

GStat 2.0 Status

*Grid Deployment Board
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- **What is GStat?**
- **Motivations for Version 2.0**
- **Main Concepts**
- **Detailed Architecture**
- **Live Demo 😊**

GStat: 10:22:21 03/19/09 GMT - @wgoc01 - Mozilla Firefox

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http://goc.grid.sinica.edu.tw/gstat/

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ServDuplicate

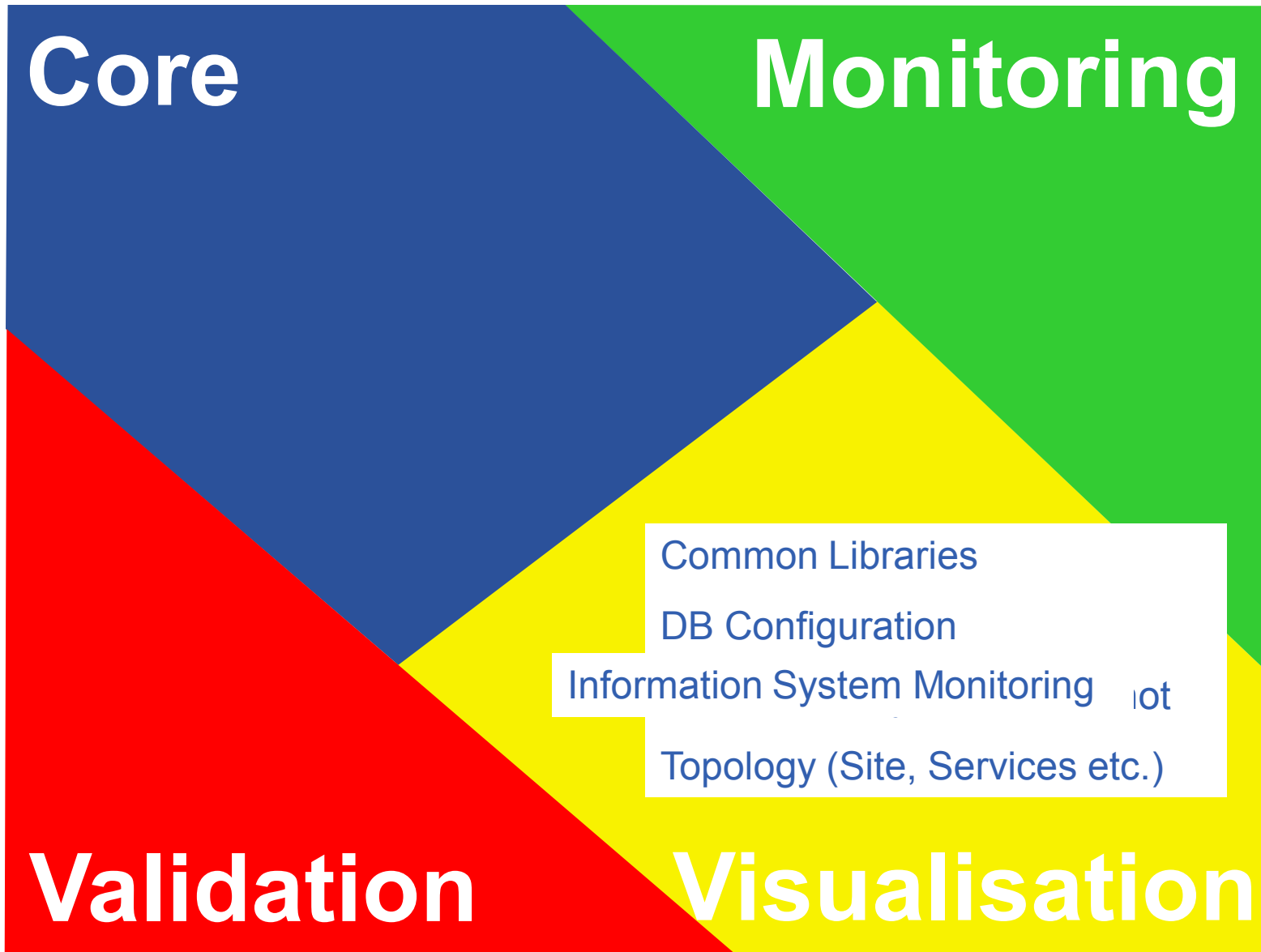
AEGIS01-PHY-SCL er	AEGIS07-PHY-ATLAS er	ALBERTA-LCG2 er	AUVERGRID er wn er er wn
BEIJING-LCG2 er	BEgrid-KULeuven er	BEgrid-UGent ok	BEgrid-ULB-VUB ok
BG01-IPP ok	BG02-IM ok	BG03-NGCC er	BG04-ACAD ok
BIFI ok	BMEGrid wn	BNL-LCG2	BUDAPEST ok
BeGrid-UCL ok	CAMK	CBPF ok	CERN-PROD sd
CFP-IST ok	CGG-LCG2 er	CIEMAT-LCG2 wn	CIRMMP wn
CNR-ILC-PISA ok	CNR-PROD-PISA ok	CSC ok	CSCS-LCG2 ok
CY-03-INTERCOLLEGE er	CYFRONET-LCG2 wn	DESY-HH ok ok	DESY-ZN wn ok
EENet ok	EFDAJET ok	ELTE wn	ENEA-INFO er er
ESA-ESRIN ok	ESRF wn	EMPhI-UNIBA wn wn	FZK-LCG2 ok wn ok ok ok er
GR-04-FORTH-ICS ok	GR-05-DEMOKRITOS sd	GR-06-IASA ok	GR-07-UIO-HEPLAB wn
GRIF er er ok wn er er er ok er	GSI-LCG2 sd sd	GUP-JKU ok	GoeGrid wn
HG-01-GRNET ok	HG-02-IASA er	HG-03-AUTH ok	HG-04-CTI-CEID er
HG-06-EKT er er	HK-HKU-CC-01 ok	HTC-BIGGRID er	Hephy-Vienna ok
IEETA er	IEPSAS-Kosice ok	IFCA-LCG2 er er	IFIC-LCG2 wn er

