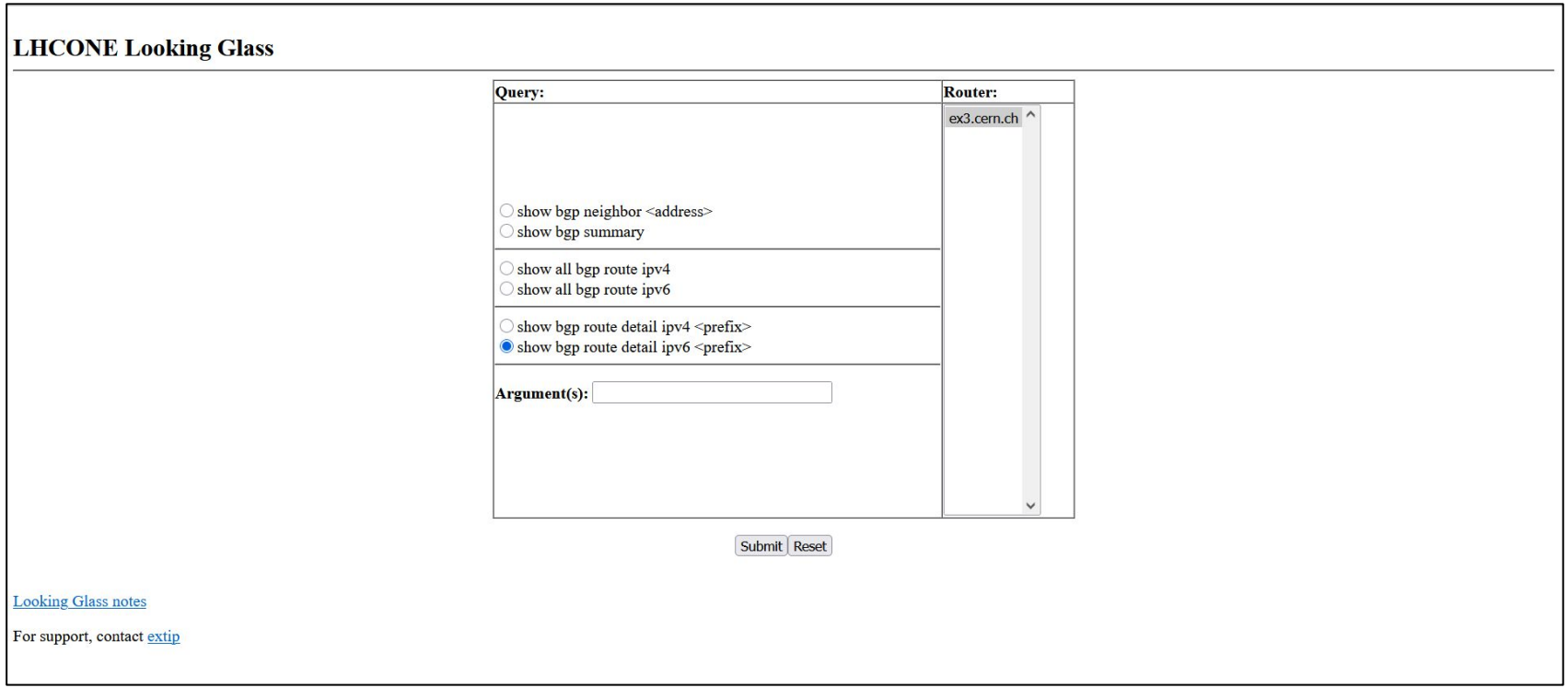
MultiONE tagged routes analyses

LHCOPN-LHCONE meeting #54
Manchester (UK)
Dr. Silvio Pardi
20 March 2025

LHCONE Looking Glass



LHCONE Looking Glass

Query:	Router:
○ show bgp neighbor <address> ○ show bgp summary ○ show all bgp route ipv4 ○ show all bgp route ipv6 ○ show bgp route detail ipv4 <prefix> ◉ show bgp route detail ipv6 <prefix> **Argument(s):**	ex3.cern.ch

Submit Reset

Looking Glass notes

For support, contact extip

MultiONE Tagged routes

To monitor the deployment of the BGP community on sites connected to LHCONE, a script has been set up to query the LHCONE Looking Glass (https://lhcone-lg.cern.ch/) for the IPv4 and IPv6 networks of these sites.

