IXPDB & Euro-IX Tools

Peering Days 2019, Zagreb

Association of IXPs

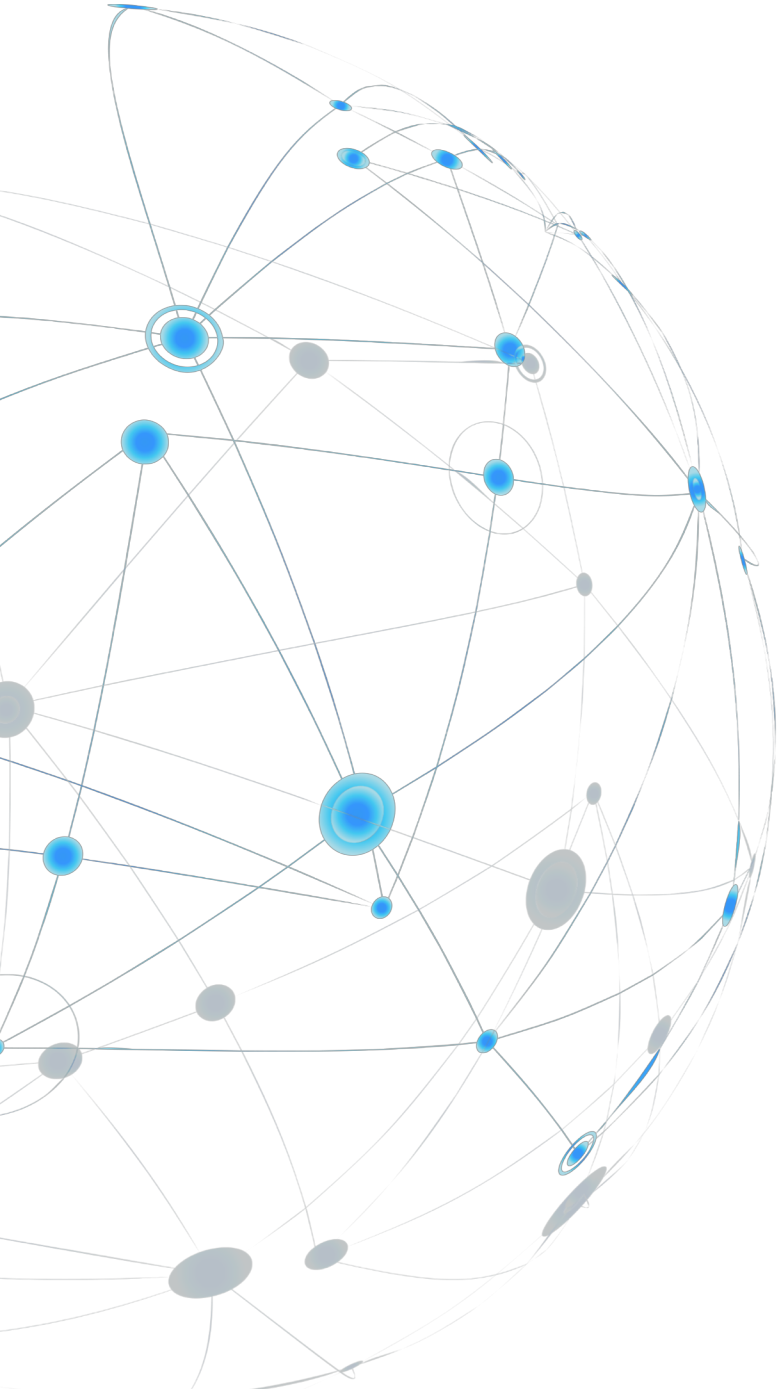
73 affiliated members

- 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
  - 33rd in Venice hosted by NAMEX, TOP-IX and VSIX (November 2018)
  - 34th in Toulouse hosted by TOUIX and France-IX
- 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/UCFyucVRAAMzxyJlsxnGwsjw

