

NGI OPERATIONS IN TURKEY

TR-GRID Operational Center
grid-teknik@ulakbim.gov.tr

OUTLINE

- Who we are?
- TR-Grid Infrastructure, Projects and Users Profile
- NGI_TR
- EGI Transition
- TR-Grid Operational Portal
- Summary

Who we are?

TUBITAK:

- The Scientific and Technological Research Council of Turkey (TUBITAK) established in 1963 is an autonomous institution and is governed by a scientific board
- Nation-wide research is conducted in 15 different research institutes.
- The national coordinating body of EU's Framework Program

Who we are?

- **ULAKBIM**

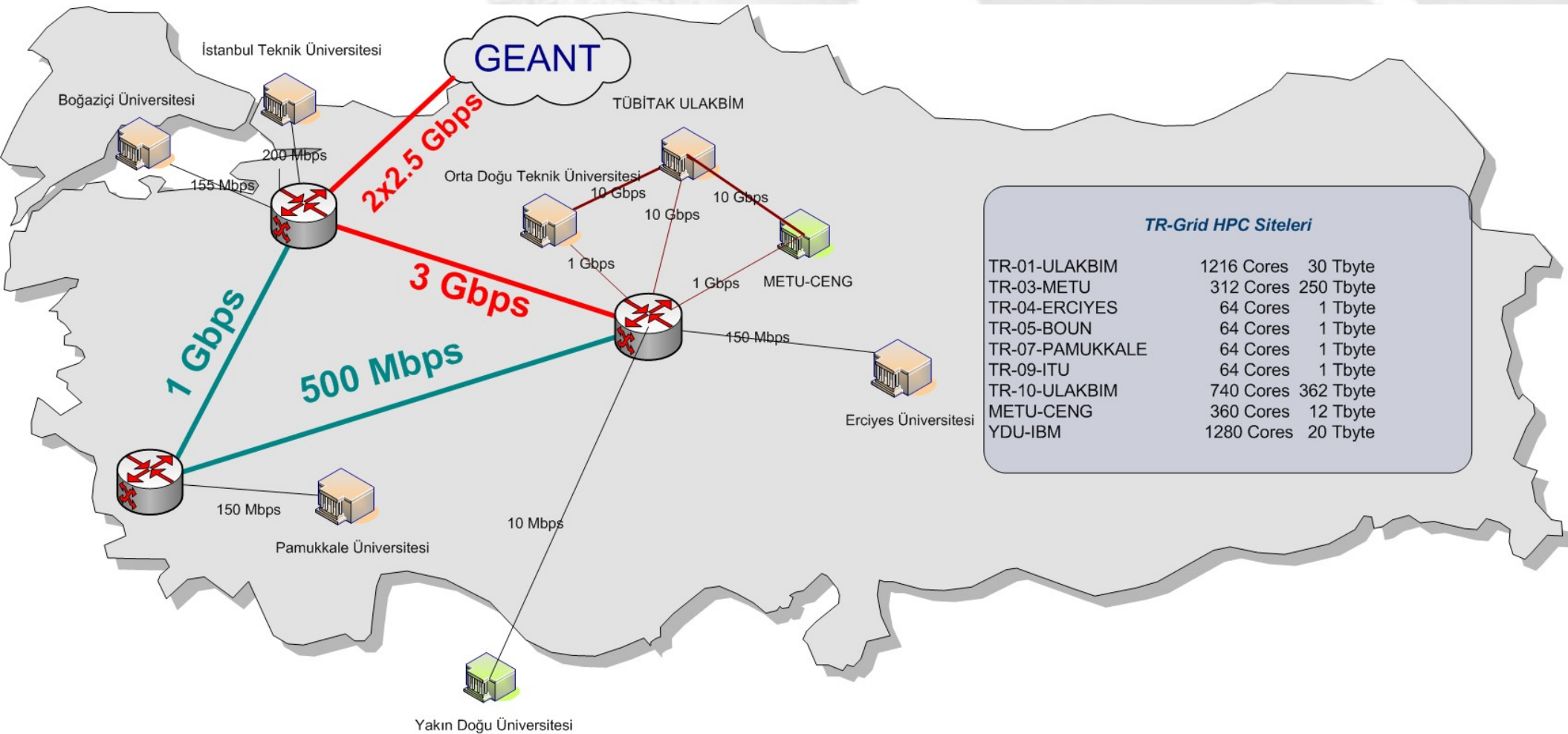
- Turkish National Academic Network and Information Center is an institute of TUBITAK which is responsible for:

