Taking the C out of CVMFS
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Background

The Cern Virtual Machine File System.
- Caching
- Deduplication
- Secure (shared key for repository access)
- Uses open standards (http, squid-cache)
- Required by WLCG VOs (so, “guaranteed” support base)

Host Configuration

Due to space and equipment constraints, the CVMFS server is hosted on a virtual machine. Load was actually very low, thanks to caching on squid.

- yum install cvmfs-server
- cvmfs_server mkfs local.gla.scotgrid.ac.uk
  (unpack into /cvmfs/local.gla.scotgrid.ac.uk)
- cvmfs_server publish

Restrictions

- CVMFS 2.x requires the currently unsupported redirfs kernel module on the server
  (Next big release of CVMFS server will move to aufs, which is an actively developed project)

Test Case 1: vo.optics.ac.uk

- "Virtual" VO : no actual guaranteed VO specific support
- Encapsulates users of proprietary Optics software: “Lumerical”

Caveats: Distribution of license files.

Test Case 2: neiss.org.uk

NEISS.ORG.UK
- < 1 FTE support effort for whole VO
- Want to expand across UK...
- Currently ship all software with jobs as can’t rely on site configuration
- Software is relatively static (occasional release updates)

CVMS client configuration

- /etc/cvmfs/default.local
  #CVMFS_USER=cvmfs
  #CVMFS_NFILES=32768
  #CVMFS_DEBUGLOG=/tmp/cvmfs.log
  CVMFS_REPOSITORIES=atlas.cern.ch,atlas-condb.cern.ch,lhec.cern.ch,cmccern.ch,geant4.cern.ch,xfit.cern.ch,local.gla.scotgrid.ac.uk
  CVMFS_CACHE_BASE=/tmp/cache/cvmfs/2
  CVMFS_QUOTA_LIMIT=10000
  CVMFS_HTTP_PROXY="http://nat005.gla.scotgrid.ac.uk:3128"

- /etc/cvmfs/domain.d/local.gla.scotgrid.ac.uk.conf
  CVMFS_SERVER_URL=${CERNVM_SERVER_URL}="http://vm004.gla.scotgrid.ac.uk/cvmfs/local.gla.scotgrid.ac.uk/
  CVMFS_PUBLIC_KEY=/etc/cvmfs/keys/local.gla.scotgrid.ac.uk.pub

  ls -l /etc/cvmfs/keys/
  total 40
  -r--r--r-- 1 root root 451 Feb 13 08:35 cern-itl.cern.ch.pub
  -r--r--r-- 1 root root 451 Feb 13 08:35 cern-it2.cern.ch.pub
  -r--r--r-- 1 root root 451 Feb 13 08:35 cern.ch.pub
  -rw------- 1 root root 451 Apr 27 12:25 local.gla.scotgrid.ac.uk.pub

Summary

CVMS was shown to be an easy to configure solution for small scale VO software management. Load on the VM host was low and easily handled.

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