

# DDM Site Services winter release

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- **New release of Site Services** planned for this week on preproduction
- Running on Functional Tests since mid October with exception of some of the new features
- **Heavy update:** Many new features and bug fixes
  - Some to be tuned and improved after production experience

# Breaking cloud boundaries and improving source selection

- Current Computing Model does not foresee direct  $T2_{\text{cloud1}} \rightarrow T2'_{\text{cloud2}}$  communication

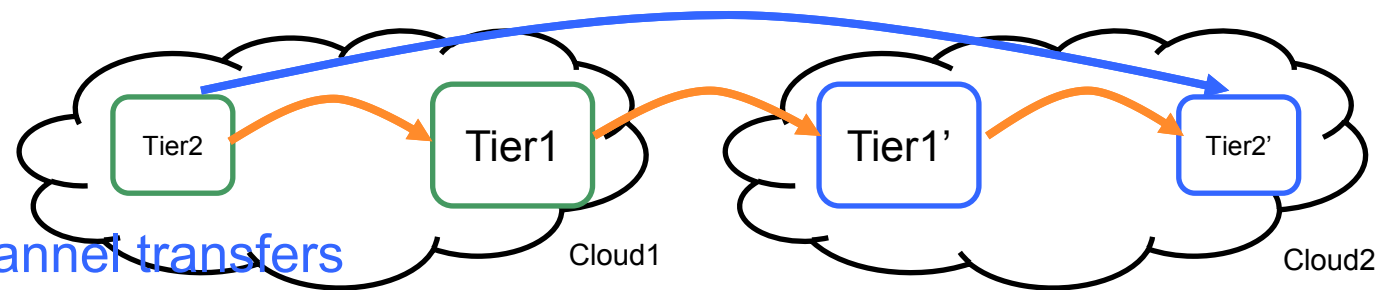
- But we need to break the cloud boundaries!

- User analysis with jobs running in different clouds and collected in one place
- PD2P

- Possibilities:

