Status of proto-Tier1 sites in Poland and China

Concezio Bozzi
Edoardo Martelli
WLCG Management Board
October 17th, 2023

Proto-Tier1 sites

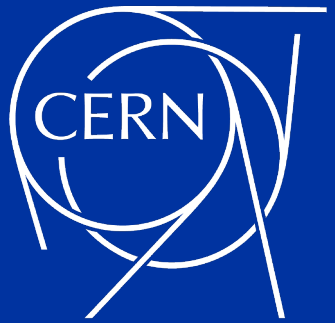
- The WLCG Overview Board (OB) approved on Dec 8th 2022 the plan presented by the NCBJ (Warsaw) and IHEP (Beijing) Tier2 sites to become Tier1 sites for LHCb
- Both sites must comply with the needed requirements in terms of network, storage (most notably: tape), services, service level agreement
- LHCb distributed computing team engaged to define tasks/deliverables/milestones/etc.
  - Minimal requirements shown at MB on Feb 14th 2023
- Two new Tier1 sites help LHCb to alleviate the anticipated pressure on storage, most notably tape, for Run 3 data taking and beyond

NATIONAL CENTRE FOR NUCLEAR RESEARCH ŚWIERK

Institute of High Energy Physics
Chinese Academy of Sciences

Current situation

- Network: see Eduardo's slides
- NCBJ: Hardware ready and configured
  - Tape reading throughput was not reaching the target
    - Bug in tape library SW was fixed by IBM in a new release, which has been installed
    - Data challenge just started; first results are going to be available shortly.
- IHEP: Hardware ready and configured
  - Configuring storage elements in DIRAC; data challenge will follow immediately afterwards



New Tier1s – network status

17 October 2023
edoardo.martelli@cern.ch

NCBJ Warsaw (PL) - new LHCb Tier1

NCBJ hosts the Świerk Computing Centre (CIŚ)

Network resources:
- 100 Gbps link to PIONIER (academic internet, GEANT)
- 20 Gbps dedicated VLAN to LHCONE
- 2x10 Gbps dedicated link for LHCOPN connectivity: in production since June 2023
- Backup link 2x10G deployed, but routing not configured yet

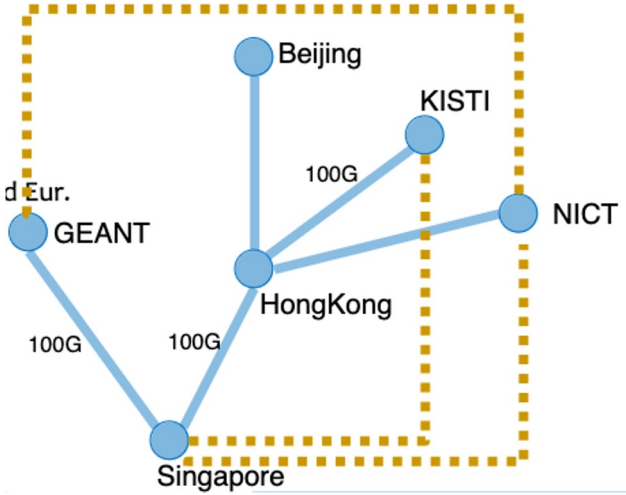
IHEP Bejing (CN) - new LHCb Tier1

IHEP is already connected to LHCONE

IHEP is working with CSTNET (CN) and GEANT (EU) to deploy a 20 Gbps LHCOPN link from IHEP to CERN

GEANT can provide the link as a shared VLANs on 100G links from Singapore to Marseille and from Marseille to CERN, but cannot guarantee the hard reservation of the 20Gbps required. However, GEANT says the link is far from being congested and is very confident there will be no bandwidth contention

To allow the start of the validation phase, it has been agreed to deploy the not-protected link and review the link requirements before the final admission



