



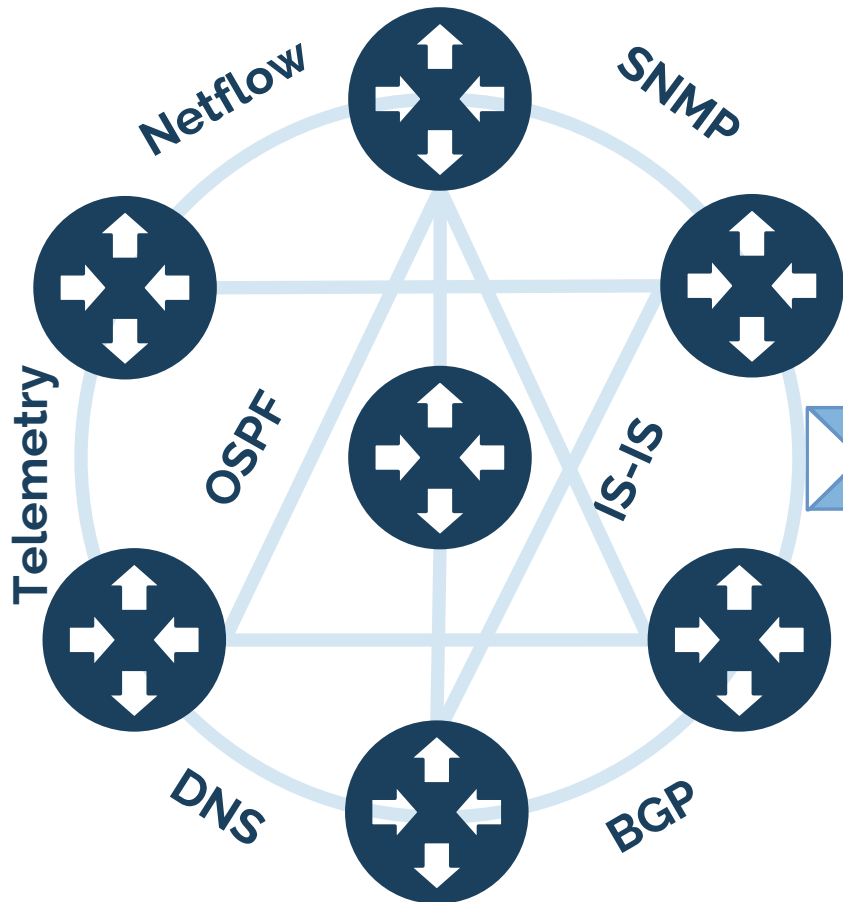
BENOCS

Forward Path

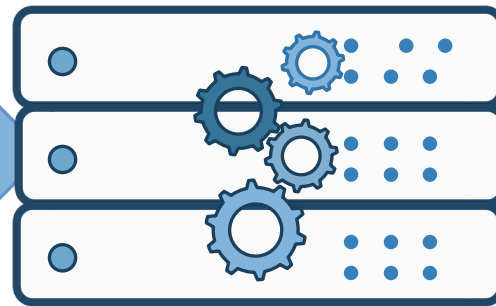
Matching routes to traffic
levels

2025

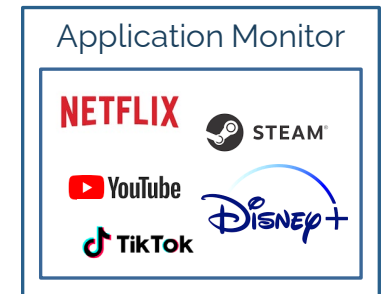
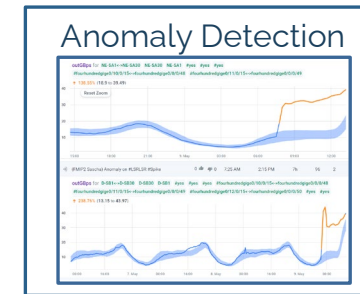
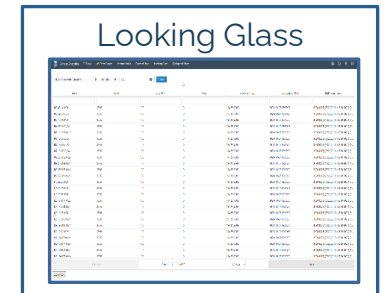
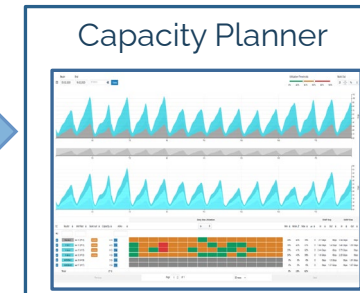
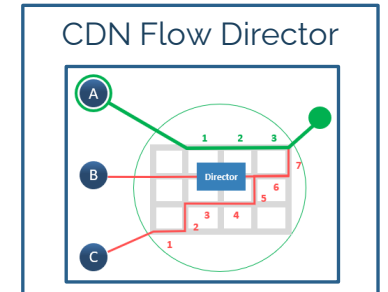
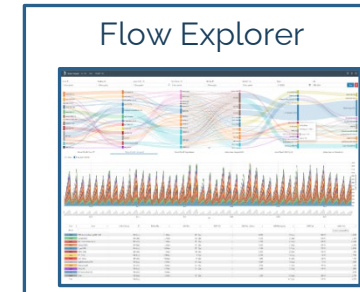
What BENOCS does:



BENOCS CORE ENGINE



Our proprietary aggregation and cross correlation process requires significantly less compute power compared to competitors



PROTOCOL POOL

PROCESSING


NETWORK INTELLIGENCE

For context...

