Computation Institute

# 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

# Agenda

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

# FAX 'Dress 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 real 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

# Use cases (1)

- 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-side outside the cloud

# Use cases (2)

- 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

# Use cases (3)

- 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)

# FAX usage modes

- Analysis within a site (just using the FAX door)
- Analysis within a cloud or region
- Extreme wide area runs
- Access from opportunistic resources

# (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

# Coordinated Load testing

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

# Pilot FAX site mover testing

- Choose validated sites
- Dedicated tests
  - “Offline” datasets
- Metrics
  - Measure processing times after before
  - Measure processing times using remote data

# Site validation

## Site certification for federation

**Notation:** completed | work is in progress | to do | problem

| Site | Cloud | SE type-(door) | Regional RD | Federated | X509 | GlobalN2N | FAX status mon | UDP Collector | Redir Cloud | Redir Gobal | Fallover | Analy Test |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BNL | US | dcache | glrd.usatlas.org | | | | | | | | | |
| AGLT2 | US | dcache-xrootd | xrd-central to glrd.usatlas.org | | | | | | | | | |
| MWT2.org | US | dcache-xrootd | xrd-central to glrd.usatlas.org | | | | | | | | | |
| MWT2_UC,IU | US | xrootd | xrd-central to glrd.usatlas.org | | | | | | | | | |
| NET2 | US | GPFS | glrd.usatlas.org | | | | | | | | | |
| SWT2 (UTA) | US | xrootd | glrd.usatlas.org | | | | | | | | | |
| SWT2 (OU) | US | Lustre | xrd-central to glrd.usatlas.org | | | | | | | | | |
| SLAC | US | xrootd | glrd.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 | | | | | | | | | |