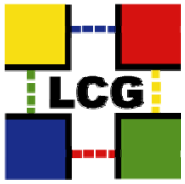
The status of IHEP Beijing Site

WLCG Asia-Pacific Workshop

Yaodong CHENG

IHEP, China

01 December 2006



Worldwide LHC Computing Grid

Distributed Production Environment for Physics data Processing

outline

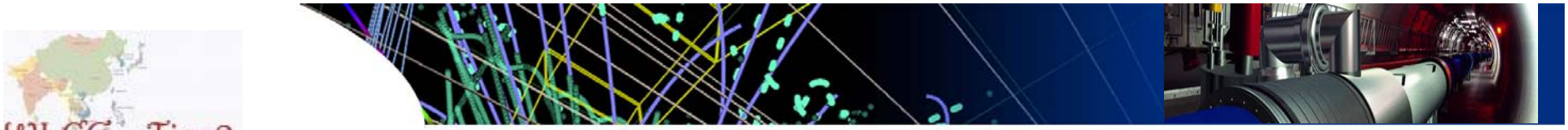
- Experiments
- Grid services
- Hardware&Software
- Network
- Other activities
- Future plan

Experiments

- Support CMS、 Atlas，about 80 physicists participating in the two experiments
  - CMS: Peking University(PKU), IHEP
  - Atlas: Shandong University(SDU), University of Science and Technology of China(USTC), Nanjing University(NJU), IHEP
- Local Experiment: BES
  - 29 institutes from China, Japan, Germany, etc
  - 5PB totally in next 5 years
  - 2000 kSpecInt2K

Grid Services

- UI (User Interface)：Glite-3.0.2
- RB (Resource Broker)： Glite-3.0.2 (LCG RB)
- MyProxy：Glite-3.0.2
- SE (SRM/Dcache/DPM)：Glite-3.0.2
- CE (Torque）：Glite-3.0.2 (LCG-CE)
- MON (R-GMA)：Glite-3.0.2
- BDII：Glite3.0.2
- WNs：Glite-3.0.2
- FTS: Glite-3.0.2
- LFC：LHC File Catalogue
- CA：IHEP CA
- VOMS: for BES VO



Hardware Resources

- Computing Resources
  - 28 CPUs (Xeon 3.2GHz/2GB/73SCSI, IBM Blade Server)
  - 10 CPUs (Xeon 3.0GHz/2GB/80GB Sata,1U Rackmount).
- Storage resources
  - CMS SE (Dcache/srm): 1.2TB(SCSI Raid5)
  - Atlas SE (Dcache/srm): 1.2TB(SCSI Raid5)


WLCG - Tier2


22 6 2006

Infrastructure

- 500 m2 floor space refurbished by spring 2006
  - Power
  - UPS
  - Cooling

Software

- All machines running Scientific Linux CERN 3.0.5
- Quattor based OS installation
- Network File System: NFS/Lustre(testing)
- Grid Middleware: gLite 3.0 based
- Local Resource Manager: Torque
- Monitoring: ganglia
- Currently supported VOs: ATLAS, CMS, BES, GILDA, EUCHINA

Manpower

- Abou
- 6 sta

CC-IHEP

CA and BES VOMS Operation

- IHEPCA is a unique CA recognized by EUGridPMA and APGridPMA, covering HEP and Biomedical.
- Statistics:

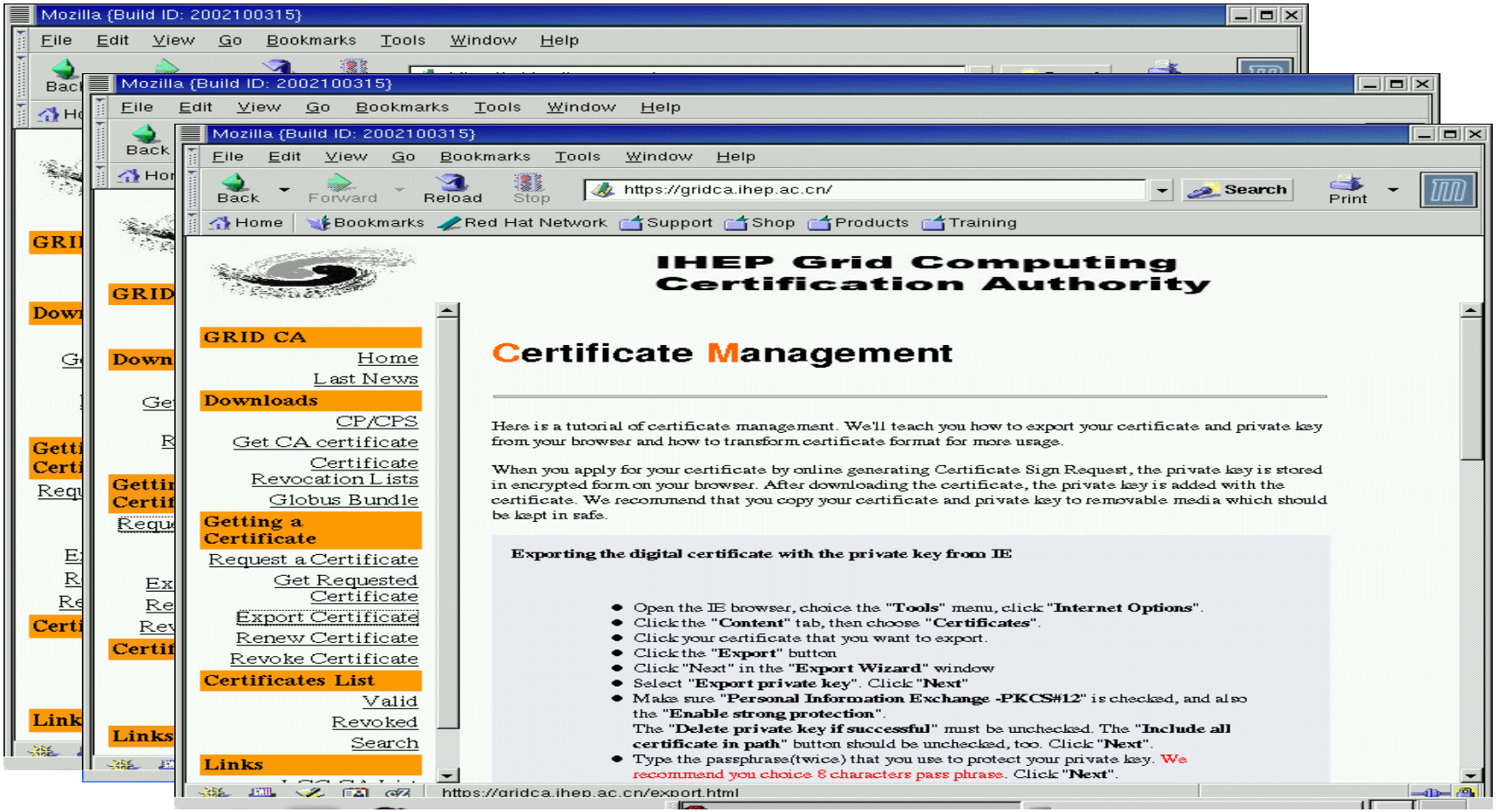
Number of issued certificates:

Types	User	Host	Server	Total
Valid	59	82	2	143
Revoked	33	9	1	43

Subscribers:

Org.	Number
IHEP	35
SDU	6
PKU	5
BUAA	2
CNIC	2
NNU	1
USTC	1
NJU	1
CCNU	1

Web-based CA User Interface



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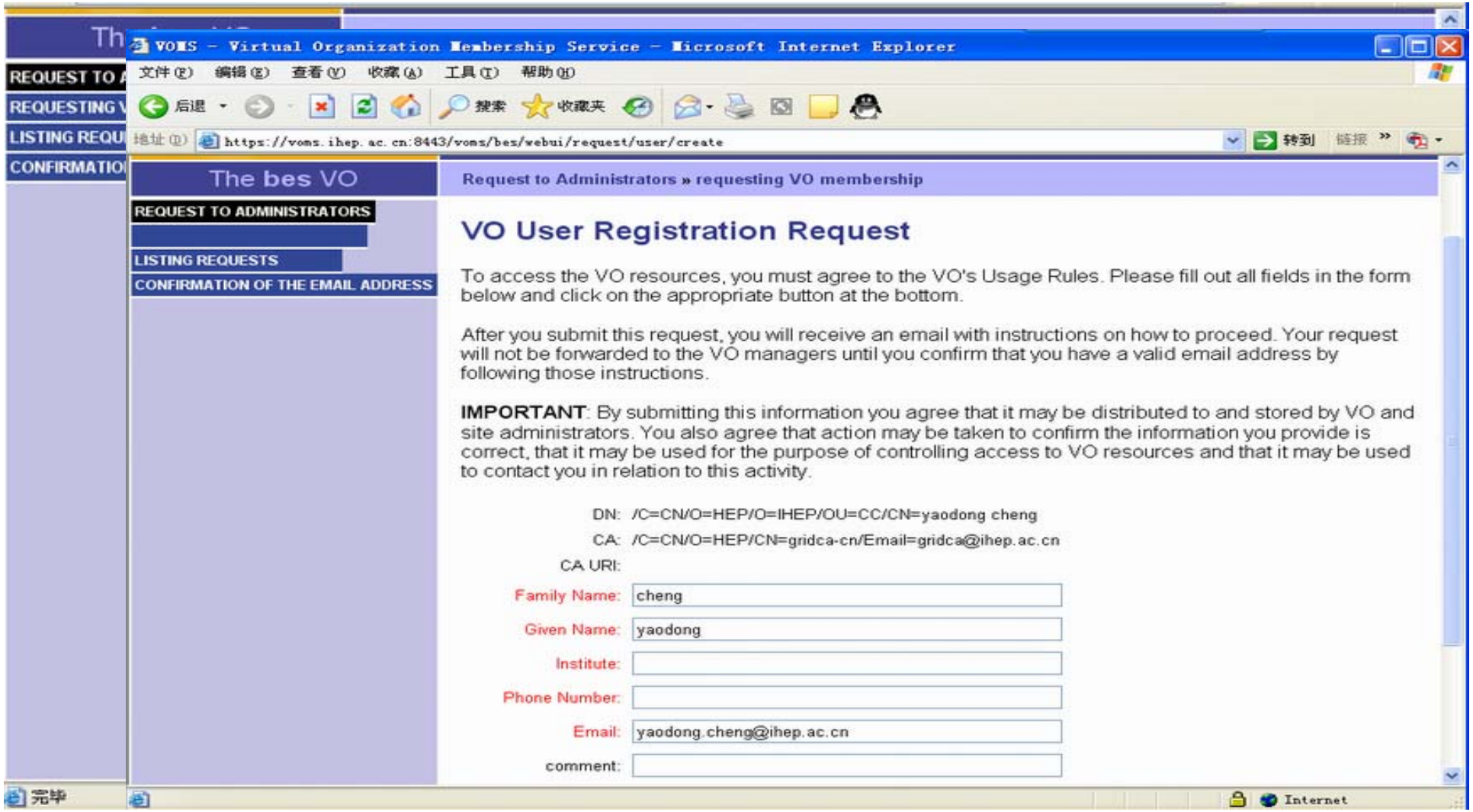
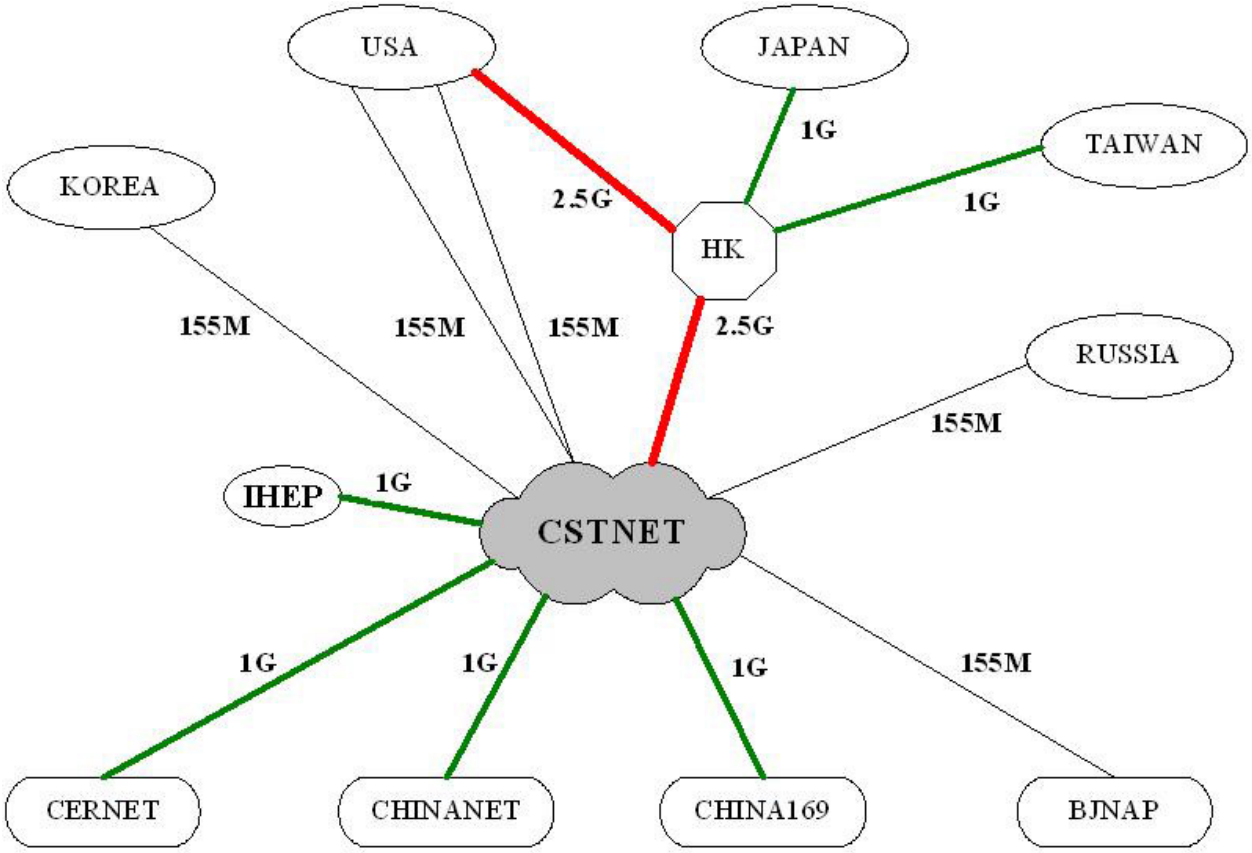
VOMS for BES experiment



