Monitoring: perfSONAR and ETF

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HEPiX IPv6 WG F2F

perfSONAR News

- 4.0.2 was released in November with many bug-fixes and performance improvements
  - Most of our infrastructure updated, we already have around 60 instances on CC7
  - However we're still seeing issues with performance and also stability
  - perfSONAR F2F dev meeting will take place in Amsterdam 7-8th March
- Currently ongoing campaign to update all perfSONARs to CC7
  - 4.1 release will not have SL6 packages and SL6 support will be dropped 6 months after 4.1 (Q3 2018)
- New Grafana dashboards introduced - single place to visualize all results
  - Currently IPv4-only, but working towards enabling IPv6 as well with side-by-side comparison
- IPv6 configured via dual-stack mesh maintained by Duncan
  - Out of 270 hosts monitored, 103 are dual-stack now
  - IPv6 performance analysis - credits to Brian Davies
  - Few cases with IPv6 issues were also reported to the WLCG Network Throughput support
    - Most notable was IC to SARA, which was due to a firmware issue

perfSONAR Dual-stack Mesh

- Dual-stack mesh was created to follow up IPv4 vs IPv6 performance
  - Ideally we would like to run both IPv4 and IPv6 tests for all dual stack perfSONARs
  - This would however increase the amount of testing by factor 2 on already stretched resources
- Proposal to replace dual-stack mesh is needed
  - We need to have a way to monitor IPv6 performance while at the same time avoid collapse of the infrastructure due to overload
  - The most resource sensitive monitoring is latency as it runs continuously
  - Throughput and packet trace could in principle scale by factor 2
  - Ideas:
    - Create dual-stack LHCOPN with both IPv4 and IPv6 for all tests
    - Change all current experiments meshes to contain IPv6 throughput and tracepath
    - Create a dedicated IPv6/IPv4 latency mesh that would only be used for debugging specific cases
    - Alternatively, change experiments meshes to measure IPv4 on IPv4-only paths and IPv6 on IPv6-only paths, however this way we would be missing IPv4 results on IPv6-enabled paths

ETF News

- ETF IPv6 instance was established some time ago to take measurements for IPv6-enabled services - running exact same tests as we do in production
- Proposal was sent to the experiments in August to create dedicated instances for IPv6-only testing (replacing ETF IPv6 instance)
  - CMS and LHCb IPv6-only instances were created
    - https://etf-cms-ipv6.cern.ch/etf/check_mk/
    - https://etf-lhcb-ipv6.cern.ch/etf/check_mk/
  - Both are currently dual-stack, but will be switched to IPv6-only as soon as this is supported
  - Missing input from ATLAS, some input received from ALICE, but not request was made yet
- For both LHCb and CMS we can start publishing results to SAM3
  - Note: current worfklow ETF -> message-bus -> SAM3 -> WLCG reports
  - Publishing to SAM3 needs to be tested as the aggregation algorithm needs to be tuned to support getting results from IPv4-only/IPv6-only instances or both at the same time
  - We have a technical proposal how to enable this and will start testing it in QA soon