IETF Hackathon

BGP-MUP SAFI
Implementation and Interop

IETF 116

25-26 March 2023

Yokohama

Hackathon Plan

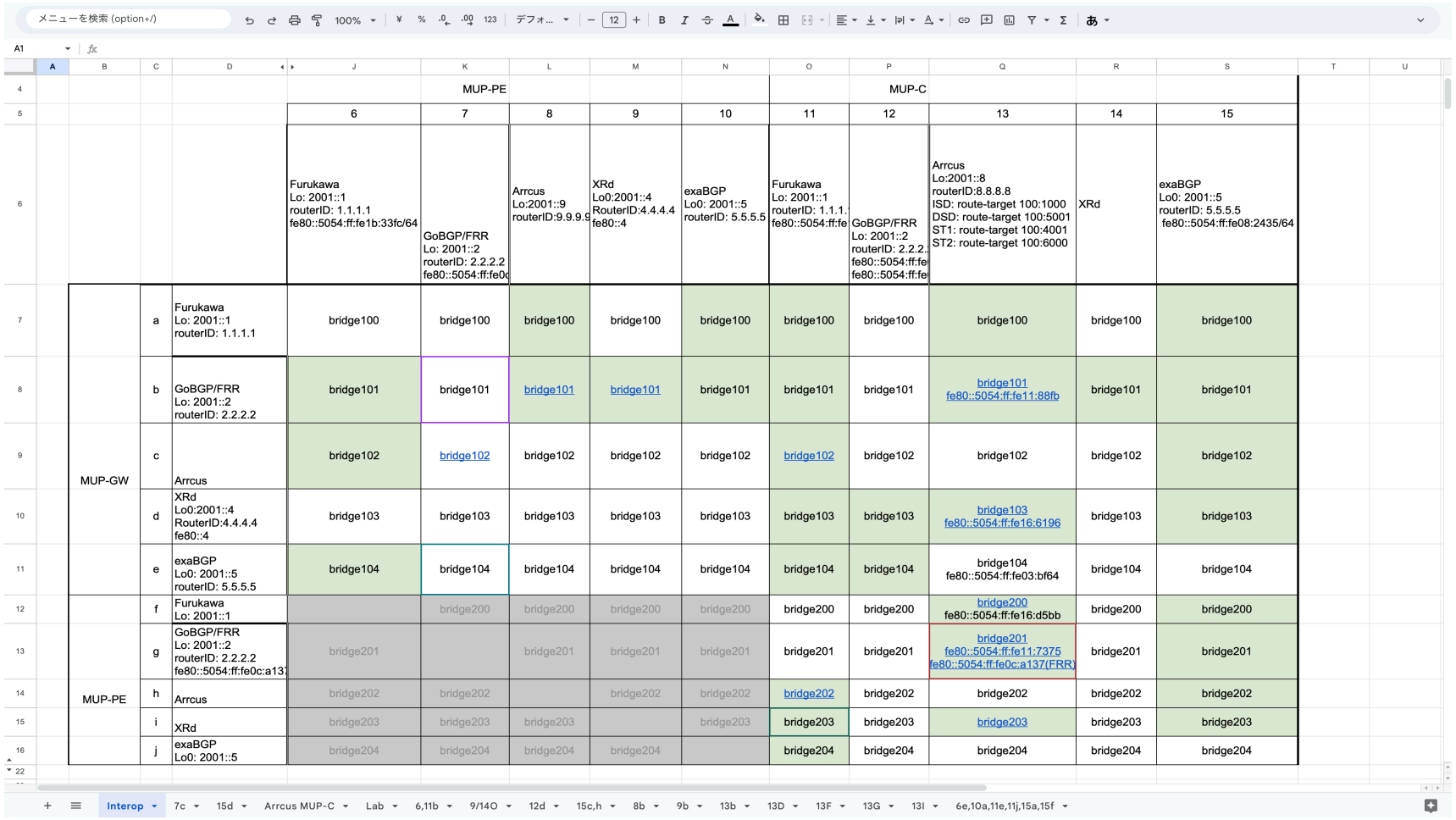
Let's implement a new BGP SAFI and do the Interop together!