- **Managing national grid initiative and infrastructure (NGI)**
 - **Managing national academic network ULAKNET (NREN)**
 - **Acting as a (digital) library for academic publications**

TR-Grid

- TR-Grid initiative was established in 2003 with a MoU between:
 - TUBITAK-ULAKBIM
 - Bogazici University
 - Bilkent University
 - İstanbul Technical University
- Then, it was extended with the participation of four universities
- SEEGRID, SEEGRID-II, SEE-GRID-SCI, EUMEDGRID, EUMEDGRID-Support, EGEE-II, EGEE-III and EGI are the international projects that TR-Grid have been involved
- Under the management of ULAKBIM, TR-Grid NGI has been coordinating national grid related activities for 7 years

TR-Grid Infrastructure



EGEE Certified Sites



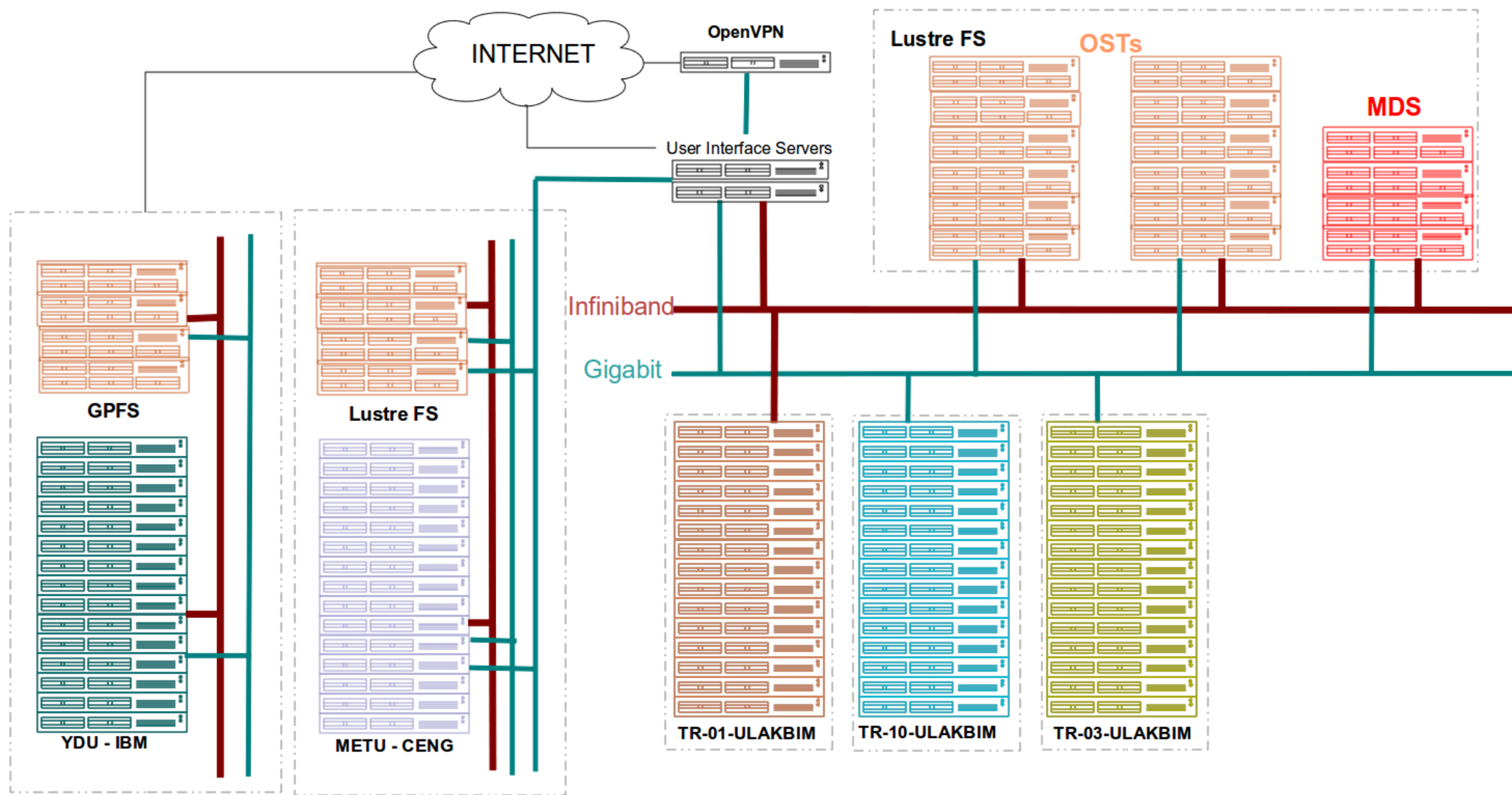
	Number of Cores	Storage (Tbyte)	Memory per Cores (GB)	Interconnectivity	Theoretical Computing Performance (Tflops)
TR-01-ULAKBIM	1216	30	3	Infiniband	13
TR-03-METU	312	250	1	Gigabit Ethernet	2
TR-04-ERCIYES	64	1	1	Gigabit Ethernet	0.5
TR-05-BOUN	64	1	1	Gigabit Ethernet	0.5
TR-07-PAMUKKALE	64	1	1	Gigabit Ethernet	0.5
TR-09-ITU	64	1	1	Gigabit Ethernet	0.5
TR-10-ULAKBIM	740	360	2	Gigabit Ethernet	6.1
TOTAL	2524	646	5696		