Euro-IX Patrons



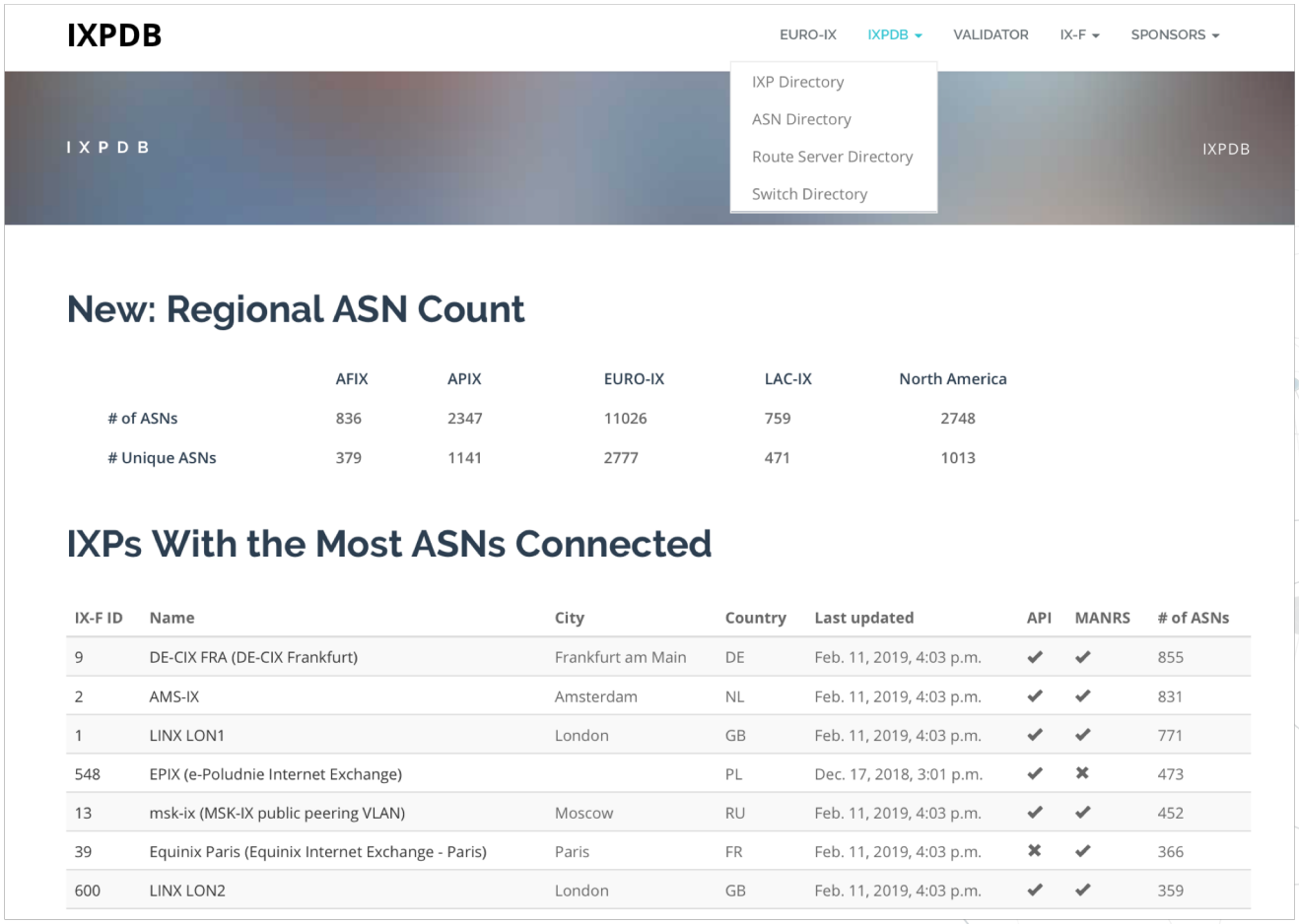
IXPDB & Euro-IX Tools

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

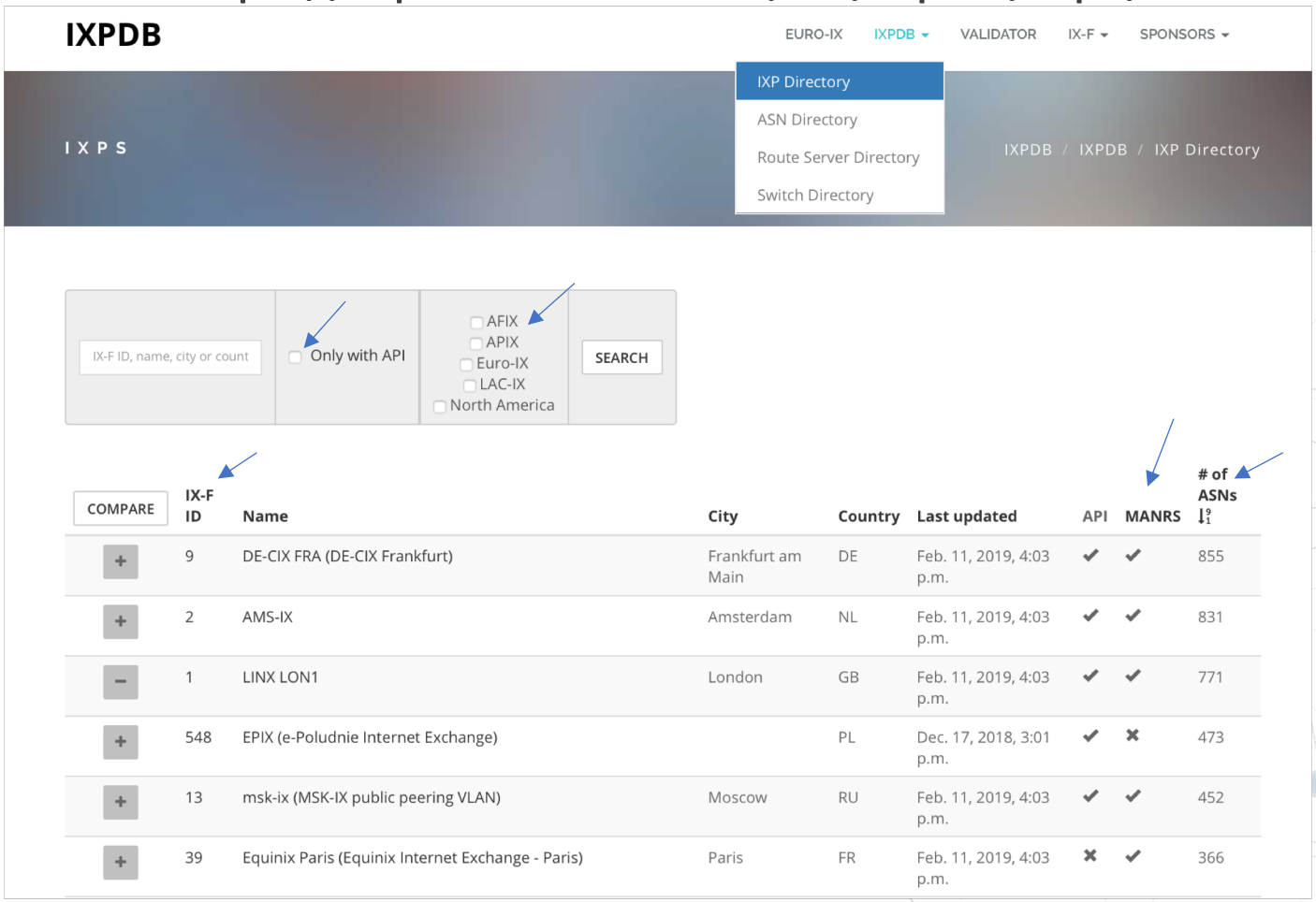
	AFIX	APIX	EURO-IX	LAC-IX	North America
