IXPDB & Euro-IX Tools

SEE 8 2019, Sarajevo

Association of IXPs

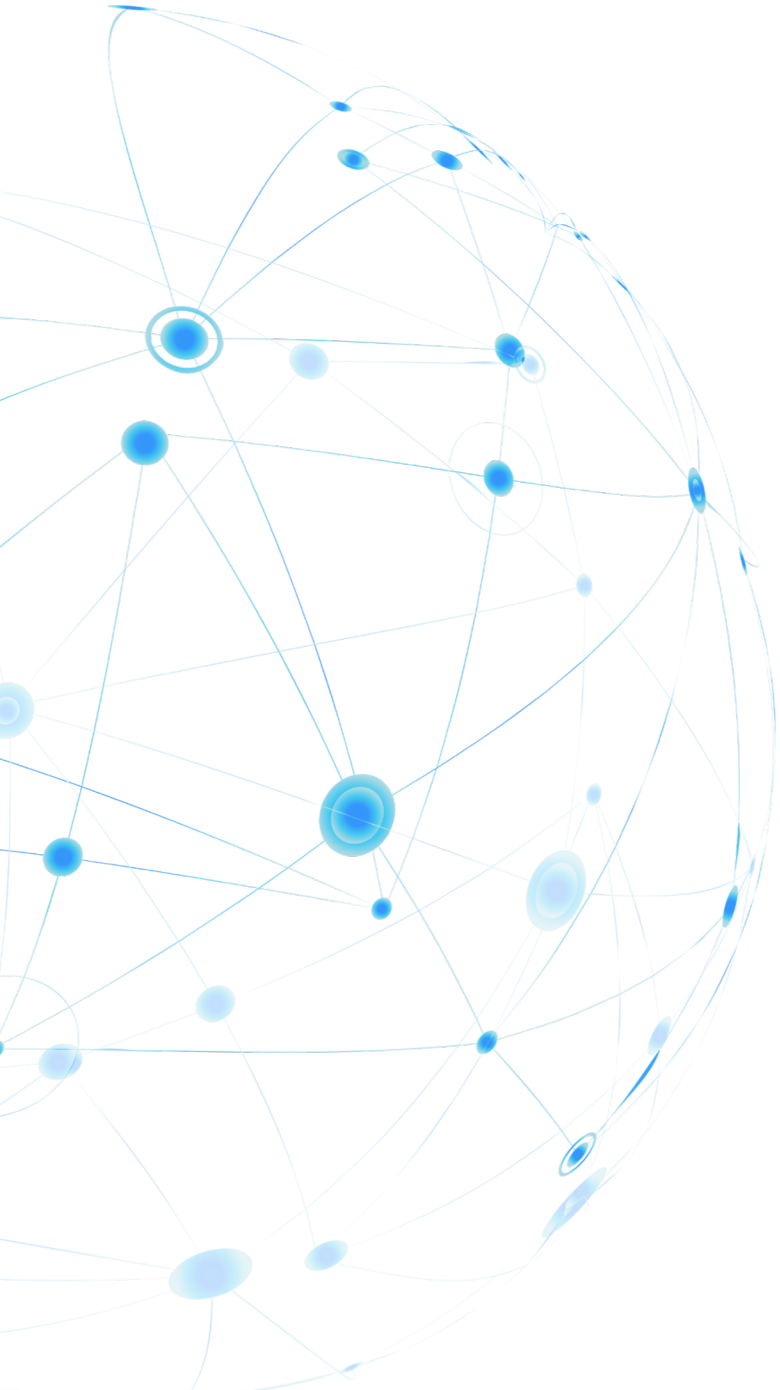
73 affiliated members

- 54 IXPs in the Euro-IX region, 49 countries, operating over 100 peering LANs
- 19 IXPs from the rest of the world
- Newest Member:
  - Piter – IX- Russia
  - IXP. Mk - Macedonia

Euro-IX Activities

- 2 Fora a year
  - 34th in Toulouse hosted by TOUIX and France-IX
  - 35th in Zaandam hosted by AMS-IX, 20 -22 October
- Website & Database
- Fellowship & Mentor-IX Programs
- Peering Toolbox – BCPs and other information for Peers
- Reports – Benchmarking, traffic, hardware, route servers.
- Newsletters - https://www.euro-ix.net/en/communications/newsletters/
- Route Server Large BGP communities list: https://www.euro-ix.net/en/forixps/large-bgp-communities/
- Social media
  - Twitter @euroix
  - Facebook fb.me/maineuroix
  - Youtube youtube.com/channel/UCFyucVRAAMzxyJIsxnGwsjw

Euro-IX Patrons



IXPDB & Euro-IX Tools

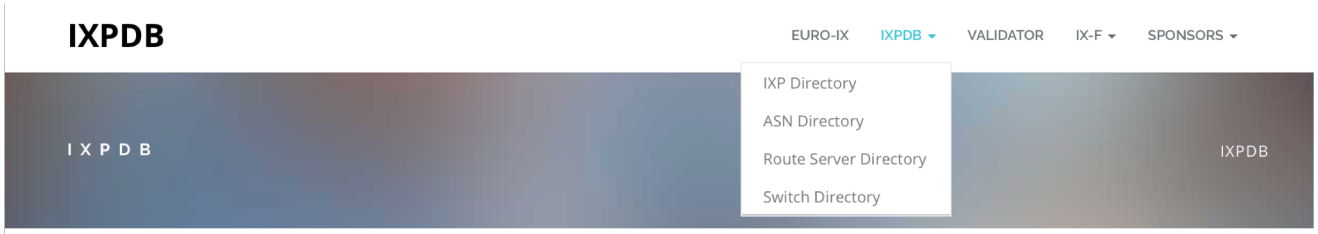
euro-IX

Some History

- It's not new, the original code was written around 15 years ago…
- Membership feedback from consultations and the Membership Survey clearly showed IXPs wanted a place to publish an accurate and complete data set.
- As members of IX-F it didn't make sense for all of us to create individual databases or directories
- In 2016 we considered the limitations of the underlying database and structure.
- We wanted to move forward with automation and work started on the IXP Member List JSON Schema, which is also used by PeeringDB
- In 2017 we contracted the website and IXP Database work to CZ.NIC.

