HPC & Research Computing Support at HKU

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"Mini-PRAGMA" at HKU
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The University of Hong Kong

▶ Founded in 1912

▶ Ranked 18th in "THES-QS World University Rankings 2007"

▶ Ranked 1st in "QS.com Asian University Rankings 2010"

▶ 22,139 students (in 2009-2010)

- 11,589 undergraduates, 10,550 postgraduates

▶ 10 faculties

- Architecture, Arts, Business and Economics,
  Dentistry, Education, Engineering,
  Law, Medicine, Science, Social Sciences

Characteristics of
HKU HPC & Research Computing Support

▶ One of the few that provides centralized HPC and service support for cutting-edge research collaborations

▶ Well known within institution as well as in the region

▶ Active exchanges with a number of Chinese and International research consortiums

▶ Enabled successful work of more than 130 PhDs since 1995
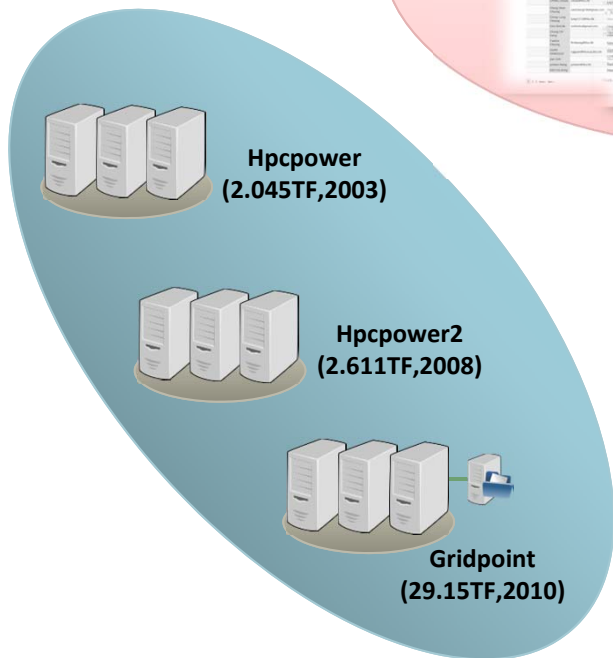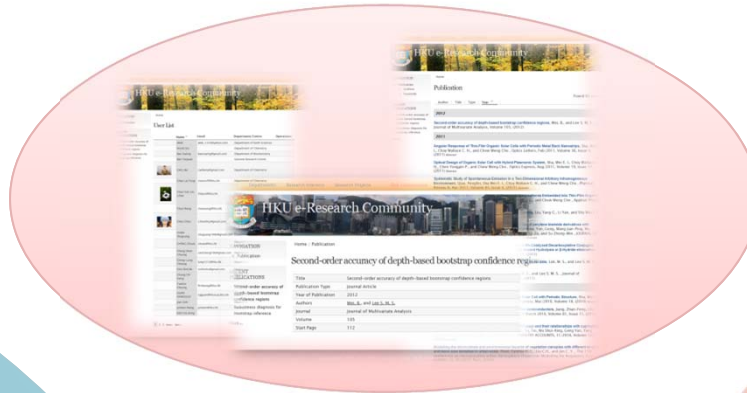
▶ Hosted the 20th PRAGMA Conference at March 2011

Memory Refresh –
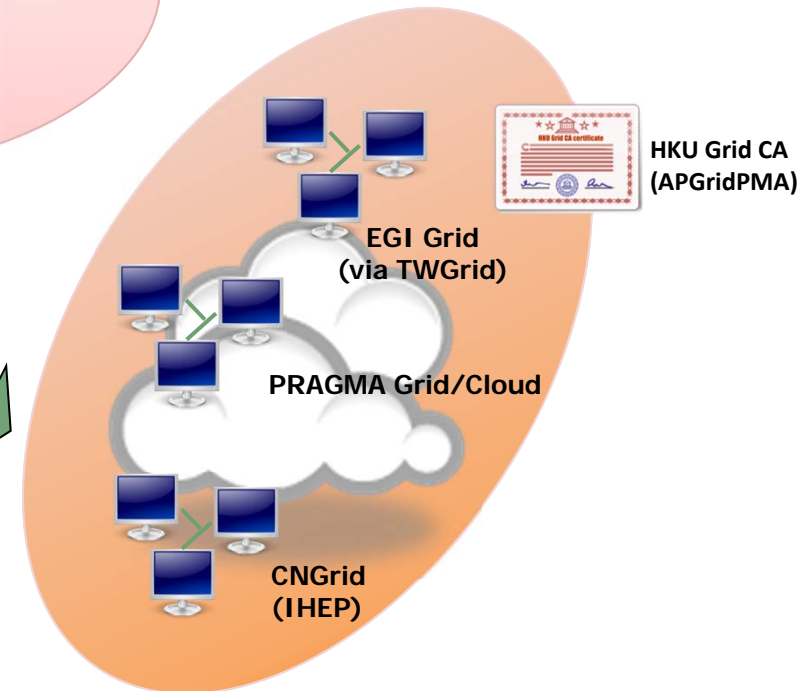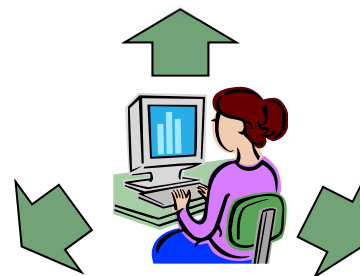## PRAGMA 20 cum HKU Centenary IT Conference