# of ASNs	836	2347	11026	759	2748
# Unique ASNs	379	1141	2777	471	1013

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

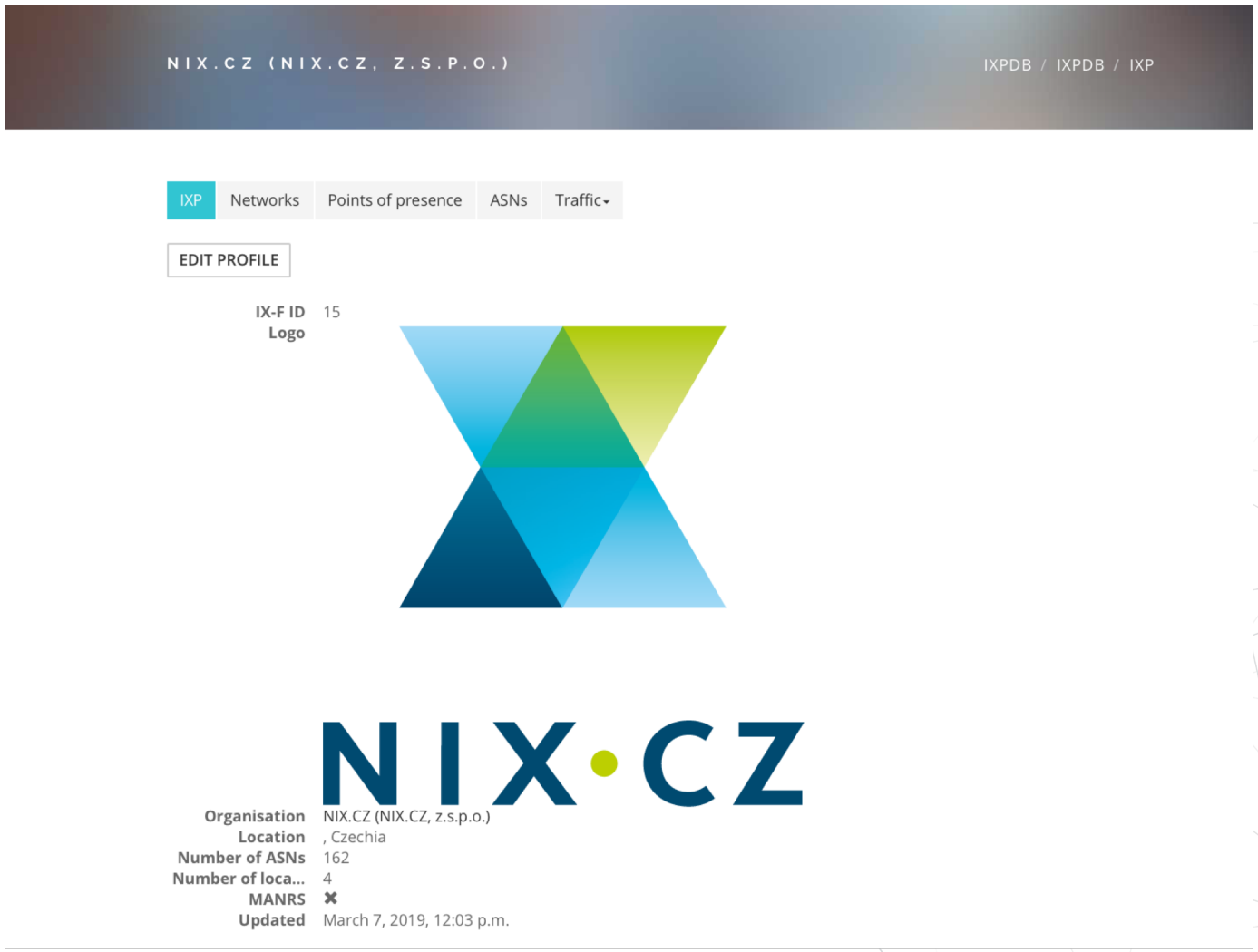
What we've been working on – IXP Directory