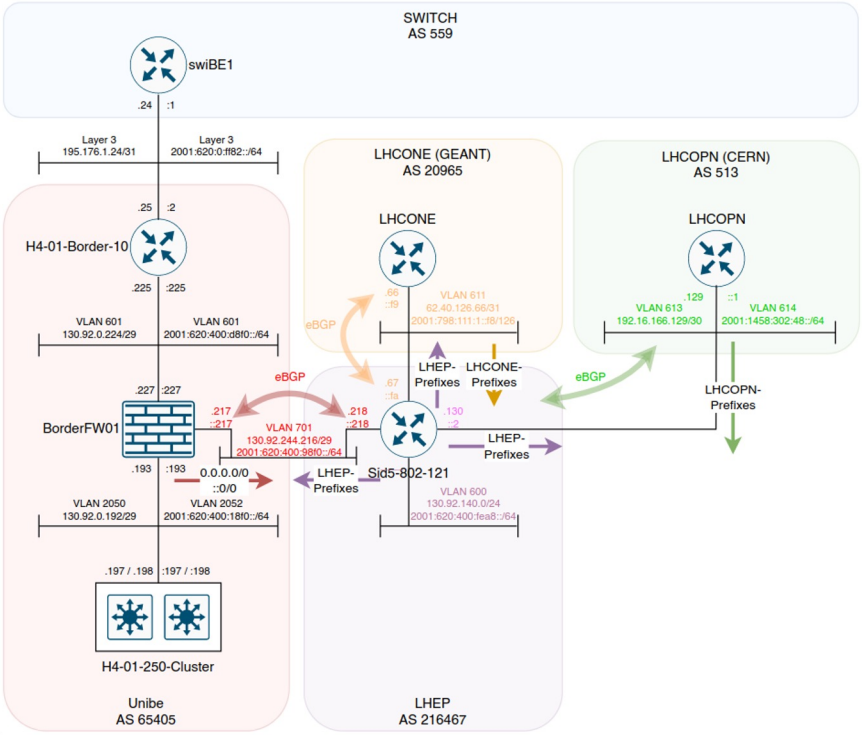
LHEP (CH) new NDGF Tier1 site

LHEP at University of BERN has joined the NDGF distributed Tier1.

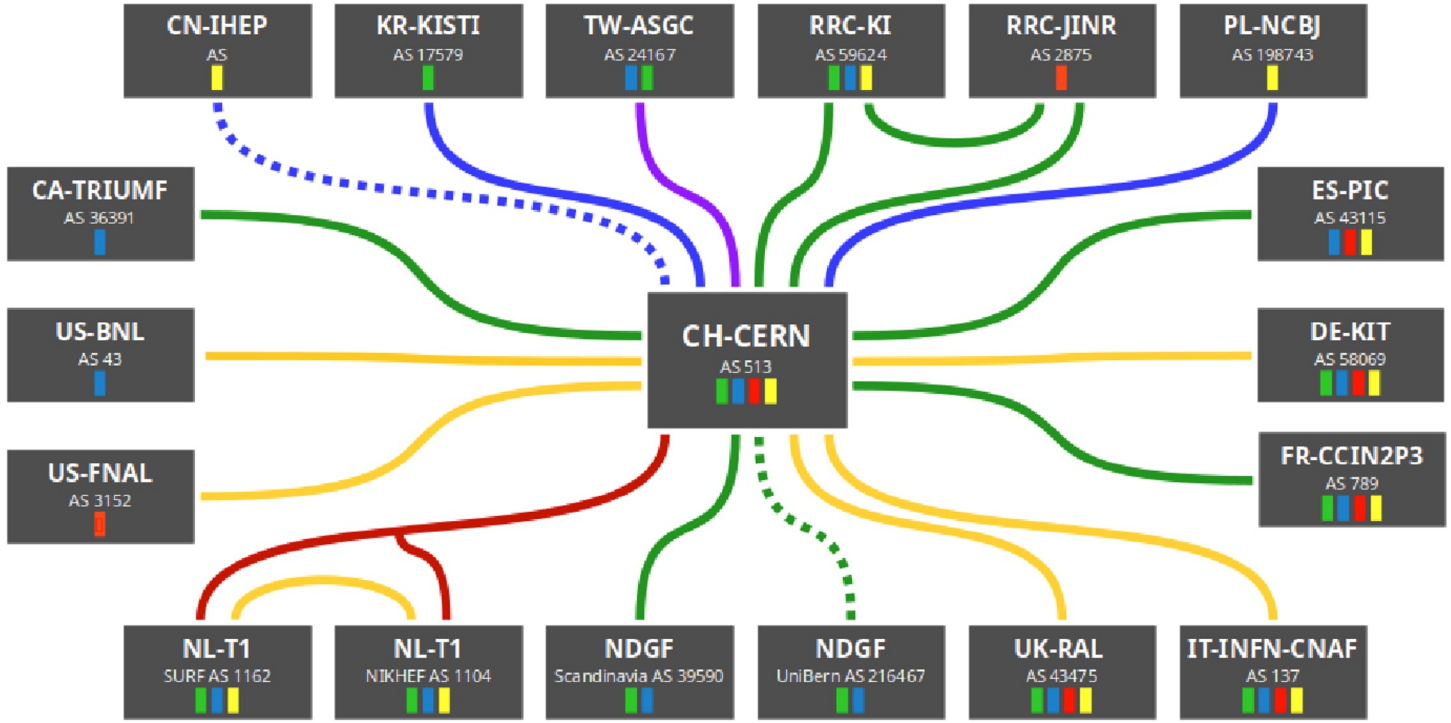
LHEP will be connected to CERN with a 100G LHCOPN link

The physical connection is provided by SWITCH (Swiss NREN) and it is already in place.

LHCOPN routing will be configured in November 2023



LHCOPN



https://twiki.cern.ch/twiki/bin/view/LHCOPN/OverallNetworkMaps

Numbers

- 18 sites for 15 Tier1s + 1 Tier0
- PL-NCBJ just joined, CN-IHEP and NDFG-LHEP in the process to connect
- 15 countries in 3 continents
- 2.1 Tbps to the Tier0

Questions?

edoardo.martelli@cern.ch