



**BRIAN**

(Backbone Router Interface ANalytics)

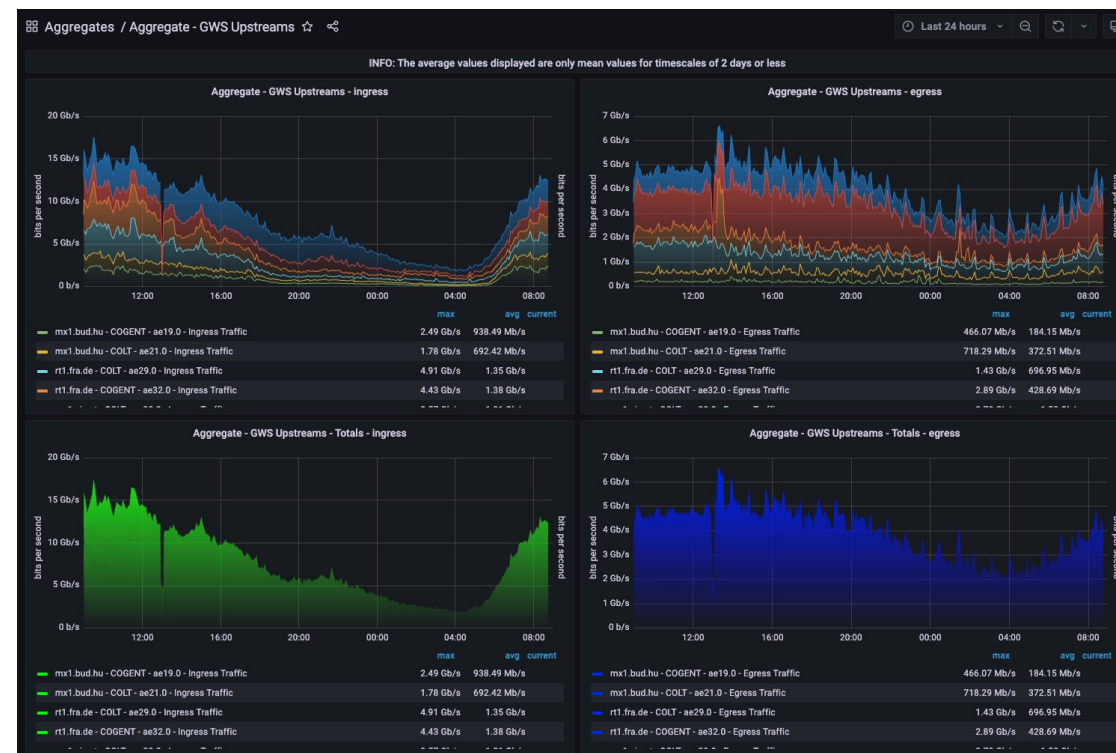
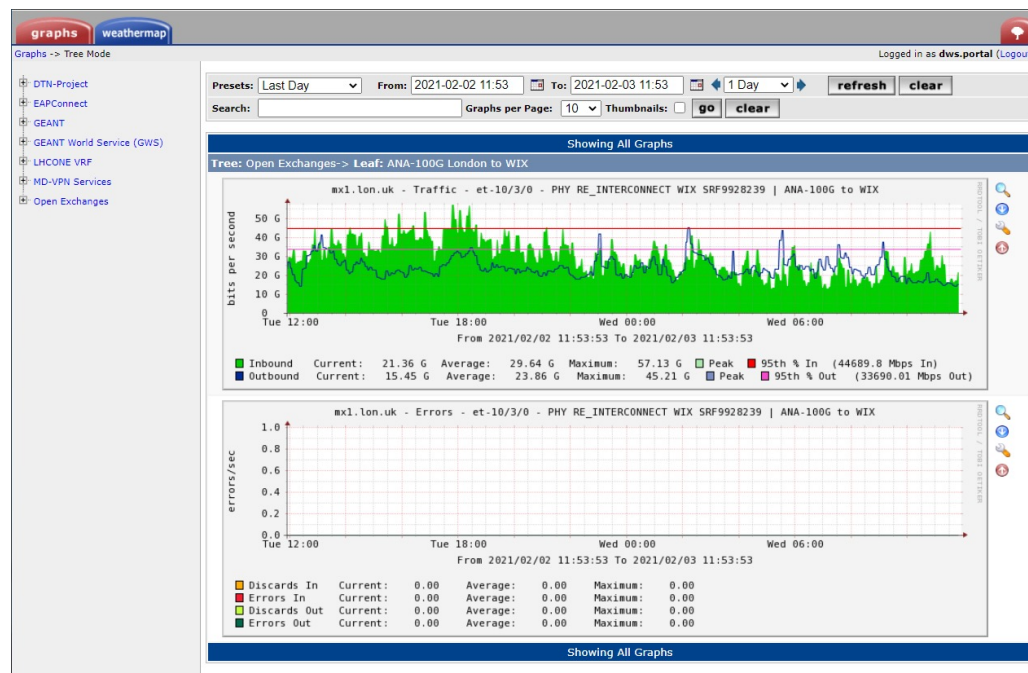
**Keith Slater**