Existing HPC Services

HKU eResearch Community

**Hpcpower
(2.045TF,2003)**

**Hpcpower2
(2.611TF,2008)**

**Gridpoint
(29.15TF,2010)**

**HKU Grid CA
(APGridPMA)**

**EGI Grid
(via TWGrid)**

PRAGMA Grid/Cloud

**CNGrid
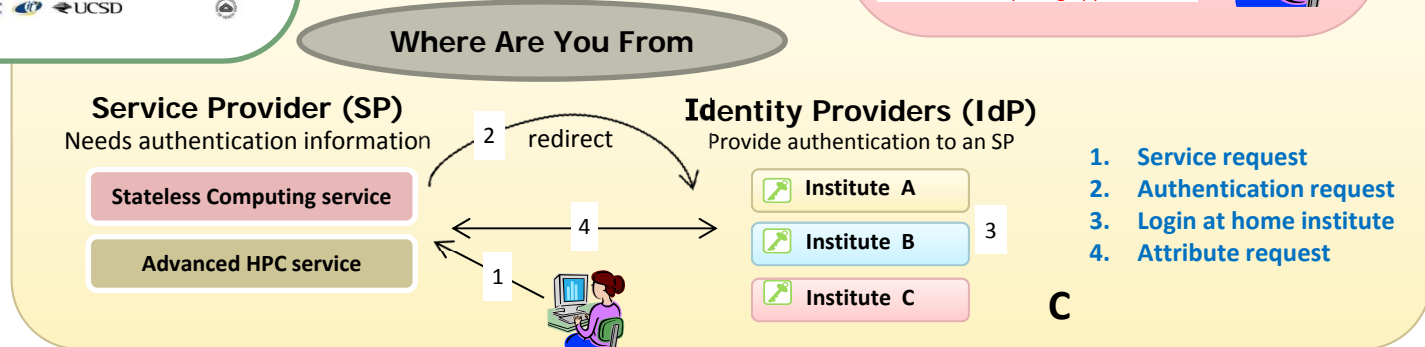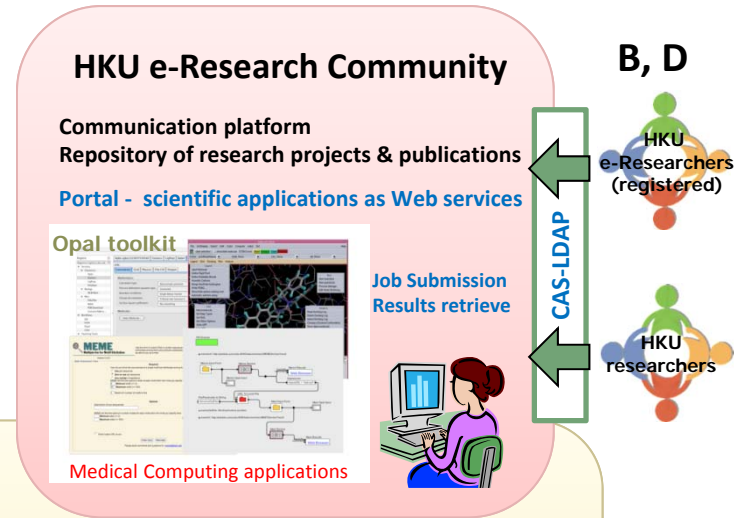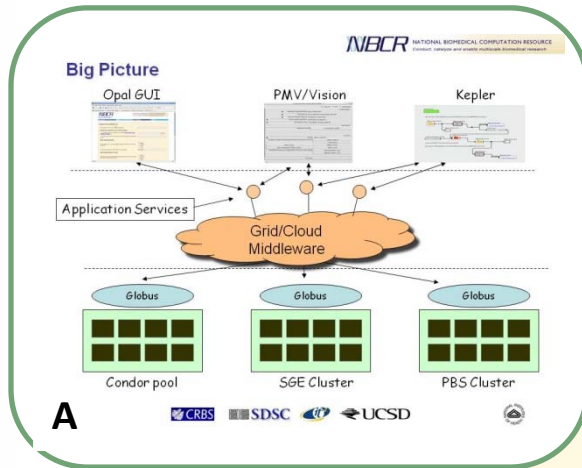(IHEP)**