Connectivity

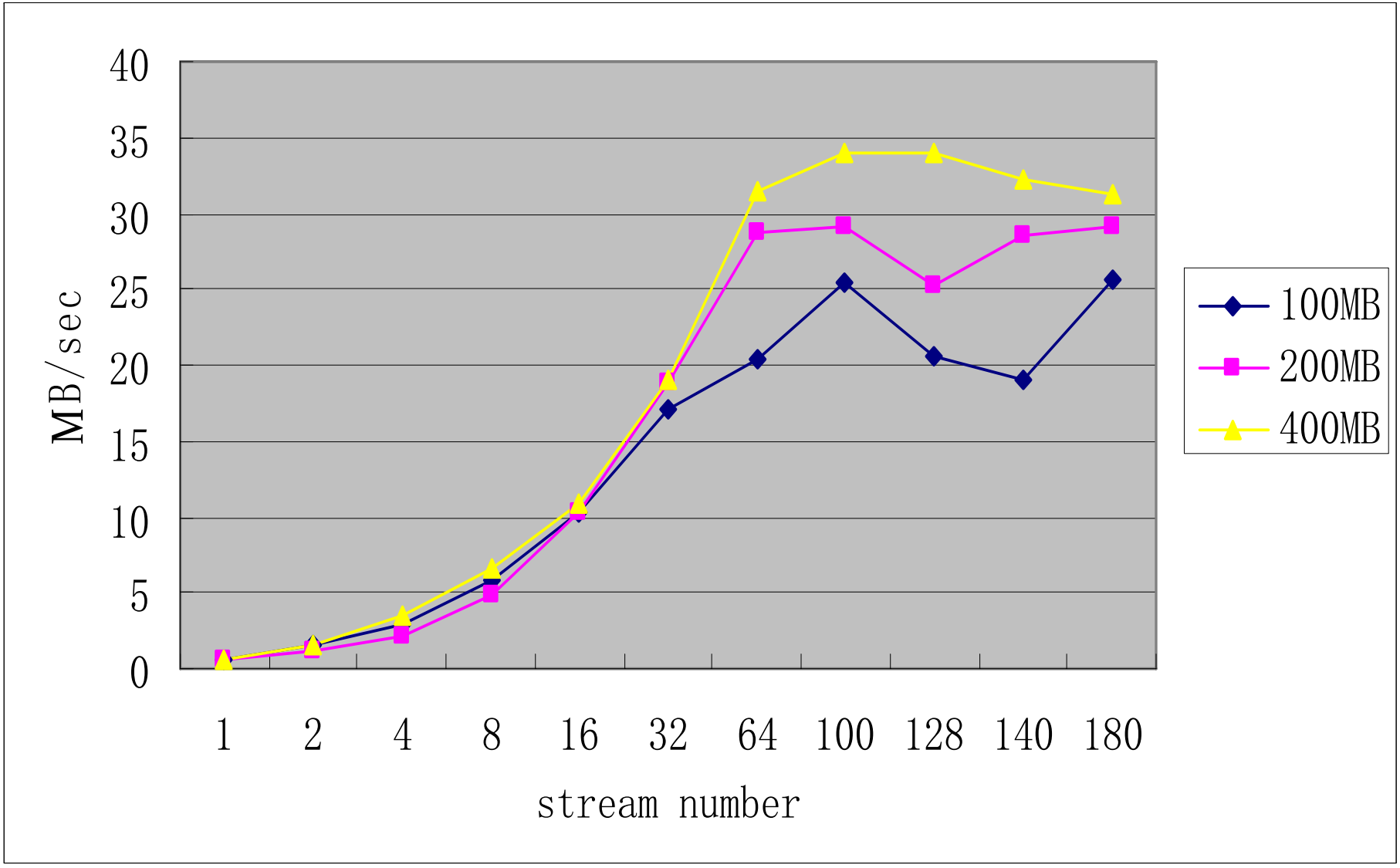
- IHEP has a 1 Gbps connection to CNIC

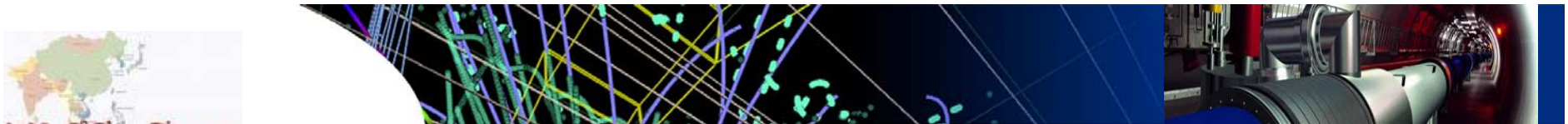


Quick Tests

- Using lcg-cp
- Data transfer from IHEP to Taipei, IN2P3,
- File size: 100, 200, 400MB
- Stream number: from 1 to 180
- Local 1GB link + IDE disk server