Senior Service Manager

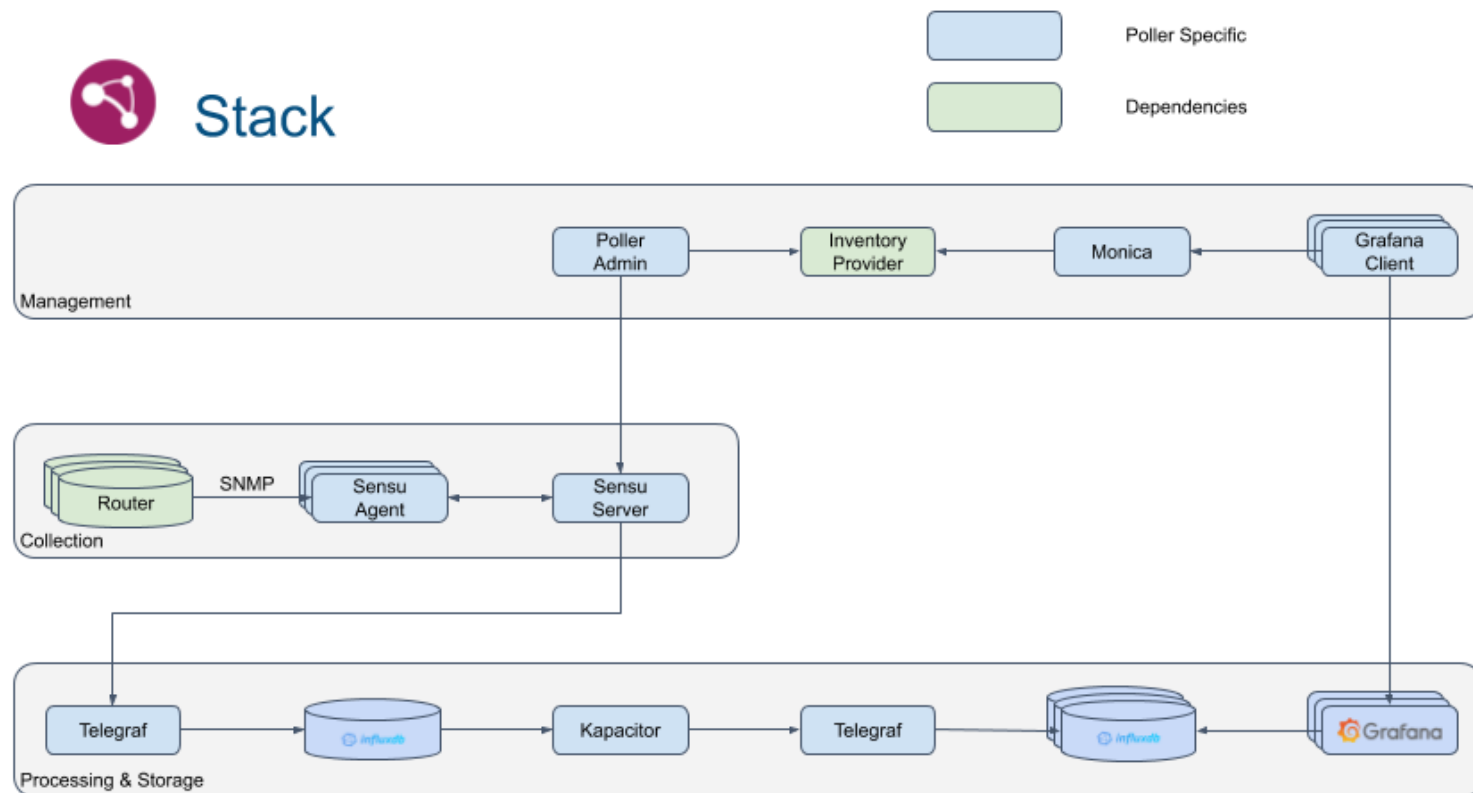
Network Performance and Monitoring Workshop

