

LHCONE Experience and Concerns AGLT2 (and USATLAS T2s)

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LHCONE Meeting

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❄️ AGLT2 (and other USATLAS Tier-2s) have been using LHCONE for more than a year

- ❑ Not all USATLAS Tier-2s using LHCONE: SWT2, NET2 in process.

❄️ Desire is to improve networking for LHC/ATLAS

- ❑ Better bandwidth end-to-end (avoid GPN links, better R&E pipes)
- ❑ Cleaner paths between sites (better watched/managed)
- ❑ Avoiding firewalls!
- ❑ Easier to diagnose problems
 - ⌘ Traffic “marked” and tracked
 - ⌘ Improved ability for intervening networks to track and localize issues

Review Details for Joining LHCONE



- ❄ The best place to start is the LHCONE Wiki
<https://twiki.cern.ch/twiki/bin/view/LHCONE/WebHome>
- ❄ Details for joining at layer-3 are spelled out here:
<https://twiki.cern.ch/twiki/bin/view/LHCONE/LhcOneHowToConnect>
- ❄ Technical requirements for a site
 - ❑ Must have a public AS (Autonomous System) number
 - ❑ Must have a public IP
 - ❑ Must have a router capable of BGP
- ❄ Policy: LHCONE is for LHC traffic. (Devil in the Details)
 - ❑ Sites must advertise only LHC related IP addresses
 - ❑ Traffic must be symmetric: TierXs can send into the LHCONE only packets with IP source address in the announced address space. It's important to assure symmetry in order to avoid TCP traffic drops due to state-full firewalls

Concerns



- ❄ **Sites have seen issues in trying to join LHCONE.** AGLT2 experience was actually good. Used a VRF to enable appropriate peering/routing.
 - ❑ Many sites have had major connectivity issues because they didn't fully appreciate the requirements to announce ONLY LHC subnets/systems AND ensure only announced networks flow to LHCONE. (2nd part is the problem...routing is by destination)
- ❄ **For connected sites we have seen issues in performance.**
 - ❑ Debugging has not been timely (Nebraska/Vanderbilt in Ken's talk)
 - ❑ New issues seem to arise most times the routing changes (like for LHCONE). **Expectation of easier debugging not fulfilled.**
 - ❑ **LHCONE can seem like a step down for many sites: problems and no obvious advantages.**
 - ❑ No SLA or "spanning" support that owns issues.

Moving Forward



- ❄ **Make it easier to successfully join.** This may be just providing a set of detailed examples to document the various methods sites can use to join.
- ❄ **Set expectations appropriately:** What your site needs to do and what you can expect after joining
- ❄ **Much better monitoring needs to be in place:**
 - ❑ We can't find problem locations easily in the current setup
 - ❑ Given the lack of an LHCONE support organization it is critical that we be able to target the appropriate organization for resolution.
 - ❑ Use perfSONAR-PS instances deployed at LHCONE locations and documented?
- ❄ **Document support process for problems:**
 - ❑ When joining
 - ❑ When there are performance or connectivity issues

Discussion/Questions/Comments?

