NOTED and BBRv1 testing during DC24

DOMA meeting
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Carmen Misa – Edoardo Martelli

NOTED test

Test of new NOTED version with:
    - start actions triggered by link saturation (saturation alarms
    from CERN network monitoring) and confirmed by presence of
    large FTS transfers to the affected site
    - stop actions decided by decrease of FTS transfers below a
    certain threshold

During DC24, saturation alarms were set at ~50% of the link
    capacity, because there was seldom saturation
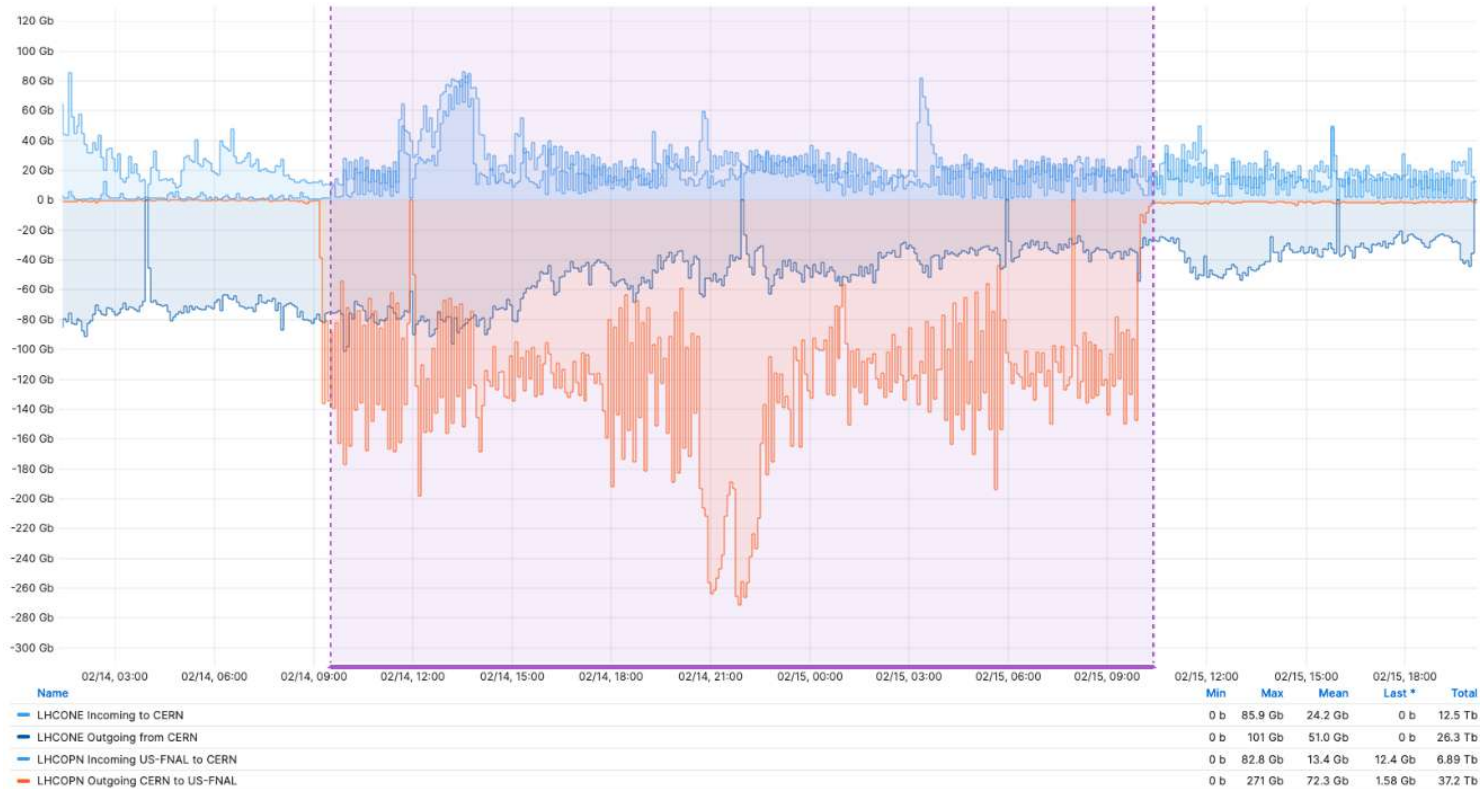
NOTED test

NOTED ran during the whole DC24

On the first 10 days it was not taking any action, just triggering a
warning when additional bandwidth was needed

On the last 3 days, NOTED was taking real actions for TRIUMF, PIC
and KIT
- TRIUMF: load-balancing traffic over the primary and backup links
- PIC and KIT: load-balancing over the LHCOPN and LHCONE links

