

How to improve monitoring for the experiments ?

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Introduction

At the last LHCOPN/LHCONE at CERN, experiments have provided feedback on the available network monitoring, which apart from perfSONAR also included the following areas:

- Importance of network monitoring has been stressed by most of the experiments
- Several experiments have mentioned lack of available/used capacity monitoring (wrt. network traffic)
- Some experiments have mentioned a lack of API(s) to access network LHCOPN/LHCONE topologies
 - Which IPs/sites participate in LHCONE, which transfers will use OPN/LHCONE, which won't?
- There was also clear focus on analytics, better insights into existing results would be beneficial for most of the experiments
 - Cross-correlation with the measurements coming from the data management systems

Let's discuss

Available/used capacity - what we could do to address this ? Some rough ideas:

- Sflow/netflow from R&Es via API (like for example ESnet API)
 - Is this feasible - if so at what level ? What would be the major obstacles ?
- SNMP router readout at the sites using the existing perfSONAR infrastructure
 - Requires SNMP cache to be setup and maintained by each/most sites and configured to be readout by perfSONAR nodes. Unclear if sites would be willing to do this.
- Other(s) ?

Lack of APIs to access network topology information:

- LHCOPN/LHCONE topology via API ? Static JSON file that defines which IPs/sites participate ?
- Routing API (static or dynamic)
 - E.g. Looking glass API, or a snapshot that shows all existing routing options.

Integration of both areas into existing pipelines providing data to the experiments