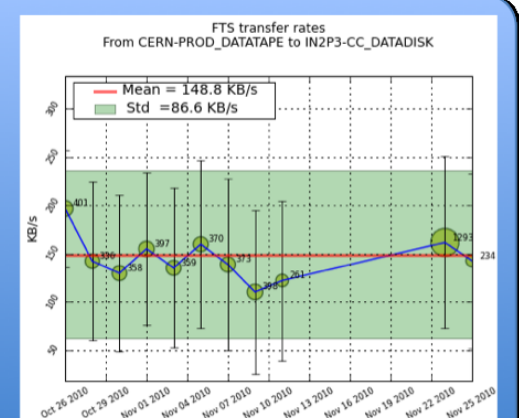
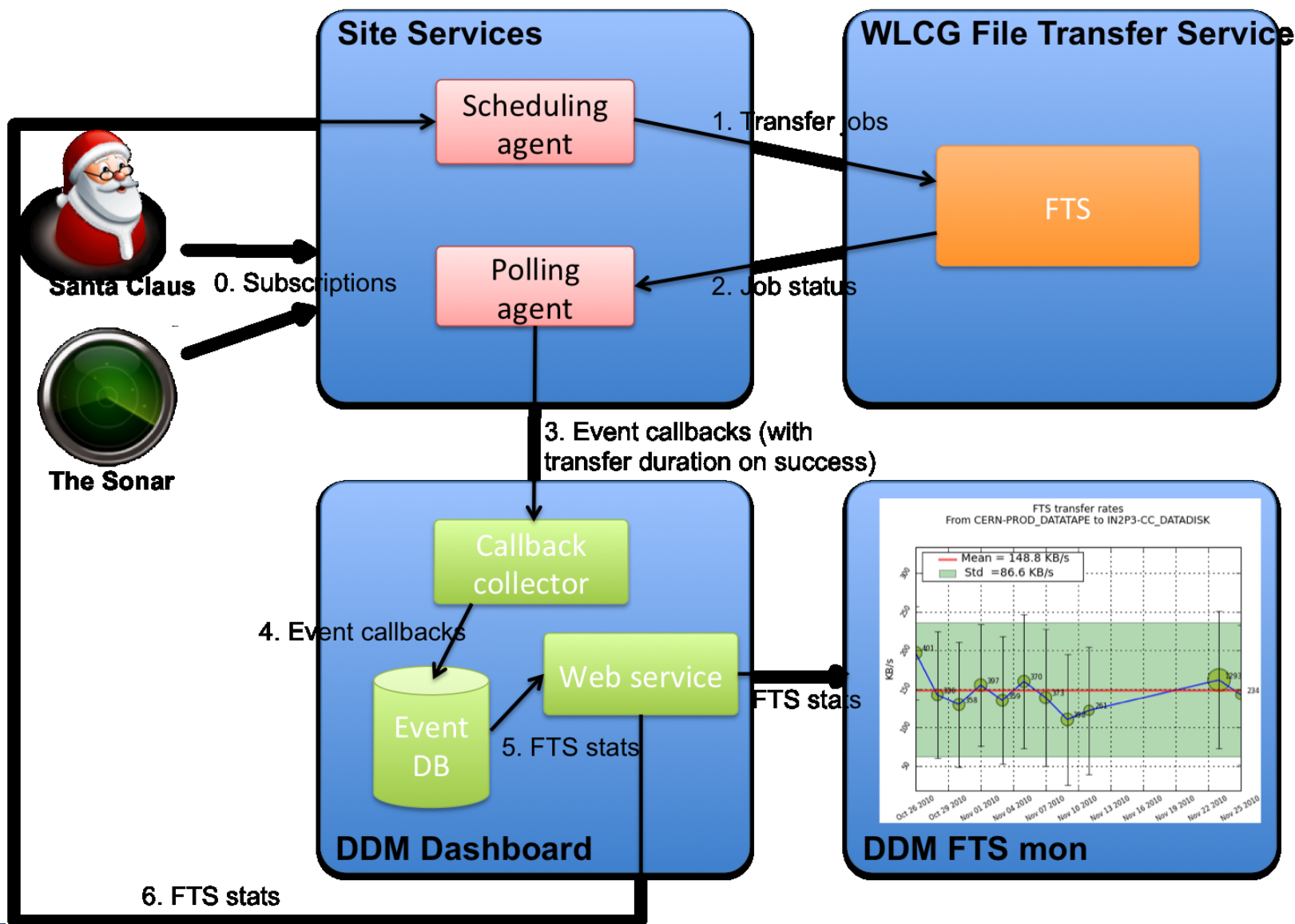
- **FTS STAR-Channel transfers**

- **Multihopping** (not natively supported in FTS, done via DaTRI atm)



## Proposed solution inside Site Services:

- **Automatic path selection:** cost estimation of STAR-channel and multihop transfers based on FTS statistics
- **In case of multihop:** Submission of *child subscriptions* through Tier1 SCRATCHDISKs





Period and output format

Source-destination pairs + - x

Start and stop dates:

11/17/2010 11/24/2010

Timebin: 4

Plot type: Histogram

Go

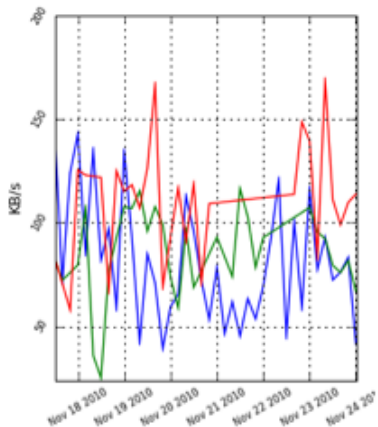
CERN-PROD_DATATAPE	BNL-OSG2_DATADISK
CERN-PROD_DATATAPE	INFN-T1_DATADISK
CERN-PROD_DATATAPE	TRIUM

- TRIUMF-LCG2\_DATADISK
- TRIUMF-LCG2\_DATATAPE
- TRIUMF-LCG2\_HOTDISK
- TRIUMF-
- LCG2\_LOCALGROUPDISK
- TRIUMF-LCG2\_MCDISK
- TRIUMF-LCG2\_MCTAPE
- TRIUMF-LCG2\_PERF-JETS
- TRIUMF-LCG2\_PERF-TAU
- TRIUMF-LCG2\_SCRATCHDISK

- Django, Matplotlib, jquery
- Putting final touches to first version <http://bourricot.cern.ch/dq2/ftsmon/>