Done

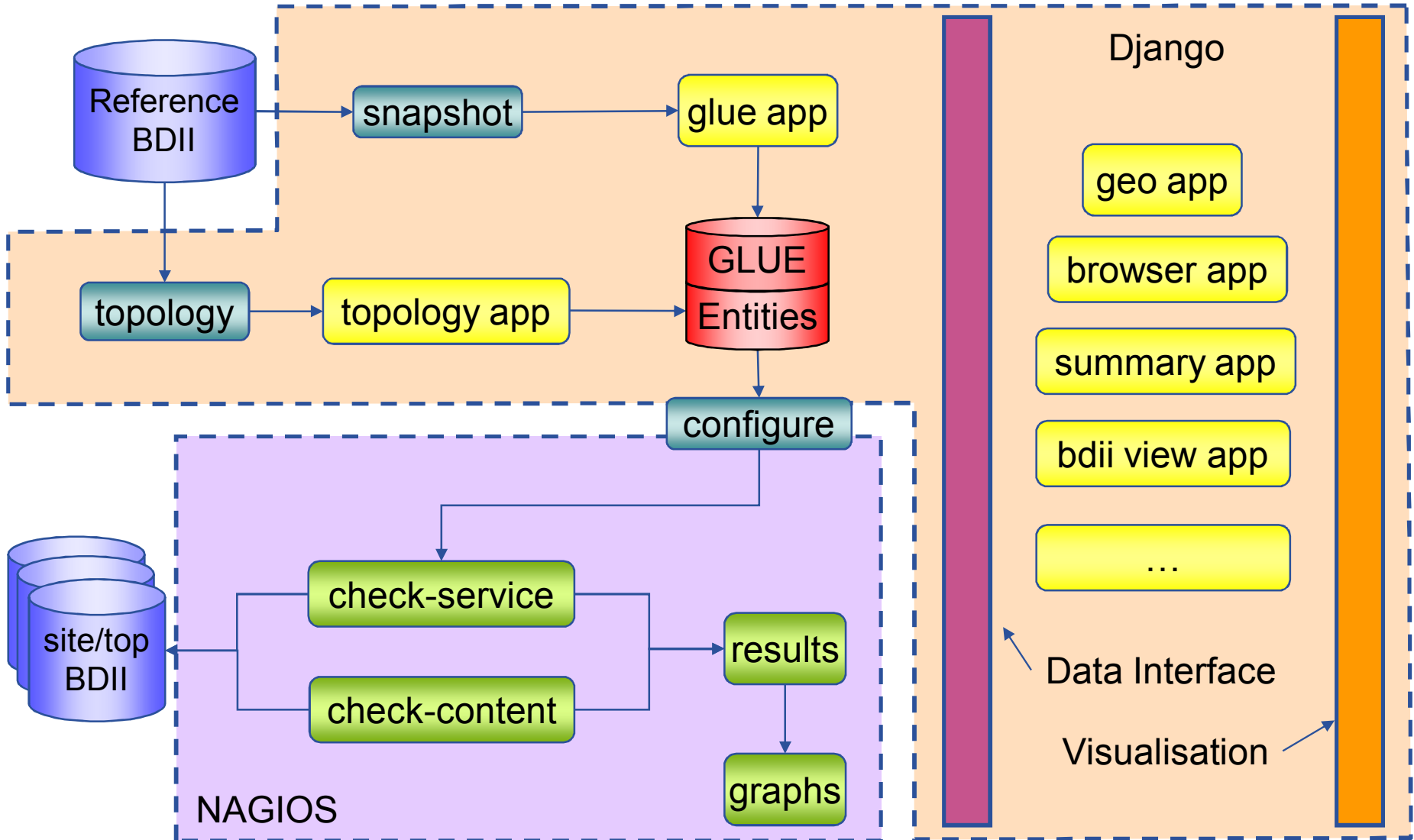
- **An operations tool for the production infrastructure**
 - Used successfully for over **5 years**
- **Started as a **summary** web page for the infrastructure**
 - For people who didn't want to do an LDAP search
 - How many sites have joined?
 - How many CPUs do we have?
 - How much storage is available?
- **Gradually **expanded** to provide additional functionality**
 - Site summaries
 - Information sanity check
 - BDII performance metrics
 - Alarms for information system problems
 - etc.

