



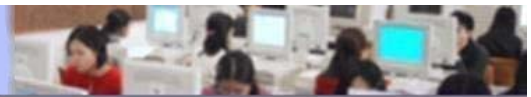
HARNET Collaboration and Grid-related Initiatives at HKU

Geoffrey Dengate and Dr. P.T. Ho
Information Technology Services
8th July, 2009



Agenda

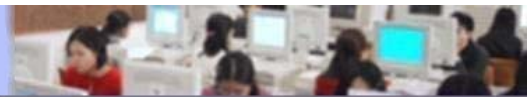
- ▶ The University of Hong Kong (HKU)
- ▶ JUCC and HARNET
- ▶ Service-oriented views of Grid Computing
- ▶ Initiatives from HPC to Grid Computing
- ▶ HKU Grid-point and possible future developments



The University of Hong Kong



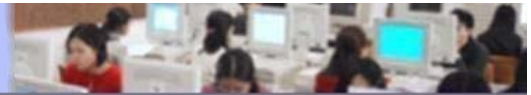
3



The University of Hong Kong

- ▶ Founded in 1912
- ▶ THES-QS World University Rankings
 - #26 in 2008, #18 in 2007
- ▶ QS.com Asian University Rankings
 - #1 in 2009; #3 in 2008
- ▶ 12,300 undergraduate students
- ▶ 9,900 postgraduate students
- ▶ 10 faculties
 - Architecture, Arts, Business & Economics, Dentistry
Education, Engineering, Law, Medicine, Science, Social Sciences

4



<http://www.hku.hk>



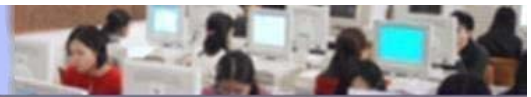
5



Joint Universities Computer Centre

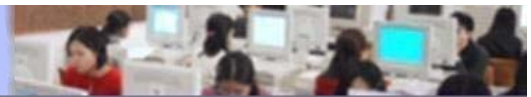
- ▶ Incorporated in 1970
- ▶ Equivalent to CAUDIT + AARNet
- ▶ 8 full members - Universities funded by University Grants Committee (UGC) of Hong Kong SAR Government
- ▶ 3 Affiliated members & 2 Network Members
- ▶ Responsible for HARNET
Hong Kong Academic & Research Network