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

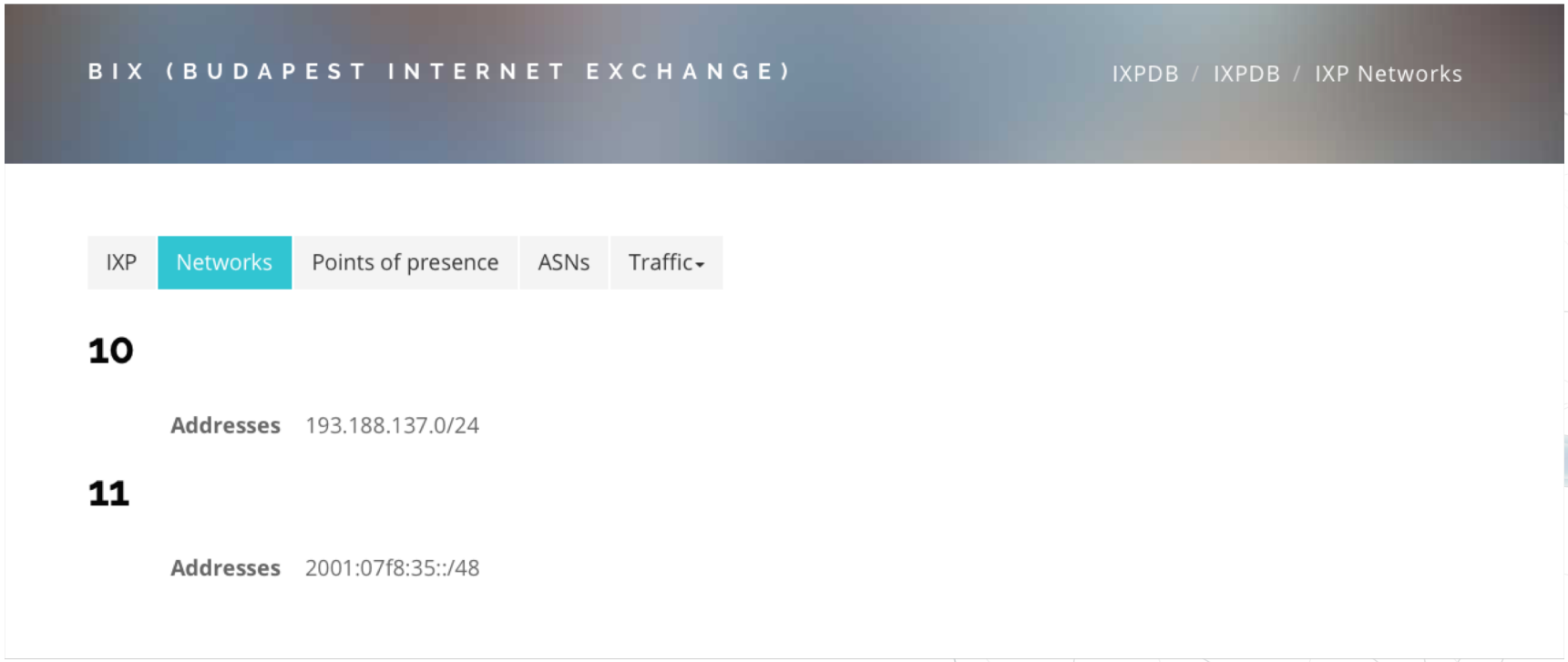


COMPARE	IX-F ID	Name	City	Country	Last updated	API	MANRS	# of ASNs
+	9	DE-CIX FRA (DE-CIX Frankfurt)	Frankfurt am Main	DE	Feb. 11, 2019, 4:03 p.m.	✔	✔	855
+	2	AMS-IX	Amsterdam	NL	Feb. 11, 2019, 4:03 p.m.	✔	✔	831
−	1	LINX LON1	London	GB	Feb. 11, 2019, 4:03 p.m.	✔	✔	771
+	548	EPIX (e-Poludnie Internet 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

