ESnet
ENERGY SCIENCES NETWORK

BERKELEY LAB

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LHCONE and CRIC

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2025-03-20

ChatGPT, What is the CRIC database at CERN used for, particularly with respect to LHCONE?

The CRIC (CERN Resource Information Catalogue) database at CERN is used to catalog and track the resources provided by the WLCG sites, including computing power, storage capacity, and network bandwidth. This information is essential for managing the distribution of computing tasks, data storage, and data transfer across the global grid of computing resources.

...

Regarding LHCONE (LHC Open Network Environment), CRIC plays a crucial role in managing the network resources and topology of the LHCONE network.

Example record in CRIC


```
"AGLT2_UM IPv6": {
   "asn": 237,
   "last_modified": "2023-05-24T02:27:10.970729",
   "lhcone_bandwidth_limit": 80,
   "lhcone_collaborations": [
     "US-ATLAS",
     " WLCG"
   ],
   "lhcopn_bandwidth_limit": -1,
   "name": "AGLT2_UM IPv6",
   "netsite": "US-AGLT2 University of Michigan",
   "networks": {
     "ipv6": [
       "2001:48a8:68f7:1::/64",
       "2001:48a8:68f7::/50"
     ]
   }
```

Why does CRIC data matter?

Premise

- LHCONE has a strict AUP
- Sites formally accept the AUP
- Sites register their data into CRIC
- Networks want to apply route filters and packet filters


I'M GOING TO ANNOUNCE MY ROUTES INTO LHCONE
YES, AND WE ALSO PUT THEM INTO CRIC!
THEY ARE IN CRIC, RIGHT?
imgflip.com

Let's compare the LHCONE routing table to CRIC

Methodology

- Dump data from cric to a file
- Dump routes seen at ESnet into files
- Diff the files more or less

Example script output

```
prefix 2001:2f8:3e:cc23::/64 {'as-path': '2907'} not in cric
prefix 2001:320:8300:203::/64 {'as-path': '2907'} not in cric
prefix 2001:620:400:fea8::/64 {'as-path': '20965 216467'} not in cric
prefix 2001:660:3024::/48 {'as-path': '20965 789 2091'} not in cric
prefix 2001:660:302c::/48 {'as-path': '20965 2091'} not in cric
...
prefix 202.179.241.216/30 {'asn': 23911, 'netsite': 'CN-CERNET-NREN-LHCONE'} not in esnet rib
prefix 203.185.131.0/24 {'asn': 38296, 'netsite': 'TH-NECTEC-NREN-LHCONE'} not in esnet rib
prefix 205.189.32.79/32 {'asn': 6509, 'netsite': 'CA-CANARIE-NREN-CA-CANARIE-LHCONE-KEK'} not in
esnet rib
prefix 206.12.24.0/25 {'asn': 11105, 'netsite': 'SFU-LCG2-LHCONE'} not in esnet rib
prefix 206.12.154.0/24 {'asn': 16462, 'netsite': 'CA-UVIC-CLOUD-LHCONE'} not in esnet rib
```

How are we doing?

467 routes in LHCONE at ESnet
497 prefixes defined in CRIC

routes seen in ESnet LHCONE
> cat output.txt | grep 'not in cric' | wc -l
72

registrations seen in CRIC but not in LHCONE
> cat output.txt | grep 'not in esnet' | wc -l
131

Input data snapshot, script & output

https://github.com/dwcarder/lhconeaudit

- Not an officially supported project
- I was just curious
- Sorry