- MUP Architecture and BGP-MUP SAFI
  - https://datatracker.ietf.org/doc/draft-mhkk-dmm-srv6mup-architecture/
  - https://datatracker.ietf.org/doc/draft-mpmz-bess-mup-safi/
- Participated BGP developers
  - Arrcus
  - Cisco
  - ExaBGP
  - FRR
  - Furukawa
  - GoBGP
  - (Open BMP)

What got done

- Running code for BGP-MUP SAFI supported BGP implementations
- GoBGP:
  - https://gist.github.com/higebu/ad7b47f675b5d3a8a6296c9fc48e7836
  - Already merged into the master repo:
  - https://github.com/osrg/gobgp/
- ExaBGP:
  - https://github.com/Exa-Networks/exabgp/pull/1142/
  - Already merged into the master repo:
  - https://github.com/Exa-Networks/exabgp/

The Interop Matrix



				MUP-PE					MUP-C				
				6	7	8	9	10	11	12	13	14	15
				Furukawa Lo: 2001::1 routerID: 1.1.1.1 fe80::5054:ff:fe1b:33fc/64	GoBGP/FRR Lo: 2001::2 routerID: 2.2.2.2 fe80::5054:ff:fe0c	Arrcus Lo:2001::9 routerID:9.9.9.9	XRd Lo0:2001::4 RouterID:4.4.4.4 fe80::4	exaBGP Lo0: 2001::5 routerID: 5.5.5.5	Furukawa Lo: 2001::1 routerID: 1.1.1.1 fe80::5054:ff:fe	GoBGP/FRR Lo: 2001::2 routerID: 2.2.2.2 fe80::5054:ff:fe fe80::5054:ff:fe	Arrcus Lo:2001::8 routerID:8.8.8.8 ISD: route-target 100:1000 DSD: route-target 100:5001 ST1: route-target 100:4001 ST2: route-target 100:6000	XRd	exaBGP Lo0: 2001::5 routerID: 5.5.5.5 fe80::5054:ff:fe08:2435/64
		a	Furukawa Lo: 2001::1 routerID: 1.1.1.1	bridge100	bridge100	bridge100	bridge100	bridge100	bridge100	bridge100	bridge100	bridge100	bridge100
		b	GoBGP/FRR Lo: 2001::2 routerID: 2.2.2.2	bridge101	bridge101	bridge101	bridge101	bridge101	bridge101	bridge101	bridge101 fe80::5054:ff:fe11:88fb	bridge101	bridge101
	MUP-GW	c	Arrcus	bridge102	bridge102	bridge102	bridge102	bridge102	bridge102	bridge102	bridge102	bridge102	bridge102
		d	XRd Lo0:2001::4 RouterID:4.4.4.4 fe80::4	bridge103	bridge103	bridge103	bridge103	bridge103	bridge103	bridge103	bridge103 fe80::5054:ff:fe16:6196	bridge103	bridge103
		e	exaBGP Lo0: 2001::5 routerID: 5.5.5.5	bridge104	bridge104	bridge104	bridge104	bridge104	bridge104	bridge104	bridge104 fe80::5054:ff:fe03:bf64	bridge104	bridge104
		f	Furukawa Lo: 2001::1		bridge200	bridge200	bridge200	bridge200	bridge200	bridge200	bridge200 fe80::5054:ff:fe16:d5bb	bridge200	bridge200
		g	GoBGP/FRR Lo: 2001::2 routerID: 2.2.2.2 fe80::5054:ff:fe0c:a137	bridge201		bridge201	bridge201	bridge201	bridge201	bridge201	bridge201 fe80::5054:ff:fe11:7375 fe80::5054:ff:fe0c:a137(FRR)	bridge201	bridge201
	MUP-PE	h	Arrcus	bridge202	bridge202		bridge202	bridge202	bridge202	bridge202	bridge202	bridge202	bridge202
		i	XRd	bridge203	bridge203	bridge203		bridge203	bridge203	bridge203	bridge203	bridge203	bridge203
		j	exaBGP Lo0: 2001::5	bridge204	bridge204	bridge204	bridge204		bridge204	bridge204	bridge204	bridge204	bridge204

What we learned

- Network design is important for smooth interop scenarios.
- Better understanding on MUP SAFI format for coding.

Wrap up

Team members:

- Derek Yeung
- Kaito Sawada
- Ketan Talaulikar
- Katsuhiro Horiba
- Leo Fujita
- Mahesh Jethanandani
- Matthew Anderson
- Ryosuke Takenaka
- Satoru Matsushima, Champion
- Takeru Hayasaka
- Tatsuya Fujiwara
- Teppei Kamata
- Tetsuya Murakami
- Yuya Kawakami
- Yuya Kusakabe

First timers @ IETF/Hackathon:

- Derek Yeung
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- Leo Fujita
- Matthew Anderson
- Ryosuke Takenaka
- Takeru Hayasaka
- Tatsuya Fujiwara
- Teppei Kamata
- Yuya Kawakami
- Yuya Kusakabe

Notes and contacts:

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