Network:
European
Incumbent

Peer:
Major
Hyperscaler

Graphs:
BENOCS
Analytics

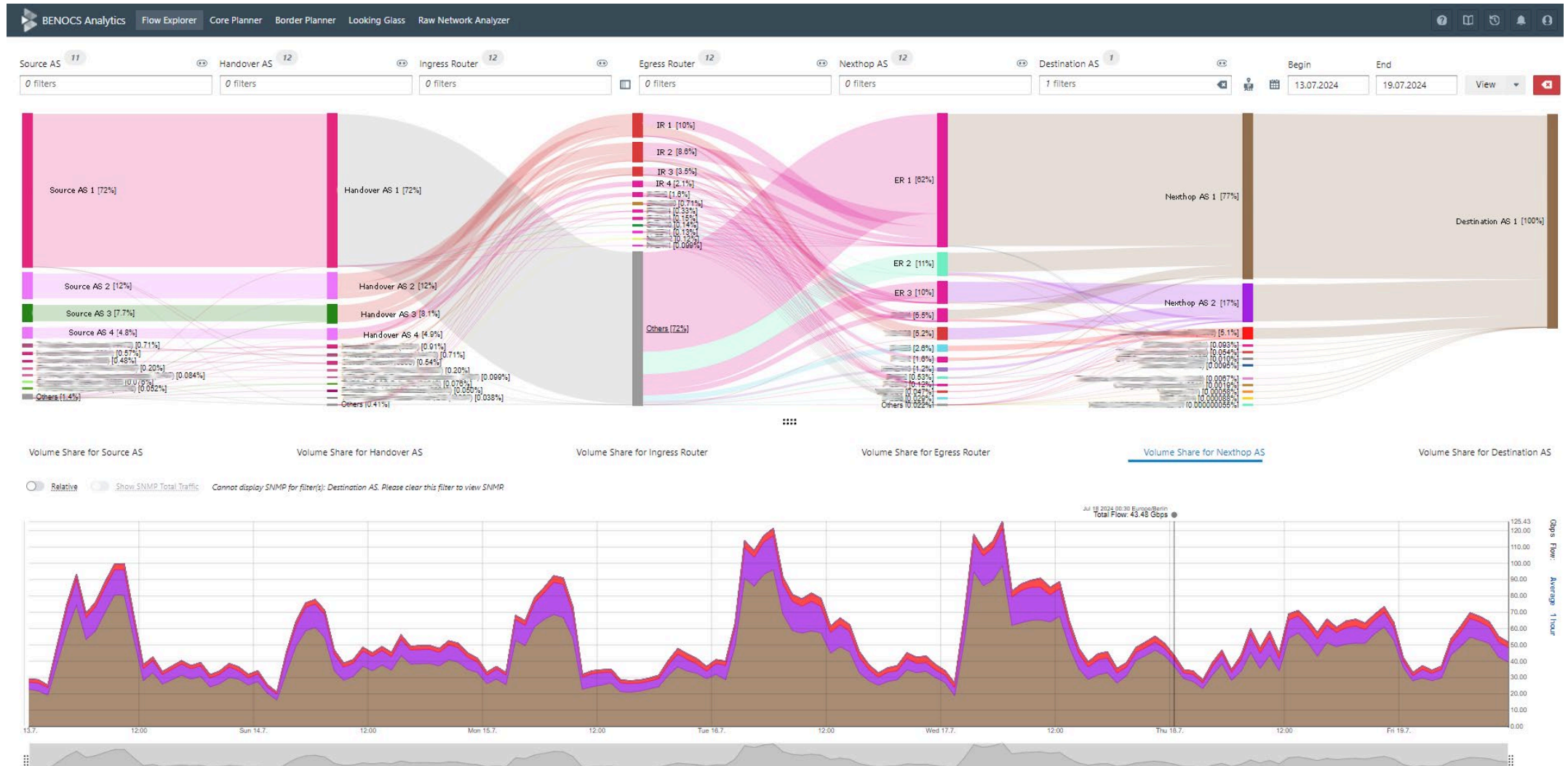
The background of the slide features a complex network of interconnected nodes and lines, rendered in a light blue color against a dark blue background. The nodes are small circles, and the lines represent connections between them, forming a web-like structure that spans the entire frame.

Typically, when you have a direct interconnect
with a peer in multiple locations...

...all traffic should exit via direct route.



But with this hyperscaler...



Vantage Point	Prefix	Route Distinguisher	AS Path	Local Pref	Med	BGP Next Hop	BGP Originator	BGP Community	Last update (UTC)
17.248.201.0/24	-	3356 714	100	0				2024-07-16 00:19:26	
17.69.104.0/23	-	714	100	150				2024-07-17 13:39:16	
17.188.120.0/24	-	1299 714	100	-				2024-07-17 19:00:29	
17.253.128.0/21	-	714	100	0				2024-06-28 07:52:34	
17.91.144.0/21	-	714	100	3830				2024-07-18 05:09:58	
17.45.206.0/23	-	3356 714	100	0				2024-07-16 00:19:27	
