IPv6 workshop summary

Alastair Dewhurst
David Kelsey
Andrea Sciabà

Grid Deployment Board meeting
14th May 2014

Outline

- Status and plans for the experiments
- Highlights from the HEPIX IPv6 F2F meeting in April and the IPv6 Vidyo meeting last week

Status and plans for ATLAS

- Panda and Pilot development machines (being) made dual stack
  - Working towards submitting workflows through system
- NDGF T1 has added dual stack storage to AGIS, some HC test jobs accessing it
- ATLAS will work under the assumption that CE, will be either IPv4 or IPv6, while SE will be either IPv4 or dual stack
  - Will start looking at testing FAX works with dual stack machines

Status and plans for CMS

- Data management
  - Continue to operate the GridFTP to send files around a full mesh of sites (eventually move to FTS3)
    - currently working sites are: CERN, Caltech, Chicago, DESY, FNAL, FZU, INFN, KIT, NDGF, PIC
  - Expand the PhEDEx testbed to more storage technologies
    - Current sites: IC, Glasgow; planned: PIC, QMUL, Nebraska
  - Consider enabling AAA on IPv6
- Workload management
  - IPv6 CEs at Nebraska, FNAL, UK
    - Basic Condor-G submission tests being run
  - Plan to set up a glideinWMS instance on dual stack to submit to these CEs
    - Due to a Condor limitation all WNs must use the same IP protocol, but this is planned to be fixed

IT-SDC

Highlights from the HEPIX IPv6 F2F meeting

- CERN
  - DHCPv6 enabled on all nodes in Meyrin and Wigner (incl. WNs)
- Xrootd 4.0.0.RC1 released
- Plan to contact the perfSONAR task force to discuss using pS to monitor IPv6 links
- Agreed to encourage sites to try enabling dual stack on their SEs
  - Needed for storage federations if there are IPv6 WNs
- Preparation for the June pre-GDB on IPv6
  - Will summarise all issues observed in the various middleware components, in particular SEs, CEs and batch systems
- Will start a survey to assess the status of plans of the IPv6 readiness at WLCG sites

The IPv6 readiness survey

- Sites will be asked to answer these questions:

1. Is your site already offering connectivity, routing and naming services for IPv6 end systems (i.e. is your site already connected to the worldwide IPv6 network and ready to support IPv6 end systems)?

2. If so, have you already enabled IPv6 on some of the services you manage? Please provide details on which services are enabled

3. If your site is not yet IPv6-ready, are there plans for this? If so, what are the timelines?

4. Does your site currently have problems with allocating a sufficient number of IPv4 addresses? Or foreseen in the near future?

5. Are there other issues you are aware of? Or interesting work going on in this area?

6. Any other comments?

- Tickets will be sent out and a wiki page has been set up
  - https://wiki.gridpp.ac.uk/wiki/2014_IPv6_WLCG_Site_Survey
- Answers should arrive in time for the June 10 pre-GDB

Highlights from the IPv6 WG meeting on May 8

- Much of the one hour meeting was taken preparing for the one-day pre-GDB IPv6 workshop (10 June) *https://indico.cern.ch/event/313194/*

- Other news includes
  - dCache 2.9 (new version fixes earlier problems with IPv6)
    - *Allowing IPv6 FTP transfers without having to proxy via the FTP door*
    - Now being tested at several testbed sites
  - LXPLUS now has a dual-stack end-point (for user testing)
    - lxplus-ipv6.cern.ch
    - Can connect via ssh over either ipv6 or ipv4 from anywhere
    - Limited resources right now, but hopefully can be expanded

8 May meeting (cont'd)

- CERN activated dhcpv6 for all portables
  - Change went well
- NGDF testing SLURM and dCache 2.9
- Imperial London & Nebraska testing IPv6 connectivity with dual-stack BeStMan SE (in Nebraska)
  - over xrootd V4 (RC version) over IPv6 (from job at Imperial)
- QMUL testing StoRM and PerfSonar
  - Chris Walker will talk at next week's HEPiX meeting
- IN2P3 joined the data transfer testbed

Next IPv6 WG meetings

- 27 May 2014 – Vidyo
- **Pre-GDB (full day)** on 10 June at CERN
- 10 July 2014 – Vidyo
- Next F2F meeting will be after the summer holiday season – date to be confirmed

June pre-GDB IPv6 workshop

- The [agenda](#) is already there
- Vidyo connectivity will be available
- People should register if they plan to attend
- All Tier-1 sites should be represented!

IT-SDC

09:00 - 12:30 **Session 1**

09:00 **Do you want to configure your laptop/portable device to use IPv6 during this workshop?** *30'*

Guidance and help available

Speaker: Edoardo Martelli (CERN)

09:30 **Start of workshop - Welcome and Introduction** *15'*

Aims of workshop
Agenda
The IPv6 working group

Speaker: Dave Kelsey (STFC - Rutherford Appleton Lab. (GB))

09:45 **IPv4 and IPv6 at CERN** *20'*

Speaker: Edoardo Martelli (CERN)

10:05 **File transfer testing over IPv6** *20'*

Speaker: Dr. Tony Wildish (Princeton University (US))

10:25 **IPv6 for Sys Admins** *20'*

Speaker: Edoardo Martelli (CERN)

10:45 **Coffee** *30'*

11:15 **IPv6 readiness and Configuration Guidance** *1h15'*

Software and tools survey (DaveK) 10 mins
Storage systems
  DPM   (Duncan/Glasgow)
  dCache (Ulf)
  STORM (Chris W)
FTS3 (Michail)
Batch systems (Francesco)

12:30 - 14:00 **Lunch break**

| 12:30 - 14:00 | Lunch break |
| 14:00 - 17:30 | Session 2 |

14:00 Experiment testing and plans *45'*

proposed use cases for use of CERN worker nodes with IPv6-only (plus local IPv4)
ATLAS (Alastair)
CMS (?)
ALICE (Costin?)
LHCb (?)

14:45 Monitoring *30'*

PerfSONAR (Duncan)
Nagios

15:15 IPv6 quiz *15'*

15:30 Coffee *30'*

16:00 Site status and plans *45'*

See wiki table.
Review each Tier 1 - status, plans and timetable
Experiences of one Tier 2 (QMUL - ChrisW?)
Guidance on best practices

16:45 Next steps and future plans *45'*

Plans for rest of 2014.
Timetables.
Encourage participation in the IPv6 working group

Further info

- HEPiX IPv6 web

  http://hepix-ipv6.web.cern.ch

- HEPiX IPv6 wiki

  https://w3.hepix.org/ipv6-bis/

- Working group meetings

  http://indico.cern.ch/categoryDisplay.py?categId=3538

- WLCG Operations IPv6 Task Force

  http://hepix-ipv6.web.cern.ch/content/wlcg-ipv6-task-force-0