What we've been working on - Home

You can access the IXPDB via https://ixpdb.euro-ix.net/



New: Regional ASN Count

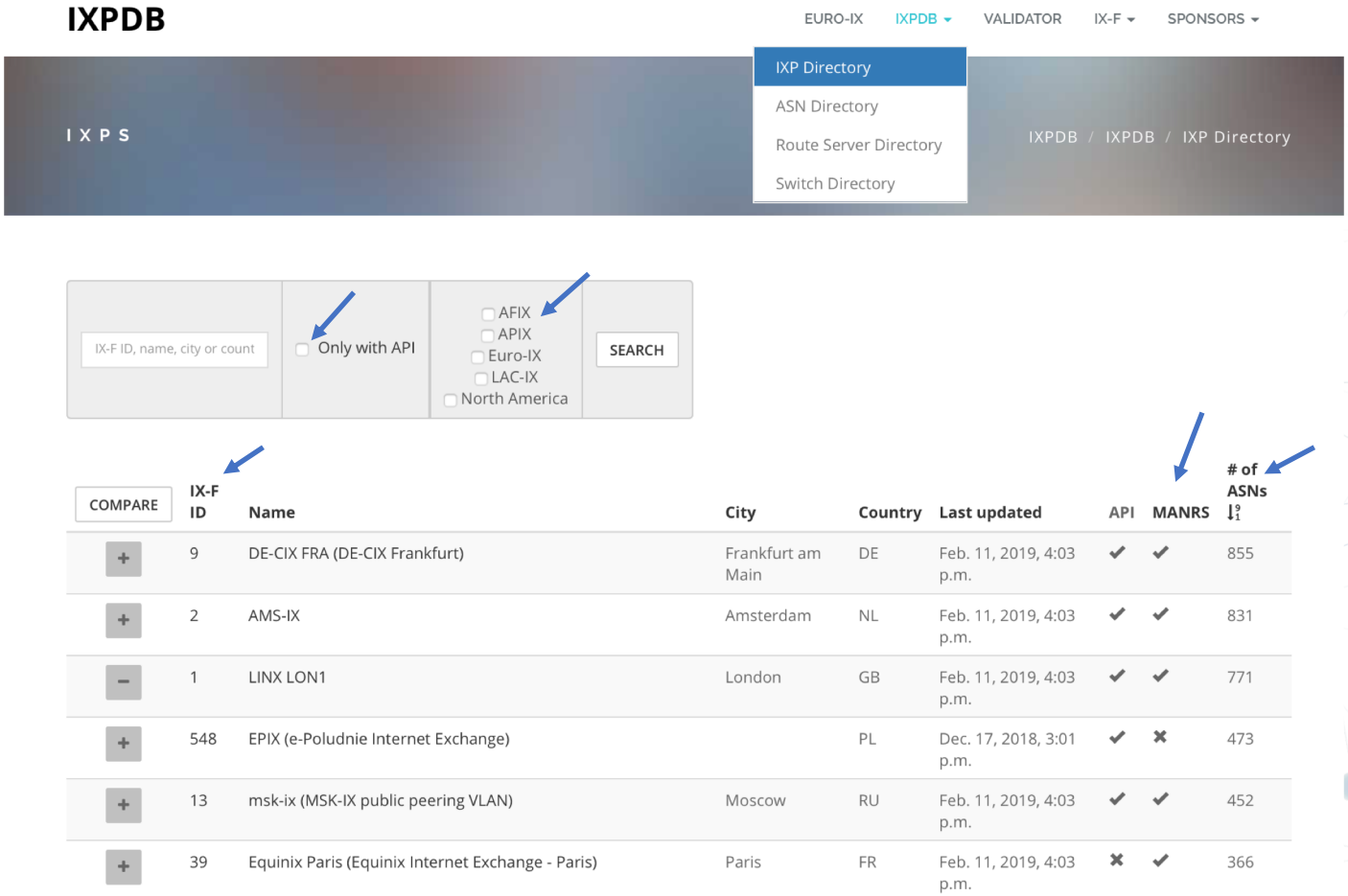
	AFIX	APIX	EURO-IX	LAC-IX	North America
# of ASNs	836	2347	11026	759	2748
# Unique ASNs	379	1141	2777	471	1013

IXPs With the Most ASNs Connected

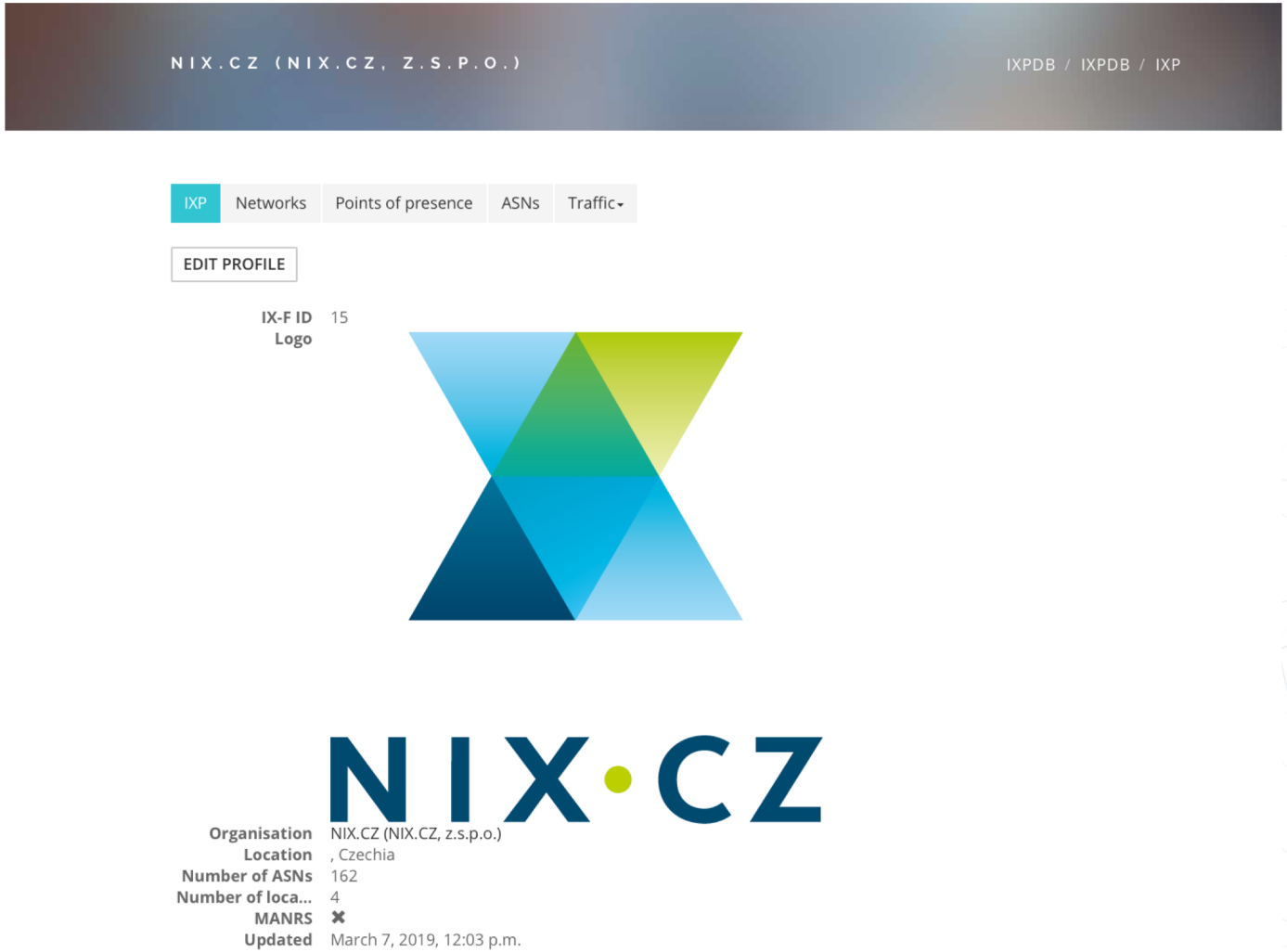
IX-F ID	Name	City	Country	Last updated	API	MANRS	# of ASNs
9	DE-CIX FRA (DE-CIX Frankfurt)	Frankfurt am Main	DE	Feb. 11, 2019, 4:03 p.m.	✔	✔	855
2	AMS-IX	Amsterdam	NL	Feb. 11, 2019, 4:03 p.m.	✔	✔	831
1	LINX LON1	London	GB	Feb. 11, 2019, 4:03 p.m.	✔	✔	771
548	EPIX (e-Poludnie Internet Exchange)		PL	Dec. 17, 2018, 3:01 p.m.	✔	✖	473
13	msk-ix (MSK-IX public peering VLAN)	Moscow	RU	Feb. 11, 2019, 4:03 p.m.	✔	✔	452
39	Equinix Paris (Equinix Internet Exchange - Paris)	Paris	FR	Feb. 11, 2019, 4:03 p.m.	✖	✔	366
600	LINX LON2	London	GB	Feb. 11, 2019, 4:03 p.m.	✔	✔	359

