



CA Federation Ideas

16th EUGridPMA in Zurich

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Academia Sinica Grid Computing



Motivation

- Users don't like to deal with certificate
 - Get certificate, joining VO, access UI/Grid resources
 - Also ignore security for the sake of convenience
- Cross-national collaboration usually happens first before the national infrastructure is available (such as AAI, CA, IdM, etc.)
- Some university Libraries in Taiwan already deployed IdM (e.g., Shibboleth) for resource sharing
 - How could we take advantage of this ?
- Achievements in Europe was introduced at the APGridPMA meeting and ISGC in Apr. 2009
 - Should learn more from those references
- Always keep the interoperability for a regional trust framework



Landscape of Grid in Asia

	Sites	CA	MW	VO	App
EGEE Asia Federation (4)	AU(U. Mel), JP(KEK), KR(KISTI), TW(ASGC NTCU, NIU)	JP(KEK), KR(KISTI), TW(ASGC)	gLite	Apesci	HEP, G4, LS
EUAsiaGrid (11)	AU(ANU), PH(ASTI, AdMU), VN(VAST-HCM), TH(NECTEC, HAI), MY(MIMOS, UPM), SG(IDA), ID(ITB), TW(ASGC)	AU(APAC), TH(NECTEC), SG(NGO), TW(ASGC)	gLite	Euasia	HEP, DR, LS, CChem,
EU-ChinaGrid	CN(CNIC, IHEP)	CN(CNIC, IHEP)	Glite		HEP, LS
EUIndiaGrid	IN (DAE-VECC-EUIndiaGrid)	IN (IGCA)	gLite		
WLCG (16)	AU(U. Mel), JP(U. Tokyo, KEK, Hiroshima), KR(KISTI, KNU), CN(IHEP, PKU), IN(VECC, TIFR), PK(NCP, PAKGrid), TW(ASGC, FTT, IPAS, NCUHEP, NCUCC)	CN(IHEP), IN(IGCA), JP(KEK), KR(KISTI), PK(NCP), TW(ASGC)	gLite	ATLAS, CMS, ALICE, LHCb	HEP
PRAGMA (30)	AU(Months), CN(CNIC, JLU), HK(HKU), IN(UoH), JP(AIST, Osaka, TITEC, Tsukuba, NARC), KR(Konkuk, KBSI, KISTI), MX(CICESE), MY(MIMOS, USM), NZ(BeSTGrid), PH(ASTI), TH(KU, ThaiGrid), SG(NGO) TW(ASGC, NCHC), US(UCSD, Utah, NCSA, UIUC, TransPAC2), VN(HUT, HCMUT, IOIT)	JP(AIST), CN(CNIC), HK(HKU), TW(ASGC, NCHC), PRAGMA-UCSD	Globus, VDT	Praam	LS, telsci,
APAN	16 NRENs in Asia	IdM			eSci



14 Accredited CAs

Members (14 + 4)

- ▶ AIST (JP) 26, 394
- ▶ APAC (AU): 224, 307, 22
- ▶ ASGC (TW): 244, 278, 32
- ▶ CNIC (CN): 153, 30
- ▶ IGCA (IN): 44, 17, 14
- ▶ IHEP (CN): 81, 94
- ▶ KEK (JP): 90, 220
- ▶ KISTI (KR): 69, 173
- ▶ NAREGI (JP): 12, 110
- ▶ NCHC (TW): 10, 15
- ▶ NECTEC (TH): 23, 15
- ▶ NGO/Netrust (SG)
- ▶ PRAGMA-UCSD (US)
- ▶ U. Hong Kong (HK)



Planning

- ▶ ThaiGrid (TH)



General membership

- ▶ Osaka U. (JP)
- ▶ U. Hyderabad (IN)
- ▶ USM (MY)

Valid Certificate: ~ 2,800
User: > 1,000 Host: ~ 2,000



The Official RA at ASGCCA

- **Taiwan : 9**

- ASGC, NIU, NTCU, THU, NTU, NTU, NCCU, ASIAA and NDHU

- **Asia Pacific : 23**

- Korea, India, New Zealand, Philippines, Malaysia, Vietnam, Indonesia and CERN (ASGC Staff)