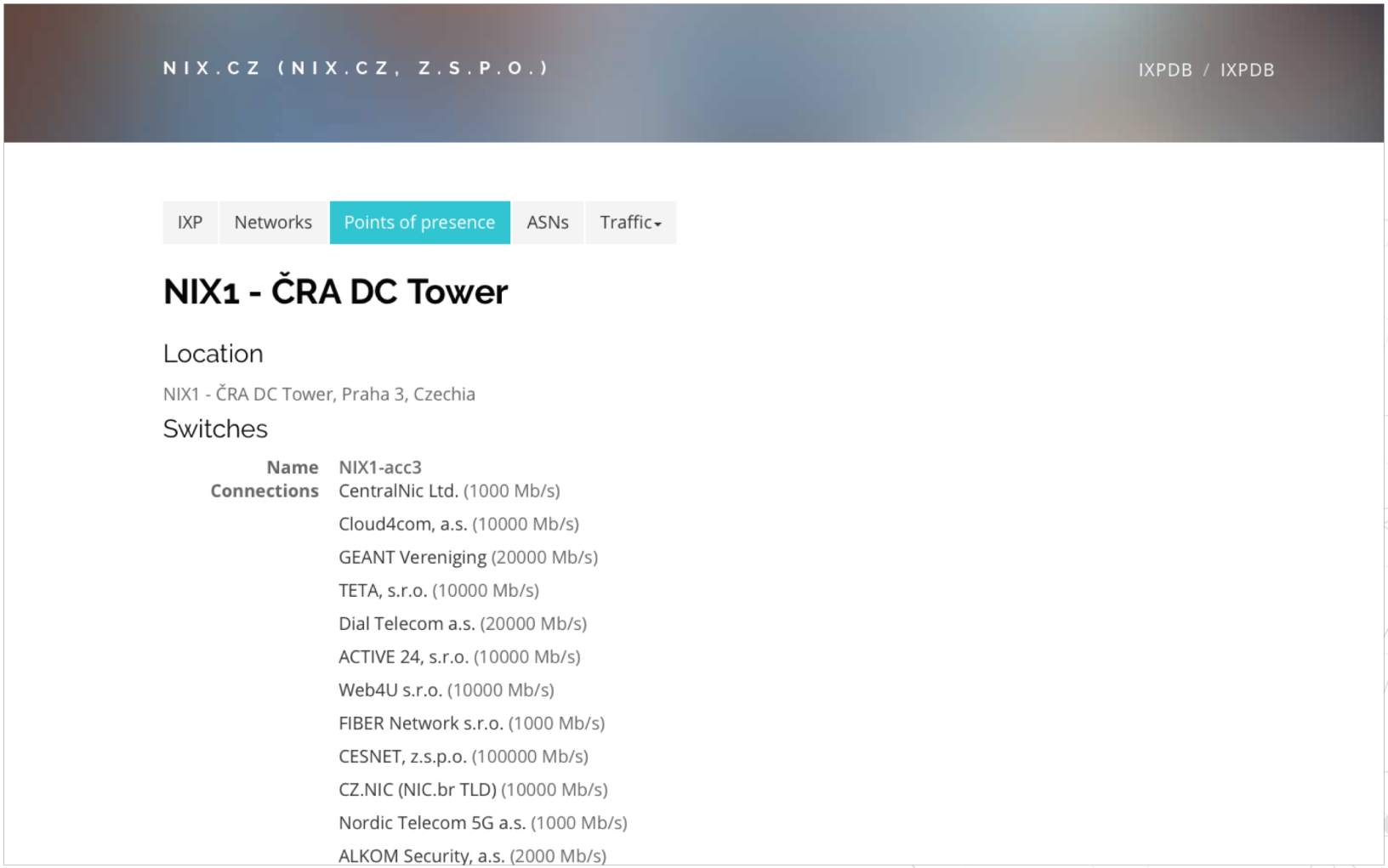
What we've been working – IXP profile



What we've been working on – Network tab



What we've been working on – Points of Presence



What we've been working on – ASNs