What we've been working on – IXP Directory

https://ixpdb.euro-ix.net/en/ixpdb/ixps/

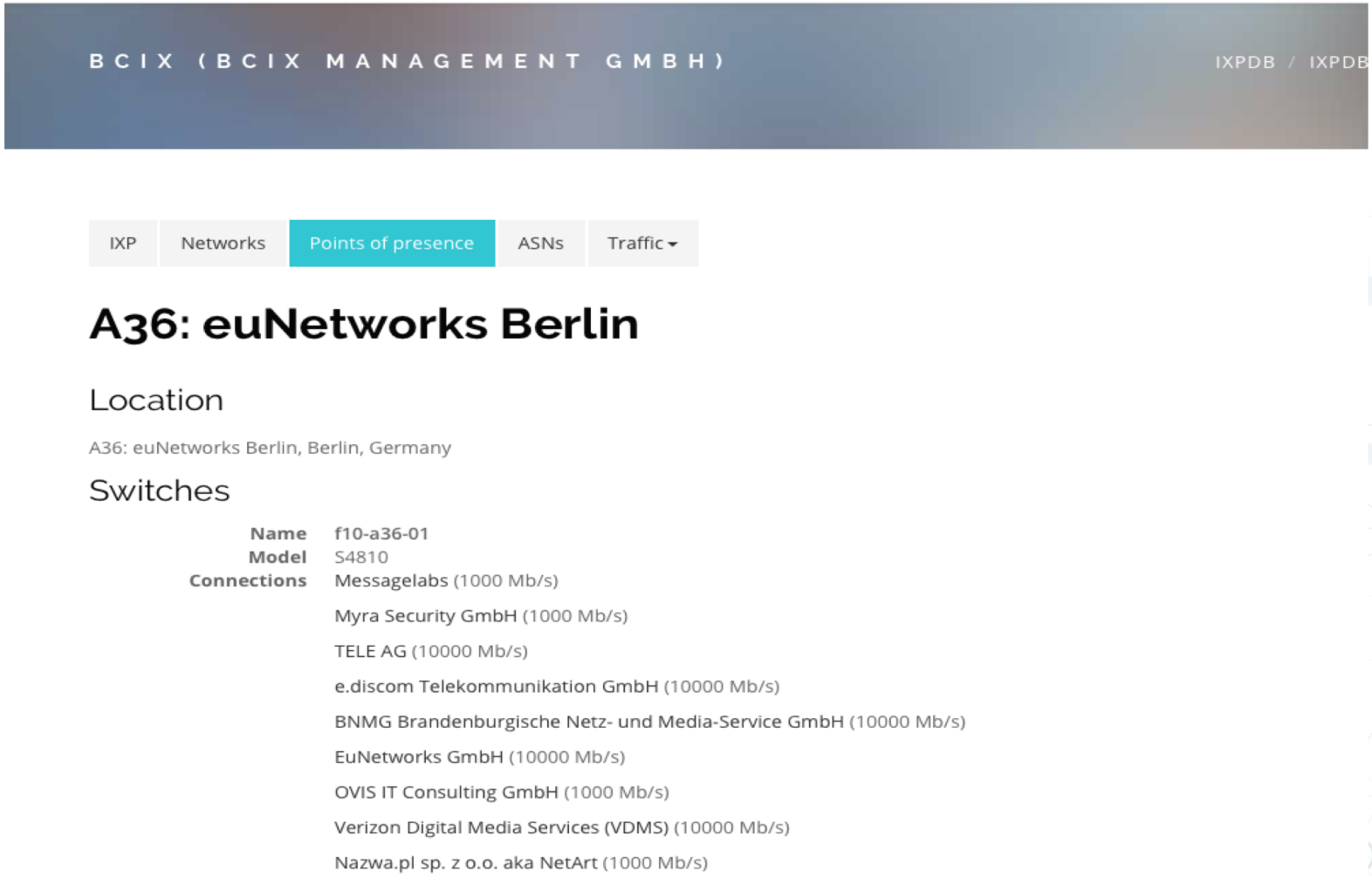


What we've been working – IXP profile



What we've been working on – Network tab

What we've been working on – Points of Presence

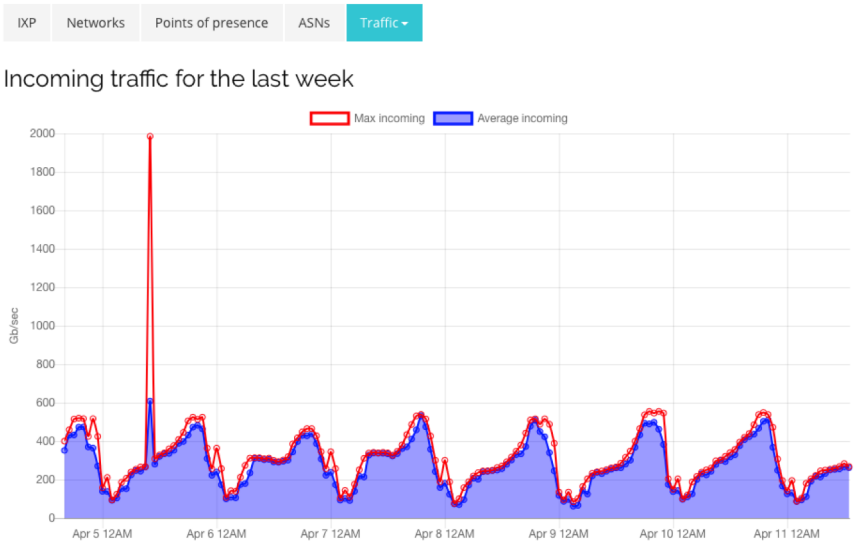


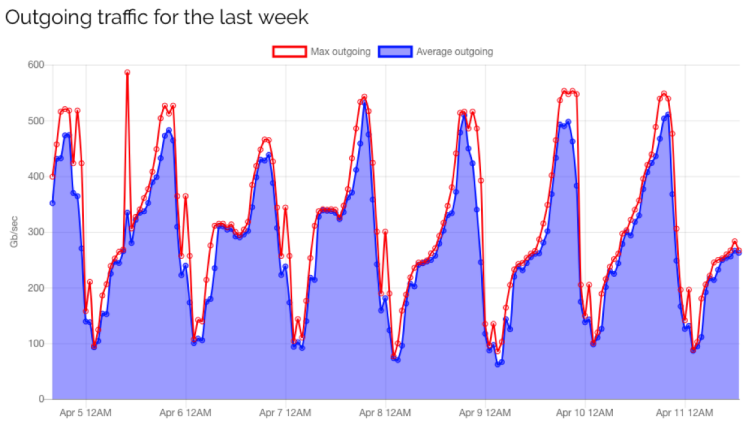
What we've been working on – ASNs

IXP | Networks | Points of presence | ASNs | Traffic

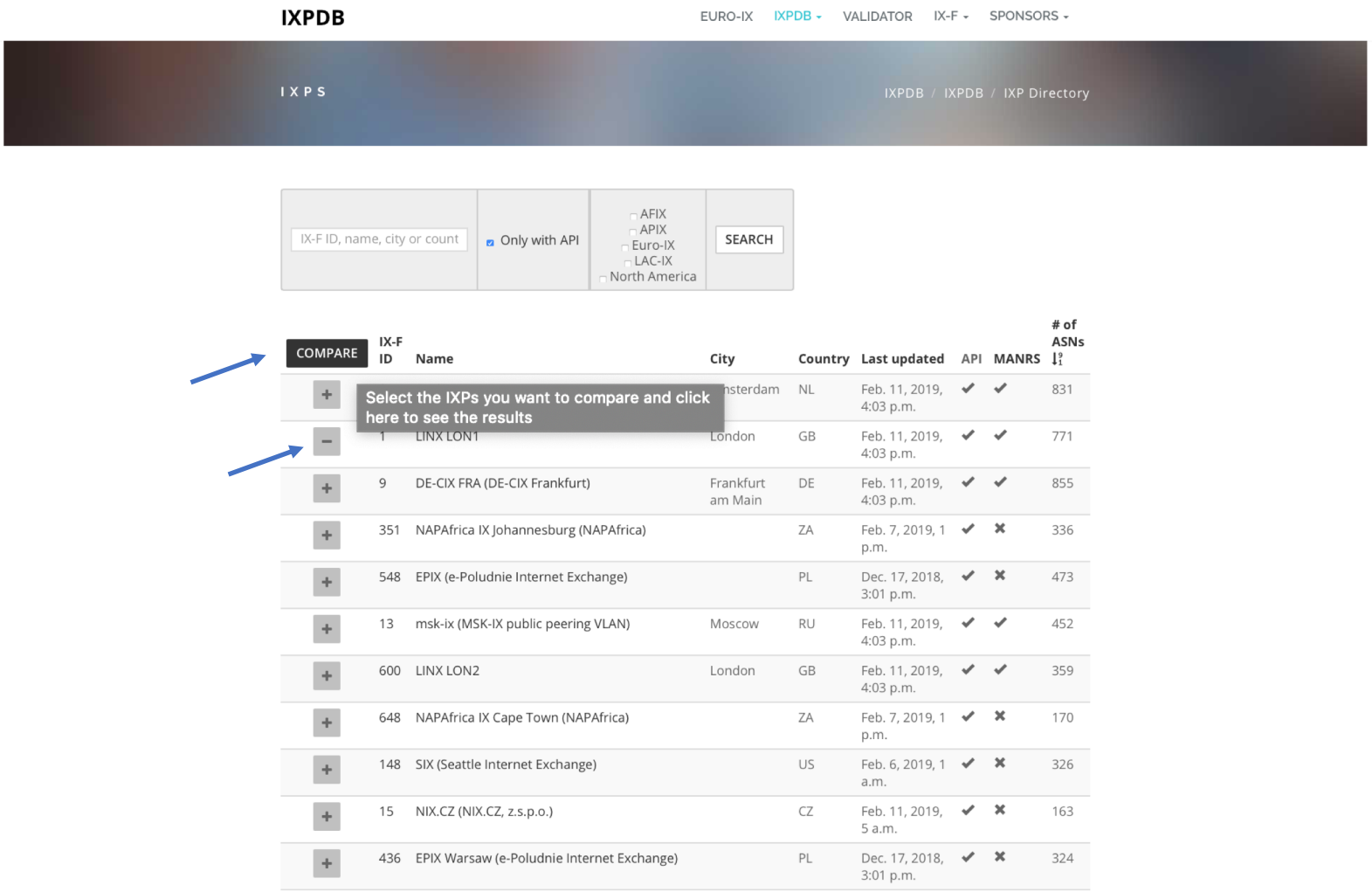
ASN	Organisation	Type	IP addresses	MAC addresses	MANRS	Entry in PeeringDB	# of IXP connection
42	Packet Clearing House (PCH)	Educational/Research			✖	✖	78
1241	FORTHnet S.A.	Cable/DSL/ISP			✔	✖	4
3216	VEON Wholesale Services B.V.	NSP			✖	✖	13
3856	Packet Clearing House (PCH)	Educational/Research			✖	✖	84
5483	Magyar Telekom Nyrt.	NSP			✖	✖	7
6507	Riot Games Ltd	Content			✖	✖	27
6866	CYTA Cyprus Telecommunications Authority	Cable/DSL/ISP			✖	✖	7
6939	Hurricane Electric	NSP			✖	✖	106
8075	Microsoft	Content			✔	✖	72
8262	Evolink	NSP			✖	✖	8
8390	Interoute				✖	✖	2

