



10 octobre 2012

## **FCPPL MEETINGS**



Transfer rates for real data between IHEP and CC-IN2P3





### **Summary Interventions during 2012**



- Summary interventions during 2012:
  - https://indico.in2p3.fr/materialDisplay.py?materialId=0&confld=7336
  - May 2012: Modification of the bonding algorithm of all transferring machines at CC-IN2P3
  - June 28th: new configuration of perfsonar machines
  - ~ July : 10Gbps card replaced by 1Gbps card on the network interface of perfsonar machines
- All interventions, except first one will affect/improve perfsonar machines. First intervention is the only one that could affect real data transferts
- Presented in these slides, compilation of the transfer throughput to and from IHEP during 2012

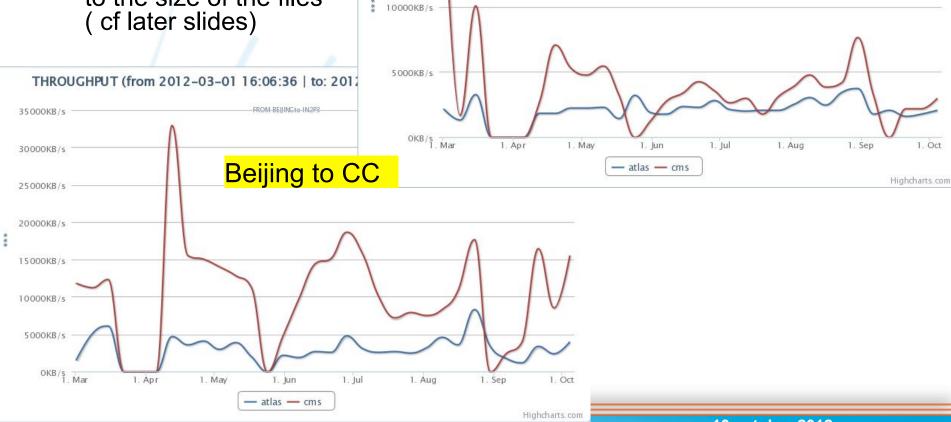


### **FTSMON CC Monitoring**

20000KB/s

15000KB/s

- ATLAS:~ 2 MB/s to Beijing vs 4 MB/s from Beijing
- CMS higher throughput
  - Difference may be due to the size of the files ( cf later slides)



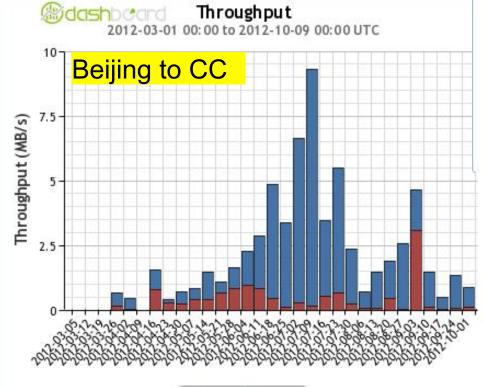
**CC** to Beijing

THROUGHPUT (from 2012-03-01 16:33:21 | to: 2012-10-09 16:33:17 | per week)



### **WLCG Dashboard**

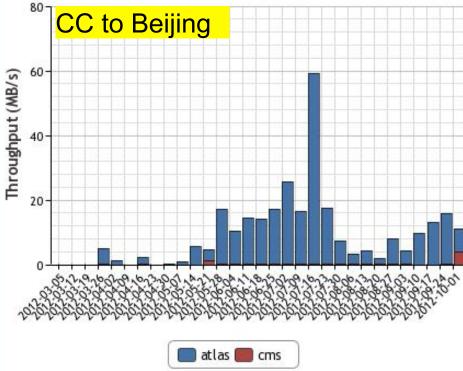
- Select only transfers going through cclcgftsprod instance
- 1 bin per week
- Throughput not compatible with previous graphs. Possible origin:
  - Bug?
  - Throughput calculations?
  - ???? To be investigated