6

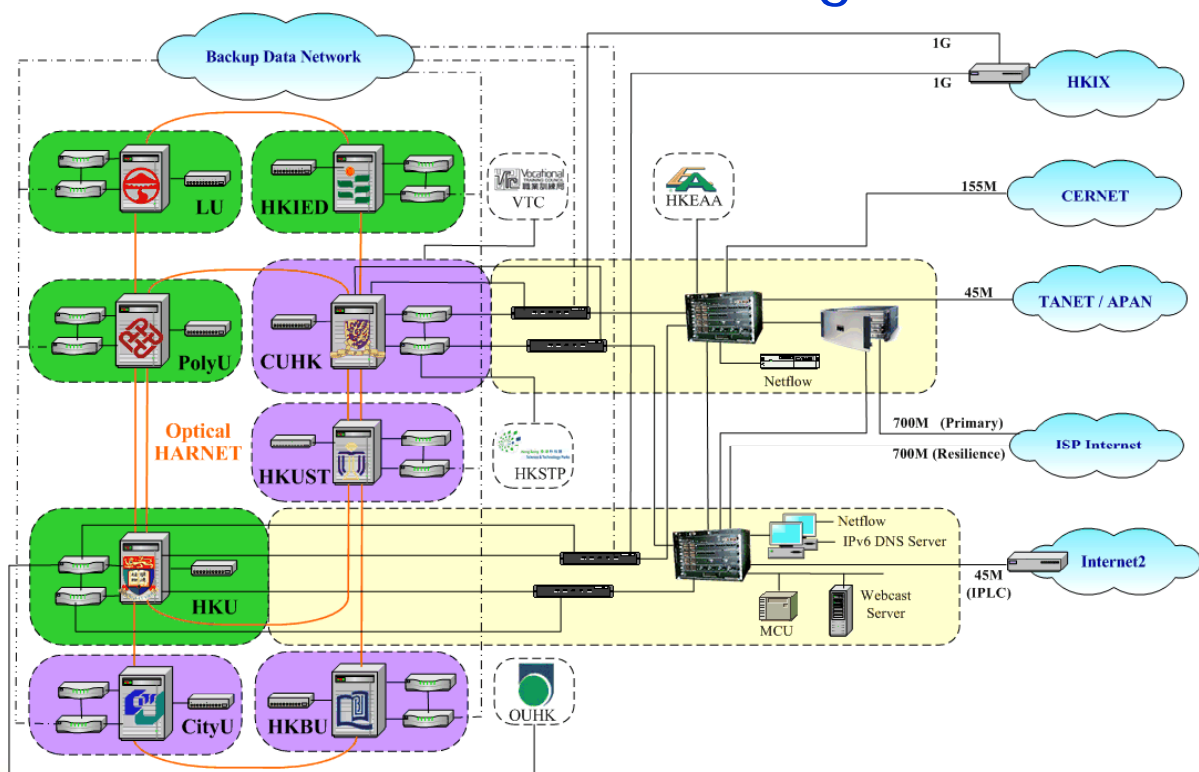


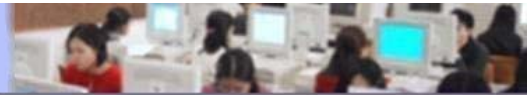
JUCC Governance

- ▶ Board of Management
- ▶ Steering Committee
- ▶ Tender Board
- ▶ Working Groups and Projects
 - Network Task Force
 - Video Network Task Force
 - Information Security Task Force
 - Inter-Institutional WiFi Access Collaboration
 - Special Interest Group on Security
 - Special Interest Group on User Services
 - Special Interest Groups on Unified Communication
 - Special Interest Groups on Green IT



HARNET Network Configuration



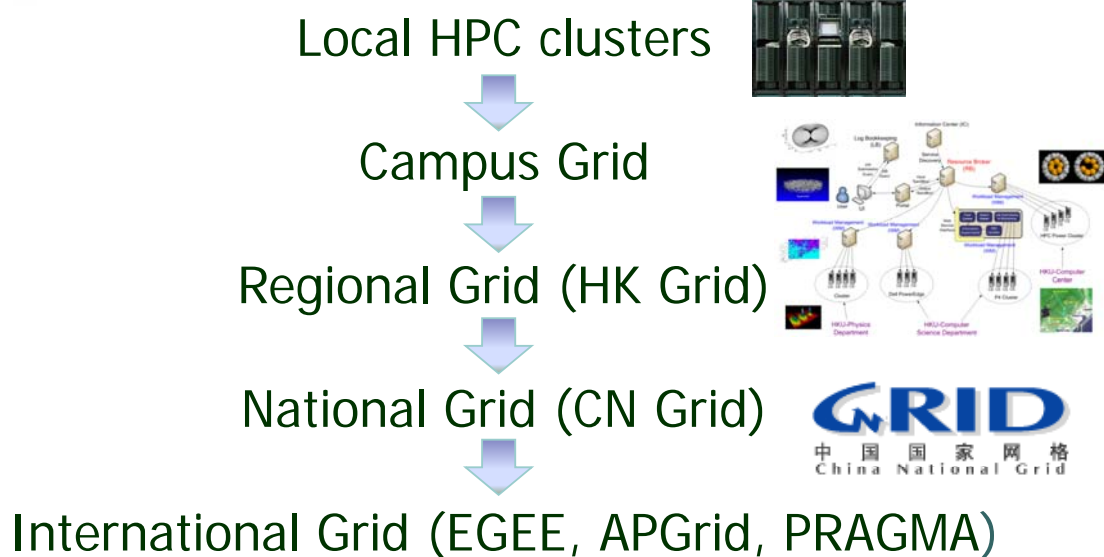


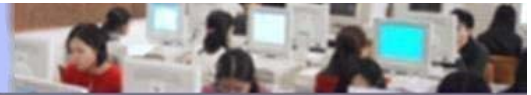
Grid Computing - Service-oriented Views

- ▶ Service needed today for researchers
- ▶ Resulted from technology advancements of HPC & Research Networks
- ▶ Driven by research collaborations on
 - technology development;
 - knowledge discovery;
 - Inventions/solutions for quality life and sustainable environment



Grid Computing: Development & Collaborations





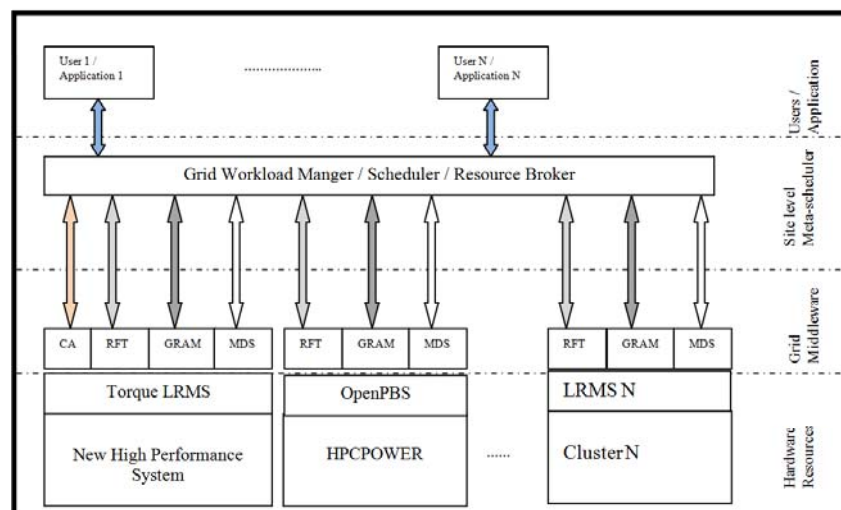
HKU Grid Point – Participation in China National Grid