What we've been working on – IXP Traffic





What we've been working on – Compare IXPs



What we've been working on – Compare IXPs

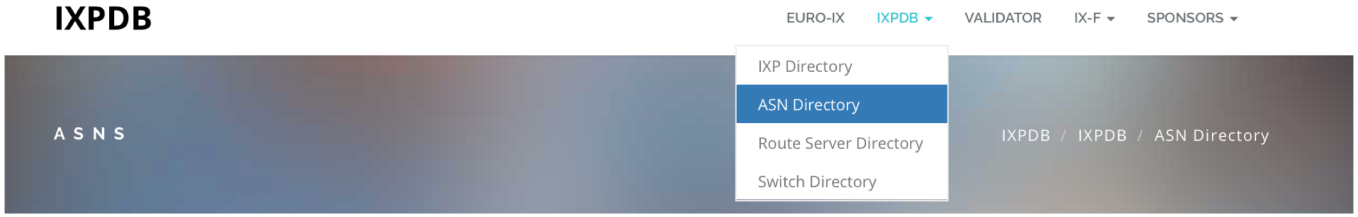
	BCIX (BCIX Management GmbH)	BIX.BG (Bulgarian Internet eXchange)	InterLAN Internet Exchange (Interlan IX)
Number of locations	8	1	16
MANRS	✖	✖	✖
Type	Non-profit	–	Non-profit
Joining requirements	AS Number	Legal entity AS number BGP-4	http://oldsite.interlan.ro/?lang=en&t=2
Application form	https://www.bcix.de/bcix/services/join-bcix/		http://oldsite.interlan.ro/?lang=en&t=2
Monitoring tools	mrtg	Zabbix SmokePing MRTG/RRDtool	Nagios and Cacti
Topology	https://www.bcix.de/bcix/connect/		http://www.interlan.ro/?lang=en&t=4&s=1
Reseller program	✔	✖	✔
Private peering	✔	✔	✔
24x7 services	✔	✔	✔
24x7 access	✖	✔	✔
Multi-protocol Labels, MPLS	✖	✖	✖
Jumbo frames	✖	✔	✔
Maximum Transmission Unit, MTU	–	9216	1500

What we've been working on – Compare IXPs

	BCIX (BCIX Management GmbH)	BIX.BG (Bulgarian Internet eXchange)	InterLAN Internet Exchange (Interlan IX)
Speed 10M	–	–	–
Speed 100M	–	–	–
Speed 1G	200 EUR	–	–
Speed 10G	750 EUR	–	–
Speed 40G	–	–	–
Speed 100G	3750 EUR	–	–
Number of ASNs	100	81	95
Common ASNs		#7 Cloudflare Inc. Packet Clearing House (PCH) Facebook UK Ltd Packet Clearing House (PCH) Hurricane Electric Google Akamai Technologies, Inc.	
Unique ASNs	#85]init[AG adviqo Aixit Amazon Apple Europe Limited AS250.net Network Operations BCIX BCIX Management GmbH BNMG Brandenburgische Netz- und Media-Service GmbH	#70 3T Com AngelSoft Atlantis Net BelCloud Hosting Corporation BGOne Blizoo Media and Broadband EAD Bulgarian Telecommunication Company Plc. Bulgartel EAD	#80 A1 Telecom Ada Voice Allnet Telecom Almsoft Computers Ambra ANCOM Antena TV Group ARNIEC Bestnet Service Bink Networks Limited

What we've been working on – ASN Directory

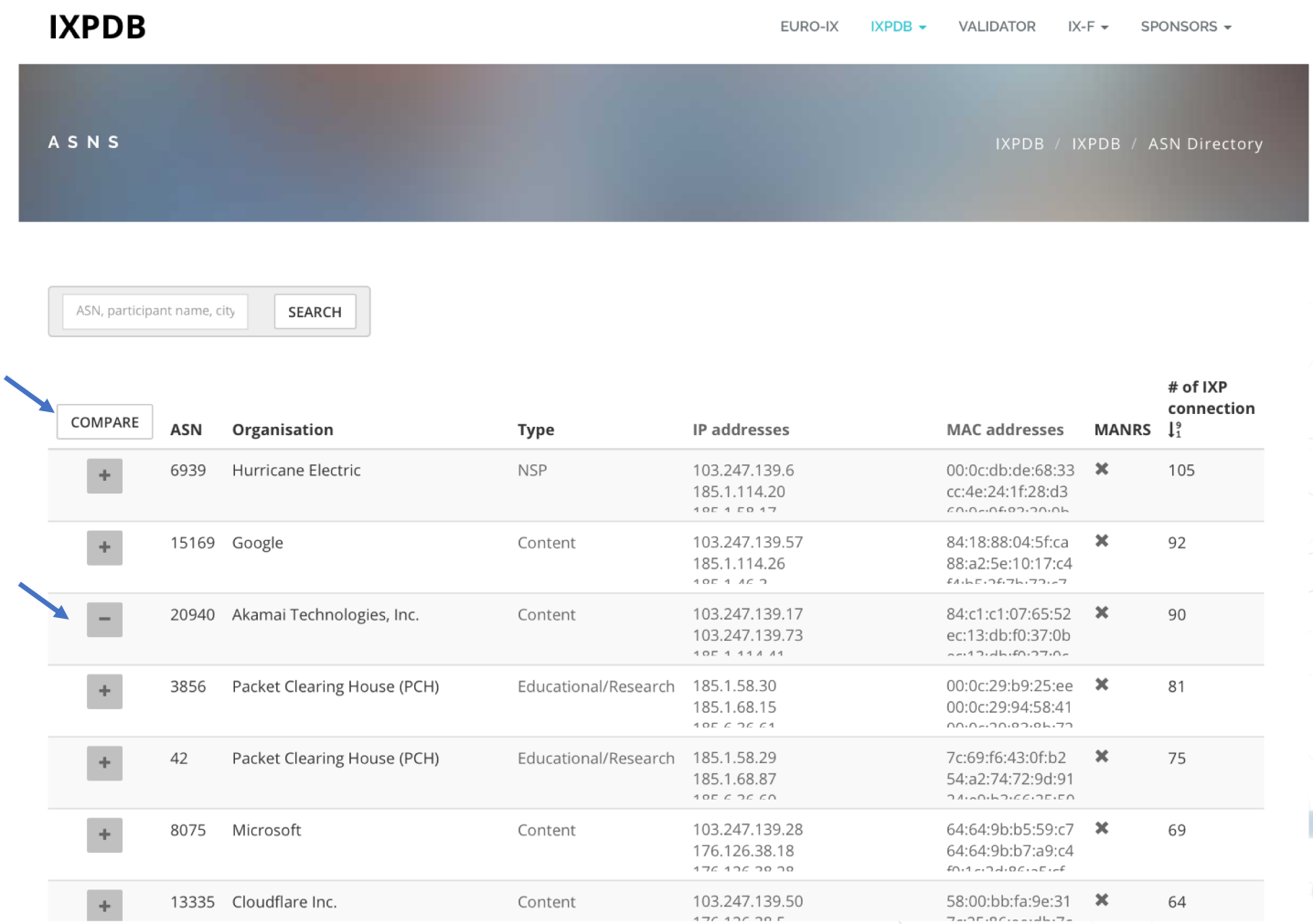
https://ixpdb.euro-ix.net/en/ixpdb/asns/



