



Enabling Grids for E-science

GStat: Monitor EGEE/LCG Compatible Information Systems

Operations Automation Team kickoff

EGEE-III transition meeting, CERN

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www.eu-egEE.org



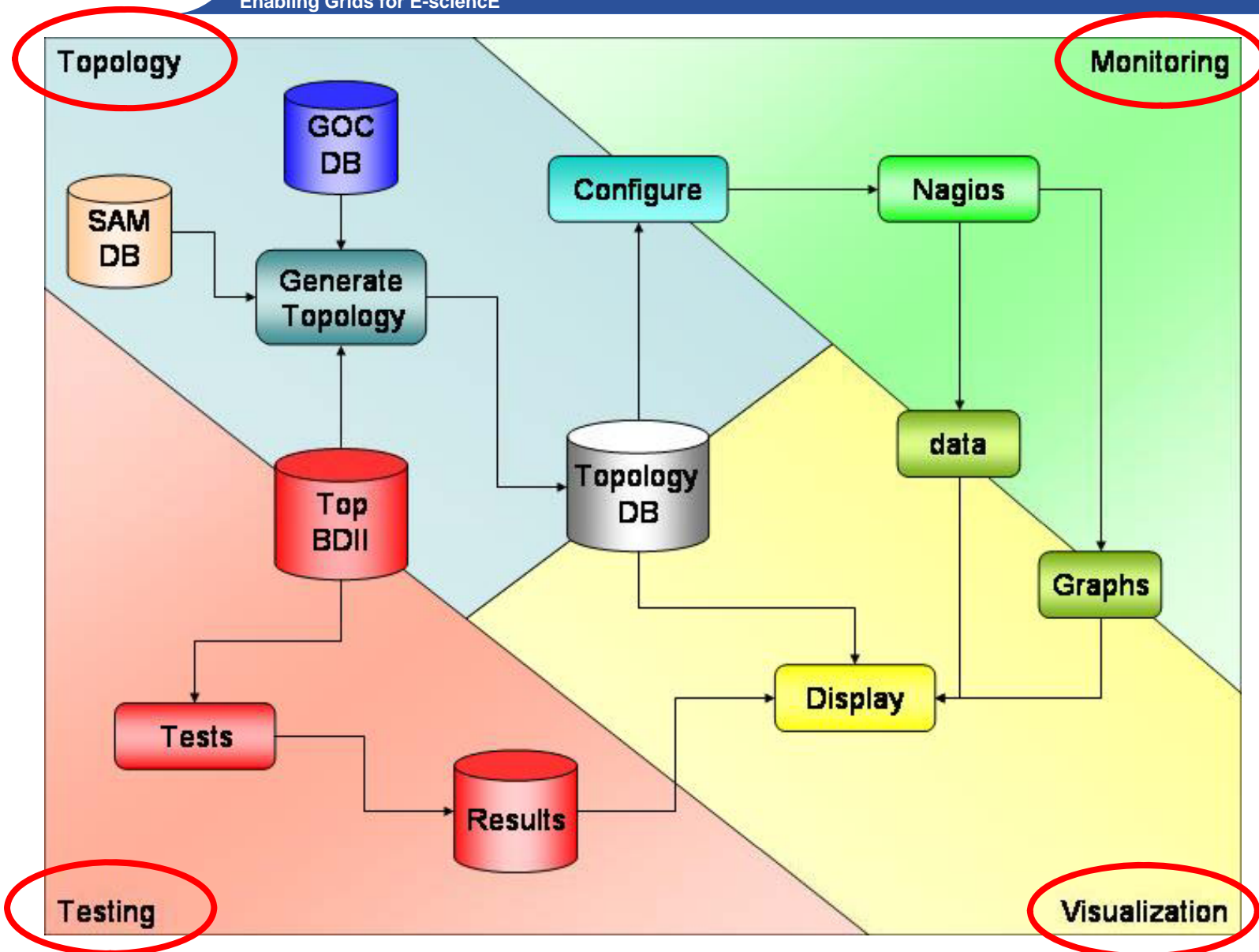
- **GStat Overview**
- **Issues of Current GStat**
- **Visions of GStat 2.0**
- **GStat 2.0 Architecture Overview**
 - Core (Topology Database)
 - Validation (Information Content Testing)
 - Monitoring
 - Visualization

- **Monitor EGEE/LCG compatible Information Systems**
- **Primary goals:**
 - detect faults in the information published by Information System
 - verify the validity of resource information with Glue Schema
 - display useful data from the Information System
- **Provide rich features: info. testing and monitoring**
 - http://goc.grid.sinica.edu.tw/gstat/filter_help.html
 - <http://goc.grid.sinica.edu.tw/gstat/>
- **User groups:**
 - Site Admins
 - Operations (CIC, ROC, OCC)

- **GStat is not designed in modular way**
 - Not easy to **reuse** in other application scenarios
 - Not easy to **maintain**, not easy to test functionality independently
 - Not easy to make people they would like to contribute the development **work independently**
- **Display the results on the same page**
 - Not easy to **browse**
 - Not always **clear** what you are looking at
- **Low performance problem**

- Provide a complete monitoring on Information System
- Check health of Information System at each site
- Try to fulfill the needs from different user groups
- Provide three main functionalities:
 - Visualization of information in Information System
 - Information System Monitoring
 - Information Content Testing
- Make GStat easy
 - Make a clear separation between these three tasks
 - Take a modular approach where different parts can be re-used where necessary
 - Enable GStat to be integrated into and used by many other operational tools easily

GStat 2.0 Architecture Overview



Core: Topology Database

- It provides a **skeleton framework** for other tasks, such as visualization and monitoring
- Periodically (hourly), a top-level BDII is queried
- The snapshot of information system is stored in a relational database (sqlite)
- The topology database is created by
 - extracting the site and service entities
 - adding them to the topology database tables in the same sqlite database
- It presents **topology of the Grid infrastructure**
- For EGEE production system, addition queries are made to **GOCD** and to **SAM**, in order to reduce the ambiguity between **non-existence** and **not-published** information

- **Information Content Checking**
- The testing results will be placed in an **errors table** ready for visualization
- We need to significantly improve the approach and coverage of the information system testing

- A monitoring **configuration script** is used to query the topology database to find the list of services to monitor
- The script then configures Nagios
- The **Nagios sensors** monitor various aspects of the information system
- The **Nagios graph** capabilities complement for visualization
- A number of sensors have been created for Nagios to monitor a number of metrics
- The metrics available are described in
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSMonitoringMetrics>

- Use topology database to generate the main structure for visualization
- The source of information to visualize:
 - The results of Information content testing
 - Nagios monitoring data and graphs
- The visualization framework makes a clean separate between data gathering and data visualization
- Need to provide different views for different user groups according their requirements
- Need to be In charge of real operational use cases
- The views available are described in:
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSRequirements>

- **All pages can be found from the index page**
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSIndex>
- **GStat 2.0 Overview documentation**
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSOverview>
- **GStat 2.0 Project Plan**
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSProjectPlan>
- **A guide for developers**
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSDevelopersGuide>
- **GStat installation guide**
 - <http://goc.grid.sinica.edu.tw/gocwiki/GSInstallationGuide>

The Current implementation

- The result of a collaboration between **Operations team at ASGC** and the **Grid Deployment Group at CERN**
- Team Members:

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