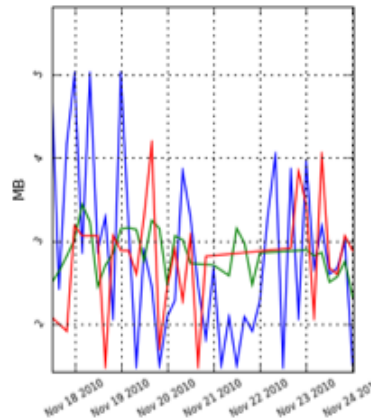
Small files (0 to 100 MB)

FTS transfer rates

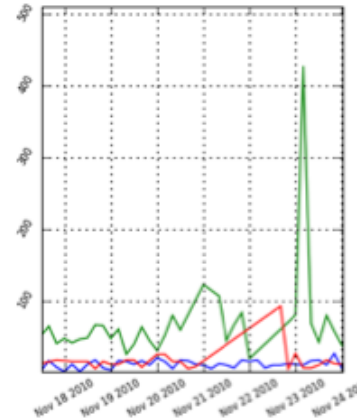


Total number of small file transfers: 3094

File sizes



#files transferred



— CERN-PROD\_DATATAPE - TRIUMF-LCG2\_DATADISK (452 files)  
 — CERN-PROD\_DATATAPE - BNL-OSG2\_DATADISK (2190 files)  
 — CERN-PROD\_DATATAPE - INFN-T1\_DATADISK (452 files)

\* Always DATADISK spacetoken

Source*	Destination*	Small files (0-100MB) avg(std)	Medium files (0.1-1GB) avg(std)
UTA_SWT2	IN2P3-LAPP	0.9MB/s (38KB/s) 5 file transfers	5.4MB/s (0.9MB/s) 5 files transfers
UTA_SWT2	BNL-OSG2	0.8MB/s (41KB/s) 5 file transfers	3.7MB/s (0.4MB/s) 5 file transfers
BNL-OSG2	IN2P3-CC	0.1MB/s (81KB/s) 1656 file transfers	7.8MB/s (0.7MB/s) 22 file transfers
IN2P3-CC	IN2P3-LAPP	0.7MB/s (473KB/s) 320 file transfers	1.2MB/s (14KB/s) 157 file transfers

**Multihopping** does not seem to make sense for small and medium files unless **STAR channels** collapse

Transfer times of small files are completely dominated by SRM interactions

# Other improvements



- **Priority of activities** can now be configured
  - Files will be partitioned into FTS jobs with equal priority
- ➔ Priority lanes for **express file replication** (e.g. for DBRelease replication)

- **Before:** Site exclusion prevented new subscriptions to be processed, but **subscriptions already in the queue** of the system were generating FTS/staging jobs that were **condemned to fail**.
- **Now:** In addition site exclusion will **avoid generating new FTS/staging** jobs with queued files.  
2 cases:
  - Destination gets blacklisted: We can only wait
  - Source gets blacklisted: Look for different sources to get the subscriptions moving.

1. Changed the polling methods: **gfal\_ls** (aka SRM\_ls) replaced by **gfal\_prestagestatus**
  - Polling **requests** instead of **single files**
  - An aborted request by the server is noticed **immediately**.  
Before we would wait for several hours until timeout
2. Fixed “mystical” bug that was preventing the correct filling of the internal SS staging queues (symptom: **staging at sites being stuck**)

- **Automatic restarting after reboot**
  - **Not new** - had to be understood after SLC5 migration
  - Init.d script improved
  - **Rebooting campaigns should not be an issue anymore**
- **On demand file callbacks:**
  - Analysis tools can know immediately successfully copied/staged files and are able to start releasing jobs

**And many other smaller fixes and features...**

# Work in progress: ActiveMQ integration

- **ActiveMQ integration** for messaging
- Site Services send many different callbacks to dashboard and analysis tools. Examples:
  - Dataset content
  - File events (Transferring, copied, registered, failed...)
  - Subscription events (Queued, complete, canceled, broken...)
- Message queues will allow to **send once** and listen by **everyone** interested
- Testing environment set up
- Martin will take care of the development

(See Donal's talk for some more information on ActiveMQ)

- Simone Campana
- Stephane Jezequel
- Vincent Garonne
- Andrii Thykonov
- David Tuckett
- I.Ueda