ASN, participant name, city SEARCH

COMPARE	ASN	Organisation	Type	IP addresses	MAC addresses	MANRS	# of IXP connection
+	6939	Hurricane Electric	NSP	103.247.139.6 185.1.114.20	00:0c:db:de:68:33 cc:4e:24:1f:28:d3	✖	105
−	15169	Google	Content	103.247.139.57 185.1.114.26	84:18:88:04:5f:ca 88:a2:5e:10:17:c4	✖	92
−	20940	Akamai Technologies, Inc.	Content	103.247.139.17 103.247.139.73	84:c1:c1:07:65:52 ec:13:db:f0:37:0b	✖	90
+	3856	Packet Clearing House (PCH)	Educational/Research	185.1.58.30 185.1.68.15	00:0c:29:b9:25:ee 00:0c:29:94:58:41	✖	81
+	42	Packet Clearing House (PCH)	Educational/Research	185.1.58.29 185.1.68.87	7c:69:f6:43:0f:b2 54:a2:74:72:9d:91	✖	75
+	8075	Microsoft	Content	103.247.139.28 176.126.38.18	64:64:9b:b5:59:c7 64:64:9b:b7:a9:c4	✖	69
+	13335	Cloudflare Inc.	Content	103.247.139.50 176.126.38.5	58:00:bb:fa:9e:31 7c:25:86:ee:db:7c	✖	64

What we've been working on – Compare ASNs



What we've been working on – Compare ASNs

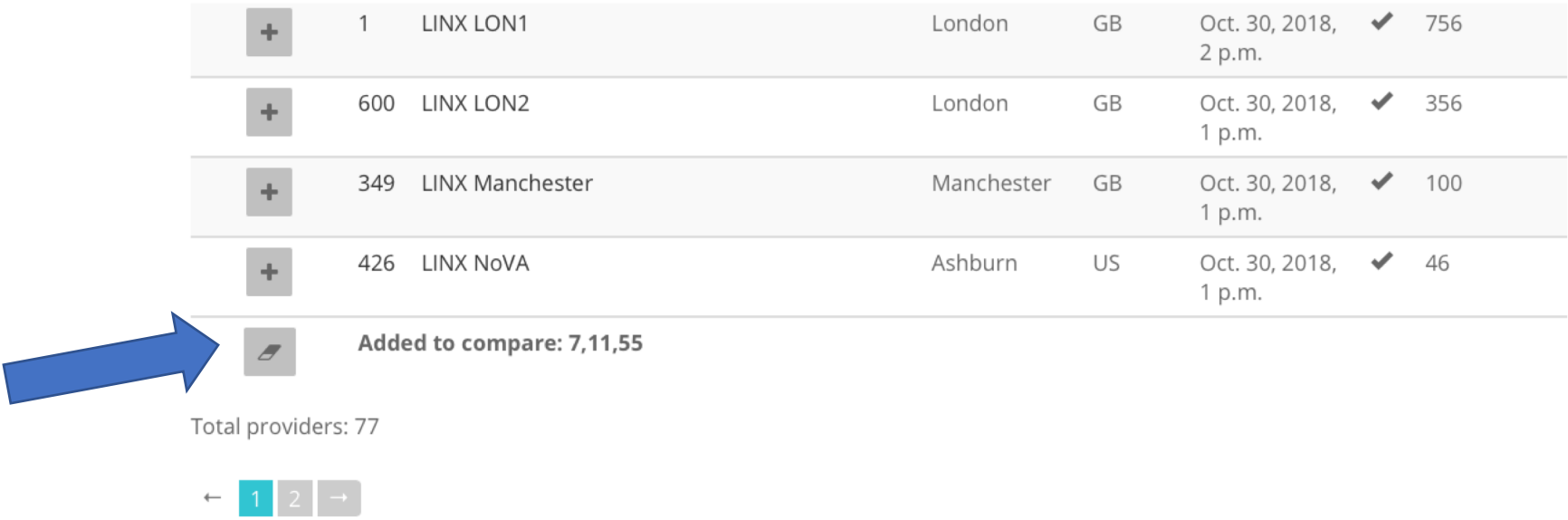
	Akamai Technologies, Inc.	Limelight Networks UK Ltd.
MANRS	✖	✖
ASN	20940	22822
Type	Content	Content
Number of IXPs	90	60
Common IXPs	#48 LINX LON1 AMS-IX VIX (Vienna Internet Exchange) Netnod - Stockholm (Netnod - Stockholm) MIX (Milan Internet Exchange) DE-CIX FRA (DE-CIX Frankfurt) NIX.CZ (NIX.CZ, z.s.p.o.) AMS-IX USA Chicago Equinix Zurich (Equinix Internet Exchange - Zurich) NL-ix (Neutral Internet Exchange) SwissIX (SwissIX - Swiss Internet Exchange) Equinix WA IX (Equinix Warsaw) InterLAN Internet Exchange (Interlan IX) Equinix Paris (Equinix Internet Exchange - Paris) France-IX Paris (France-IX Paris)	

What we've been working on - Compare ASNs

	Akamai Technologies, Inc.	Limelight Networks UK Ltd.
Unique IXPs	#42 AAIX (Alpes Adria Internet Exchange) AMS-IX Caribbean AMS-IX USA Bay Area Bangkok Neutral Internet Exchange (BKNIX) BBIX - Tokyo (BroadBand Internet eXchange - Tokyo) Big APE (The big apple peering Exchange) BIX.BG (Bulgarian Internet eXchange) BostonIX (Markley Boston Internet Exchange) CATNIX (Catalunya Neutral Internet eXchange) CRIX (NIC Costa Rica - Academia Nacional de Ciencias) DE-CIX Dallas (DE-CIX Dallas) DE-CIX Istanbul (DE-CIX Istanbul) Digital Realty - Phoenix (Digital Realty Phoenix) DIX - Lyngby (Danish Internet eXchange point) ECIX-BER ECIX-HAM ECIX-MUC Equinix Singapore (Equinix Singapore Exchange) Equinix Sydney (Equinix Sydney Data Centers) France-IX Marseille (Marseille IX) GIGAPIX (Gigabit Portuguese Internet Exchange)	#12 Any2 (CoreSite) Chicago (Any2 (CoreSite) Chicago) AZIX (Arizona Internet Exchange) DE-CIX Marseille (DE-CIX Marseille) DE-CIX PMO (DE-CIX Palermo) Digital Realty - New York (Digital Realty New York) LAIIX (Los Angeles International IX) LINX LON2 PAIX Virginia (Palo Alto Internet Exchange Virginia) PIX Vancouver (Peer1 Internet Exchange Vancouver) SFINX (Service for French Internet eXchange) SFMIX (San Francisco Metropolitan Internet Exchange) TOP-IX (Torino Piemonte Exchange Point)

What we've been working on..