To lcg00123.grid.sinica.edu.tw





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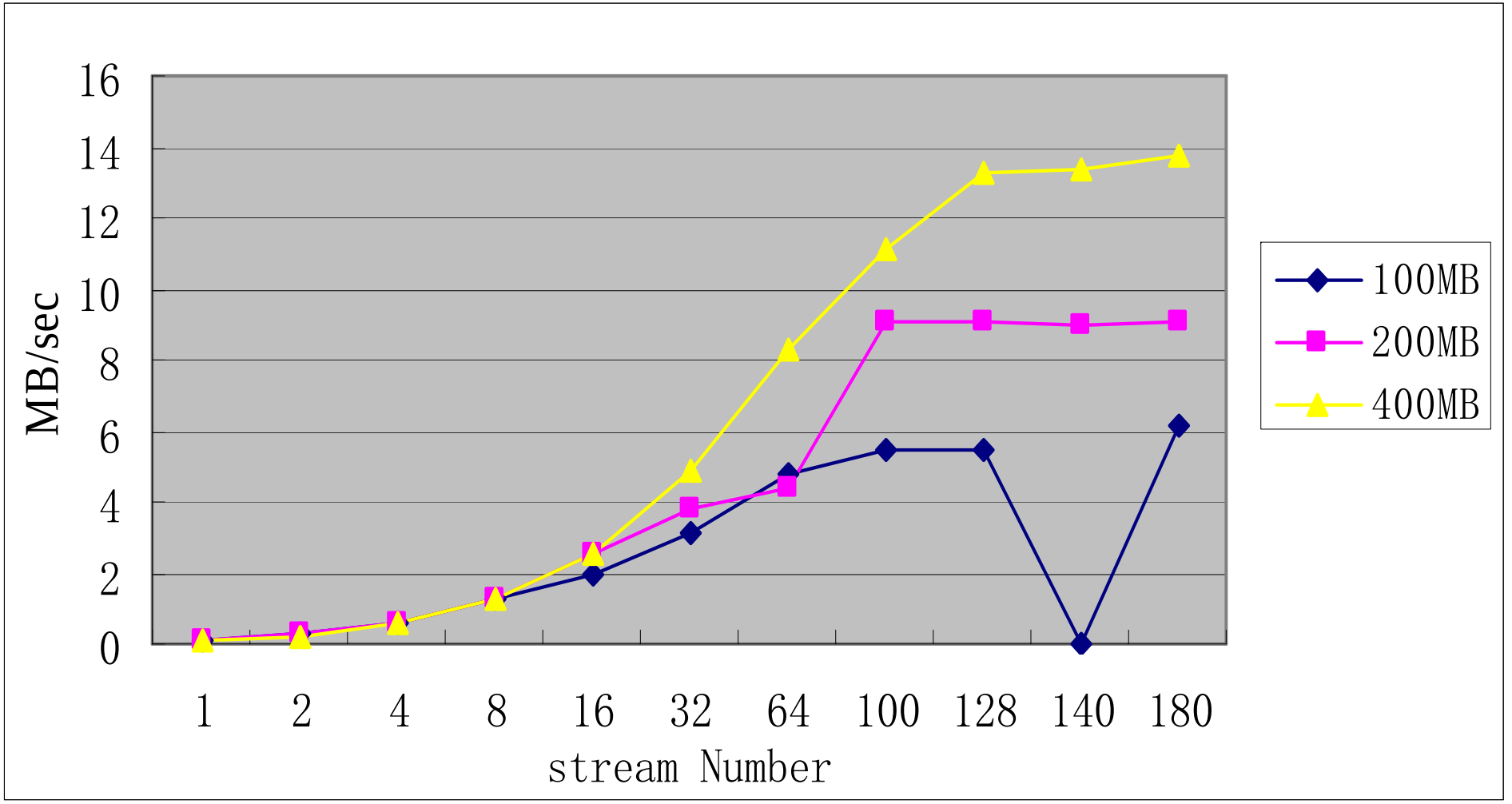
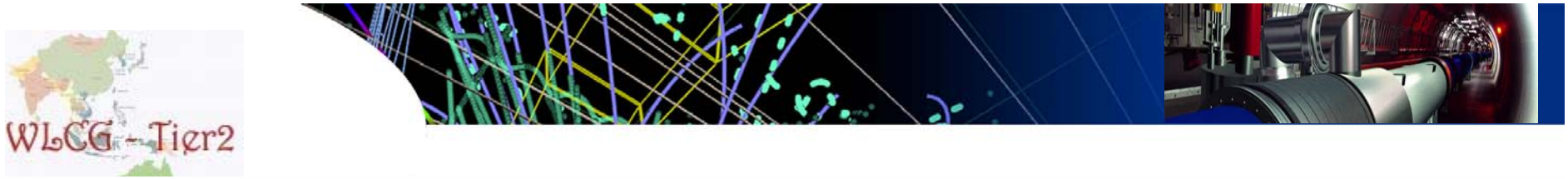