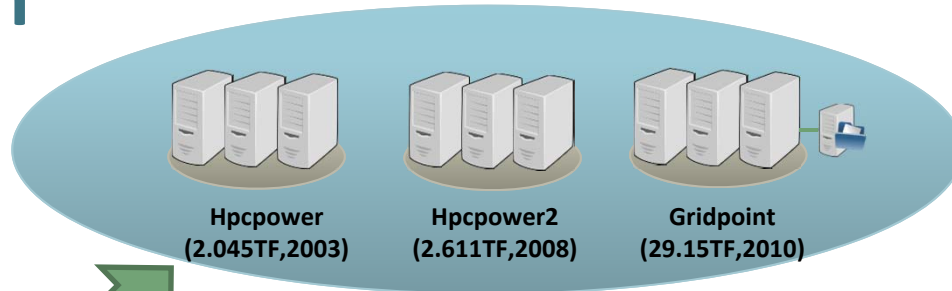**High Performance Cluster Computing**

Grid Computing

Our goal in coming years to be achieved

A. Web-based Stateless Scientific Computing Services

B. HKU e-Research Community

C. Federated Identity Management System for Scientific Collaboration

D. Medical Computing

HKU e-Research Community

B, D

Communication platform
Repository of research projects & publications

Portal - scientific applications as Web services

Opal toolkit

Job Submission
Results retrieve

Medical Computing applications

HKU
e-Researchers
(registered)

CAS-LDAP

HKU
researchers

A

Where Are You From

Service Provider (SP)
Needs authentication information

2 redirect

Stateless Computing service

Advanced HPC service

4

1

Identity Providers (IdP)
Provide authentication to an SP

Institute A

Institute B

Institute C

3

1. Service request
2. Authentication request
3. Login at home institute
4. Attribute request

C

Our mission

HPC Cluster Systems

Hpcpower
(2.045TF,2003)

Hpcpower2
(2.611TF,2008)

Gridpoint
(29.15TF,2010)

Grid Computing

**Federated Identity Management System
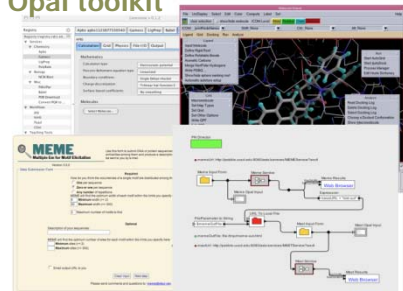for Scientific Collaboration**
(Shibboleth, SAML, etc.)

HKU e-Research Community

**Communication platform
Repository of research projects & publications**

Portal - scientific applications as Web services

Opal toolkit

MEME

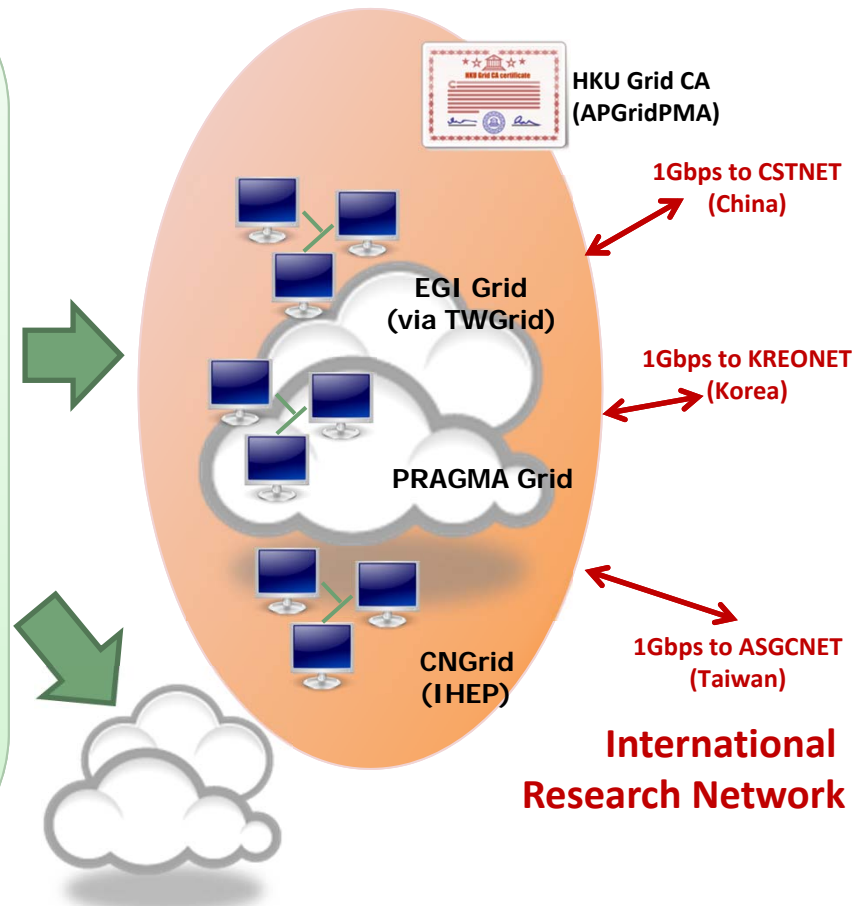Medical Computing applications

CAS-LDAP

Job Submission
Results retrieve

Local institutes

HKU
e-Researchers
(registered)

HKU
researchers

HKU Grid CA
(APGridPMA)

EGI Grid
(via TWGrid)

PRAGMA Grid

CNGrid
(IHEP)

1Gbps to CSTNET
(China)

1Gbps to KREONET
(Korea)

1Gbps to ASGCNET
(Taiwan)

**International
Research Network**

Thank You