Don't forget to clear your search ☺



What we've been working on - ASN Details

ASN | IXPs

Organisation	Akamai Technologies, Inc.
ASN	20940
PeeringDB	http://as20940.peeringdb.com
MANRS	✖
Updated	Dec. 18, 2018, 11:01 a.m.

What we've been working on - ASN Details

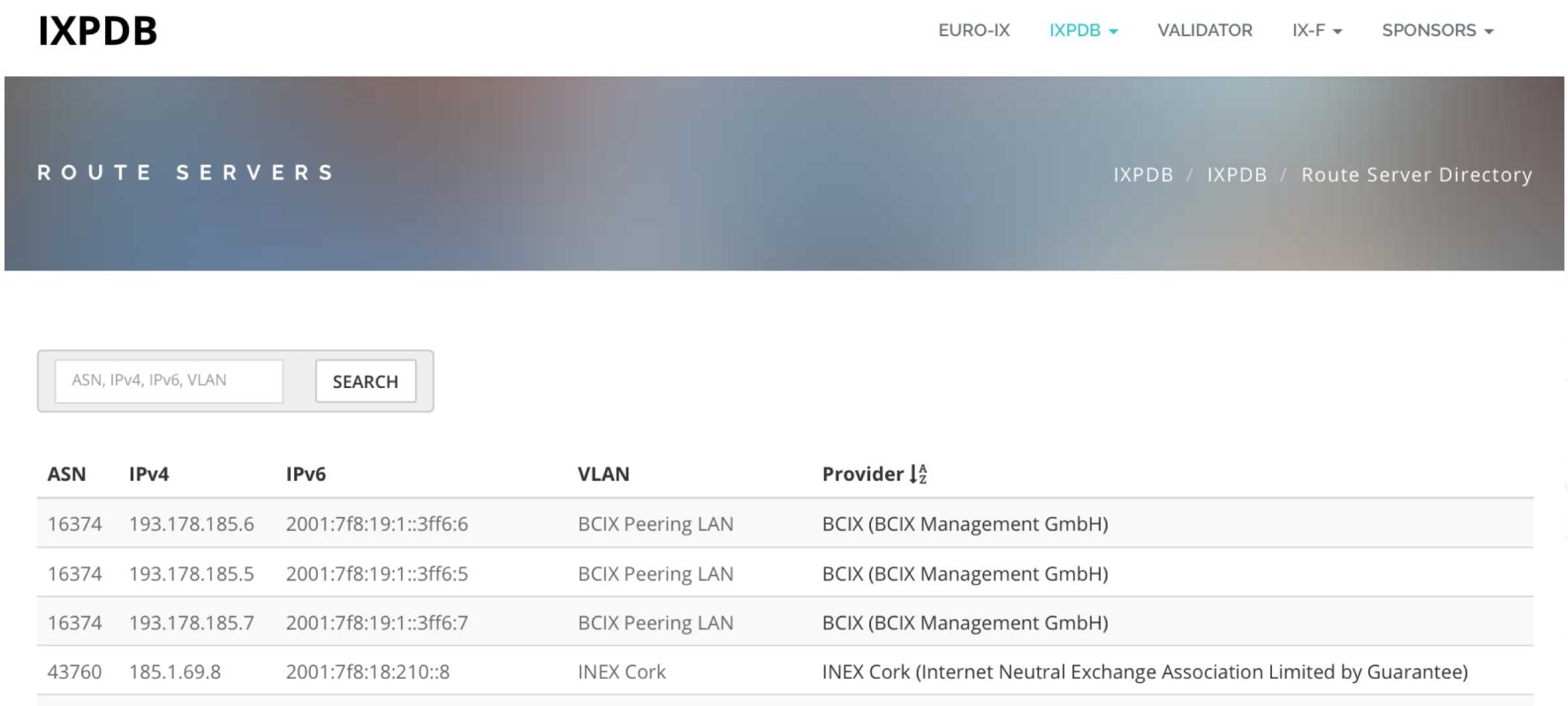
AKAMAI TECHNOLOGIES, INC.