TR-Grid-HPC Resources

	Number of Cores	Storage (TByte)	Memory per Core (GB)	Interconnectivity	Theoretical Computing Performance (Tflops)
TR-01-ULAKBIM	1216	30	3	Infiniband	13
METU - CENG	360	12	2	Infiniband	3,8
YDU – IBM	1280	20	2	Infiniband	12

- The national HPC users can also utilize other computing centers, which are mostly managed by technical staffs on the universities

TR-Grid HPC Architecture



TR-Grid Infrastructure

- TR-Grid infrastructure was initiated by donated resources from collaborating institutes in the context of SEE-GRID project in 2004.
- Competitive TR-Grid infrastructure was formed with a 1MEuro project that was supported by TUBITAK at the end of 2006.
- TUBITAK supported project was lasted two years. To provide continuance and expansion of the infrastructure a project for strengthening infrastructure was submitted to State Planning Organization in 2008.
- Supporting organizations are providing support at hardware, network and security issues.
- Thanks to remote server management on the purchased hardware, OS and middleware are fully controlled by TR-Grid central operation center in Ankara.

Strengthen of Infrastructure

- Infrastructure has being supported by State Planning Organization since the start of 2009.
- Current project is a five year, 15MEuro project.
- For 2010 following purchases are on the bidding process:
 - Storage Resources
 - Expanding with additional ~650 TB storage, totally ~1.3 PB storage will be available
 - Computing Resources and Performance Network
 - Nearly 4800 CPU cores will be added, totally ~7400 cores will be available
 - Current infiniband infrastructure (144 port 4x DDR and 648 port 4x QDR) at ULAKBIM will be densely used for computing and storage network in grid resources also.

