



Database for LHCONE prefixes

Edoardo Martelli

LHCONE meeting #46

23rd March 2021

recap

Needs for a database to store all LHCONE prefixes (i.e. IP prefixes used by sites connected to LHCONE).

The list of prefixes can be used to create filters to secure the LHCONE routing tables. Or any other need.

A route-set record in a Internet Routing Registry is preferred by RENOs to build BGP filters

A database with more records would be practical, though

CRIC

Computing Resources Information Catalogue

On-line database for WLCG Computing Resources:

<http://wlcg-cric.cern.ch/>

- Used by ATLAS and CMS, other experiments may follow
- JSON output
- not WLCG sites can be added

New records for network information

```
{  "network" : {
    "ipv4" : { list of IPv4 prefixes }
    "ipv6" : { list of IPv6 prefixes }
    "ASN"  : integer
    "NOC"  : { list of email addresses }
    "LHCONE" {
        "active" : true/false
        "bandwidth" : integer (bps)
        "providers" : { list of LHCONE-providers }
        "collaborations" : { list of LHCONE-collaborations }
        "AUP": {
            "signed" : true/false
            "date" : date
        }
    }
}
"LHCOPN" : {
    "active" : true/false
    "bandwidth" : integer (bps)
}
}
```

New records for network information

```
{  
  "LHCONE-providers" : {  
    0: "ASGC"  
    1: "AARNET"  
    2: "CANARIE"  
    3: "CENIC"  
    4: "CERNet"  
    5: "CERNlight"  
    6: "CSTNet"  
    7: "DFN"  
    8: "ESnet"  
    9: "GARR"  
    10: "GEANT"  
    11: "ING"  
    12: "Jisc"  
    13: "Internet2"  
    14: "JGN"  
    15: "KREONET"  
    16: "NORDUnet"  
    17: "Pionier"  
    18: "RedCLARA"  
    19: "RedIRIS"  
    20: "Renater"  
    21: "REUNA"  
    22: "RoEduNet"
```

```
{  
  "LHCONE-providers" : {  
    23: "RNP"  
    24: "RU-VRF"  
    25: "SINET"  
    26: "TEIN"  
    27: "ThaiREN"  
    28: "TransPAC"  
    29: "URAN"  
  }  
}
```

```
{  
  "LHCONE-collaborations" : {  
    0: "WLCG"  
    1: "BelleII"  
    2: "US-ATLAS"  
    3: "US-CMS"  
    4: "PierreAugerObservatory"  
    5: "NOvA"  
    6: "XENON"  
    7: "DUNE"  
    8: "JUNO"
```

Additional records

Additional records being discussed:

- link to monitoring page
- link to perfSONAR infrastructure

Still possible to add records, make your request now!

Question for Tier1s:

- do we need to distinguish LHCOPN and LHCONE prefixes?

RS-LHCONE route object

The **RS-LHCONE** route object with the list of all the LHCONE prefixes will be periodically updated with the content of the CRIC database. The update script can be run at CERN

The route object is stored in the RIPE whois database:

<https://apps.db.ripe.net/db-web-ui/query?searchtext=rs-lhcone>

RS-LHCONE route object

```
whois -h whois.ripe.net rs-lhcone
```

```
% Information related to 'RS-LHCONE'
```

```
route-set:      RS-LHCONE
descr:          List of prefixes available in LHCONE
tech-c:         LHC1
admin-c:        LHC1
mnt-by:         LHCONE-MNT
mnt-by:         CERN-MNT
created:        2020-07-07T12:35:15Z
last-modified: 2020-11-04T13:50:39Z
source:        RIPE
members:       150.244.246.0/23
members:       193.48.101.0/24
members:       81.180.86.0/24
members:       144.206.236.0/24
members:       131.154.128.0/17
members:       128.227.253.0/24
members:       90.147.67.0/24
members:       130.246.152.240/28
members:       212.193.96.0/26
...
```

```
...
mp-members:    2001:48a8:68f7::/48
mp-members:    2001:67c:1bdc:200::/64
mp-members:    2620:0:2b3d:100::/56
mp-members:    2400:4500:0:2::/64
mp-members:    2001:1459:301::/48
mp-members:    2a00:139c::/45
mp-members:    2001:678:7d8:2000::/52
mp-members:    2001:638:700:10a0::/64
mp-members:    2001:67c:1148:200::/64
mp-members:    2620:0:210::/48
mp-members:    2607:f8f0:660:1::/64
mp-members:    2001:67c:1bdc:201::/64
mp-members:    2001:67c:1148:201::/64
mp-members:    2001:1458:301::/48
mp-members:    2001:638:700:10c0::/64
mp-members:    2001:760:4205::/48
```


Status and next steps

- Request for CRIC new records accepted in December 2020
- Scheduled for availability in April 2021

Next steps:

- populate database: the [LHCONE twiki](#) page will be used as starting data
- run regular updates of RIPE route object
- agree with WLCG operations how to keep database up to date

Questions?

edoardo.martelli@cern.ch

