

FAX splinter session

Rob Gardner
Computation and Enrico Fermi Institutes
University of Chicago

ATLAS Tier 1 / Tier 2 / Tier 3 Jamboree
December 10-11, 2012



- Informal discussions
- Main focus: planning for dress rehearsal activities
- Plans post-rehearsal



- Steps towards usability:
 - Define an FDR sufficient to cover most anticipated user workloads, including user docs
 - Define a rehearsal period: ~ week and metrics (and needed monitoring)
 - Poll for site volunteers and an ad-hoc FAX OPS team
 - Execute the FDR; gather monitoring statistics and accounting data
- Propose spend December preparing
 - Identifying five exemplar use cases that can be run by FAX OPS team
 - Preparing a clean set of tutorial-like documents
 - Preplace example datasets
 - Load test redirectors and sites against with examples
 - Solve the main problem of federated access to datasets
- Week of January 21 going live with early adopting users



Organizing the rehearsal



- Identifying the capabilities to be probed and assessed, with associated metrics
- Preparing specific test cases
 - Synthetic tests that can be run by “us” from the facilities side
 - Tutorial tests
 - Specific test jobs & datasets, highly supported
 - Early adopting users
 - Load tests
- Coordinating operations with ADC
- Metrics collection, post-mortem analysis and reporting





- Start with validation of basic functionality
 - Define set of blessed sites that pass basic status tests
 - Direct xrdcp of site-specific test files
 - Copy from parent redirector
 - Failover checks:
 - Redirection for files off-site within the cloud
 - Redirection for files off-site outside the cloud



- Simple read tests
 - Simple script which reads test file used for WAN testing
 - Cloud contacts self-verify that all sites are “readable”
- Extend for FAX tutorial datasets





- FAX-specific tutorials
 - Identify a few common analysis prototypes
 - prun + ANALY queues
 - Off-grid
 - Preplace datasets widely, replicate on stable sites
 - Document instructions for test users
 - Test instructions
 - Validate sites versus tutorial
 - Usage of tools (isDSinFAX.py)



- Analysis within a site (just using the FAX door)
- Analysis within a cloud or region
- Extreme wide area runs
- Access from opportunistic resources
- Access types
 - Remote direct access
 - Stage-in to local disk
- Frameworks – work to do
 - Specialized HC templates
 - WAN cost matrix framework



(Controlled) Load testing



- Define specific tests
 - Leverage HC tests where possible
- Simple test targeted
 - Choose one or more reference client sites
 - Choose participating server sites
 - 10, 100, 500, 1000 remote clients reading random files from a dataset
 - Collect read times, efficiency
 - Capture of monitoring plots
 - From site monitors for IO and load



- Simulate a coordinated, simultaneous activity across multiple sites
 - # users
 - # sites
 - # jobs
 - # sites
- Measure
 - Job efficiency
 - Throughput
 - Plots of distribution of FAX bandwidth





- Choose validated sites
- Dedicated tests
 - “Offline” datasets
- Metrics
 - Measure processing times after before
 - Measure processing times using remote data
 - Instrumentation needed in FAX local site mover



Site validation, to be updated



Site certification for federation

Notation: completed work is in progress to do problem

Site	Cloud	SE type-(door)	Regional RD	Federated	X509	GlobalIN2N	FAX status mon	UDP Collector	Redir Cloud	Redir Goba1	Fallover	Analy Test
BNL	US	dcache	gird.usatlas.org									
AGLT2	US	dcache-xrootd	xrd-central to gird.usatlas.org									
MWT2.org	US	dcache-xrootd	xrd-central to gird.usatlas.org									
MWT2_UC,IU	US	xrootd	xrd-central to gird.usatlas.org									
NET2	US	GPFS	gird.usatlas.org									
SWT2 (UTA)	US	xrootd	gird.usatlas.org									
SWT2 (OU)	US	Lustre	xrd-central to gird.usatlas.org									
SLAC	US	xrootd	gird.usatlas.org									
Wuppertal	DE	dcache-xrootd	atlas-xrd-de.cern.ch									
LRZ-LMU	DE	dcache-xrootd via xrootd proxy	atlas-xrd-de.cern.ch									
Edinburgh	UK	DPM	atlas-xrd-uk.cern.ch									
Glasgow	UK	DPM	atlas-xrd-uk.cern.ch									
Oxford	UK	DPM	atlas-xrd-uk.cern.ch									
QMUL	UK	Storm/Lustre	atlas-xrd-uk.cern.ch									
EOS	EU	EOS	atlas-xrd-eu.cern.ch									
Dubna	RU		atlas-xrd-ru.cern.ch									

ATLAS



- Crowded room, most cloud representatives in attendance, ADC, Xrootd, EOS, ...
 - Good, lively discussions
 - All on-board for the dress rehearsal
 - Much discussion about desired capabilities, post rehearsal, and specific metrics (MB/s/user; event rates; comparing local versus remote costs)
 - Key is figuring out what is doable in this very short timescale → choices + effort
- List of concrete action items with responsible(s) being prepared
- Time is very tight – only two meetings before January 21

