Recent activities on building a production Grid in the Asia Pacific Region

- PRAGMA routine-basis experiments –
- APGrid PMA and the IGTF -

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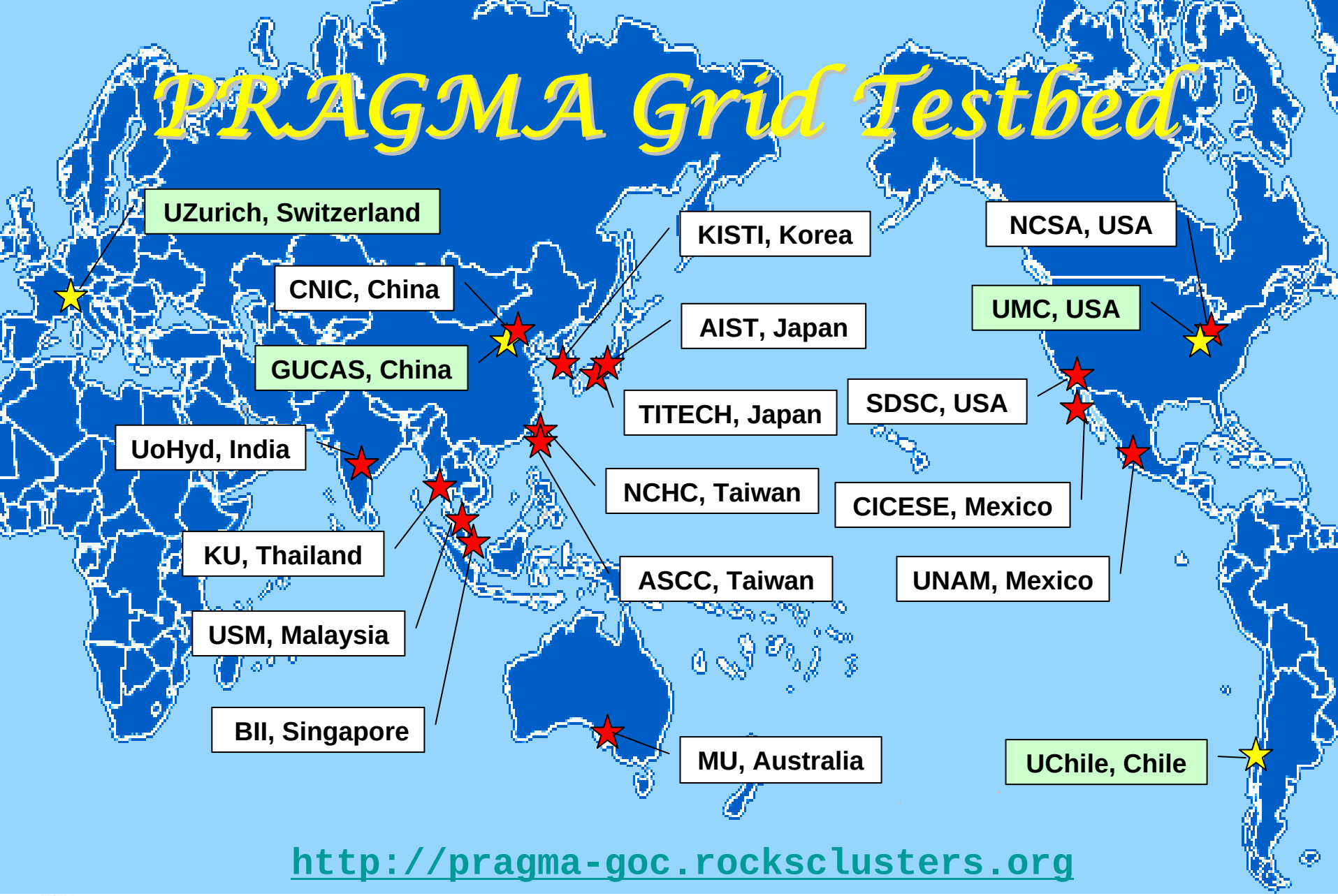
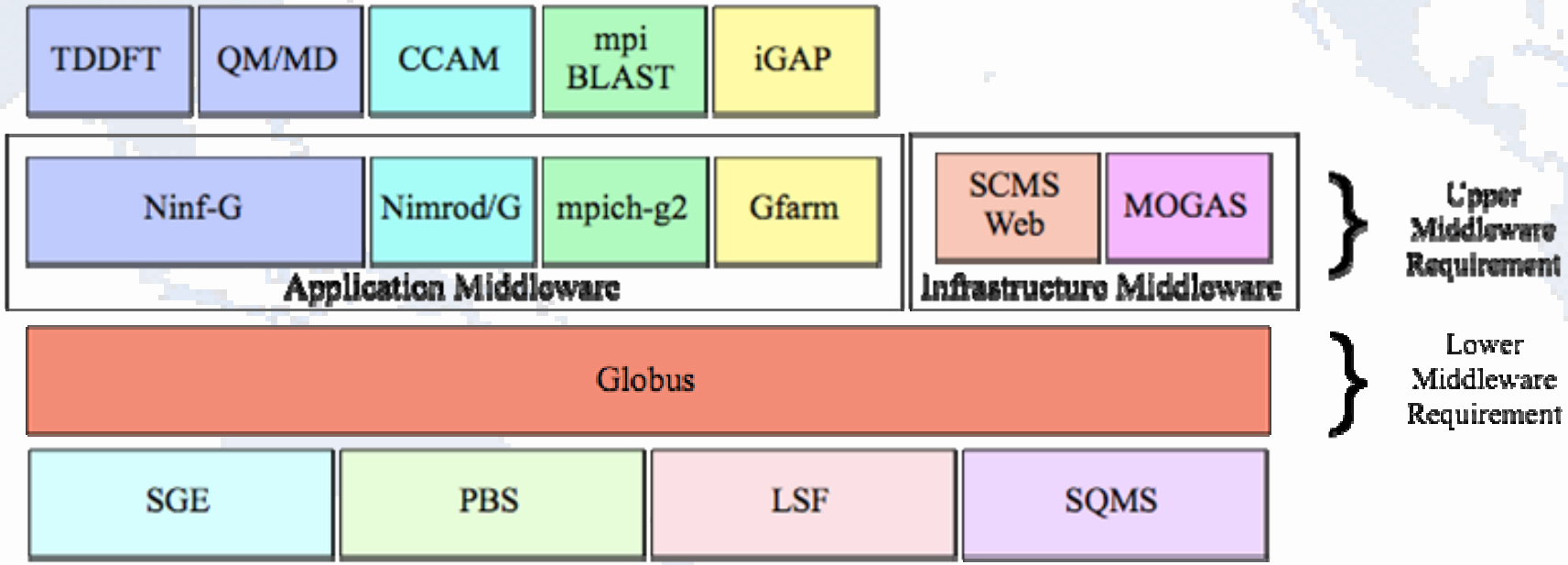
PRAGMA routine-basis experiments

