South East Europe resources in EGEE and next steps

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Overview

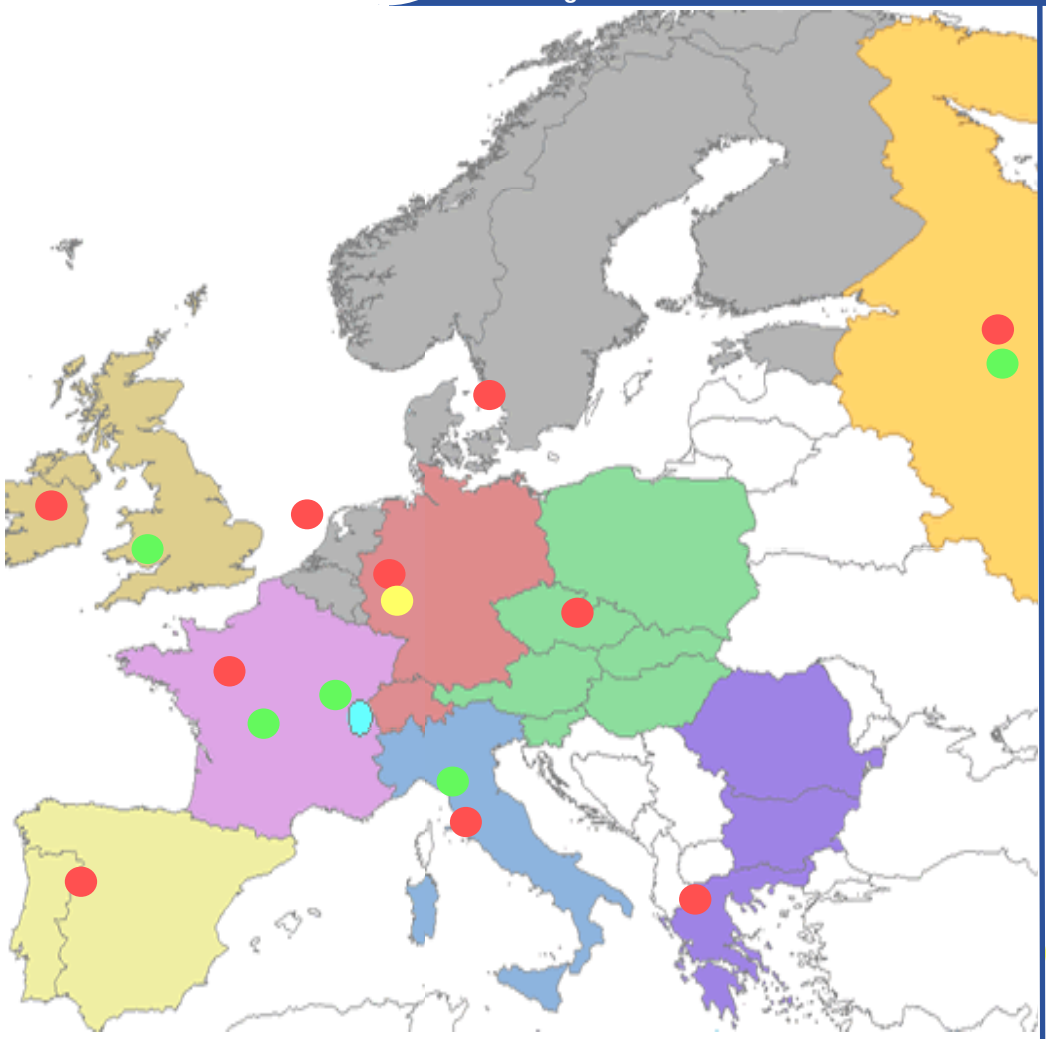
- Organization of EGEE project
- Organization of EGEE SEE ROC
- Authorization/Authentication resources
- Information system resources
- Workload Management System resources
- Monitoring Tools
- Bulgarian sites in EGEE
- Conclusions