atlas [

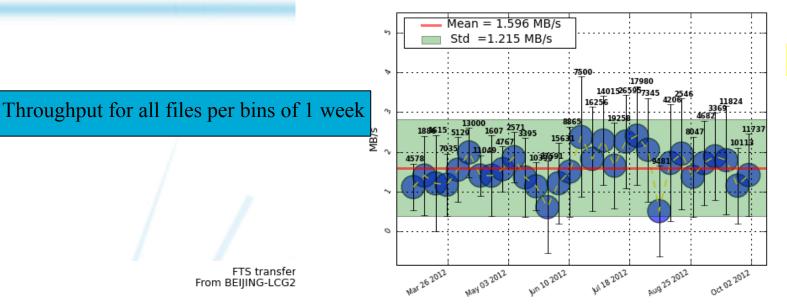
cms





### **ATLAS** dashboard

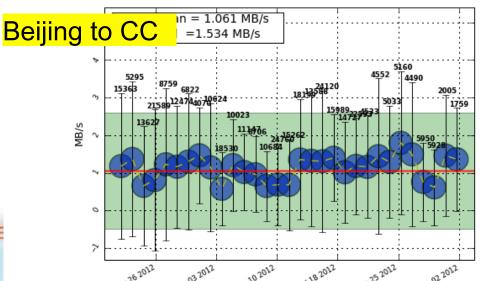
FTS transfer rates From IN2P3-CC to BEIJING-LCG2



> 1000 file transfers

> 1000 file transfers

**CC** to Beijing



# Compatible with FTSMON

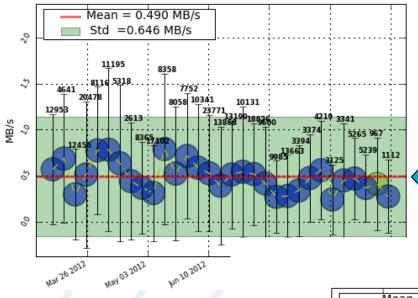
- Order of magnitude, not values
  - Throughput calculation?