NGI_TR Organization

- Local Site Managers manage the failure of
 - Network
 - Hardware
 - Operating System
- Middleware and operating system management of all sites are in responsibility domain of NGI_TR Operational Center

TR-Grid Users Profile

- Totally 450 users for grid and cluster computing
- 32 various disciplines
- From 55 universities with various public institutes and industries

TR-Grid Leading Projects

- **CERN Experiment**
 - Both atlas and cms are supported with two production T2 centers
 - 9800 CPU (HEP-Spec) and 900 TB will be dedicated in this year
- **Earth Sciences**
 - **Seismology**
 - **Data repository for seismic waveform obtained by geographically distributed stations**
 - ~7.6 M files, ~2 TB data
 - **National data as well as other countries in SEE region as part of SEE-Grid-SCI project**
 - **Meteorology**
 - **~20 TB data for processing**
- **Network Flow on WAN**
 - ~18 TB data for storing
- **Individual users scientific data**

HEP Studies

- TR-Grid has two T2 centers for supporting ATLAS and CMS experiment.
 - TR-10-ULAKBIM for atlas
 - TR-03-METU for cms

		2009			2010		
Turkey, Turkish Tier-2 Federation	ATLAS	CMS	TOTAL	ATLAS	CMS	TOTAL	
CPU (HEP-SPEC06)	2800	2600	5400	5100	4700	9800	
Disk (Tbytes)	340	210	550	550	350	900	
Nominal WAN (Mbits/sec)	1000	1000		1000	1000		

NGI User Community Services

- The following virtual organizations are going to be supported during EGI
 - atlas, cms, biomed, ops, compchemp, see, see-grid, seismo.see-grid-sci.eu, trgrida, trgridb, trgridd, trgride
- We are providing training supports to all VOs, as well as application porting supports for national VOs
- There are 5 accredited trainers in our NGI

Resource Update Transition from EGEE to EGI

- **TR-01-ULAKBIM**
 - Will be quadrupled in terms of computing resources
- **TR-03-METU**
 - T2 center for CMS experiment
 - Increase in both storage and computing capacity in terms of MoU agreement
- **TR-05-BOUN**
 - Increase in the storage and computing resources regarding to needs of national EarthScience community
- **TR-10-ULAKBIM**
 - T2 center for ATLAS experiment
 - Increase in both storage and computing capacity in terms of MoU agreement

Core Services in TR-Grid

- BDII, LFC, VOMS, RB and WMS have been using as secondary core services for SEE-Grid Project
- These services will continue to be supported through EGI VOs with FTS server

Middleware Stacks

- In the first year of EGI, we are not planning a change at the middleware stack of the sites.
- TR-01-ULAKBIM, TR-03-METU, TR-05-BOUN and TR-10-ULAKBIM will continue with gLite.
- ARC middleware has already been installed on TR-07-PAMUKKALE.
- Following sites will be migrated from gLite to ARC:
 - TR-04-ERCIYES, TR-09-ITU

Turkish NGI Operations

TR-Grid Ulusal Akademik Ağ ve Bilgi Merkezi
TR-Grid

TR-Grid Home Page

TR-Grid MGI

Services

Activities

Projects

Contact Us

Site Map

ULAKBİM High Performance and Grid Computing Center is a national HPC center environment to the research groups from all over the country and also to coordinate (TR-Grid NGI) in Turkey. As well as coordinating the NGI, the Center has designed infrastructure with developing required services and tools. TR-Grid has become a projects and IGTI with experienced personnel and sustainable infrastructure.

TR-Grid Objectives:

- Setup, operate and improve the high performance and grid computing infrastructures.
- Lead and coordinate the activities of independent research communities in computing.
- Participate national and international research infrastructure projects to support TR-Grid via representing National Grid Initiative of Turkey.
- Support the development of grid and high-performance applications having social impacts.
- Organize meetings, workshops and trainings to disseminate Grid and HPC use community through the country.