17.77.0.0/17	-	714	100	250				2024-07-17 13:39:36	
17.66.140.0/23	-	714	100	5				2024-07-17 13:38:16	
17.252.48.0/20	-	714	100	0				2024-06-28 07:52:34	
17.44.192.0/20	-	714	100	11880				2024-07-18 05:18:14	
17.4.27.0/24	-	3356 714	100	20				2024-07-16 00:19:31	
17.69.0.0/16	-	714	100	250				2024-07-17 13:39:36	
17.56.9.0/24	-	714	100	20				2024-06-28 07:52:33	
17.1.138.0/24	-	3356 714	100	20				2024-07-16 00:19:31	
17.58.2.0/24	-	714	100	0				2024-07-17 19:00:29	
17.160.0.0/16	-	714	100	20				2024-06-28 07:52:33	
17.240.32.0/20	-	714	100	20				2024-06-28 07:52:33	
17.155.0.0/20	-	3356 714	100	0				2024-07-16 00:19:26	
17.24.0.0/16	-	714	100	0				2024-07-16 00:19:21	
17.43.112.0/21	-	714	100	12180				2024-07-10 21:13:31	
17.61.0.0/17	-	714	100	0				2024-07-16 00:19:21	
17.57.156.0/24	-	3356 714	100	0				2024-07-16 00:19:22	
17.39.96.0/20	-	714	100	20				2024-06-28 07:52:33	
17.39.128.0/19	-	3356 714	100	0				2024-07-16 00:19:26	
17.33.90.0/24	-	3356 714	100	0				2024-07-16 00:19:20	