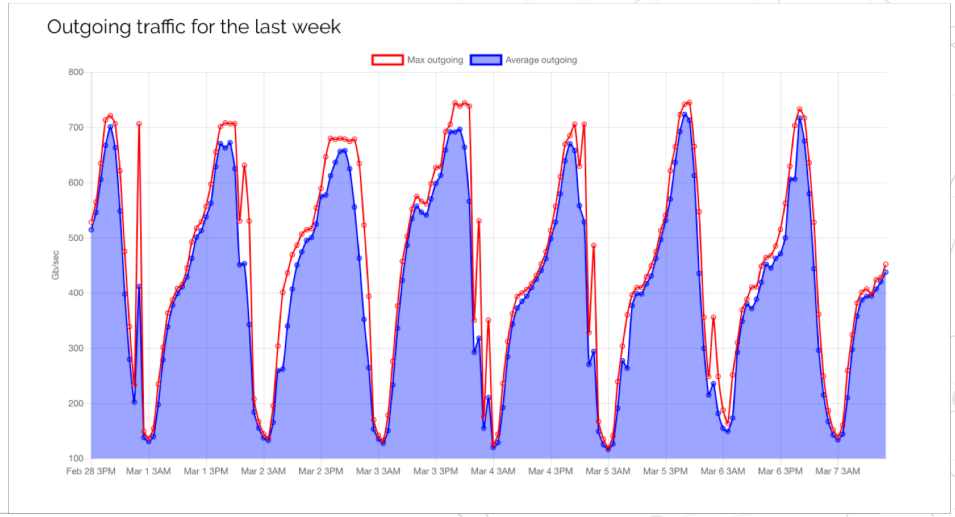
BIX (BUDAPEST INTERNET EXCHANGE)

IXPDB / IXPDB / IXP Participants

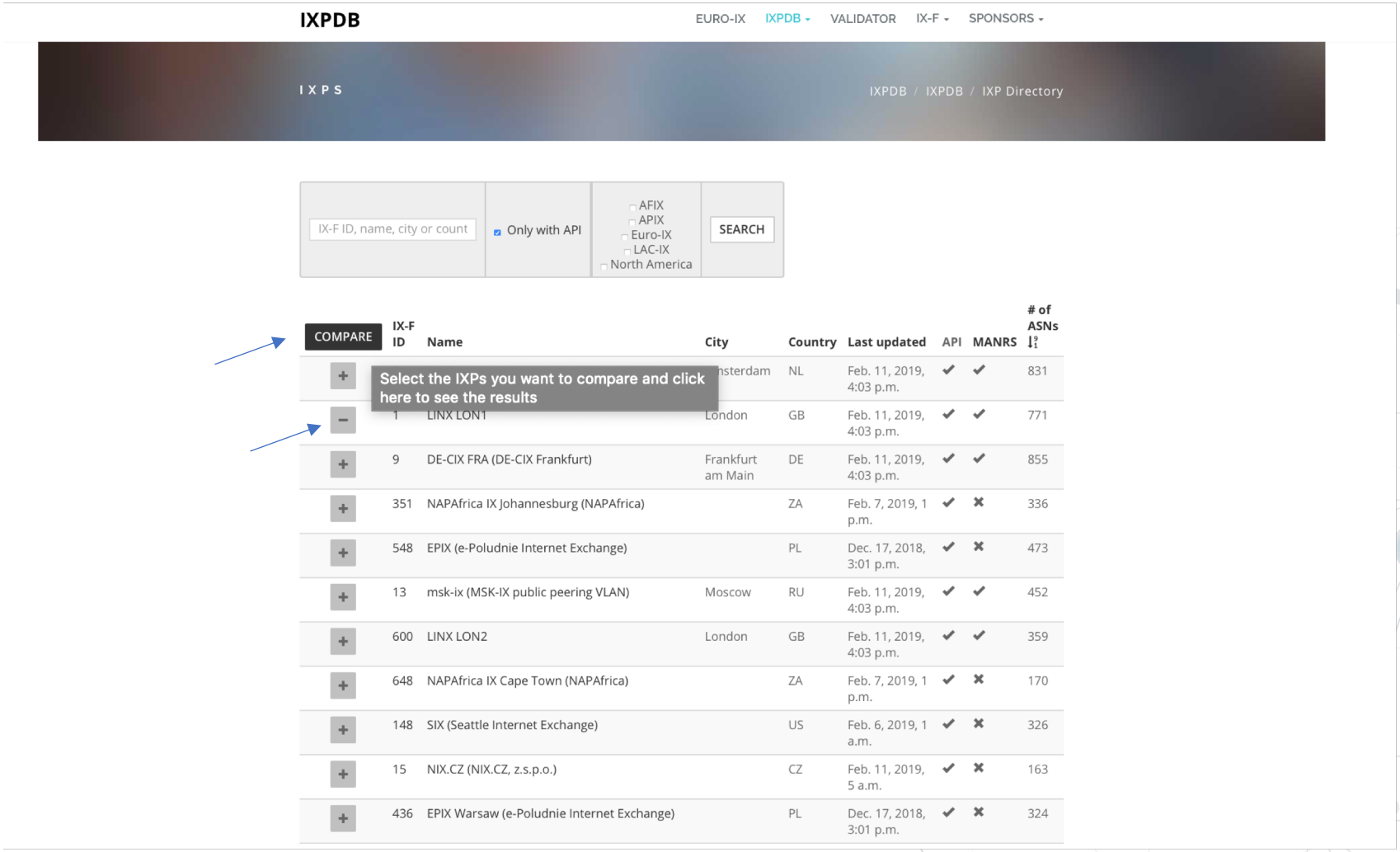
IXP | Networks | Points of presence | ASNs | Traffic