[SEE GRID](#)

Nagios

Current Network Status
Last updated: Friday 28 May 2010 09:40:00 EEST 2010
Last checked: 28 May 2010 09:40:00 EEST 2010
Nagios® Core 3.2.1 - [www.nagios.org](#)
Copyright (c) 1999-2009 The Nagios Project
ULAKBİM/OGSİB/AGB

Host Status Totals

Service	OK	Warning	Unknown	Down
All Problems	19	0	0	0
All Types	0	0	0	19

Host Status Details For All Host Groups

Host	Status	Last Check	Duration	Submit Information
ulakbim01	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim02	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim03	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim04	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim05	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim06	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim07	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim08	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim09	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim10	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim11	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim12	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim13	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim14	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim15	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim16	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim17	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim18	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim19	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel
ulakbim20	UP	09-28-2010 09:39:04	00:29:39.19	TR-GR - Packard-Travel

Paketi: "vulnerable" hosts for TR-Grid (28 May 2010 09:40)

Order by: Admin | Display hosts: all unpatched not reporting

Statistics for TR-Grid

Section	Hosts	Clean nodes	Unpatched hosts	Dead hosts	Last report
Serverlar	5	1	0	0	28 May 2010 09:40
TR-01-ULAKBIM	204	20	174	0	28 May 2010 09:40
TR-03-METU	158	1	157	0	28 May 2010 09:40
TR-04-ERCİYES	28	1	27	0	28 May 2010 09:40
TR-05-BOLİM	38	0	38	0	28 May 2010 09:40
TR-07-DIĞARLIKALE	17	0	17	0	28 May 2010 09:40
TR-09-ITU	18	2	16	0	28 May 2010 09:40
TR-10-ULAKBİM	26	0	26	0	28 May 2010 09:40
TR-11-ULAKBİM	28	0	28	0	28 May 2010 09:40

Query Packages

All pages are optimized by [YASIN](#) and compatible with Internet Explorer. Execution: 28.79 seconds.

Ganglia TR-Grid Grid Report for Fri, 28 May 2010 09:39:20 40300

Last hour | Sorted descending

TR-Grid Grid (6 sources)

CPU's Total: 1898
Hosts up: 253
Hosts down: 92

TR-01-ULAKBİM (6 sources)

CPU's Total: 352
Hosts up: 61
Hosts down: 79

TR-11-ULAKBİM (6 sources)

CPU's Total: 184
Hosts up: 23
Hosts down: 0

TR-03-METU (6 sources)

CPU's Total: 296

TR-Grid Ulusal Akademik Ağ ve Bilgi Merkezi
TR-Grid

Ana sayfa

TR-Grid Wki Duyuruları

Yeni wki sayfaları grid kullanıcılarına detaylı bilgi vermek amacıyla tasarlanmıştır. Eski wki sayfalarında ki bilgiler buraya taşınmış olup, sayfa sonunda eklenmiş ve düzenlemeler yapılmışa devam edilmektedir. YEK Çalışmaları hakkında yeni etkinlikler olup, kaynak olarak <http://wiki.ogtibim.gov.tr/wiki/index.php/Main> sayfası kullanılmaktadır. Bu sayfadan kullanıcılar arasında bir paylaşım yapılmasını istediği bilgileri buradan beklemekteyiz.

Konu başlıkları

- 1 TR-Grid Olupmu Nedir?
- 2 TR-Grid Üyeleri için Genel Bilgiler
- 3 Kişisel Hesaplar
- 4 Grid Kayıtları
- 5 Kurulum ve YEK Çalışmaları
- 6 Site Yönetimi Rehberi
- 7 Site ve Sorular Sorular
- 8 Yarı Otomatik

TR-Grid Oluşumu Nedir?