- **The pages are now too cluttered**
 - The grid has grown to 300+ sites
 - 1 CE at CERN to 20 CEs at CERN
- **It is a single, centralized instance**
 - EGI would like de-centralized, regional-based operations tools
- **The information checks are not easily reusable**
 - Difficult for use by sys admins and for software certification
- **Tight coupling with SAM**
 - Requires high-availability operation and notifications
- **High-maintenance backend**
 - Due to the gradual evolution of the code base

- **Consolidate** the existing code base
 - To give a **low-maintenance** solution
- **Isolate the testing component**
 - To ensure that the tests are **reusable**
- **Remove the dependency on the GOC database**
 - To enable **de-centralized** deployment
 - Bootstrapping should be achieved by querying a BDII
- **Redesign the displays to address specific use cases**
 - Generally improve the presentation
- **Ensure that components are reusable**
 - And that GStat is **extensible**



- **Nagios**
 - Manages the execution of tests and test results
 - Probes can be re-used by other OAT applications
 - Used for:
 - Information Content Validation Tests
 - BDII Service Monitor
- **Django**
 - Web application framework to simplify page generation
 - We no longer have to write code that prints html ☺
 - Object-relational mapper simplifies database integration
 - Significant experience already exists within the OAT
 - Used for:
 - Snapshot and topology import scripts
 - Web page rendering and management




- **Geo View**

The screenshot shows the GStat 2.0 web application interface. At the top right, it says 'Grid Statistics at your finger tips'. Below this is the LCG logo and the text 'GStat 2.0'. A navigation bar contains four tabs: 'Geo View' (selected), 'Top View', 'Grid View', and 'LDAP Browser'. Below the navigation bar is a breadcrumb trail 'Home'. The main area is a world map with numerous red pins indicating grid locations. On the left side of the map, there is a vertical zoom control with a plus sign at the top and a minus sign at the bottom. On the right side, there are icons for map navigation: a square, a line, a pencil, and a hand. At the bottom left, there is a scale bar showing '2000 km' and '1000 mi'. At the bottom right, it displays 'Scale = 1 : 111M' and a 'Permalink' with the URL '95.97656, 30.93750'. At the bottom left of the map area, there is a link that says 'Download the KML file'.

- **Top BDII View**

Grid Statistics at your finger tips



Top BDII View

Geo View
Top View
Grid View
LDAP Browser

:: Home

Show entries Search:

Hostname ▲	Instances ↕	Services ↕	Sites ↕
agh1.atlas.unimelb.edu.au	1	CRITICAL	OK
bdii-dgrid.gridka.de	1	UNKNOWN	UNKNOWN
bdii-egee.srce.hr	1	OK	OK
bdii-enmr.cerm.unifi.it	1	WARNING	WARNING
bdii-fzk.gridka.de	4	OK	OK
bdii.balticgrid.org	1	OK	OK
bdii.egee-see.org	2	OK	OK
bdii.grid.sara.nl	1	OK	OK
bdii.isabella.grnet.gr	1	OK	OK
bdii.phy.bg.ac.yu	1	OK	OK
bdii01.pic.es	1	OK	OK
bdii02.begrid.be	1	OK	OK
bdii1.egee.cesnet.cz	1	OK	OK
...