- ❁ A UGC Special Equipment Grant project - an extension of China National Grid (CNGrid) in Hong Kong
- ❁ Collaboration with Dept. of Computer Science (PI), Chemistry and Stat. & Actuarial Sc.
- ❁ A CNGrid compliant Grid middleware platform for multiple-discipline research collaboration between universities in Hong Kong and research institutions in China

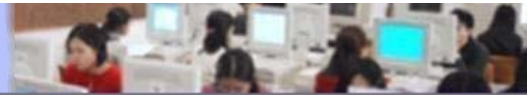


HKU Grid Point UGC Project – Forming Hong Kong HK Grid

- ❁ Collaboration with HKU departments and other universities to form a regional Grid in Hong Kong

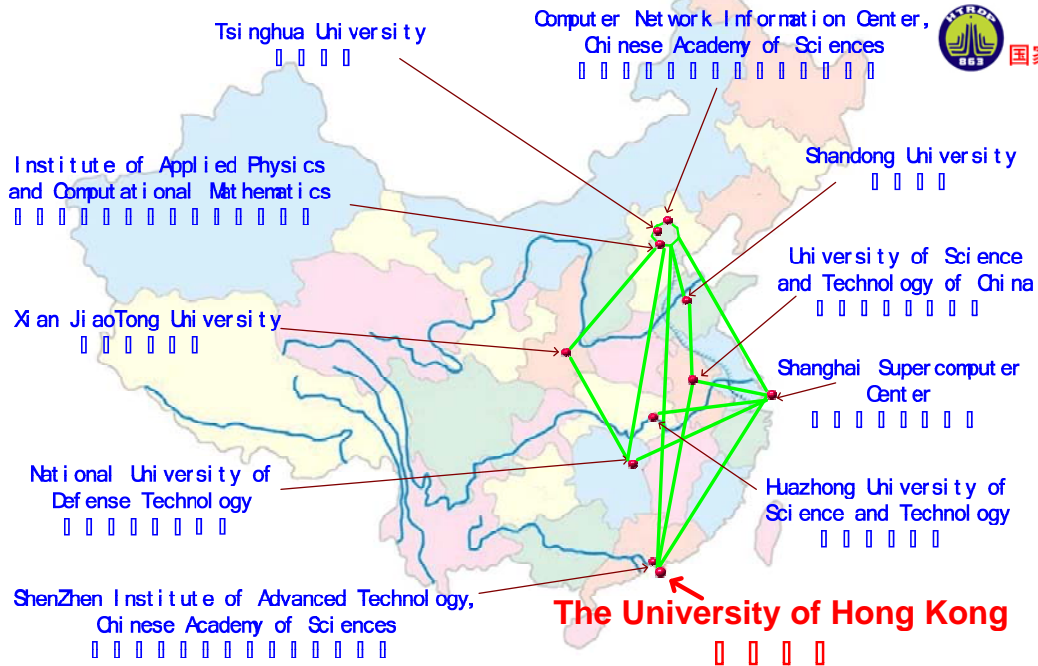


Architecture of the HK Grid Infrastructure



China National Grid : Phase II

The China National Grid II (CNGrid II) (2006-2010)



The only institution outside Mainland China



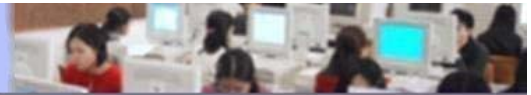
International Collaboration – with EGEE development

- ▶ Pilot Set-up of EGEE (Enabling Grids for E-science) access facility in 2007

- CE(Computing Element)
- SE(Storage Element)
- MON(Information System)
- UI(User interface)



- ▶ Joined APGrid PMA in 2008
- ▶ HKU Grid CA certified by APGrid PMA for EGEE Grid collaborations



PRAGMA – Pacific Rim Application and Grid Middleware Assembly



- ▶ HKU joined PRAGMA in 2009 as a full Member
- ▶ It is a collaborative body for advancing the use of grid technologies in applications among investigators in leading institutions around the Pacific Rim
- ▶ To provide an “assembly” to allow researchers for academic knowledge exchange and research collaboration
- ▶ Regular workshop meeting twice a year



Possible GRID Connections



▶ HARNET →

- Internet2, Trans-Eurasia Information Network (TEIN3), CERNET, APAN , etc.



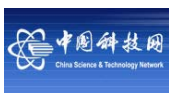
▶ Direct connections:

- To KISTI (Korea Institution of Technology and Science Information) established



- To ASGCC of Taiwan being done

- To China Science and Technology Network (CSTnet) for CNGrid platform being arranged



- Future development with China Next Generation Internet (CNGI) to be explored



Questions?