-UTFSM

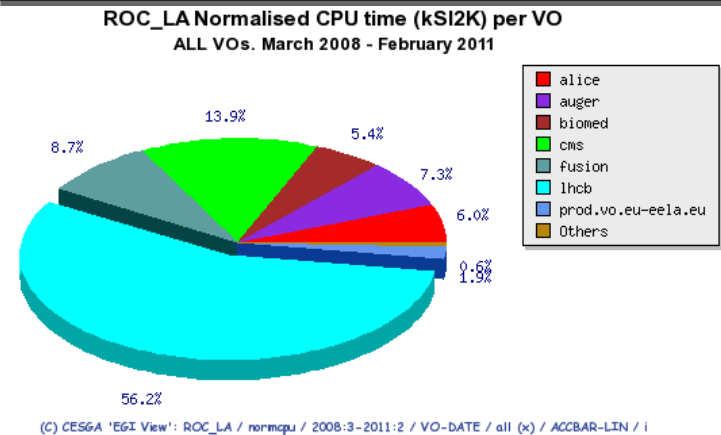
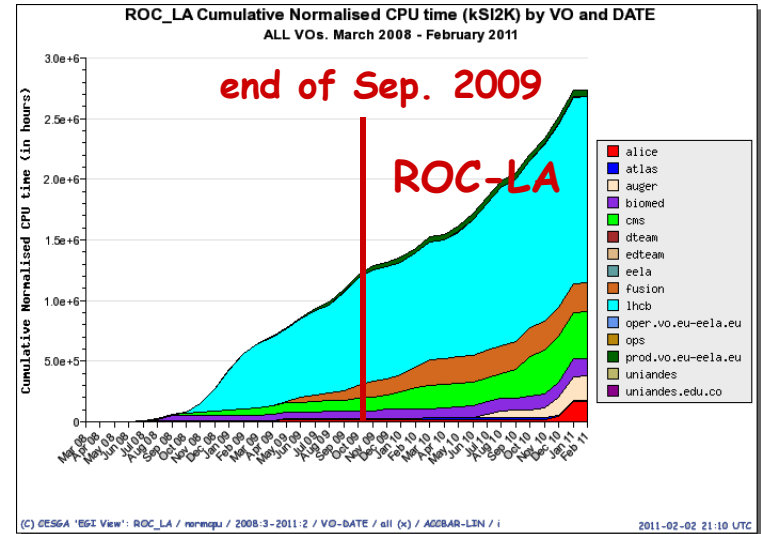
- Starting date: March 2009
- 44 cores + 256 cores to be installed
- 5 Tb storage + 80 Tb to be installed
- Staff: 5 computing technicians
- March 2009 to Sep. 2009 → depending of ROC-CERN
- Sep. 2009 on → depending of ROC-LA
- Main VO: ATLAS (Tier3 of ATLAS)
- Other VOs: oper.vo.eu-eela.eu, prod.vo.eu-eela.eu
- About 3×10^4 1K.SI2K.hours CPU time run since April 2008 (source: EGI accounting portal)

EELA-UTFSM



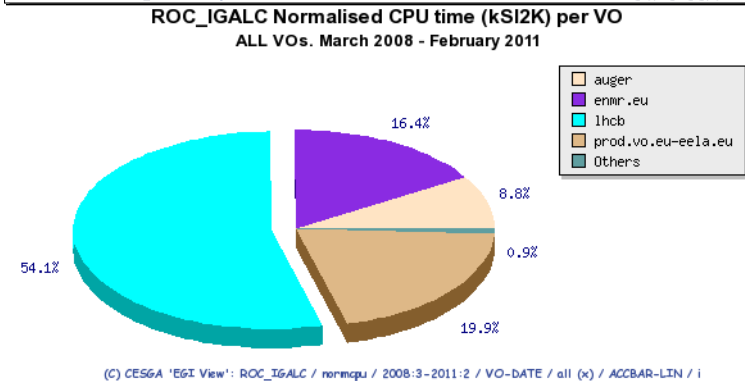
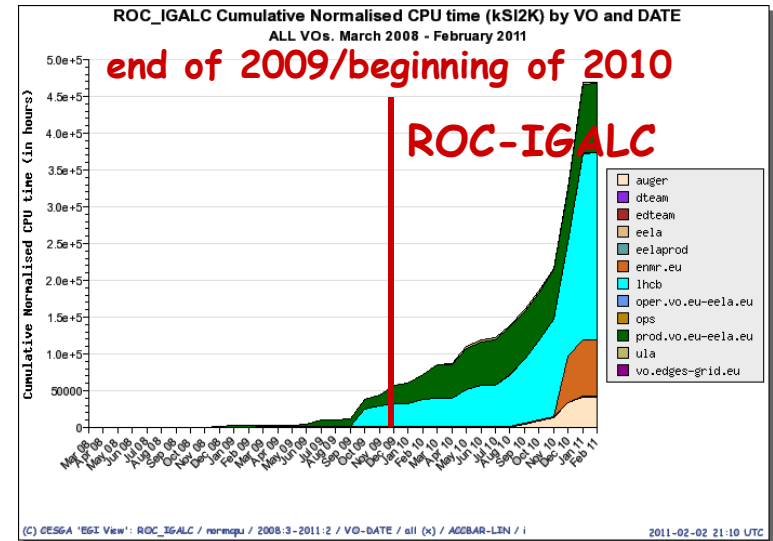
Summary of ROC-LA sites

- Startup in Sep. 2009.
- More than 2.7×10^6 1K.SI2K.hours CPU time.
- Support to 11 VOs.
- 5 sites in major Universities and Institutes in 4 Countries in Latin America.
- Most of the activity is related to HEP (CERN exp.).
- 854 cores
- 47 Tb of storage



Summary of ROC-IGALC sites

- Startup in Dec 2009.
- About 4.7×10^5 1K.SI2K.hours CPU time.
- Support to 5 VOs.
- 4 sites in 3 Universities in 3 Countries in Latin America.
- Most of the activity is related to HEP (LHCb and Auger).
- 273 cores.



