

HEPiX report



Helge Meinhard, Ian Neilson,
Peter Kelemen / CERN-IT
Computing Seminar / After-C5
04 May 2007

Outline

- Meeting organisation, site reports, solutions and architecture (Helge Meinhard)
- Storage and file systems, benchmarking (Peter Kelemen)
- System administration, Scientific Linux (Ian Neilson)

HEPiX

- Global organisation of service managers and support staff providing computing facilities for HEP
- Covering all platforms of interest (Unix/Linux, Windows, Grid, ...)
- Aim: Present recent work and future plans, share experience, provide technical advice to IHEPCCC
- Meetings ~ 2 / y (spring in Europe, autumn in North America)

HEPiX Spring 2007 (1)

- Held 23 – 27 April 2007 at Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany
 - DESY is a lab moving from pure HEP to accelerator centre
 - HERA; photon sources; Atlas, CMS; Tier 2 and German analysis centre for LHC
 - Well organised – local organisation by Knut Woller and helpers (> 10)
- Format: a bit ambiguous
 - Intention (expressed in Rome) was to organise the same way as in Rome: Pre-organised topics with track conveners, invited speakers, still room for spontaneous talks
 - Only day organised this way: Wed (Storage and file systems)
 - Mon: site reports; Tue: solutions and architectures; Wed: storage and file systems; Thu: system administration, Scientific Linux; Fri: Benchmarking. BOF sessions on Tue pm

HEPiX Spring 2007 (2)

- More than 100 participants, of which 8 from CERN-IT
 - Horvath, Iven, Kelemen, Meinhard, Neilson, Panzer, Poncet, Traylen
 - Other sites: (Don't have a complete list – list of participants not published yet because of data privacy)
 - Compare with Jefferson Lab (autumn 2006, 52 participants, of which 6 from CERN-IT) and Rome (spring 2006, 149 participants, of which 21 from CERN-IT)
- 56 talks, of which 9 from CERN-IT
 - Compare with JLAB: 48 talks, of which 7 from CERN-IT
 - Compare with Rome: 84 talks, of which 21 from CERN-IT
- Full details incl. slides, video streams and photos (no trip report by Alan Silverman this time):
<http://hepixon2007.desy.de/>

Next meetings

- 05 – 09 November 2007: Genome Sequencing Center, Washington University, St Louis, Missouri, USA
 - Supercomputing: 10 – 16 November Reno
- Spring 2008: CERN
- Further application: GSI

Site Report Highlights (1)

- Cooling, power, space
 - Mentioned by almost everyone
 - Some sites refurbish existing rooms and equip them with water-cooled racks
 - SLAC: Container (Sun Black Box)
- CPU procurements
 - Intel (Woodcrest 2.66 or 3 GHz) steeply on the rise as compared with Opterons
 - Mostly 1U systems, ever more blades (mentioned most of the time: HP C-class)
 - SLAC expecting massive investment for LCLS (40k cores)
- Tape storage
 - Robotics: Sun SL8500
 - Drives: Mixture of LTO-3, LTO-4, T10000

Site Report Highlights (2)

- Disk storage
 - Some sites heavily using NFS
 - Panasas on its way out (of HEP) at BNL and JLAB, still in use at DESY. Possible replacement: BlueArc NAS
 - Reports about declining quality of support
 - BNL are using disks spread over worker nodes
 - Many sites are using 'Storage in a box' servers for bulk storage
 - Sun Fire X4500 (Thumper – 48 x 500 GB in 4U chassis) very popular
 - LAL (3), IN2P3 (> 40), DESY, SLAC, CERN
 - Mostly ZFS under Solaris
- Lustre and GPFS mentioned a number of times
- HSM: not much change (Castor, dCache, HPSS)

Site Report Highlights (3)

- Configuration
 - Quattor: GRIF/LAL, LAPP, CNAF, DESY
 - Cfengine: PSI, DESY
- Monitoring
 - Many sites mentioned Nagios (for exceptions), Ganglia (for performance), Cacti (network monitoring)
 - Lemon not as successful as Quattor
- Scientific Linux is ubiquitous
 - Big success for HEP (and for HEPiX!)
 - PSI first one to mention migrating to SL5

Site Report Highlights (4)

- Virtualisation is a hot topic
 - XEN, VMware, Solaris 'zones'
- Kerberos
 - No one mentioned K4
 - K5: MIT preferred over Heimdal
- Indico: LAL, DESY (e.g. this HEPiX meeting!)
- Miscellaneous tools
 - Request Tracker: BNL and DESY rolling it out for the lab
- Very little about Windows
 - Really nothing to discuss? Vista? Office 2007? Longhorn?