Organization of the EGEE project

Enabling Grids for E-sciencE

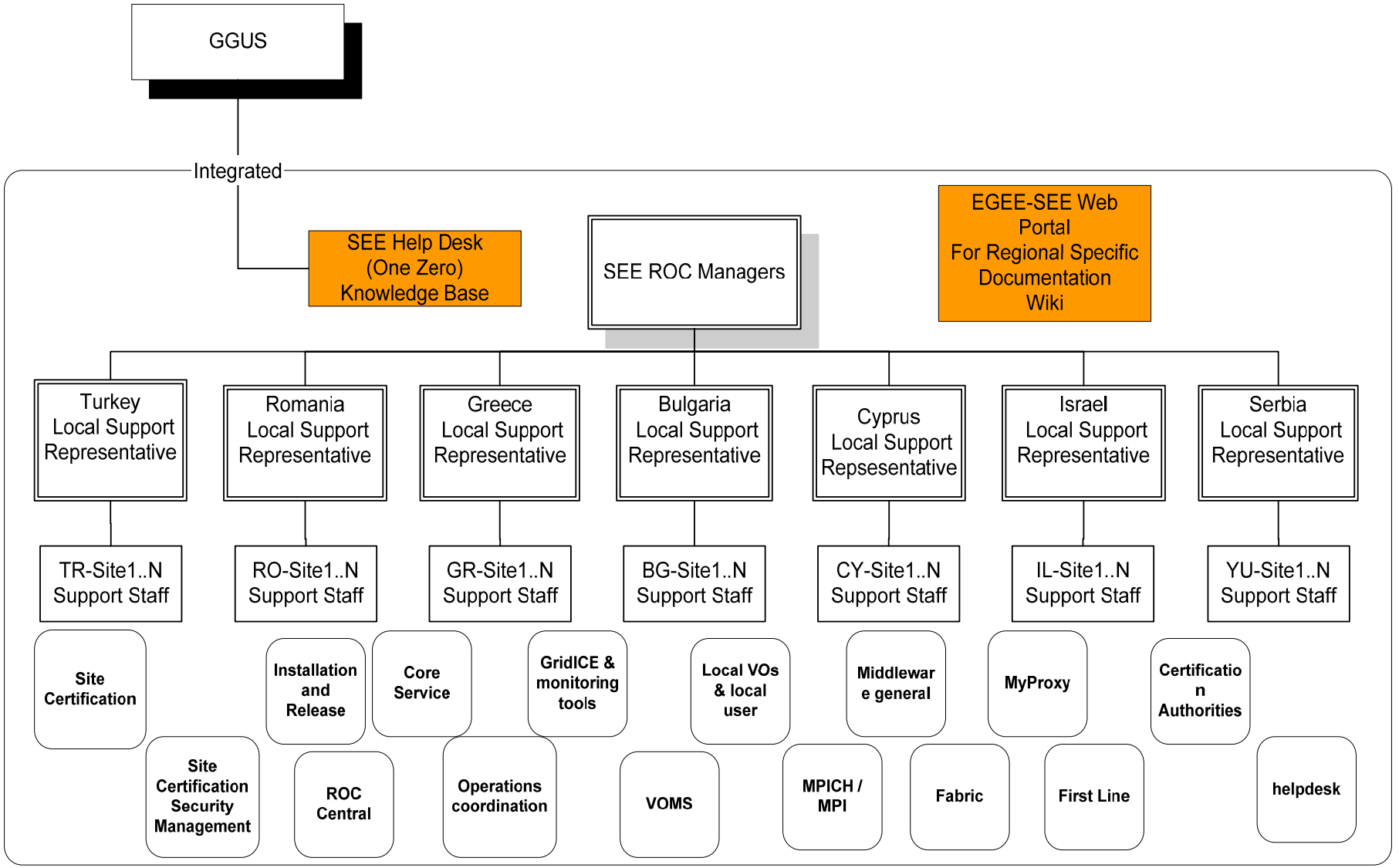
- The EGEE project brings together experts from over 27 countries with the common aim of building on recent advances in Grid technology and developing a service Grid infrastructure which is available to scientists 24 hours-a-day.
- The project provides researchers in academia and industry with access to a production level Grid infrastructure, independent of their geographic location. The EGEE project also focuses on attracting a wide range of new users to the Grid.
- The EGEE II project is organized in 12 federations. Bulgaria is a member of the South Eastern Federation