OSG sites in Latin America

- Three sites running in Brazil:
 - **T2HEP-GRID (UERJ) and SPRACE (UNESP)**
 - First GRID site in Latin America (T2-HEPGRID - 2004)
 - ~400 + 320 cores + storage of 300 + 120 Tb.
 - VOs supported: CMS (main) + VOs of the T2USA organization.
 - **GridUNESP**
 - Startup in Sep. 2009
 - Central cluster + 7 secondary clusters.
 - ~ 3000 cores + storage of ~140 Tb in total.
 - VOs supported: CMS, LIGO and about 26 local projects.

ROC-LA

- **Began to operate in Sep. 2009**
 - Beginning of 2009: CERN announced the cease of operations of ROC-CERN as a catch-all ROC.
 - There was no ROC in the region (LA)
 - There was three sites in LA under the umbrella of ROC-CERN (CBPF, ICN-UNAM, UNIANDES)
 - The three sites were associated to groups in LHC experiments.
 - CBPF, UNIANDES and ICN-UNAM decided to create ROC-LA.
 - **By the end of 2009/beginning of 2010 ROC-IGALC was created.**

ROC-LA commitment

- To provide a GRID infrastructure for Latin America, adequate for HEP and non-HEP sites.
- To give support to the GRID community in Latin America certifying, testing and monitoring sites.
- To provide technical support to sites in production and sites in formation for both, HEP and non-HEP groups.

What the ROC-LA is ?

- ROC-LA is a distributed ROC: CBPF (Brazil) + ICN-UNAM (Mexico) + UNIANDES (Colombia).
- Administration of the ROC is shared between the three institutions.
- The technical support team is composed by staff personnel from the three institutions.
- Services of the ROC-LA are distributed between the three institutions.
 - Nagios , sam, GSTAT for monitoring.
 - GOCDDB, site_BDII, APEL for information.
 - wms, myproxy, VOMS, GGUS ticketing services.

- Five certified sites in ROC-LA (854 cores)
 - CBPF (Brazil) 344 cores - LHCb
 - UNIANDES (Colombia) 216 cores - CMS
 - SAMPa (USP) (Brazil) 196 cores - ALICE
 - ICN-UNAM (Mexico) 58 cores - ALICE
 - EELA-UTFSM (Chile) 44 cores - ATLAS
 - Total storage installed capacity: 47 Tb shared between the five sites.
- Four candidate sites
 - PUC (Chile) ~128 cores - ATLAS
 - UAN (Colombia) ~ 44 cores - ATLAS
 - UESF (Brazil) ~4 cores - cs.br, fusion
 - LNCC-COMCIDIS (Brazil) ~100 cores - cs.br

- Support to the VOs ATLAS, ALICE, CMS, LHCb, Auger, Biomed, Fusion, cs.br (computing-science), Uniandes.edu.co and also eela VOs (prod and oper)
- Several support mailing lists: support@roc-la.org (technical support), sites@roc-la.org (rapid communication between sites), security@roc-la.org, admin@roc-la.org
- Home-page: www.roc-la.org
- Annual Workshop of the ROC-LA
 - Open to the community of users of the ROC-LA
 - I Workshop: CERN, October 6 to 8, 2010
 - II Workshop: Colombia, end of Sep. 2011

Expected growth of ROC-LA

- Today: 854 cores + 47 Tb storage capacity
- Very near future (few months):
 - Storage: 220 Tb (CBPF+SAMPA+EELA-UTFSM) ready to be installed.
 - CPU cores: 384 (CBPF+EELA-UTFSM) ready to be installed + ~270 from candidate sites (total of ~650 cores to be added to ROC-LA)
- End of 2012 (counting only 9 installed sites):
 - ~2000 cores
 - ~ 2-3 Pb of storage capacity

Conclusions

- GRID in Latin America shows a slow but sustained and healthy growth
 - most of the ROC-LA activity is due to HEP groups
 - ~ 76% → LHC
 - ~ 7.3% → Auger
 - In ROC-IGALC: 54.1% by LHCb and 8.8% by Auger
 - Similar numbers in OSG sites
- IT and WLCG people at CERN have had a non negligible participation (training people, giving technical support, etc.) - Many thanks to all of them !

- Non-HEP groups are starting to show up
 - UESF and LNCC-COMCIDIS (Brazil) - cs.br
 - Uniandes community (Colombia) - uniandes and uniandes.edu.co
 - Expected participation of other groups in the near future (astrophysics, biophysics, etc)
 - Several (~30) projects of UNESP (Brazil) ranging from biophysics to meteorology (OSG).
- LCG and OSG coexist in Latin America (Ex. Brazil)
 - Project to integrate OSG and LCG sites funded by RENAFEA (Brazil)
 - Activity in the same direction in UNIANDES
 - GRID initiative by RENATA in Colombia

- Several things are still needed:
 - Training centers/schools to prepare people to mount and operate GRID sites and to give technical support.
 - Friendly tools for GRID users (important for the non-HEP community).
 - Bigger involvement of people of the computing community in Latin America could help.
 - Network upgrade - Most of the Countries in LA have very poor access to internet.
- We have to move from isolated initiatives to collective work.