Performance monitoring in USLHCNET

Sandor Rozsa
Azher Mughal

Overview

- USLHCNET
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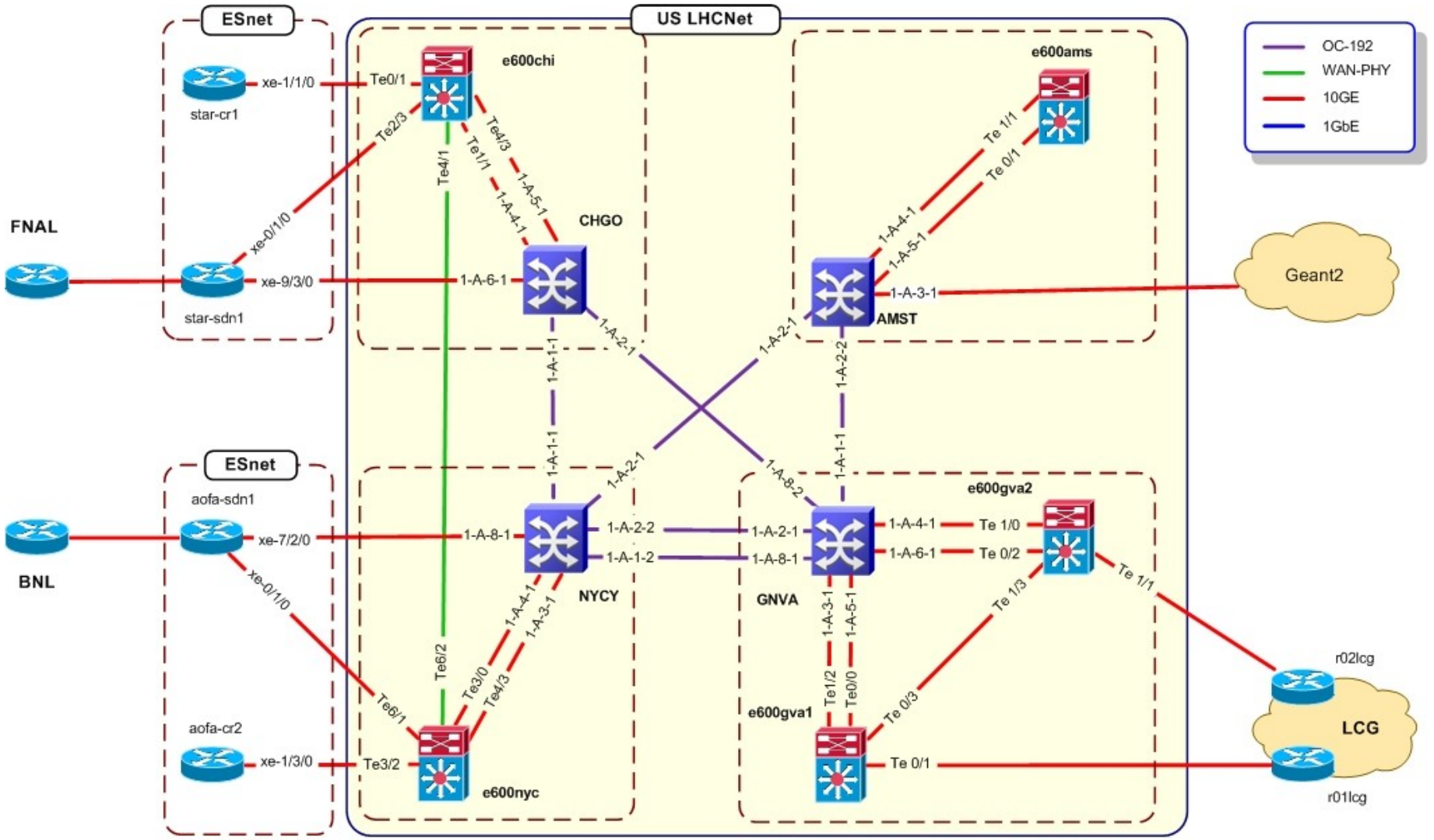
USLHCNET

- Provides Tier0-Tier1 connectivity for US Tier 1s
- Consists of multiple 10 Gbps links interconnecting CERN, MANLAN in New York and Starlight in Chicago.
- NOC
  - Geneva, Caltech
- PoPs
  - Geneva - CERN
  - Chicago – STARLIGHT
  - New York – MANLAN
  - Amsterdam - SARA