Structure of EGEE operations



- **Resource centres (RC) are controlled by the Regional Operation Centres (ROC)**
- **Bulgaria is a member of South East European ROC, which comprises:**
  - **Greece**
  - *Bulgaria*
  - Romania
  - Turkey
  - Serbia
  - Cyprus
  - Israel
- **ROC managers are located at GRNET, Greece**
- **Every country has country representative in SEE ROC**
- **Bulgaria is represented by Emanouil Atanassov (emanouil@parallel.bas.bg)**

SEE ROC Support Structure



SEE ROC Support Structure

- Regional web site – http://www.egee-see.org
- Regional SEE helpdesk: http://helpdesk.egee-see.org
- SEE wiki pages: http://wiki.egee-see.org
- Country web sites – http://www.grid.bas.bg for Bulgaria
- Country representatives: Emanouil Atanassov for Bulgaria
- Security contact for SEE: Eddie Aronovich - **eddiea** at cs.tau.ac.**il**

SEE-ROC Authentication/Authorization resources

In order to access the Grid, every user needs a valid certificated from an accepted **Certification Authority** (CA)

A certification authority – **BG.Acad**, is in the process of being accepted

Until this happens, we use the SEE-GRID catch-all CA:
http://www.grid.auth.gr/pki/seegrid-ca

The procedure requires a Memorandum of Agreement between IPP-BAS and the respective institute, before the certificate can be issued.

A certificate request is created on a UI computer, using correct values for the organization's name. Follow

http://www.grid.auth.gr/pki/seegrid-ca/services/GenConfig

SEE ROC Authentication/Authorization resources

The certificate request is sent to the RA (Registration Authority) for SEE-GRID (**Emanouil Atanassov**) and if approved, the user receives a certificate signed by SEE-GRID CA. The certificate can be used for any Grid activity.

It is extremely important that the user sends back signed e-mail stating that he or she accepts the SEE-GRID CA policy. In order to do this the user must now how to import the certificate into a browser or e-mail client.

See:

http://www.grid.auth.gr/pki/seegrid-ca/documents/

and also

man pkcs12

on your UI

SEE ROC Authentication/Authorization resources

After the user has a valid certificate, the next step is to request membership in the appropriate VO

Users from areas like biomedicine and high-energy physics are advised to join the respective EGEE-wide VOs:

http://lcg.web.cern.ch/LCG/users/registration/registration.html

For users that can not locate an appropriate VO, we provide membership in SEE VO:

https://www.grid.auth.gr/services/voms/SEE/request.php

In order to join SEE VO the user must submit a description of the application that he or she is going to develop and/or use to the BG country representative in SEE ROC.

SEE ROC Authentication/Authorization resources

- Upon approval of the request, the user joins the SEE-GRID VO and can submit jobs and perform data management.
- Users are advised to always use voms-proxy-init instead of grid-proxy-init command. The SEE VO VOMS server is located at:

voms.grid.auth.gr

The command voms-proxy-init –voms see uses automatically this VOMS server

The main myproxy server for SEE VO is located at

myproxy.grid.auth.gr

See: https://www.grid.auth.gr/services/myproxy/user_guide.php

Always check if the RB/WMS you are using works correctly with the MyProxy server that you specify!

SEE ROC Workload Management resources

- In order to submit jobs in EGEE SEE sites using SEE VO, one can use:
  - ✓ The production Resource Broker: **rb.isabella.grnet.gr**
  - ✓ The production WMS: **wms.egee-see.org**

SEE ROC Information System resources

- In order to locate resources in SEE ROC, one can use the BDII bdii.isabella.grnet.gr
- Changing the BDII used on a UI (User Interface) is accomplished by changing LCG_GFAL_INFOSYS in /etc/profile.d/lcgenv.sh and /etc/profile.d/lcgenv.csh

- Example:

  export LCG_GFAL_INFOSYS=bdii.isabella.grnet.gr:2170

Using the BDII for finding information about available resources:

lcg-infosites –vo see ce – for computing elements

lcg-infosites –vo see se – for storage resources

lcg-infosistes –vo see lfc – the name of the LFC server for SEE VO

SEE ROC production sites

The picture of SEE ROC sites and their status is obtained from:

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

We can see there that in SEE ROC there are 30 production sites with a total number of CPUs 1390 right now, and the total storage 30 TB.

Advanced users must understand the meaning of the gstat report.