- TR-Grid Oluşumu
- TR-Grid Alt yapısı ve TR-Grid Statüsü

TR-Grid Üyeleri için Genel Bilgiler

- Nedir TR-Grid Üyesi Olabilmek?
- TR-Grid Kurulumu
- TR-Grid CA
- Nedir Sertifika Sahibi Olabilmek?
- Sertifika ile nasıl kullanılır?
- Yarı Otomatik Kurulum ve YEK Zaman ve Nasıl Yapılır?
- Kişisel ve Grid Hesaplarının Oluşum Uygulamaları
- YEK Çalışmalarında TR-Gridin Rolü ve Beklenenleri
- Türkiye ve Strateji Ağı Örnekları

TR-Grid Ulusal Akademik Ağ ve Bilgi Merkezi
TR-Grid

AMD 12 çekirdekli işlemciler için Spec değerlerini yayınladı. Sonuçlar bu garptir.

AMD'nin 12 çekirdekli işlemcileri için Spec değerlerini yayınladı. Sonuçlar bu garptir.

Uzun zamandır beklenen 12 ve 8 çekirdekli AMD Opteron işlemci rapor yayıncı piyasaya girmeye başlıyor. Peki bu işlemcilerin işlevleri için analizi nasıl yapılabilir.

Geçtiğimiz günlerde AMD 812 çekirdekli işlemcileri için Spec testleri sonuçlarını yayınladı. Sonuçları <http://wiki.ogtibim.gov.tr/wiki/index.php/Main> sayfasında eklenmiş ve düzenlemeler yapılmıştır. Sonuçlar genel olarak şunlardır: Ancak, AMD'nin bu işlemciler için yayınladığı sonuçlar genellikle "sadece bir tutarlılık mı var" sorusuna somut bir cevap vermiyor. Bununla birlikte...

OpenOffice ile makale nasıl yazılır.

Ölçülebilir makale yazma için, çok sayıda işlemcilerde bakılmaması gereken, bu işlemcilerde yazılabilir materyallerle ilgili editörler gerekli çok yetersiz yapıları ve sonuçları belirlemeyi zorlaştırdığı için yazılabilir.

OpenOffice ile gelen materyalleri editörün bu açıdan düzenleme yapması zorlaşır. Ancak, bununla birlikte, kullanıcıların OpenOffice ile yazılan makaleleri kullanmaları mümkün olacaktır. İşlevleri...

IGSM (Hierarchical Grid Site Management)

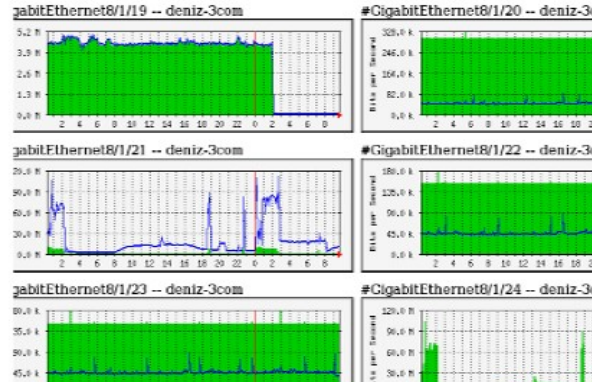
English

SEEGRID

ID	Country	Name	email	Phone	Comments
1	AL	Albania	naki.trasheri@gmail.com	+355 68 22 59 467	Address List
2	BA	Bosnia and Herzegovina	badabosniya@tbf.net	+387 51 221.860	Address List
3	BG	Bulgaria	emanouil@parafel.bas.bg	+359 2 9796793	Address List
4	RS	Serbia	grid-admin@ibp.ac.rs	+381 11 371.3152	Address List
5	GR	Greece	fiabot@gmail.gr	+302107474248	Address List
6	HR	Croatia	kg-admin@ibp.hr	+385 1 4561168	Address List
7	HU	Hungary	kg2@ipds.utzaki.hu	+361 2 7966066	Address List
8	MK	FN of Macedonia	bcroq@edu.mk	+389 70 328718	Address List
9	RO	Romania	stanou@grid.ro.no	+40 21 2241.256	Address List
10	TR	Turkey	grid@ulakbim.gov.tr	+90 312 2989363	Address List
11	ME	Montenegro	luka@cg.ac.yu	+381 81 242777	Address List
12	MD	Moldavia	suv@nanam.md		Address List
13	CH	Switzerland	dusan.vudragovic@cern.ch		Address List
14	AM	Armenia	grid-admin@ss.am	+374 94 361138	Address List
15	GE	Georgia	grid-admin@grna.ge	+995 32 250501	Address List
16	AZ	Azerbaijan	al.ismajlov@seeg.org		Address List