ASN	Organisation	Type	IP addresses	MAC addresses	MANRS	# of IXP connection
1955	Hungarnet				✖	2
3244	3C Telecom				✖	2
5400	British Telecommunications plc (2)	NSP			✖	19
5483	Magyar Telekom Nyrt.	NSP			✖	7
5580	GTT Communications, Inc.	NSP			✖	15
5588	Deutsche Telekom AG (ex Antel)	NSP			✖	12
6663	Turk Telekom International AT AG	NSP			✖	11
6830	Liberty Global Services B.V.	Cable/DSL/ISP			✖	20
6939	Hurricane Electric	NSP			✖	108
8075	Microsoft	Content			✖	73
8448	Telenor	NSP			✖	2
8462	TARR Kft.	Cable/DSL/ISP			✖	4

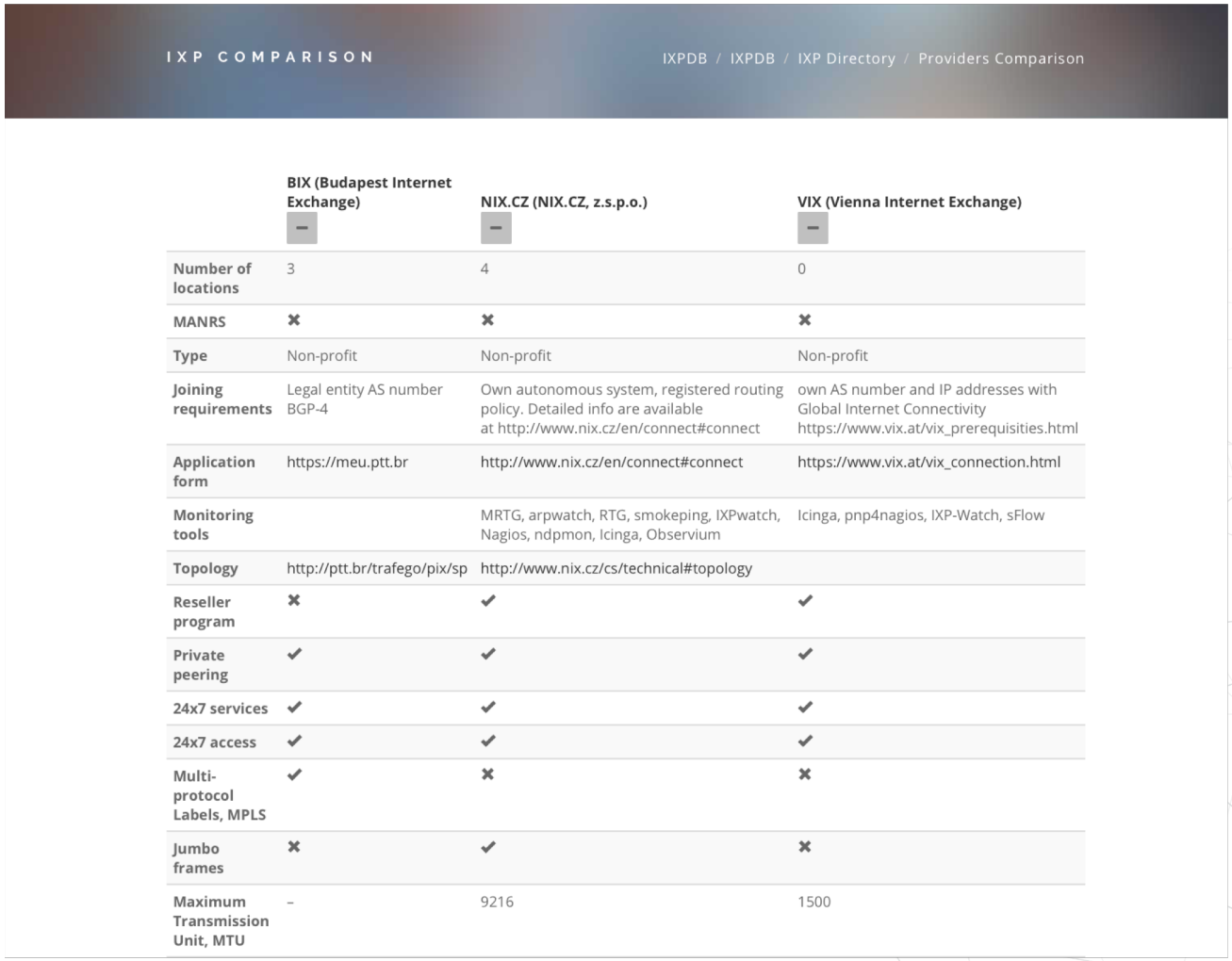
What we've been working on – IXP Traffic