GStat: 12:45:28 12/01/06 GMT

home alert table service regional service metrics links prod pps test baltic eela euchina eumed seegrid gilda trigrid

AsiaPacific	CERN	CentralEurope	France	GermanySwitzerland	Italy	NorthernEurope	Russia	SouthEasternEurope	SouthWesternEurope
UKI									

GR-03-HEPNTUA	SD	TR-01-ULAKBIM		HG-03-AUTH	OK	IL-BGU	CT	CT	AEGIS01-PHY-SCL	OK	OK	GR-04-FORTH-ICS	JL
LCG-IL-OU	OK	CY-01-KIMON	OK	BG01-IPP	OK	BG04-ACAD	OK		GR-01-AUTH	OK		GR-06-IASA	OK
HG-02-IASA	OK	HG-04-CTI-CEID	OK	HG-05-FORTH	OK	HG-06-EKT	OK	OK	MK-01-UKIM_II	JS		RO-01-ICI	JL
RO-07-NIPNE	OK	TAU-LCG2	JS	TECHNION-LCG2	OK	BG-INRNE	OK		BG02-IM	OK		BG05-SUGrid	OK
GR-05-DEMOKRITOS	OK	HG-01-GRNET	OK	NIHAM	OK	RO-02-NIPNE	OK		RO-11-NIPNE	OK		WEIZMANN-LCG2	OK

Color Legend									
GSTAT		OK	INFO	NOTE	WARN	ERROR	CRIT	MAINT	OFF
SFT	OK	NonCrit	Crit	JobSub	JobListMatch	SchedDown			

No	Site Reports	GIIS Host	bnode	cernse	gperf	sanity	serv	version	totalCPU	freeCPU	runJob	waitJob	seAvail TB	seUsed TB	maxCPU	avgCPU	DI	gice
1	BG-INRNE	ce1.inrne.bas.bg	ok	ok	ok	ok	ok	GLITE-3_0_2	27	22	5	0	0.90	0.00	27	26	OK	ok
2	BG01-IPP	ce002.ipp.acad.bg	.	.	info	ok	ok	GLITE-3_0_2	4	4	6	173	0.89	0.10	14	7	OK	ok
3	BG02-IM	ce001.imbm.bas.bg	.	.	ok	ok	ok	GLITE-3_0_2	3	3	0	22	0.02	0.03	4	3	OK	ok
4	BG04-ACAD	ce02.grid.acad.bg	.	.	info	ok	ok	GLITE-3_0_2	80	28	48	132	0.03	0.02	80	80	OK	ok
5	BG05-SUGrid	ce001.grid.uni-sofia.bg	.	.	ok	ok	ok	GLITE-3_0_0	16	6	9	89	0.03	0.04	16	9	OK	ok
6	CY-01-KIMON	ce101.grid.ucy.ac.cy	ok	ok	ok	ok	ok	GLITE-3_0_5	72	16	56	4	0.12	0.09	74	70	OK	ok
7	GR-01-AUTH	node001.grid.auth.gr	.	.	info	ok	ok	GLITE-3_0_0	12	5	8	360	0.15	0.05	14	12	OK	.

Bulgarian Grid sites

- 5 clusters in EGEE production
- The biggest cluster is BG04-ACAD, located at IPP-BAS, with 80 CPUs. 24 CPUs are equiped with Myrinet interconnect, allowing for low-latency MPI communications. Each Worker node has 4 GB RAM.

	CPU	Storage	Tape
March 06	43	1TB	-
Nov 06	145	5TB	10TB

- BG01-IPP (21 CPU)

- BG04-ACAD (80 CPU)

Types of the Grid nodes

- **User Interface** – provides user access to the Grid resources;
- **Worker Node** – basic building block, performs the computations;
- **Computing Element** – manages the received jobs inside the cluster;
- **Workload Management System** – manages the jobs between clusters;
- **Berkerley Database Information Index** – Information system;
- **MON** – cluster monitoring;
- **R-GMA** – RDBMS for accounting;
- **Storage Element (Castor, dCache, DPM)** – reliable storage server;
- **File Transfer Service** – guaranteed fast file transfer;
- **Logical File Catalogue** – information about thedata files and their locations;
- **AMGA** – metadata file catalog;
- **MyProxy** – storage for user certificates;
- **HYDRA** – encrypting data services;
- **Web-portals** – for easy access to the Grid resources;

Questions?