Important: This site works best with Firefox

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GOCDB1 Regional

Sites

- Browse Sites
- Add a New Site

Network end-points

- Browse Services
- Add a New Service

Downloads

- List all
- List ongoing
- List planned
- Add a New Download

Groups and Contacts

- HOCDB Contacts

About GOCDB

- Help and Support
- Documentation

Search

Short Name	Official Name	Certification Status	Rec	Country	Act
BFCU02	Rapide Organization for Nuclear Research	Certified	Germany/Denmark	DE	View Site
GRID-LIC2	Grid SDC, University of Erlangen	Certified	France	FR	View Site
TR-01	TR-01 ULAKBİM	Certified	Turkey/Bosnia and Herzegovina	TR	View Site
YAS-FTP	Yet Another Site For Testing Purpose	Candidate	Austria/Turkey	AU	View Site

Page 1 of 1

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Turkish NGI Operations

Accounting Repository

- TR-Grid is a composition of various resource types and project obligations.
- As well as the EGEE sites there are also SEE-GRID sites and TR-Grid-HPC infrastructure sites some of which are also involved in EGEE.
- Thus a central accounting repository was deployed as part of TR-Grid operations.
- Since this accounting repository is fully compatible with current EGEE accounting repository schemas, an adapter for filtering and pushing EGI only records can easily be developed.

Turkish NGI Operations

Accounting Portal

- EGI view of Turkish sites can be reported through the central EGI accounting portal.
- This will enable us to compare the usage of international VOs with different countries.
- Implementation of an advanced portal which enables research groups to adjust resource usage in their groups at specific sites has been started.

Turkish NGI Operations Operations Portal

- TR-Grid operation center has been using an in-house developed operations portal for three years.
- For Turkish users and site administrators it is important to have an operations portal in national language.
- Documents
 - Wiki
 - Blog
 - Training Events

Turkish NGI Operations Operations Portal

- It also combines all the related tools such as help-desk, monitoring information for all supported VO's.
- Monitoring Tools and Operations Dashboard
 - Nagios
 - On the validation progress now
 - Ganglia
 - Pakiti
 - MRTG
 - RT

Turkish NGI Operations

GOCDB & HGSM

- Two local installments of configuration repositories in Turkey.
- **HGSM**
 - Developed in the framework of SEE-GRID projects and has been used by all SEE-GRID countries for nearly five years
- **GOCDB**
 - Alpha release of regional GOCDB was deployed in TR-Grid at the start of 2010

Turkish NGI Operations

Ticketing System

- OneorZero based helpdesk is used for grid troubles, whereas RT based helpdesk is used for network problem
- Because of being located centrally, e-mail is also used for communication with the users
- We are in the progress of integration RT based help-desk with GGUS
- At the end of integration process, RT will be used for handling all tickets.

SUMMARY

- **Central management**
 - All operational tasks of grid and HPC cluster computing are being handled by TR-Grid Operation Center
- **Transition to NGI_TR**
 - The required steps have been almost completed
 - The GGUS ticket for enabling NGI_TR is on the progress
- **Sustainability of TR-Grid is fully provided with hardware budget support from State Planning Organization and personnel support from TUBITAK.**

The background of the slide is a grayscale topographic map of Europe, showing the continent's terrain with varying shades of gray representing elevation. The map is centered on the continent, with the British Isles to the west and the Mediterranean region to the south.

THANKS !!!