All slides in this part are by courtesy of Mason Katz and Cindy Zheng (SDSC/PRAGMA)


PRAGMA Grid Testbed
UZurich, Switzerland
CNIC, China
GUCAS, China
UoHyd, India
KU, Thailand
USM, Malaysia
BII, Singapore
KISTI, Korea
AIST, Japan
TITECH, Japan
NCHC, Taiwan
ASCC, Taiwan
MU, Australia
NCSA, USA
UMC, USA
SDSC, USA
CICESE, Mexico
UNAM, Mexico
UChile, Chile
http://pragma-goc.rocksclusters.org

Application vs. Infrastructure Middleware



PRAGMA Grid resources

http://pragma-goc.rocksclusters.org/pragma-doc/resources.html

	Institution Name	Country /Region	Host Name	# nodes	# CPUs	Memory (GB)	User Disk Space (GB)	Job manager	CPU Model	CPU Speed (MHz)	System Type	OS Type	OS Release
	AIST	Japan	ume	33	66	34.460	209	SGE	i686	1396	Cluster	Linux	2.4.20-30.8.legacysmp
	ASCC	Taiwan	pragma001	4	4	2.936	196	PBS	i686	2390	Cluster	Linux	2.4.21-15.0.4.Elsmp
	BII	Singapore	marlin	5	5	2.505	27	SGE	i686	1836	Cluster	Linux	2.4.21-15.EL
	CICESE	Mexico	solaris	8	8	2.048	11	SGE	Sparc	500	Cluster	Solaris	5.9
	CNIC	China	pragma	8	32	64.000	48	LJRS	ia64	1300	Cluster	Linux	2.4.21-3.5qsnet
	GUCAS	China	igeon	16	32	36.000	1000	SGE	x86_64	3000	Cluster	Linux	
	KISTI	Korea	jupiter	17	17	15.103	481	PBS	i686	1694	Cluster	Linux	2.4.20-28.7
	KU	Thailand	amata1	15	15	8.020	138	SQMS	i686	1009	Cluster	Linux	2.4.20-31.9
	MU	Australia	mahar	50	50	50.828	57	PBS	i686	2993	Cluster	Linux	2.4.22-xfs
	NCHC	Taiwan	ase	9	18	9.288	154	PBS	i686	1666	Cluster	Linux	2.4.26-686-smp
	NCSA	USA	tgc	13	52	26.169	1685	PBS	i686	2400	Cluster	Linux	2.4.21-15.ELsmp
	SDSC	USA	rocks-52	16	62	32.493	275	SGE	i686	2388	Cluster	Linux	2.4.21-20.Elsmp
	SDSC	USA	rocks-47	4	4	8.140	24	SGE	ia64	900	Cluster	Linux	2.4.21-20.EL
	Titech	Japan	gsic-presto	9	9	7.566	118	PBS	i686	1195	Cluster	Linux	2.4.26
	UChile	Chile	syntagma	16	32	34.000	2000	SGE	ia64	1600	Cluster	Linux	2.6.9-11smp
	UMC	USA	obsidian	16	32	32.000	500	SGE	i386	2800	Cluster	Linux	2.4.20-8smp
	UNAM	Mexico	malicia	6	6	3.510	78	PBS	i686	1894	Cluster	Linux	2.4.19-ipvs
	UoHyd	India	amber	9	9	4.287	110	PBS	i686	2394	Cluster	Linux	2.4.18-14
	USM	Malaysia	aurora	17	34	17.700	70	SGE	i686	1396	Cluster	Linux	2.4.28-husseinl
	USM	Malaysia	hawk	17	17	8.700	70	SGE	i686	2800	Cluster	Linux	2.4.20-8smp
	UZurich	Switzerland	ocikbsbg	8	16	16.840	28	SGE	i686	2800	Cluster	Linux	2.4.21-20.ELsmp
	UZurich	Switzerland	ocikbsbg	8	16	16.840	28	SGE	i686	2800	Cluster	Linux	2.4.21-20.ELsmp
Total	19	13	22	367	662	981.080	7307						

Why Routine-basis Experiments?

- Resources group Missions and goals
  - Improve interoperability of Grid middleware
  - Improve usability and productivity of global grid
- PRAGMA from March, 2002 to May, 2004
  - Computation resources

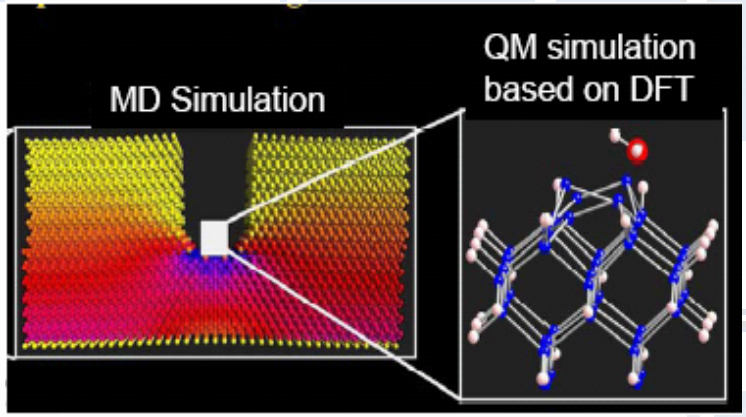
    10 countries/regions, 26 institutions, 27 clusters, 889 CPUs
  - Technologies (Ninf-G, Nimrod, SCE, Gfarm, etc.)
  - Collaboration projects (Gamess, EOL, etc.)
  - Grid is still hard to use, especially global grid
- How to make a global grid easy to use?
  - More organized testbed operation
  - Full-scale and integrated testing/research
  - Long daily application runs
  - Find problems, develop/research/test solutions

