Contribution ID: **317** Type: **Oral**

IPv6-only networking on WLCG

Thursday, 7 November 2019 14:30 (15 minutes)

The use of IPv6 on the general internet continues to grow. Several Broadband/Mobile-phone companies, such as T-Mobile in the USA and BT/EE in the UK, now use IPv6-only networking with connectivity to the IPv4 legacy world enabled by the use of NAT64/DNS64/464XLAT. Large companies, such as Facebook, use IPv6-only networking within their internal networks, there being good management and performance reasons for this. The transition of WLCG central and storage services to dual-stack IPv4/IPv6 is progressing well, thus enabling the use of IPv6-only CPU resources as agreed by the WLCG Management Board and presented by us at earlier CHEP conferences.

During the last year, the HEPiX IPv6 working group has not only been chasing and supporting the transition to dual-stack services, but has also been encouraging network monitoring providers to allow for filtering of plots by the IP protocol used. We have investigated and fixed the reasons for the use of IPv4 between two dual-stack endpoints when IPv6 should be preferred. We present this work and the tests that have been made of IPv6-only CPU showing the successful use of IPv6 protocols in accessing WLCG services.

The dual-stack deployment does however result in a networking environment which is much more complex than when using just IPv6. Some services, e.g. the EOS storage system at CERN, are using IPv6-only for internal communication, where possible. The group is investigating the removal of the IPv4 protocol in more places. We will present the areas where this could be useful and possible and suggest a timetable for being able to turn off IPv4 in this way.

Consider for promotion

No

Primary author: KELSEY, David (Science and Technology Facilities Council STFC (GB))

Co-authors: BABIK, Marian (CERN); BLY, Martin (STFC-RAL); CHOWN, Tim (Jisc); CHUDOBA, Jiri (Acad. of Sciences of the Czech Rep. (CZ)); CONDURACHE, Catalin (Science and Technology Facilities Council STFC (GB)); FINNERN, Thomas (DESY); FROY, Terry (Queen Mary University of London); GRIGORAS, Costin (CERN); HAFEEZ, Kashif; HOEFT, Bruno Heinrich (KIT - Karlsruhe Institute of Technology (DE)); LOPES, Raul (School of Design and Engineering - Brunel University, UK); Mr LOPEZ MUNOZ, Fernando (PIC); MARTELLI, Edoardo (CERN); NANDAKUMAR, Raja (Science and Technology Facilities Council STFC (GB)); OHRENBERG, Kars (DESY); PRELZ, Francesco (Università degli Studi e INFN Milano (IT)); RAND, Duncan (Imperial College (GB)); SCIABÀ, Andrea (CERN)

Presenter: KELSEY, David (Science and Technology Facilities Council STFC (GB))

Session Classification: Track 7 –Facilities, Clouds and Containers

Track Classification: Track 7 –Facilities, Clouds and Containers