Nagios

General

- Home
- Documentation

Monitoring

- Tactical Overview
- Service Detail
- Host Detail
- Hostgroup Overview
- Hostgroup Summary
- Servicegroup Overview
- Servicegroup Summary
- Servicegroup Grid
- Status Map
- 3-D Status Map

Service Problems

- Unhandled

Host Problems

- Unhandled

Network Outages

Show Host:

Comments

Downtime

Process Info

Performance Info

Scheduling Queue

Reporting

Trends

Current Network Status
 Last Updated: Tue Jul 7 16:09:44 CEST 2009
 Updated every 90 seconds
 Nagios@ 3.0.6 - www.nagios.org
 Logged in as /C=TW/O=AS/OU=GRID/CN=Hui-Tzu Huang 155651

[View History For all hosts](#)
[View Notifications For All Hosts](#)
[View Host Status Detail For All Hosts](#)

Host Status Totals

Up	Down	Unreachable	Pending
231	68	0	0

All Problems	All Types
68	299

Service Status Totals

OK	Warning	Unknown	Critical	Pending
982	80	6	741	0

All Problems	All Types
827	1809

Service Status Details For All Hosts

Host	Service	Status	Last Check	Duration	Attempt	Status Information
aqh1.atlas.unimelb.edu.au	check-bdii-services	CRITICAL	07-07-2009 15:45:05	11d 4h 29m 39s	2/2	CRITICAL: entries=2668 time=18.357674 sec
	check-bdii-sites	OK	07-07-2009 16:09:22	11d 4h 30m 22s	1/2	OK: entries=303 time=4.039901 sec
aqh6.atlas.unimelb.edu.au	check-bdii-entries	OK	07-07-2009 15:58:39	5d 6h 41m 5s	1/2	OK: entries=168 time=2.698465 sec
	check-bdii-services	OK	07-07-2009 15:52:57	11d 4h 46m 47s	1/2	OK: entries=6 time=1.661284 sec
	check-ce	CRITICAL	07-07-2009 16:07:14	11d 4h 37m 30s	2/2	CRITICAL - errors 16, warnings 18, info 0
	check-sanity	OK	07-07-2009 15:56:31	19d 23h 43m 13s	1/2	OK - errors 0, warnings 0, info 0
	check-se	CRITICAL	07-07-2009 15:45:48	11d 3h 58m 56s	2/2	CRITICAL - errors 20, warnings 24, info 0
	check-service	CRITICAL	07-07-2009 15:50:06	0d 5h 19m 38s	2/2	CRITICAL - errors 1, warnings 0, info 0
	check-site	CRITICAL	07-07-2009 15:49:24	11d 4h 55m 21s	2/2	CRITICAL - errors 3, warnings 0, info 0
alice003.nipne.ro	check-bdii-entries	OK	07-07-2009 16:04:36	8d 4h 5m 8s	1/2	OK: entries=51 time=0.310762 sec
	check-bdii-services	OK	07-07-2009 15:58:54	1d 22h 40m 50s	1/2	OK: entries=11 time=0.197580 sec
	check-ce	CRITICAL	07-07-2009 15:48:12	8d 3h 56m 32s	2/2	CRITICAL - errors 14, warnings 12, info 0
	check-sanity	OK	07-07-2009 15:47:29	8d 3h 52m 15s	1/2	OK - errors 0, warnings 0, info 0
	check-se	CRITICAL	07-07-2009 15:56:47	8d 3h 47m 57s	2/2	CRITICAL - errors 11, warnings 18, info 0
	check-service	OK	07-07-2009 16:01:05	0d 5h 8m 39s	1/2	OK - errors 0, warnings 0, info 0

- Grid View

Grid Statistics at your finger tips



Grid View

Geo View
Top View
Grid View
LDAP Browser

Home

Show entries Search:

Grid Name	Sites	Logical CPUs	Physical CPUs	Storage Space	Jobs
BIGGRID	8	2418	878	<div style="width: 195%;"><div style="width: 195%;"></div></div> 195%	<div style="width: 85%;"><div style="width: 85%;"></div></div> 85%
SEE-GRID	2	905	773	<div style="width: 2%;"><div style="width: 2%;"></div></div> 2%	<div style="width: 7%;"><div style="width: 7%;"></div></div> 7%
UKNGS	1	585	585	<div style="width: 25%;"><div style="width: 25%;"></div></div> 25%	<div style="width: 71%;"><div style="width: 71%;"></div></div> 71%
EGEE	204	113111	54660	<div style="width: 34%;"><div style="width: 34%;"></div></div> 34%	<div style="width: 65%;"><div style="width: 65%;"></div></div> 65%
I2G	1	492	492	<div style="width: 34%;"><div style="width: 34%;"></div></div> Percentage: 34%	<div style="width: 89%;"><div style="width: 89%;"></div></div> 89%
CANADA	1	88	44	<div style="width: 494265864222%;"><div style="width: 494265864222%;"></div></div>	<div style="width: 71%;"><div style="width: 71%;"></div></div> 71%
EUMED	1	40	40	<div style="width: 168999952622%;"><div style="width: 168999952622%;"></div></div>	<div style="width: 0%;"><div style="width: 0%;"></div></div> 0%
SCOTGRID	1	3824	3824	<div style="width: 325265911600%;"><div style="width: 325265911600%;"></div></div> 0%	<div style="width: 84%;"><div style="width: 84%;"></div></div> 84%
WLCG	86	78681	33483	<div style="width: 25%;"><div style="width: 25%;"></div></div> 25%	<div style="width: 78%;"><div style="width: 78%;"></div></div> 78%
EELA	4	306	306	<div style="width: 8%;"><div style="width: 8%;"></div></div> 8%	<div style="width: 72%;"><div style="width: 72%;"></div></div> 72%
other	1	56	28	<div style="width: 68%;"><div style="width: 68%;"></div></div> 68%	<div style="width: 0%;"><div style="width: 0%;"></div></div> 0%
D-GRID	2	8748	2537	<div style="width: 0%;"><div style="width: 0%;"></div></div> 0%	<div style="width: 99%;"><div style="width: 99%;"></div></div> 99%

- LDAP Browser

Grid Statistics at your finger tips

Geo View | Top View | Grid View | LDAP Browser

Home

LDAP Tree

- o=grid
 - Mds-Vo-name=local
 - Mds-Vo-name=AEGIS01-PHY-SCL
 - Mds-Vo-name=AEGIS07-PHY-ATLAS
 - Mds-Vo-name=AGLT2
 - Mds-Vo-name=ALBERTA-LCG2
 - Mds-Vo-name=AUVERGRID
 - GlueCESEBindGroupCEUniqueID=cirigrdce01.univ-bpclermont.fr:2119/jobmanager-pbs-auvergrid
 - GlueCESEBindSEUniqueID=cirigrdse01.univ-bpclermont.fr
 - GlueCESEBindGroupCEUniqueID=cirigrdce01.univ-bpclermont.fr:2119/jobmanager-pbs-biomed
 - GlueCESEBindGroupCEUniqueID=cirigrdce01.univ-bpclermont.fr:2119/jobmanager-pbs-dteam
 - GlueCESEBindGroupCEUniqueID=iut03auvergridce01.univ-bpclermont.fr:2119/jobmanager-lcgpbs-auvergrid
 - GlueCESEBindGroupCEUniqueID=iut03auvergridce01.univ-bpclermont.fr:2119/jobmanager-lcgpbs-biomed
 - GlueCESEBindGroupCEUniqueID=iut03auvergridce01.univ-bpclermont.fr:2119/jobmanager-lcgpbs-dteam
 - GlueCESEBindGroupCEUniqueID=iut03auvergridce01.univ-bpclermont.fr:2119/jobmanager-lcgpbs-ops
 - GlueCESEBindGroupCEUniqueID=iut15auvergridce01.univ-bpclermont.fr:2119/jobmanager-lcgpbs-alice

Attributes

objectClass	GlueGeneralTop
objectClass	GlueCESEBindGroup
objectClass	GlueSchemaVersion
GlueCESEBindGroupSEUniqueID	cirigrdse01.univ-bpclermont.fr
GlueSchemaVersionMinor	2
GlueSchemaVersionMajor	1
GlueCESEBindGroupCEUniqueID	cirigrdce01.univ-bpclermont.fr:2119/jobmanager-pbs-auvergrid

- **Builds upon the success of GStat**
 - Consolidation of the current code base
 - Reducing the maintenance cost
- **Addresses the design goals**
 - Re-usable tests
 - Regional use
 - Improved displays
- **Leveraging tools already used with the OAT**
 - Sharing experience and re-using components
- **Prototype available for evaluation**
 - Suggestions of desired features are welcome
- **Extensible, modular approach**
 - Build your own visualisation app!

- **Min Tsai**
- **James Casey**
- **Laurence Field**
- **David Horat**
- **Lukasz Kokoszkiewicz**