### ATLAS: throughput vs size of files: to CC

FTS transfer rates From BEIJING-LCG2 to IN2P3-CC



< 1000 file transfers</p>
> 1000 file transfers

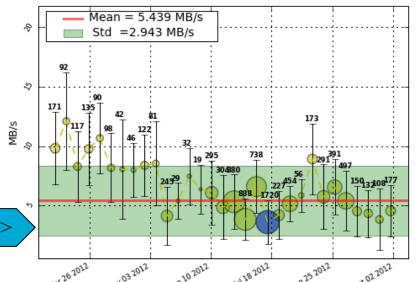


< 1000 file transfers</p>
> 1000 file transfers

**Beijing to CC** 

File sizes < 100MB : throughput <0.5MB/s>

FTS transfer rates From BEIJING-LCG2 to IN2P3-CC



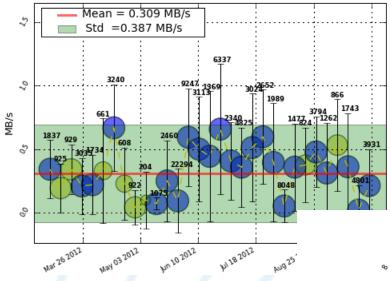
File sizes > 1GB: throughput < 5.4MB/s>

## ATLAS: throughput vs size of files: from CC



< 1000 file transfers</p>
> 1000 file transfers

FTS transfer rates From IN2P3-CC to BEIJING-LCG2

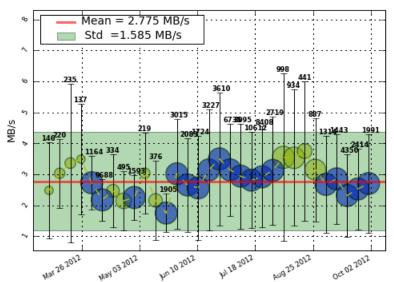


< 1000 file transfers</p>
> 1000 file transfers

**CC** to Beijing

File sizes  $< 100MB : < throughput > \sim 0.3MB/s$ 

FTS transfer rates From IN2P3-CC to BEIJING-LCG2

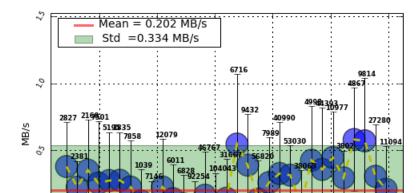


File sizes > 1GB: <throughput  $> \sim 2.8$ MB/s

### Throughput vs size of files: from CC to TOKYO

> 1000 file transfers

FTS transfer rates From IN2P3-CC to TOKYO-LCG2



CCINSPE

< 1000 file</p>
> 1000 file

**CC** to Tokyo

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File sizes  $< 100MB : < throughput > \sim 0.2MB/s$ 

### Change of bonding algorithm?

From IN2P3-CC to TOKYO-LCG2

Mean 9.530 MB/s 32 MB/s

Std 7 32 MB/s

5141 3524 919 6125

2198600 657806 1543 1123 1123 13440 136927

765 772338230 8132816 4537

590 932012 4537 1292012 4527012 4527012 4527012

File sizes > 1GB: <throughput  $> \sim 9.5$ MB/s

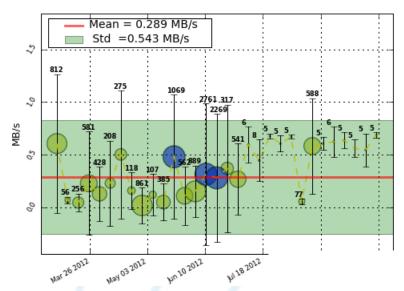
## Throughput vs size of files: to BNL

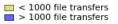
MB/s

FTS transfer rates From BEIJING-LCG2 to BNL-OSG2



< 1000 file transfers</p>

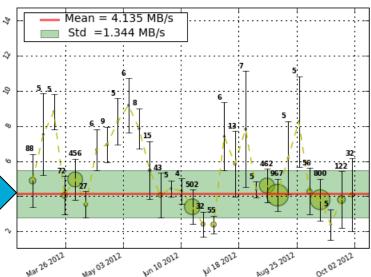




Beijing to BNL

File sizes  $< 100MB : < throughput > \sim 0.3MB/s$ 

FTS transfer rates From BEIJING-LCG2 to BNL-OSG2



File sizes > 1GB: <throughput  $> \sim 4.1$ MB/s

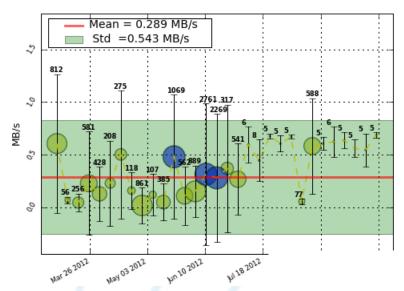
## Throughput vs size of files: to BNL

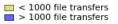
MB/s

FTS transfer rates From BEIJING-LCG2 to BNL-OSG2



< 1000 file transfers</p>

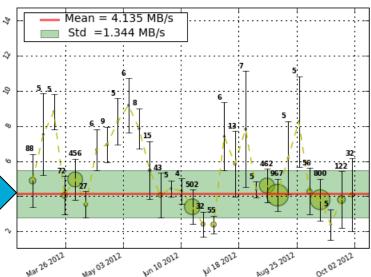




Beijing to BNL

File sizes  $< 100MB : < throughput > \sim 0.3MB/s$ 

FTS transfer rates From BEIJING-LCG2 to BNL-OSG2



File sizes > 1GB: <throughput  $> \sim 4.1$ MB/s



# **Summary**



- No clear change of throughput rate during this year.
- A clear dependency with the size of the file
  - Small files have much smaller rate than large files (factor 10)
    - Is it the time preparation of the transfer which is the same for small and large files that is specially large for transfers between remote sites?
- To investigate: differences between the dashboards.