The script uses the lhcone.json file, which contains all LHCONE prefixes, to check the networks (https://twiki.cern.ch/twiki/bin/view/LHCONE/WebHome)

The prefixes are then looked up using the site names registered in CRIC.

https://baltig.infn.it/spardi/multione-check/-/blob/main/communities.sh

```
spardi@testmultione LHCONE]$ ./communities.sh INFN-NAPOLI-ATLAS 4
HECK COMMUNITIES OF 90.147.67.0/24
                Communities: 137:5 137:6 20965:155 61339:2 61339:3 61339:4 61339:6 61339:11 61339:60001 target:137:5
                Communities: 137:5 137:6 2603:2112 20965:155 61339:2 61339:3 61339:4 61339:6 61339:11 61339:60001 target:137:5 target:2603:434300001 tar
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                Communities: 137:5 137:6 57484:137 61339:2 61339:3 61339:4 61339:6 61339:11 61339:60001 target:137:5
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spardi@testmultione LHCONE]$
spardi@testmultione LHCONE]$
spardi@testmultione LHCONE]$ ./communities.sh INFN-NAPOLI-ATLAS 6
HECK COMMUNITIES OF 2001:760:422a:1137::/64
                Communities: 137:5 137:6 20965:155 61339:2 61339:3 61339:4 61339:6 61339:11 61339:60001 target:137:5
                Communities: 137:5 137:6 2603:2112 20965:155 61339:2 61339:3 61339:4 61339:6 61339:11 61339:60001 target:137:5 target:2603:434300001 tar
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spardi@testmultione LHCONE]$
```

N.B. After a certain number of queries the IP of the host running the script will be temporarily ban

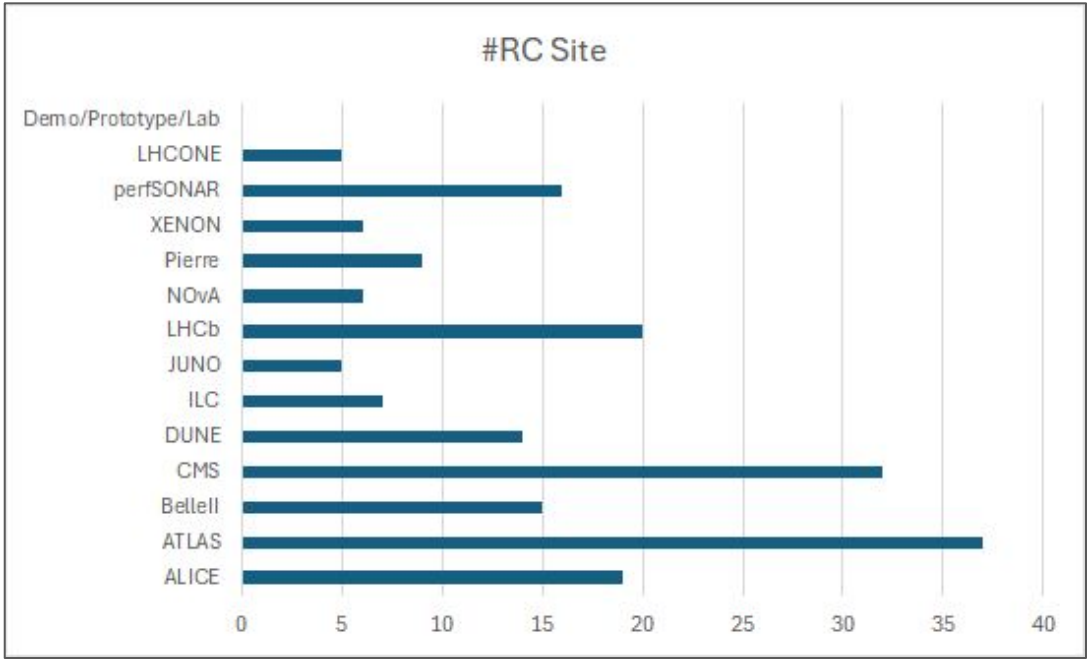
BGP Communities on LHCONE

The script has been run against all the RCs present in lhcone.json, for a total of 379 RCs.

- 340 RCs properly tested (39 RCs triggered an exception on the script, to be double check the parser of the json file)
- 56 RCs are publishing BGP communities
  - 72 IPv6 prefixes
  - 110 IPv4 prefixes

BGP Communities deployment

BGP Community	Collaboration	#RC Site
61339:5	ALICE	19
61339:2	ATLAS	37
61339:6	BelleII	15
61339:3	CMS	32
61339:8	DUNE	14
61339:10	ILC	7
61339:12	JUNO	5
61339:4	LHCb	20
61339:13	NOvA	6
61339:11	Pierre	9
61339:14	XENON	6
61339:60001	perfSONAR	16
61339:60002	LHCONE	5
61339:60003	Demo/Prototype/Lab	0



Few early observations

Some of the sites publish all the BGP communities of the experiment they support on all announced network prefixes.

Other sites publish different BGP communities on different network prefixes, so experiments must ensure that their resources are configured on the proper network.

For this monitoring method to work properly, all relevant network prefixes must be present in CRIC and then in the lhcone.json file.

More statistics can be gathered in the future.

Thank you