Total prefixes advertised: 1667

Prefixes with direct route: 757

Prefixes with indirect route: 910

Export

- Save as CSV
- Save as XLS
- Save as XLSX

Begin: 19.07.2024 13:45 MESZ | End: 19.07.2024 14:45 MESZ | Filter: Destination AS='714' AND (Sampling Direction = 'i' OR Sampling Direction = 'u') AND (Interface Type = 'edge-facing') | History | Submit



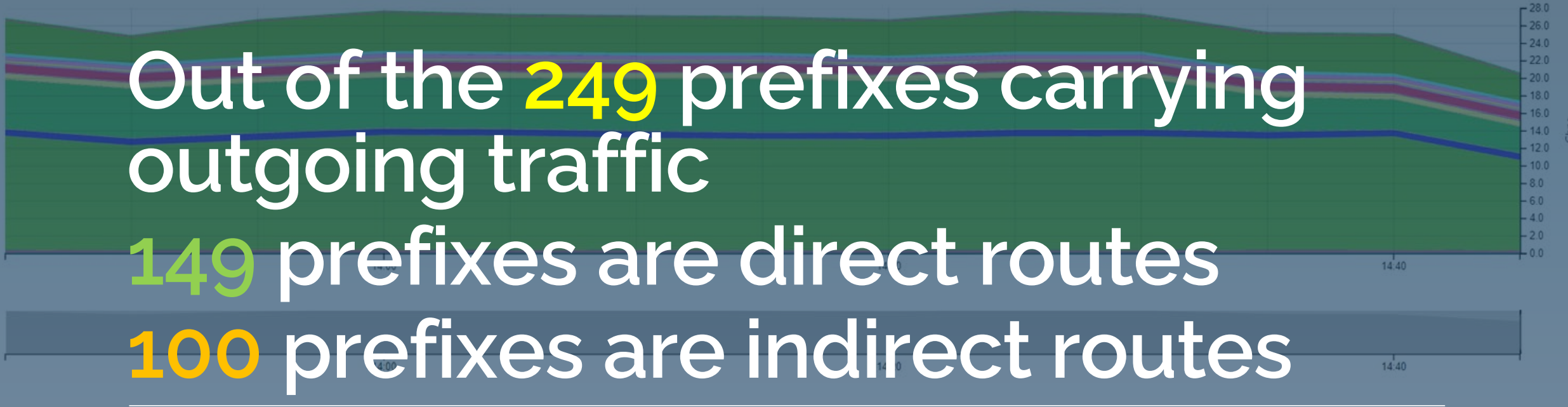
Total prefixes advertised: 1667

Prefixes carrying outgoing traffic: 249

Prefixes carrying no traffic: 1418

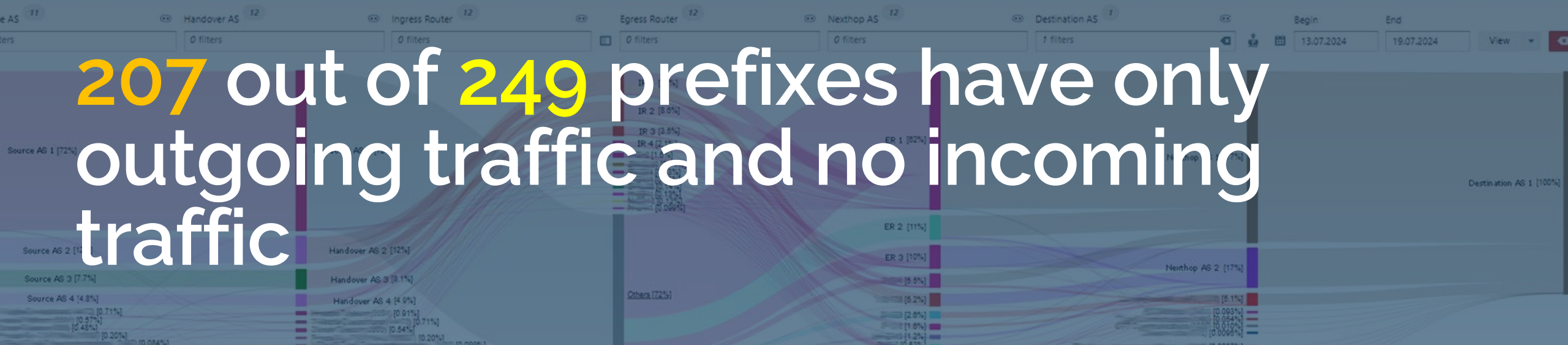
Destination Subnet	Nexthop AS	Forward AS Path	Destination AS	Max Bps	Bytes	Average Bps
2a01:b740:a41::/48 (1)				13 Gbps	5.7 TB	12.7 Gbps
	714		714	13 Gbps	5.7 TB	12.7 Gbps
17.248.209.0/24 (3)				6.18 Gbps	2.44 TB	5.42 Gbps
	1299	1299 714	714	4.87 Gbps	1.94 TB	4.32 Gbps
	3356	3356 714	714	1.25 Gbps	474 GB	1.05 Gbps
	1300		714	63.3 Mbps	20.4 GB	15.4 Mbps

Begin: 19.07.2024 13:45 MESZ End: 19.07.2024 14:45 MESZ Filter: Destination AS='714' AND (Sampling Direction = 'i' OR Sampling Direction = 'u') AND (Interface Type = 'edge-facing') History Submit



Destination Subnet	Nexthop AS	Forward AS Path	Destination AS	Max Bps	Bytes	Average Bps
