EGI CernVM-FS Infrastructure

Status - Plans - Opportunities

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Outline

- EGI CernVM-FS Task Force
- EGI CernVM-FS infrastructure
- EGI CernVM-FS status, developments
- Software installation mechanism at RAL
EGI CernVM-FS Task Force

- Active since August 2013
- Target - to establish a CernVM-FS infrastructure for EGI VOs use
- Members - reps from NGIs and other collaborations, VO SGMs, system admins at sites
EGI CernVM-FS Infrastructure - Present
EGI + OSG CernVM-FS Infrastructure - Present
EGI CernVM-FS Infrastructure

• Following CernVM-FS WG meeting (March 2014) it was agreed that ‘egi.eu’ would be the new CernVM-FS domain for new requests
• Existing ‘gridpp.ac.uk’ repositories duplicated as ‘egi.eu’
• Domain ‘gridpp.ac.uk’ to be retired
EGI CernVM-FS Infrastructure

- 19 current repositories (only 5 at kick-off) hosted and published at RAL - ~500 GB
- **RAL infrastructure**
  - Stratum-0 - VM, 20GB RAM, 1.2TB HDD
  - CVMFS uploader - VM, 8GB RAM, 1TB HDD
  - Stratum-1 - HA 2-node cluster, metal boxes, 32GB, 12TB
    - cvmfs-egi
    - it replicates ‘egi.eu’, ‘opensciencegrid.org’, ‘desy.de’, ‘nikhef.nl’
EGI CernVM-FS Infrastructure

- Also squid machines at RAL are shared for Frontier and LHC/non-LHC CernVM-FS access
- Stratum-0 at DESY and NIKHEF (not as egi.eu)
  - 25 repos replicated at RAL (non-LHC, non-OSG)
- Other Stratum-1 replicas for egi.eu at NIKHEF, ASGC, TRIUMF
EGI CernVM-FS - Status and Developments

- Supporting sites asked to configure ‘egi.eu’ (along with ‘gridpp.ac.uk’) CernVM-FS domains
  - GGUS campaigns
    - i.e. IBEGRID sites for ‘vo.phys.ibergrid.eu’
- Big help with cvmfs-keys v1.5 and cvmfs v2.1.20
  - ‘egi.eu’ configured by default
- ‘gridpp.ac.uk’ to be phased out outside UK soon
  - will remain in use for few geographically UK VOs only
EGI CernVM-FS - Status and Developments

- Still work to do with sites and VOs
  - but very good progress with ‘biomed’
    - 94 out of 156 CEs advertised the VO-biomed-CVMFS tag in Apr’15
    - also ‘auger’, ‘glast.org’, ‘km3net.org’
- At sites still supporting both ‘gridpp.ac.uk’ and ‘egi.eu’
  - campaign to change VO_<voname>_SW_DIR to /cvmfs/<repo>.egi.eu (from /cvmfs/<repo>.gridpp.ac.uk)
EGI CernVM-FS - Status and Developments

- EGI Operations
  - VO ID cards requirements
    - VO_<vo_name>_SW_DIR = /cvmfs/<repo_name>.egi.eu
    - VO-<vo_name>_CVMFS software tag
  - DIRAC client software - CernVM-FS repository
    - /cvmfs/dirac.egi.eu
EGI CernVM-FS - Deployment Issues

- Virtual Organizations
  - are lacking manpower to progress more
  - technology and its advantages are understood, just lack of time to progress
  - sometimes VOs wait too long for sites to help them with initial tests before rolling out more widely
EGI CernVM-FS - Opportunities

- Contacts established and exploratory discussions on going to server multi-VO projects
- DIRAC project
- EGI FedCloud
  - VM images could provisioned via CernVM-FS
  - Stratum-0@RAL, additional Stratum-1 where needed
  - Could make full use of the CVMFS uploader at RAL
Software Installation Mechanism at RAL

- Initially local installation jobs
  - run by VO SGM accounts
  - upload SW into NFS area
  - rsync’ed into Stratum-0 then signed and published

- Replaced by web interface access
  - used by SGMs to upload, unpack tarballs into CVMFS uploader machine
  - based on DNs
Software Installation Mechanism at RAL

- Recently GSI interface added and configured on CVMFS uploader
  - faster and easier
  - allows a programmatic way to transfer and process the tarballs
  - initially based only on DN access, then VOMS Roles access also enabled - January 2015
  - software available at WN level after max 3 hours
Software Installation Mechanism at RAL

CVMFS Uploader

/home/augersgm
/home/biomedsgm
/home/t2ksgm

Stratum-0

replication

Stratum-1@RAL
Stratum-1@NIKHEF
Stratum-1@ASGC
Stratum-1@TRIUMF

GSI Interface

GSIssh/scp
DN credentials
VOMS Role credentials

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Thank you!