- **Support to EUAsiaGrid sites**

- New RA at ASTI in Philippines

- **The current link**

<http://ca.grid.sinica.edu.tw/contact.html>

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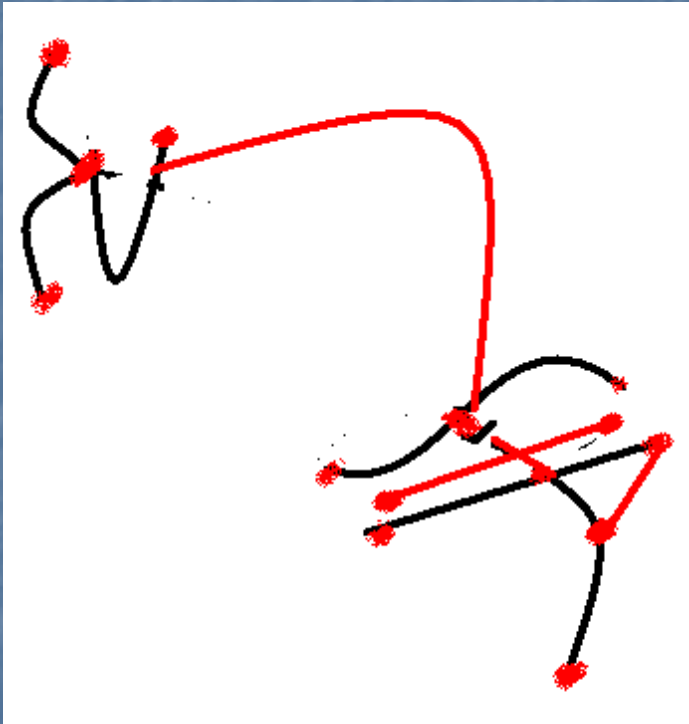
Asia Pacific Regional Operations Center

- Mission
 - Provide deployment support facilitating Grid **expansion**
 - Maximize the **availability** of Grid services
- Supports EGEE sites in **Asia Pacific** since April 2005
 - 26 production sites in 10 countries
 - Over 5,300 Cores, > 2PB in Jan. 2009
- APROC Services
 - Site Deployment & Production resource center certification
 - Operation Support: Monitoring, Diagnosis and troubleshooting, Problem tracking, and Security
 - Runs ASGCCA Certification Authority since 2003
 - EGEE Operations: C-COD, TPM, OSCT
 - <http://aproc.twgrid.org/>



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EUAsiaGrid Members



<http://www.euasiagrid.org>

EUAsiaGrid

- Identify and engage scientific communities which can benefit from the use of state-of-art Grid technologies;
- Disseminate EGEE middleware in Asian countries by means of public events and written and multimedia material;
- Provide training resources and organise training events for potential and actual Grid users;
- Support the scientific applications and create a human network of scientific communities by building on and leveraging the e-Science Grid infrastructure.

List of participants

Participant no.	Participant name	Participant short name	Country
1 (coordinator)	Istituto Nazionale di Fisica Nucleare	INFN	Italy
2	CESNET z.s.p.o.	CESNET	Czech Republic
3	National Centre for e-Social Science	NCeSS	UK
4	HealthGrid	HealthGrid	France
5	School of Science and Engineering, Ateneo de Manila University	AdMU	Philippines
6	Australia National University	ANU	Australia
7	Academia Sinica Grid Computing	ASGC	Taiwan
8	Advanced Science and Technology Institute	ASTI	Philippines
9	Hydro and Agro Informatics Institute	HAII	Thailand
10	Infocomm Development Authority	IDA	Singapore
11	Institute of Information Technology	IOIT-HCM	Vietnam
12	Institut Teknologi Bandung	ITB	Indonesia
13	National Electronics and Computer Technology Center	NECTEC	Thailand
14	Universiti Putra Malaysia	UPM	Malaysia
15	MIMOS Berhad	MIMOS	Malaysia



e-Science Application Support

- **Design of collaboration model**
- **High Energy Physics**
 - ATLAS and CMS Tier1 Center and APROC Services, Geant4, and other experiments
- **Life Science Application**
 - Support of gLite-enabled Virtual Screening Service
 - Improve autodocking drug discovery performance & scalability with the DIANE2
 - Initiate Avian Flu Data Challenge II Refine project at EUAsiaGrid
- **Disaster Mitigation**
 - Provide wave simulation applications of earthquake and tsunami, for the mitigation planning and evaluation
 - Build up GEOGrid on earthquake in corporation with Taiwan Earthquake Data Center.
 - Related EGEE applications survey (e.g., DEGREE) and collaboration
- **Carbon Flux Application**
 - Promote the Grid Application Platform (GAP) to the local ecologist
 - Migrate Carbon Flux data and integrate SRM-SRB interface in GAP system and gLite
- **Grid Portal Technology**
 - Develop grid portal technology, workflow engine and data management services



Objectives for Federation

- Ease of Use
 - Reduce hurdle of resource access and for e-Science collaborations
- Better Resource Sharing for collaboration
 - Not to make grid resources as islands
- Reliability
 - Service backup and fail-over
- Flexibility
 - Able to grow according to app requirements
- Sustainability
 - Ensure the availability of e-Infrastructure after the projects end



Path Forward to Federation ?

- Federation is the best solution ?
- LoA should be identified first
- Trust framework - follow IGTF profile/guideline/requirements
- From users' point of view, federation should be based on application/user community/VO
 - Infrastructure has to meet this by all means
 - And serve to multiple applications at the same time, hopefully
- Use case analysis within VOs first, from TW and EUAsiaGrid first
- Many universities are deploying Shibboleth as the basis for library resource sharing
- More training, communication are required for consensus building



Thanks for your listening

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