Comments

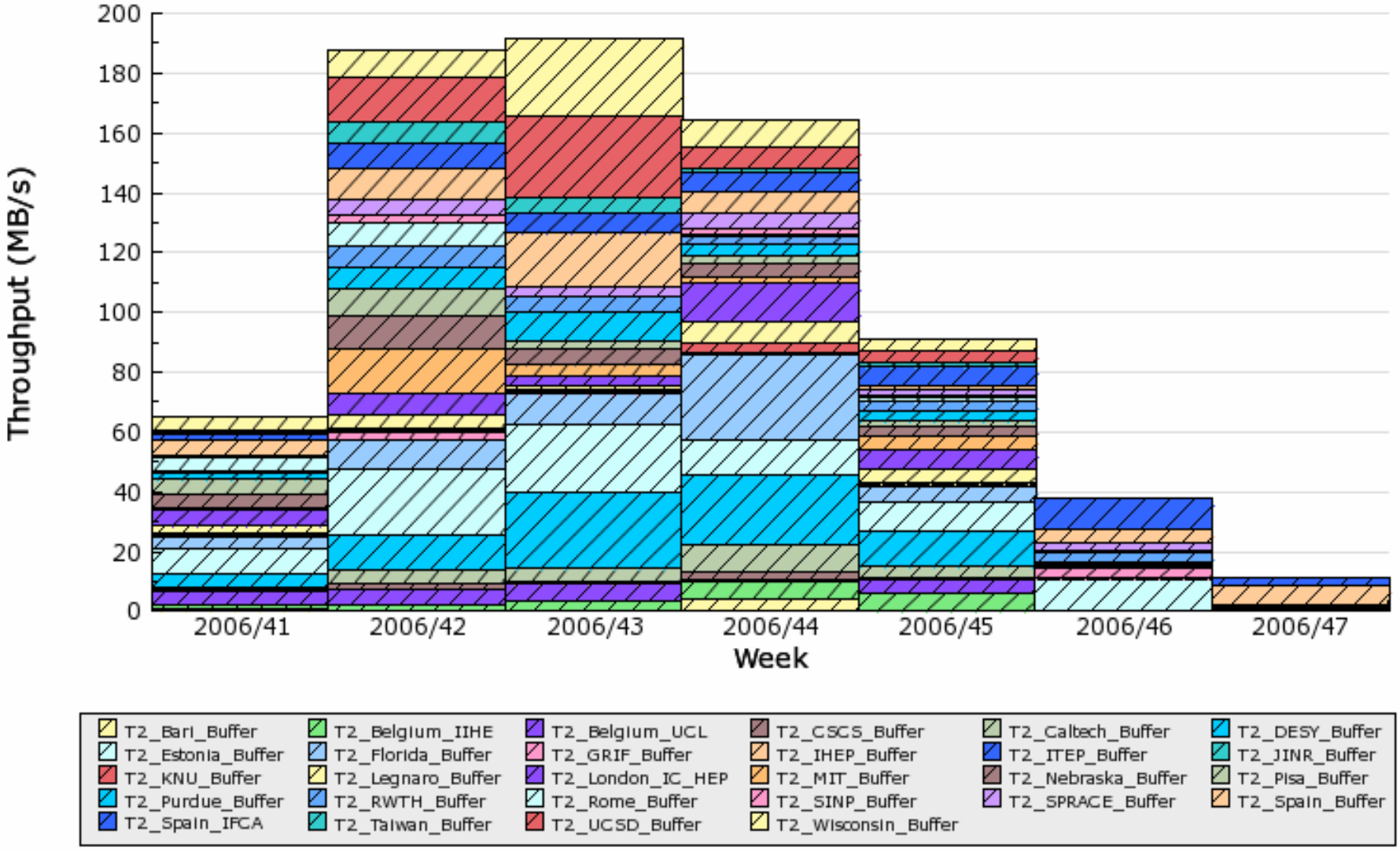
- Performance largely affected by network
- Multi-stream can achieve good performance
  - About 20MB/s to Taipei with 30 streams
- Network to Europe is far from satisfactory
- CNIC is helping us to improve it