NOTED test

Dry-run on US-FNAL LHCOPN link

Name				Min	Max	Mean	Last *	Total
— LHCONE Incoming to CERN				0 b	85.9 Gb	24.2 Gb	0 b	12.5 Tb
— LHCONE Outgoing from CERN				0 b	101 Gb	51.0 Gb	0 b	26.3 Tb
— LHCOPN Incoming US-FNAL to CERN				0 b	82.8 Gb	13.4 Gb	12.4 Gb	6.89 Tb
— LHCOPN Outgoing CERN to US-FNAL				0 b	271 Gb	72.3 Gb	1.58 Gb	37.2 Tb

NOTED test

Real run on DE-KIT LHCOPN link

NOTED test: conclusions

Useful exercise to fix some NOTED driven router configuration issues (e.g. load-balancing routing when a site had multiple LHCOPN links, full BGP config on both the LHCOPN routers…)

Also useful to implement additional checks on FTS

Overall happy of the results: Large Transfers detection worked properly in most of the cases

BBRv1 test

During the last 3 days, 40 EOS servers at CERN used by ATLAS and CMS were flipping thier TCP congestion protocol every 2 hours (every 6 hours from Thursday on)

20 CMS EOS servers

Blue: BBRv1 on. Otherwise Cubic
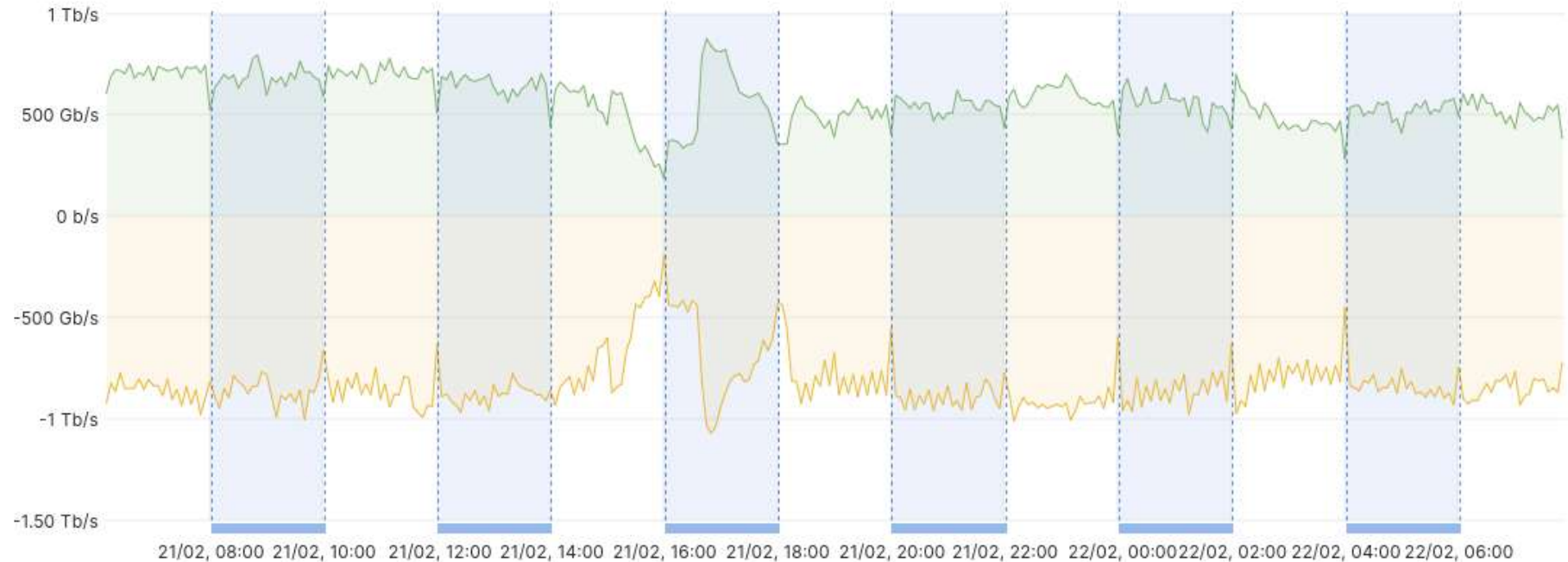
20 ATLAS EOS servers

Blue: BBRv1 on. Otherwise Cubic

Total LHCOPN+LHCONE at CERN

Blue: BBRv1 on. Otherwise Cubic

BBRv1 test: conclusions

No evidence of gain nor loss using BBRv1

BBRv1 shows advantages in congested lines, but there wasn't much congestion

Questions, comments?