USLHCNET Topology



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Clients

- FNAL
  - CERN-FERMI-LHCOPN-001 – Geneva – Chicago
    - Mesh protected – 10 G- VCAT/LCAS enabled
  - CERN-FERMI-LHCOPN-002 – Geneva – New York
    - Not mesh protected – 3G – VCAT/LCAS enabled
- BNL
  - CERN-BNL-LHCOPN-001 - Geneva – New York
    - Mesh protected – 10G – VCAT/LCAS enabled
  - CERN-BNL-LHCOPN-002 – Geneva – Chicago
    - Not mesh protected – 3G – VCAT/LCAS enabled

Perfsonar deployment in USLHCNET

- Main Objective is to check transiting circuit's status in USLHCNET domain and coordinate with other monitoring domains for the health of a complete circuit path
- Initial TL1 based experimental installation in February 2009
- Virtual Circuits (VCG) are monitored on the Ciena CoreDirectors

Perfsonar deployment in USLHCNET – contd

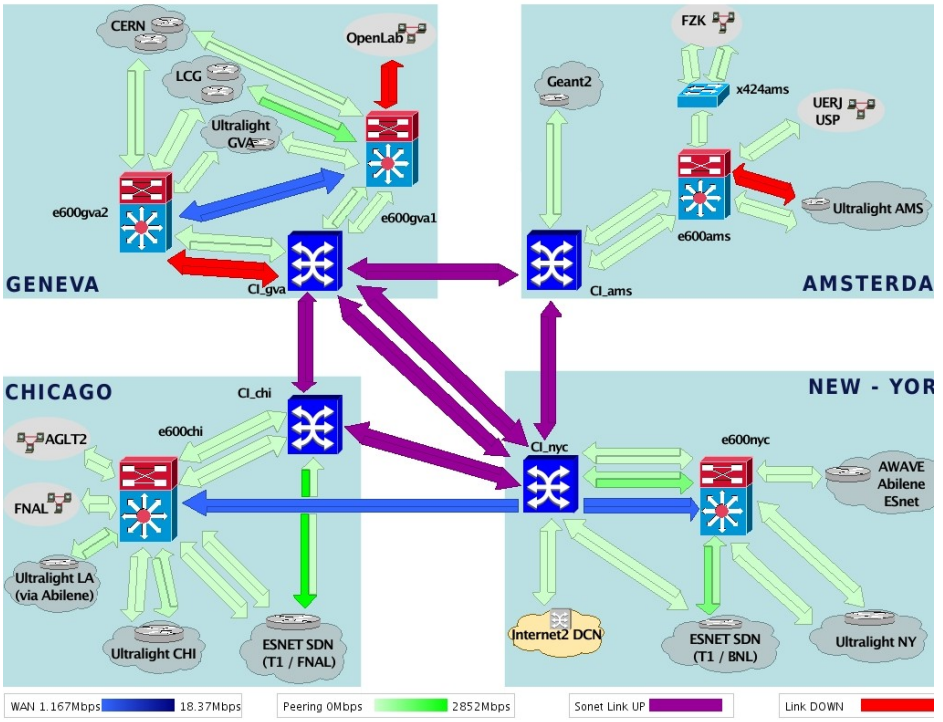
- CentOS 5.2 server
  - Server located in Geneva
- I2's perl based TL1 perfsonar
  - LHCOPN virtual circuits are checked on two different CoreDirector
  - Polling interval is 60 seconds
  - Sqlite database (the default) -> next step mysql
  - Using admin_status
    - normal operation checking all the VCG (check_all_vcgs)
- Used by the GEANT2's E2EMON for the LHCOPN paths crossing USLHCNET

Observations

- Problems reading the VCG status on the Geneva Core Director
  - 11 VCG defined on the Geneva Core Director
  - 4 VCG monitored with PS
  - At least 2 of 4 having the status “unknown”
- Solution
  - Reading the status for 2 VCGs in Chicago
  - Reading the status for 2 VCGs in New York

Other tools in USLHCNET

- MonaLisa (http://vinci.cern.ch)
  - WAN link performance monitoring
  - Bandwidth monitoring – real time and historical
  - Peering monitoring
  - Ciena ETTP traffic monitoring
  - Ciena Eflow traffic monitoring
  - Java client



Questions

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