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	714		714	13 Gbps	5.7 TB	12.7 Gbps
17.248.209.0/24 (3)				6.18 Gbps	2.44 TB	5.42 Gbps
	1299	1299 714	714	4.87 Gbps	1.94 TB	4.32 Gbps
	3356	3356 714	714	1.25 Gbps	474 GB	1.05 Gbps
	1300		714	63.3 Mbps	20.4 GB	15.4 Mbps

207 out of 249 prefixes have only outgoing traffic and no incoming traffic



	Traffic in (Mbps)	Traffic out (Mbps)	No of Prefixes
Direct in/indirect out	26,098 (99.9%)	5,232.2 (22.3%)	36 (14.5%)
Only direct out	0.0 (0%)	13,202.5 (56.3%)	149 (59.8%)
Only indirect out	0.0 (0%)	5,012.8 (21.4%)	58 (23.3%)
Transit in/asymmetrical transit out	14.8 (0.1%)	3.9 (0%)	5 (2%)
Transit in/transit out	6.5 (0%)	4.8 (0%)	1 (0.4%)
Total	26,120 (100%)	23,456 (100%)	249 (100%)

Adding location to the context

90% of the no incoming/only outgoing traffic is terminating in a different continent (US)

Our recommendation

- For US-terminating traffic (90% of outgoing traffic), consider establishing a PNI in the US and manage BGP configuration (cold-potato routing).
- For direct-in/indirect-out traffic, ensure symmetrical routes by reaching out to the BGP engineers of the Hyperscaler for potential corrections.

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