IXPDB / IXPDB / Participant Providers

ASN | IXPs

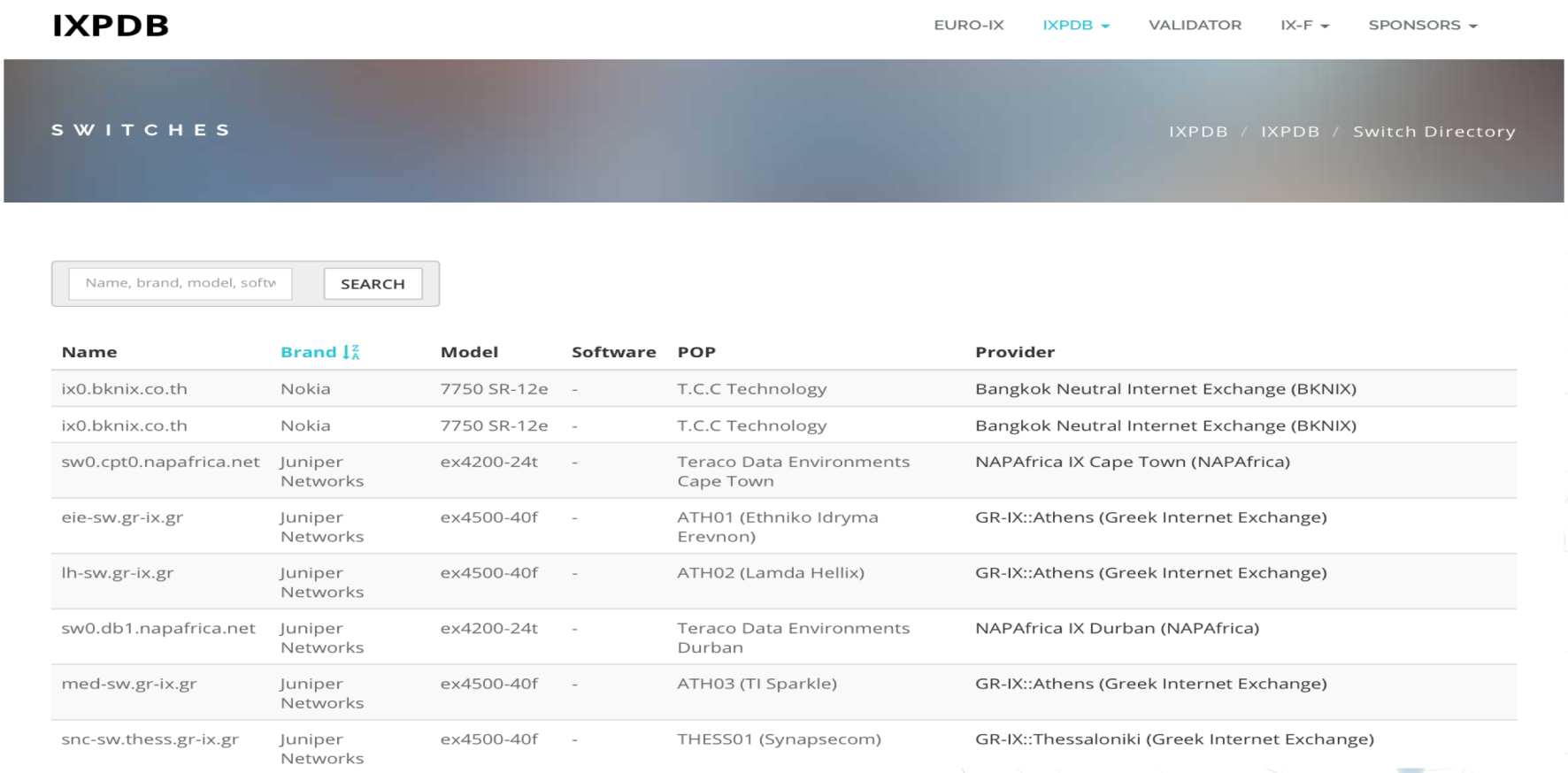
IX-F ID	Name	City	Country	Last updated	API	MANRS	# of ASNs
1	LINX LON1	London	GB	Feb. 25, 2019, 6:04 a.m.	✔	✔	774
2	AMS-IX	Amsterdam	NL	Feb. 25, 2019, 6:04 a.m.	✔	✔	832
3	VIX (Vienna Internet Exchange)		AT	Feb. 20, 2019, 2:01 p.m.	✔	✖	142
5	Netnod - Stockholm (Netnod - Stockholm)	Stockholm	SE	Feb. 25, 2019, 6:04 a.m.	✖	✔	159
8	MIX (Milan Internet Exchange)		IT	Feb. 25, 2019, 6:04 a.m.	✔	✔	250
9	DE-CIX FRA (DE-CIX Frankfurt)	Frankfurt am Main	DE	Feb. 25, 2019, 6:04 a.m.	✔	✔	854
10	GIGAPIX (Gigabit Portuguese Internet Exchange)		PT	Feb. 20, 2019, 10:06 a.m.	✔	✖	33
11	CATNIX (Catalunya Neutral Internet eXchange)		ES	Feb. 25, 2019, 6:04 a.m.	✔	✔	41
13	msk-ix (MSK-IX public peering VLAN)	Moscow	RU	Feb. 25, 2019, 6:04 a.m.	✔	✔	450
15	NIX.CZ (NIX.CZ, z.s.p.o.)		CZ	Feb. 25, 2019, 1 a.m.	✔	✖	163

What we've been working on - Route Server Directory



ASN	IPv4	IPv6	VLAN	Provider
16374	193.178.185.6	2001:7f8:19:1::3ff6:6	BCIX Peering LAN	BCIX (BCIX Management GmbH)
16374	193.178.185.5	2001:7f8:19:1::3ff6:5	BCIX Peering LAN	BCIX (BCIX Management GmbH)
16374	193.178.185.7	2001:7f8:19:1::3ff6:7	BCIX Peering LAN	BCIX (BCIX Management GmbH)
43760	185.1.69.8	2001:7f8:18:210::8	INEX Cork	INEX Cork (Internet Neutral Exchange Association Limited by Guarantee)
43760	185.1.69.9	2001:7f8:18:210::9	INEX Cork	INEX Cork (Internet Neutral Exchange Association Limited by Guarantee)

What we've been working on - Switch Directory



Name	Brand	Model	Software	POP	Provider
ix0.bknix.co.th	Nokia	7750 SR-12e	-	T.C.C Technology	Bangkok Neutral Internet Exchange (BKNIX)
ix0.bknix.co.th	Nokia	7750 SR-12e	-	T.C.C Technology	Bangkok Neutral Internet Exchange (BKNIX)
sw0.cpt0.napafrica.net	Juniper Networks	ex4200-24t	-	Teraco Data Environments Cape Town	NAPAfrica IX Cape Town (NAPAfrica)
eie-sw.gr-ix.gr	Juniper Networks	ex4500-40f	-	ATH01 (Ethniko Idryma Erevnon)	GR-IX::Athens (Greek Internet Exchange)
lh-sw.gr-ix.gr	Juniper Networks	ex4500-40f	-	ATH02 (Lamda Hellix)	GR-IX::Athens (Greek Internet Exchange)
sw0.db1.napafrica.net	Juniper Networks	ex4200-24t	-	Teraco Data Environments Durban	NAPAfrica IX Durban (NAPAfrica)
med-sw.gr-ix.gr	Juniper Networks	ex4500-40f	-	ATH03 (TI Sparkle)	GR-IX::Athens (Greek Internet Exchange)
snc-sw.thess.gr-ix.gr	Juniper Networks	ex4500-40f	-	THESS01 (Synapsecom)	GR-IX::Thessaloniki (Greek Internet Exchange)

What's next

- New JSON spec to be published
  - Further Route Server & Switch data
- Authentication – IXPs can choose what data they want public and private (IXPs/Members only)
- API work with Route Servers – prefix / ASNs
- Analysis tools, mappings, searches by city / courty
- Work with IXPs to implement a solution – how to guides / tutorials / IXP Manager / Asteroid / Support from other IXPs
- You too can help, speak to your IXPs
- 95 exports today!

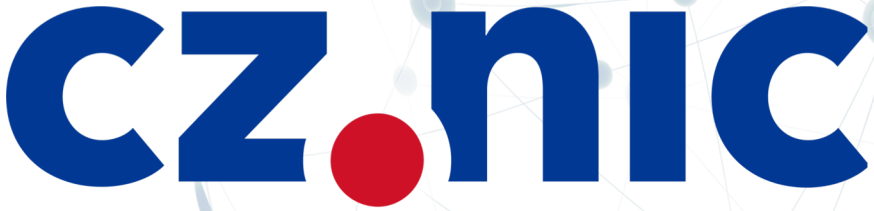
Other Information

- Mailing list for users - https://lists.euro-ix.net/mailman/listinfo/ixpdb
- GitHub JSON Member List Schema – https://github.com/euro-ix/json-schemas
- API is live – https://api.ixpdb.net
- IXPDB admin team - ixpdb-admin@euro-ix.net

If you think this is good work like we do, support us!

secretariat@euro-ix.net

Our Sponsors



Thank You

euro-IX