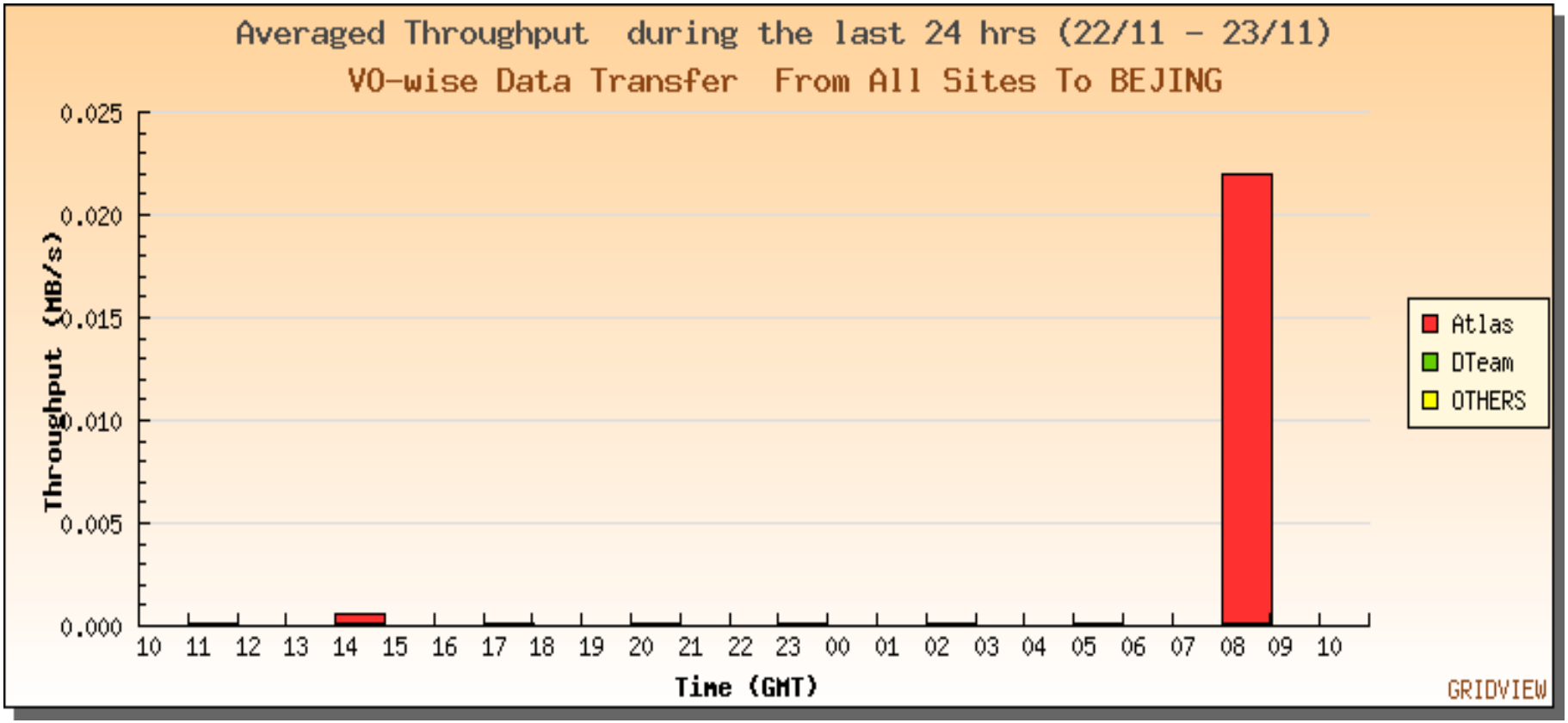
PhEDEx Prod Data Transfers By Destination

6 Weeks from 2006/41 to 2006/47 GMT

Nodes matching regular expression 'T2_.*_(?!MSS)'



Atlas SC4 Result



Other Activities

- We take part in **EUChinaGRID** project
  - **Aims to support the interoperability of the Grid infrastructures in Europe (EGEE) and China (CNGRID) for the benefit of eScience applications**
  - **To foster the creation of a intercontinental eScience community**
    - **Trainning people**
    - **Supporting existing and new applications**
  - **The official start is 1st January 2006, 24 Months duration**
  - **Support ATLAS and CMS@LHC and the Cosmic Ray Experiment ARGO in Yangbajing**
- Attend WISDOM data challenge
  - **scheduled from 01/10/2006 to 15/12/2006**

Current Problems

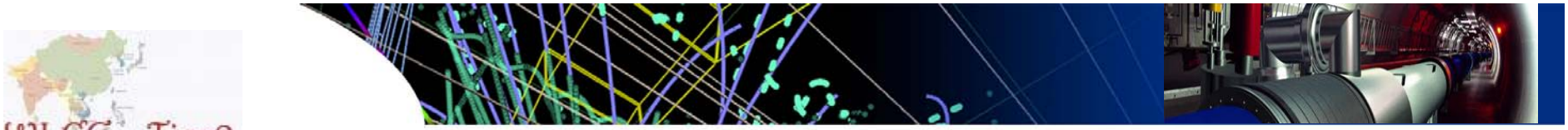
- Network is limited
- Middleware needs more robustness, usability and functionality
- More user tutorial is needed
- Manpower is not sufficient

Beijing Site in the Future

- Beijing site have been extended up to more computing power and storage capacity, will provide more powerful resource support.
- Signed MOU for building two T2 for CMS and Atlas respectively:

Sum of Atlas and CMS resources

2 X Tier2	2006	2007	2008	2009	2010
CPU (kSI2K)	100	500	1000	1400	2000
Disk (TB)	20	50	400	400	600



Thank you!

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