Routine-basis Experiments

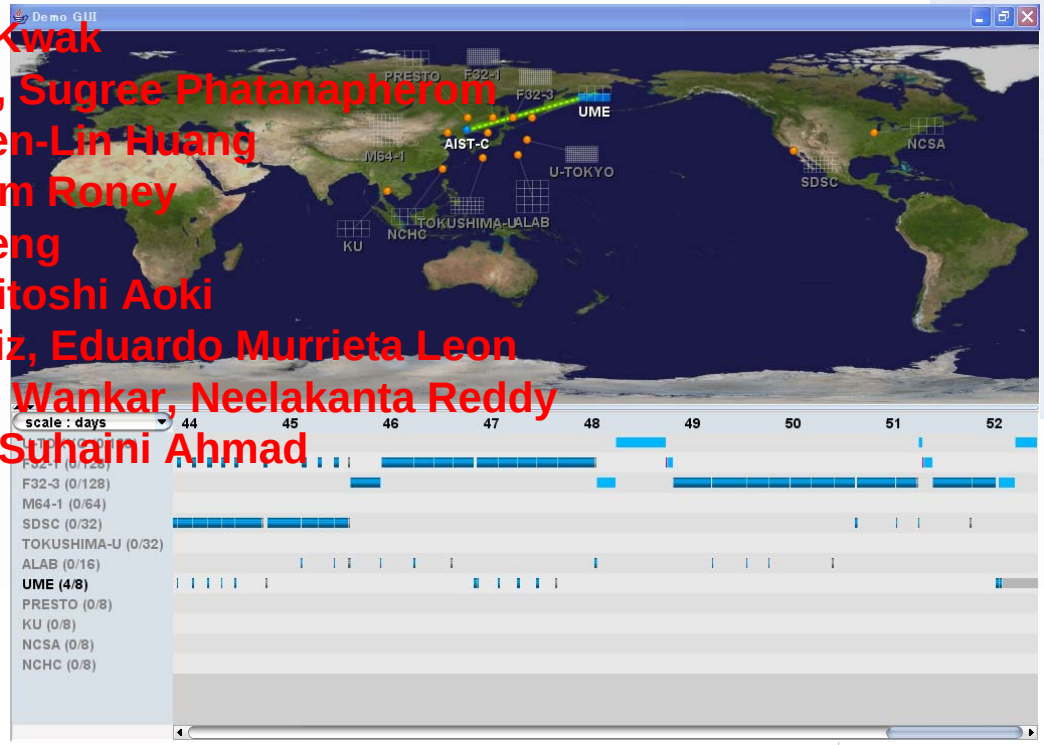
- Initiated in May 2004 PRAGMA6 workshop
- Testbed
  - Voluntary contribution (8 -> 17)
  - Computational resources first
  - Production grid is the goal
- Applications
  - QM/MD, TDDFT, mpiBlast-g2, Savannah,
  - iGAP over Gfarm
  - Ocean science, Geoscience (proposed)
- Learn requirements/issues
- Research/implement solutions
- Improve application/middleware/infrastructure integrations
- Collaboration, coordination, consensus

QMMD

http://pragma-goc.rocksclusters.org/applications/qmmd/qmmd_requirement.html



- Quantum mechanics application
- Ninf-G based
- Driver: Hiroshi Takemiya (AIST)
- Ready on 12 sites:
  - AIST: Yoshio Tanaka, Yusuke Tanimura
  - ASCC: Hurng-Chun Lee, Mike Chiang
  - CNIC: Kai Nan, Kevin Dong
  - KISTI: Jysoo Lee, Jae-Hyuck Kwak
  - KU: Somsak Sriprayoonsakul, Sugree Phatanapherom
  - NCHC: Weicheng Huang, Chien-Lin Huang
  - NCSA: Radha Nandkumar, Tom Roney
  - SDSC: Mason Katz, Cindy Zheng
  - TITECH: Satoshi Matsuoka, Hitoshi Aoki
  - UNAM: Jose Luis Gordillo Ruiz, Eduardo Murrieta Leon
  - UoHyd: Arun Agarwal, Rajeev Wankar, Neelakanta Reddy
  - USM(hawk): Habibah Wahab, Suhaini Ahmad



Lessons Learned

http://pragma-goc.rocksclusters.org/tddft/Lessons.htm