14<sup>th</sup> February 2024

# What is BRIAN?



# BRIAN Architecture



## BRIAN Principles

- Read-only. No building of individual dashboards, because...
- Built on a set of rules based on interface descriptions and Inventory, largely automated although we do just add all graphs from certain devices (It equipment) and manually poll 3<sup>rd</sup> party routers (for GWS)
- High Availability – Enterprise InfluxDB in a cluster
- No rounding of data, all data is kept (although an archiving scheme yet to be agreed)
- Using an Agile approach, sprints and scrums
- It's there for everyone - available via tools portal (slightly obfuscated)

## What have we done so far?

- Created 2 different views of BRIAN
- Added clustered InfluxDB
- Created standard dashboards for NRENS + certain products
- Added external data sources for GWS
- Added DSCP32 counters + DCU (GWS Indirect)
- Added Multicast
- Added errors and discards
- New dashboards for Copernicus, 10G GBS etc.
- 3<sup>rd</sup> party access to InfluxDB - ROBIN

## What have we done so far (continued)

- Imported cacti data
- Turned off Cacti!
- Recording of historical traffic utilisation for a service (\*)
- Capacity Planning report (\*)
- Graphing of the optical network
- InfluxDB data used for service reports



# Capacity Reports

**Jenkins** Search (#+K) Keith Slater log out

Dashboard > generate\_report >

- Status
- Changes
- Build with Parameters
- Full Stage View

**generate\_report**

Produce a spreadsheet for capacity planning.  
 To get the generated spreadsheets, the Last Successful Artifacts will link to the most recent generated spreadsheet, or else click on the job and retrieve it from Build Artifacts.

Last Successful Artifacts  
[capacity\\_report\\_M-1\\_20240101-000130.xlsx](#) 26.55 KIB view

**Build History** trend

Filter...

- #15 1 Jan 2024, 00:15  
report period: last calendar month
- #14 19 Dec 2023, 11:04  
report period: last calendar month
- #13 16 Dec 2023, 15:01  
report period: last calendar month
- #12 15 Dec 2023, 14:05  
report period: last calendar month
- #11 8 Dec 2023, 10:47  
report period: last calendar month
- #10 8 Dec 2023, 10:47
- #9 6 Dec 2023, 15:11  
report period: last calendar month
- #8 6 Dec 2023, 13:10

