



Community Resource Pool status

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Resource sharing model

- **PRAGMA**
 - Is a Grid community (VO)
 - Overlaps with other (VO)
- **PRAGMA Resources**
 - Must follow the grid philosophy
 - Resources can be shared with multiple VO
 - Resource pool is for community applications testing
- **PRAGMA Resources availability**
 - 80% of resources should be available 90% of time
- **Who can participate?**
 - Any PRAGMA member organization
 - sharable resource (computing, storage, instruments)
 - Must open up few ports from **firewall**

Resource sharing model

- **Every site must publish their**
 - Own CA distribution file (Globus CA not acceptable)
 - Cert subject of common PRAGMA user
 - Latest CRL list
- **Every site must allow other PRAGMA members to share resources via globus**
 - Install other site's CA public key
 - Add all PRAGMA user to Gridmap file
- **Must have one person for quick support regarding PRAGMA resources**
- **Simple and effective**

Minimum infrastructure

- **Middleware**

- GT2, Java CoG, (GT3 by next meeting),

- **MPI**

- MPICH/MPICH-G2

- **Global Storage for PRAGMA**

- May be SRB

- **Scheduler**

- PBS/Maui, Condor, SGE

- **Standard**

- Gcc, Fortran, Perl, ..
- Installed on /usr/local/pkg
- Temp location (/tmp)
- May standardize shell env. variables

- **BioInformatics**

- Packages (Blast, Clustalw, Fasta,)
- Databases (Genomes, ..)

Resource: Last PRAGMA 2

- **UCSD: 32 node cluster (some of it shared for PRAGMA)-Phil**
- **KISTI: 80 node cluster – some 16 node and some 32 node clusters**
- **China – 8 node cluster, (AIX)**
- **CRAY BioGrid. SV1 Aus, Singapore, Japan**
- **University of Melbourne- 24 node cluster (shared)- Rajkumar**
- **NCHC – 32 node cluster (shared)**

- **Thanks to PRAGMA Resource People:**
 - > Rajkumar Buyya, Kevin Dong, Hirotaka Ogawa, Tein Yuan, Sissades Tongsima

- **Resources published**
 - We have collected almost 250 nodes,
 - > But usable is small size

PRAGMA resource request

- **Site**
- **No of nodes**
- **Type of nodes**
- **S/W Resources**
- **Your CA distribution file**
- **Your common PRAGMA user certificate subject**
- **Custer availability % time**
- **Other other local policy**

PRAGMA resource site evaluation (Goodness)

- **T**
 - Total number of resource contributing sites
- **K1**
 - Number of PRAGMA site CA accepted
- **K2**
 - Number of other PRAGMA users accepted via Gridmapfile
- **K3**
 - Number of PRAGMA sites tested your site
- **K4**
 - Cluster Uptime
 - (0-100%)
- **K5**
 - Number of Nodes
- **Goodness index of your site=**
 $(k1+k2+k3)/3T*k4$

The Keyword

- **Increase you site Goodness index**
 - Add more acceptable CA
 - Add other PRAGMA users
 - Allow people to test your resources

Current PRAGMA resources

Site/VO	Size	Type	Responsibility	Site	Goodness
SDSC	16	Linux	mjk@sdsc.edu	slic04.sdsc.edu	10
BII	32	Linux	kishore@bii.a-star.edu.sg	Tglobus2.bii.a-star.edu.sg	10
USM (Malaysia)	16+5+10	Linux	gridadm@cs.usm.my	Grid.cs.usm.my	0
AIST	66+10	Linux	yoshio.tanaka@aist.go.jp		0
KISTI	80	Linux	Kim/sangwan@hpcnet.ne.kr	Node1001.gridcenter.or.kr	0
Tokyo Institute of Technology	16	Linux	Kenichiro.Shirose@is.titech.ac.jp		0
CNIC/CAS - China	8	AIX	kevindong@sdb.ac.cn , nankai@sdb.ac.cn	?	0
APBioGrid	8	CRAY SV1	guansin@bic.nus.edu.sg		0
GRIDS Lab, University of Melbourne, Australia	10	Linux	Rajkumar Buyya raj@cs.mu.oz.au		0
OSAKA Univ. Japan	12	Linux		Sibbs.ais.cmc.osaka-u.ac.jp	0

Challenges

- **Production level PRAGMA grid is a challenge**
- **Security is the prime concern**
 - Trust is main concern
- **Major Hurdle?**
 - No major technical problem
 - **Social engineering problem**

Proposals

- **Share small clusters**
 - Non critical system
 - No sensitive data
 - No security problem
- **Propose having a PRAGMA grid support team**
 - At least two person from each site
 - Set a response time frame
- **PRAGMA may have**
 - AUP (Acceptable User Policy)
 - Must have a PRAGMA GIIS at central site

...finally...

- **Make it all happen very quickly !**
- **Put an experimental PRAGMA test bed in place**
- **Put testable software in place**
- **Make support service operational now**

- **Full integration and validation to begin in earnest soon!**
- **Now we have opportunity to see how it performs and scales with real datasets and real experimental users**