

2^o Symposium on Grid Computing in the Americas^a



SCALAC Project: Toward an Advance Computing Service e-Infrastructure for Latin America and Caribbean e-Ciencia

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Outline:

- Abstract
- Introduction
- Actions at national level
- e-Infrastructure for Latin American research communities.
- Architecture and Services.
- Future work

Abstract

Activities oriented to:

- To build an e-Infrastructure.
- Virtual Research Communities Support.
- Training.
- New services incorporation
- Sustainability

Introduction

e-Science:

- Activities for advanced computing services for research communities in Latin American Region.

Background: Work based on FP6 and FP7 projects collaboration.

- Projects aims on Grid infrastructure: EELA, RINGrd, EELA-2, GISELA, EPIKH,
- Distributed computing infrastructures CHAIN-REDS, ELCIRA,
- Support of ALICE and *ROC_LA* projects.

National level activities

Work oriented to build a National Grid Initiative.

- JRU-MX creation,
 - Associated Institutions: CICESE, UNISON, CIC-IPN, ITESM, UAEM e IT-Ver,
- Grid Operation Center (GOC-MX), associated to ROC-LA.

e-Infrastructure

Grid Infrastructure

Production Quality

.

Three layer model

- Resource Center (Institutional level).
- Grid Operation Center (National level).
- Regional Operation Centre (Continental level -Latin American-)

Resource Center in Latin America supporting prod.vo.eu-eela.eu

- EELA-UNLP,
- ICN-UNAM,
- UNIANDES
- UNAM-GRID

Regional Operation Center (Continental level)

- *ROC_LA* supported.
- Latin American Grid Infrastructure integration with EGI.
- Grid Central Services provided by GRID-UNAM site.
 - UI: ui.grid.unam.mx
 - LFC central: lfc.grid.unam.mx
 - AMGA: amga.grid.unam.mx
 - PX: myproxy.grid.unam.mx
 - TopBDII: top-bdii.grid.unam.mx
 - WMS-LB: wms-lb.grid.unam.mx
 - VOMS: voms.grid.unam.mx
 - CREAM-CE: cream.grid.unam.mx
 - SE: se.grid.unam.mx

New centers

- RED-CONARE, Costa Rica
- CEDIA, Ecuador

Distributed Computing Infrastructure

Today the e-Science problems approach require different technological models:

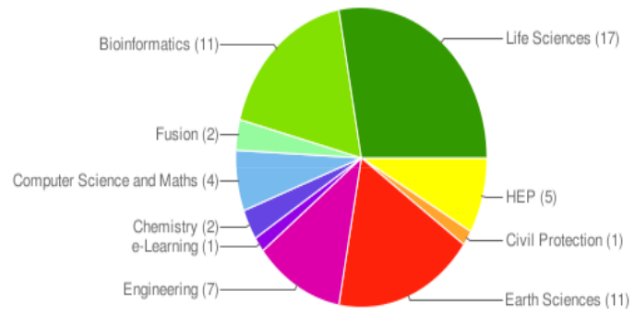
- Grid computing,
- Cloud computing,
- High Performance Computing,
- Web Service Architecture,
- Big data

Virtual Research Communities Support

Ported Application to Grid environment



Distribution by domain



Applications ported to GISELA Science Gateway (<https://gisela-gw.ct.infn.it/>):

The screenshot shows the GISELA Science Gateway website. The header features the "Science Gateway" logo and the text "Portal de aplicaciones avanzadas para la investigación en América Latina". Navigation links include "Inicio", "Sobre el SG", "Documentación y Ayuda", "Science Gateways", "Modelo SCA", "Home GISELA", "Home CLARA", "Register", and "Acceder". A search bar is present with the text "GISELA Science Gateway" and "Science Gateways".

The main content area is divided into two columns:

- Aplicaciones en el SG:**
 - Aplicaciones
 - Patrimonio Cultural
 - Earth Science
 - Sistemas Industriales
 - Bioinformática, ciencias de la vida
 - Estadísticas y matemáticas
 - Historias exitosas
- Categorías de Aplicaciones disponibles en Gisela SG:**
 - Bioinformática, Ciencias de la Vida**
 - Estadísticas y Matemáticas Sistemáticas estadísticas**
 - Patrimonio Cultural**
 - Sistemas Industriales Sistemas estadísticos**

Below the categories, there is a section for "Ver tambien: todas las aplicaciones en la Base de datos" and logos for UNAM, CUDI, chain, and Universidad de los Andes.

The footer contains navigation links: "Contact Us | Privacy Policy | Terms of Use |", "Powered by Liferay | Developed by INFN, Division of Catania |", and "Inicio Sobre el SG Documentación y Ayuda Science Gateways Modelo SCA Home GISELA Home CLARA".

At the bottom, there is a row of logos for "tadísticos", "GIDP", "RCTS", "SIR", "cafe", "eduGAIN", and "COFRE".

- Cultural Heritage
 - ASTRA
 - SONIFICATION
- Earth Science
 - SPECFEM3D
- Industrial Systems
 - Industry@Grid

- Bioinformatics and Life Science

- ClustalW
- GATE
- Phylogenetics
- jModeltest
- ProtTest
- GROMACS
- G-HMMER

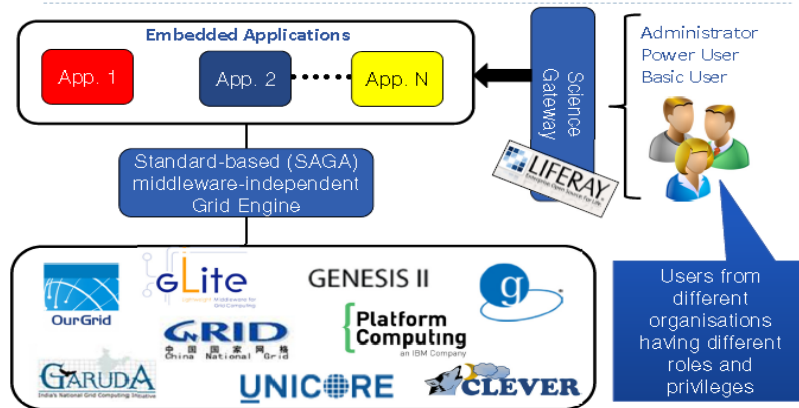
- Mathematics and Statistics

- GA-DPPM
- ME-MLS
- Octave
- R
- RCSA

Science Gateway infrastructure migration for advanced computational services

Science Gateway: resource integration of Grid, Cloud and HPC in the same Graphic User Interface

The Catania Science Gateway Framework
(<http://www.catania-science-gateways.it>)



▶ 12

Grid/Cloud/Local middleware supported so far

- IdF: Identity Federated Service.
 - <https://idf.grid.unam.mx/idp/Authn/UserPassword>
- e-Token.
 - <https://fesc06.lemdist.unam.mx:8443/eTokenServer/>
- Science Gateway for SCALAC access to ported applications
 - <https://sg.scalac.unam.mx:8080>
- Science Gateway infrastructures for HPC resource access.

Future work

- SCALAC Formalization
- Resource Center integration
- Service Level Agreement definition
- Media access installation
 - ssh access with LDAP based authentication and authorization.
 - Science Gateway resource access

Thanks