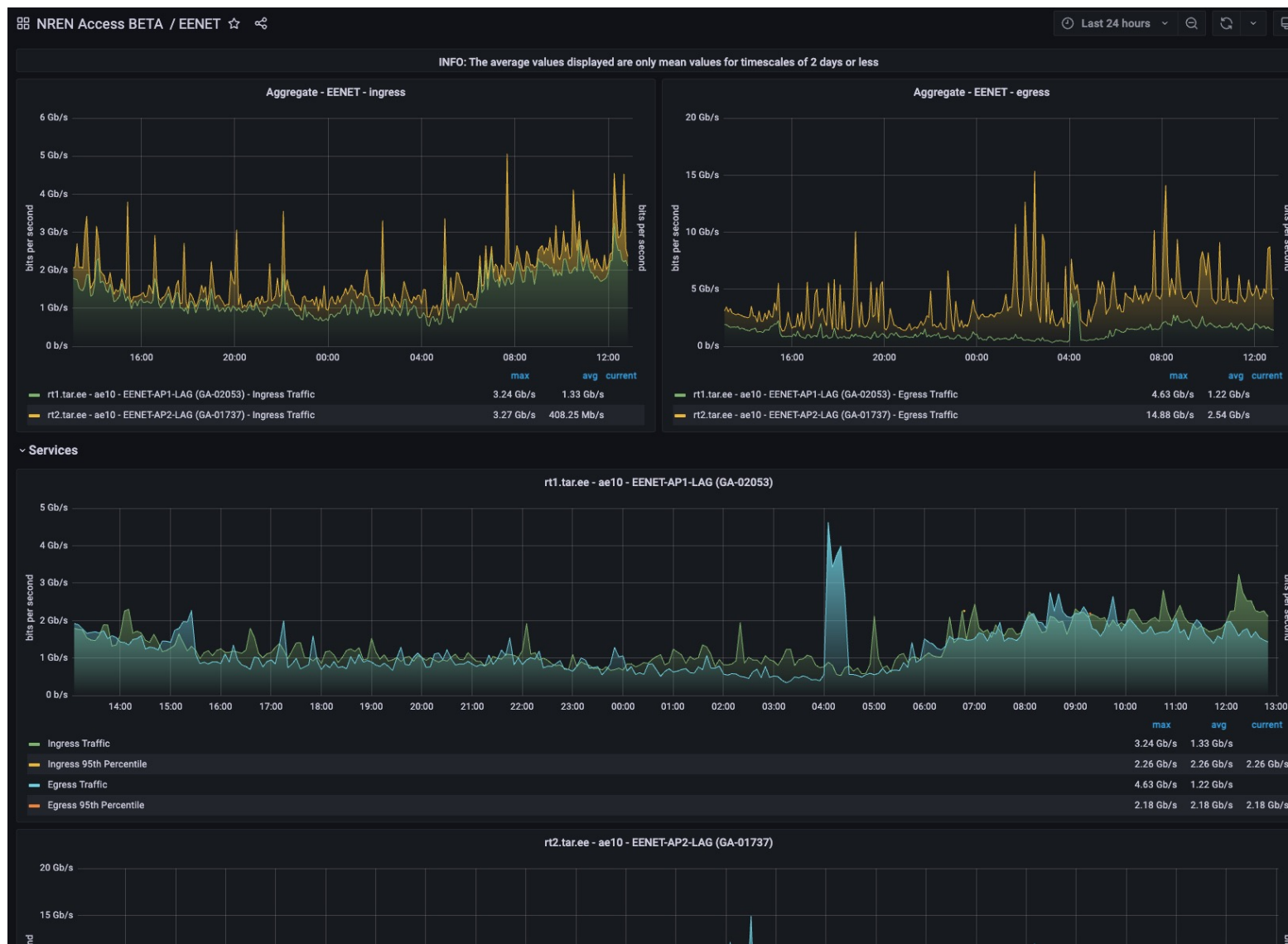
**Stage View**

	Declarative: Checkout SCM	Create workspace	Process parameters	Generate report	Update build description	Declarative: Post Actions
Average stage times: (Average full run time: ~21min 38s)	1s	17s	309ms	18min 0s	309ms	1s
#15 Jan 01 00:15 No Changes	1s	19s	500ms	23min 41s	265ms	1s
#14 Dec 19 11:04 No Changes	1s	19s	275ms	23min 47s	388ms	3s
#13 Dec 16 15:01 No Changes	1s	19s	362ms	22min 51s	337ms	935ms
#12 Dec 15 14:05 No Changes	2s	20s				

SID	Hostname	Interface	Description	Speed,		60%		Breaches		75%		Breaches	
				Gbps	Errors (pkts)	Threshold	60%, red if	Threshold	75%, red if	Threshold	75%, red if		
GS-00948	rt1.mar.fr.geant.net	ae13.100	SRV_IAS PUBLIC DE-CIX #IX-Peerings-in-DE-CIX-MAR \$GS-00948	20	0	12	5	15	0				
GS-00951	mx1.lon.uk.geant.net	ae20.0	SRV_IAS PUBLIC LINX #IX-Peerings-in-LINX \$GS-00951	100	0	60	18	75	4				
GS-00953	rt1.pra.cz.geant.net	ae12.0	SRV_IAS PUBLIC NIX #IX-Peerings-in-NIX \$GS-00953	20	0	12	1	15	1				
GS-00949	mx1.mad.es.geant.net	ae14.100	SRV_IAS PUBLIC DE-CIX #IX-Peerings-in-DE-CIX-MAD \$GS-00949	100	0	60	5	75	0				
GS-00935	rt1.mil2.it.geant.net	ae12.0	SRV_IAS PRIVATE GOOGLE #GOOGLE-15169-IT \$GS-00935   ASN15169	20	0	12	22	15	43				
GS-02248	rt1.mil2.it.geant.net	ae14.0	SRV_IAS PRIVATE GOOGLE #GOOGLE-2-15169-IT \$GS-02248   ASN15169	20	0	12	23	15	39				
GS-00603	rt1.fra.de.geant.net	ae35.0	SRV_IAS PRIVATE CLOUDFERRO #DE-CLOUDFERRO-IAS \$GS-00603   ASN200999	10	0	6	623	7	372				
GS-00954	mx1.vie.at.geant.net	ae10.0	SRV_IAS PUBLIC VIX #IX-Peerings-in-VIX \$GS-00954	100	0	60	18	75	3				
GS-00945	mx1.vie.at.geant.net	ae19.0	SRV_IAS PRIVATE VERIZON #VIENNA-VERIZON-1-15133-AT-1 \$GS-00945   ASN15133	20	0	12	11	15	2				
GS-02224	mx1.vie.at.geant.net	ae30.0	SRV_IAS PRIVATE VERIZON #VIENNA-VERIZON-2-15133-AT-1 \$GS-02224   ASN15133	20	0	12	14	15	3				
GS-00938	mx1.ams.nl.geant.net	ae11.0	SRV_IAS PRIVATE GOOGLE #NL-GOOGLE-15169 \$GS-00938   ASN15169	10	0	6	2	7	0				

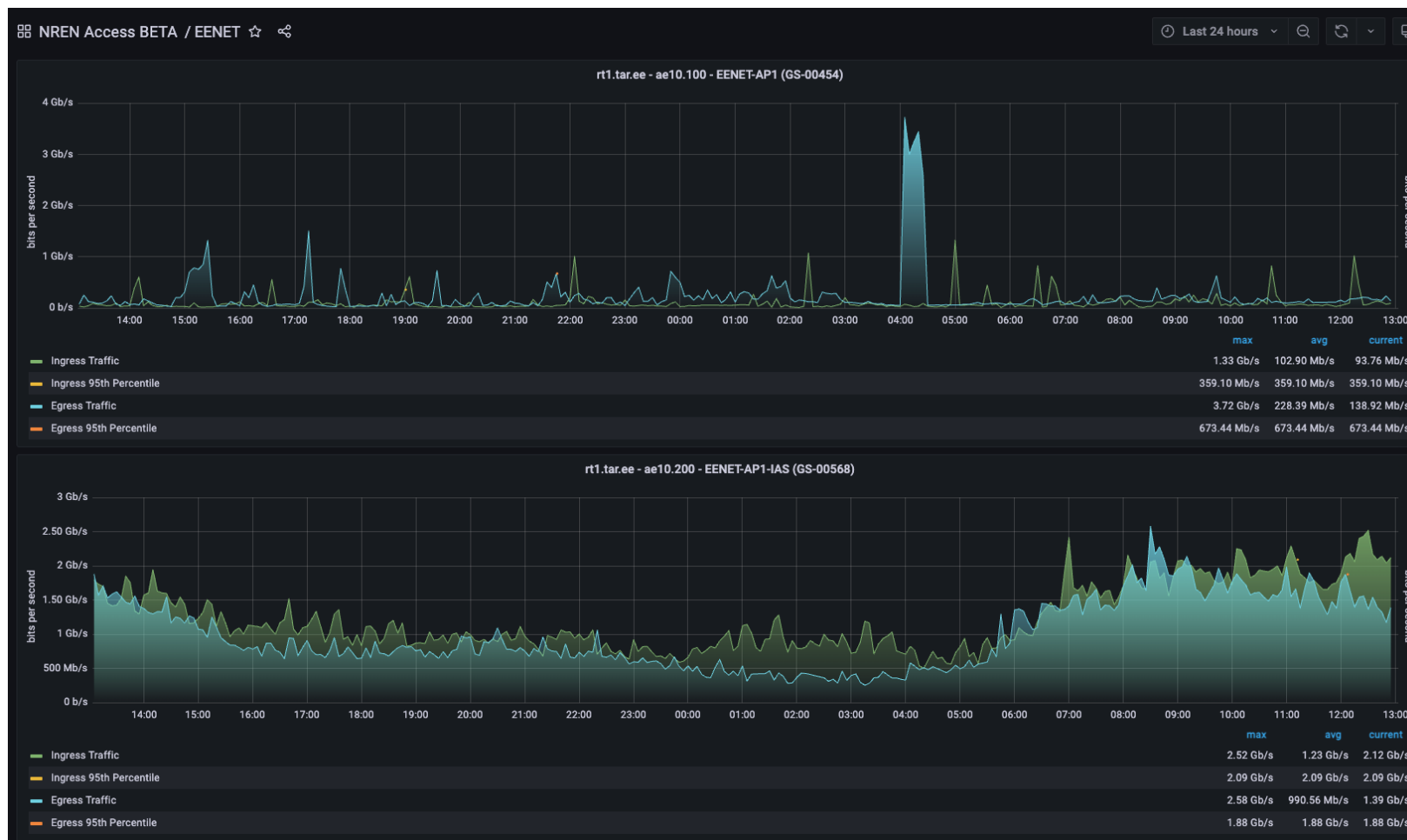


# Service-based view (BETA)





# Service-based view (BETA)



## Where next?

- Complete in-fill of data for service-based (gaps between when cacti data stopped and when service-based went into BETA)
- Take service based out of BETA (hand over to NRENs)
- Further IPv6 graphs
- New dashboards, e.g.:
  - ANA
  - IC-1
  - EAP
- Think about what to do with retired services
- User-specified OID and router graph (OC VLANs for Traffic Generation)
- Dashboard to show interface up/down

## Accessing BRIAN

<https://brian.geant.org/>

<https://public-brian.geant.org/>



# Thank You

[www.geant.org](http://www.geant.org)



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