What we've been working on – Compare IXPs



What we've been working on – Compare IXPs



IXP COMPARISON

IXPDB / IXPDB / IXP Directory / Providers Comparison

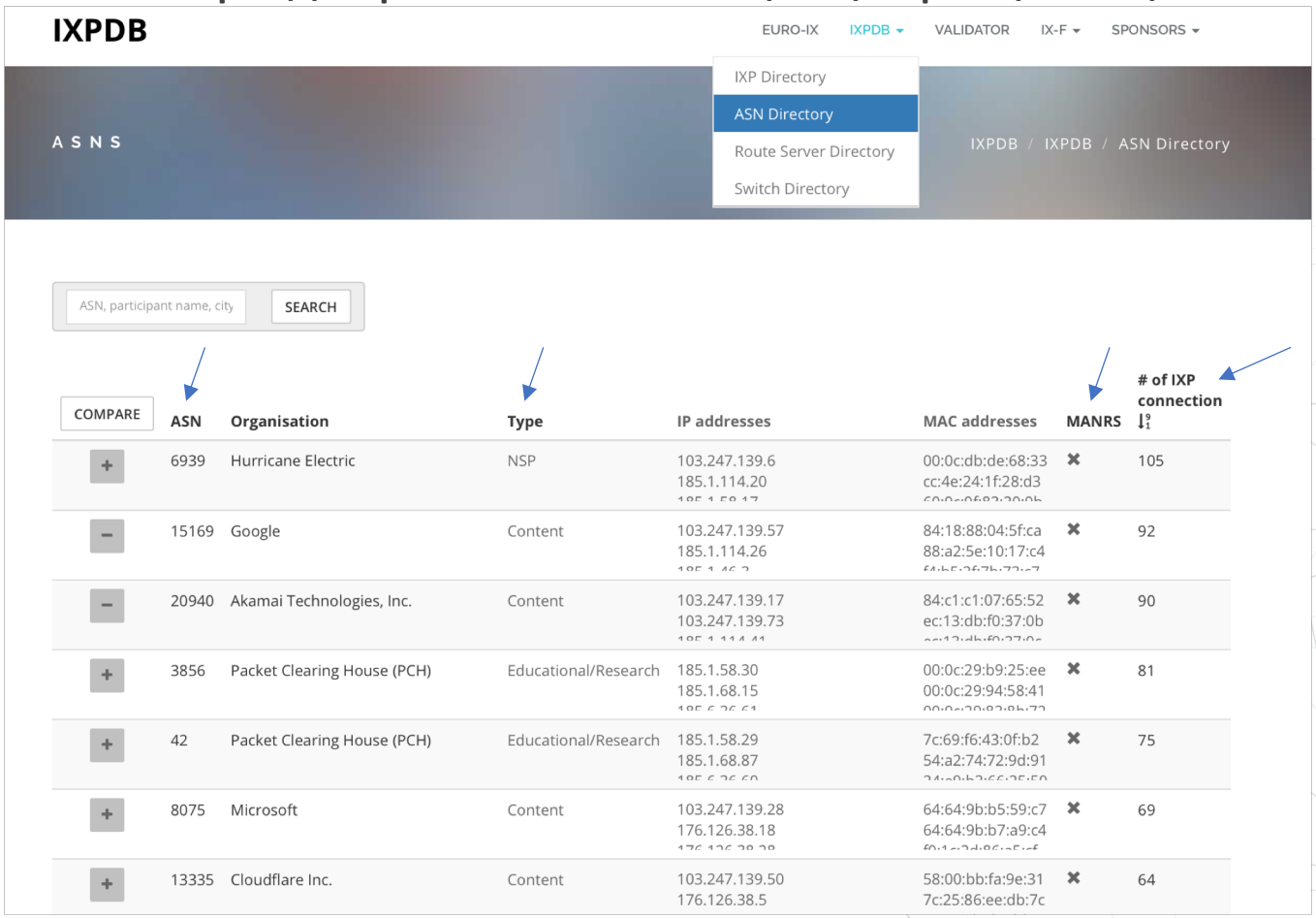
	BIX (Budapest Internet Exchange)	NIX.CZ (NIX.CZ, z.s.p.o.)	VIX (Vienna Internet Exchange)
Number of locations	3	4	0
MANRS	✖	✖	✖
Type	Non-profit	Non-profit	Non-profit
Joining requirements	Legal entity AS number BGP-4	Own autonomous system, registered routing policy. Detailed info are available at http://www.nix.cz/en/connect#connect	own AS number and IP addresses with Global Internet Connectivity https://www.vix.at/vix_prerequisities.html
Application form	https://meu.ptt.br	http://www.nix.cz/en/connect#connect	https://www.vix.at/vix_connection.html
Monitoring tools		MRTG, arpwatch, RTG, smokeping, IXPwatch, Nagios, ndpmon, Icinga, Observium	Icinga, pnp4nagios, IXP-Watch, sFlow
Topology	http://ptt.br/trafego/pix/sp	http://www.nix.cz/cs/technical#topology	
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

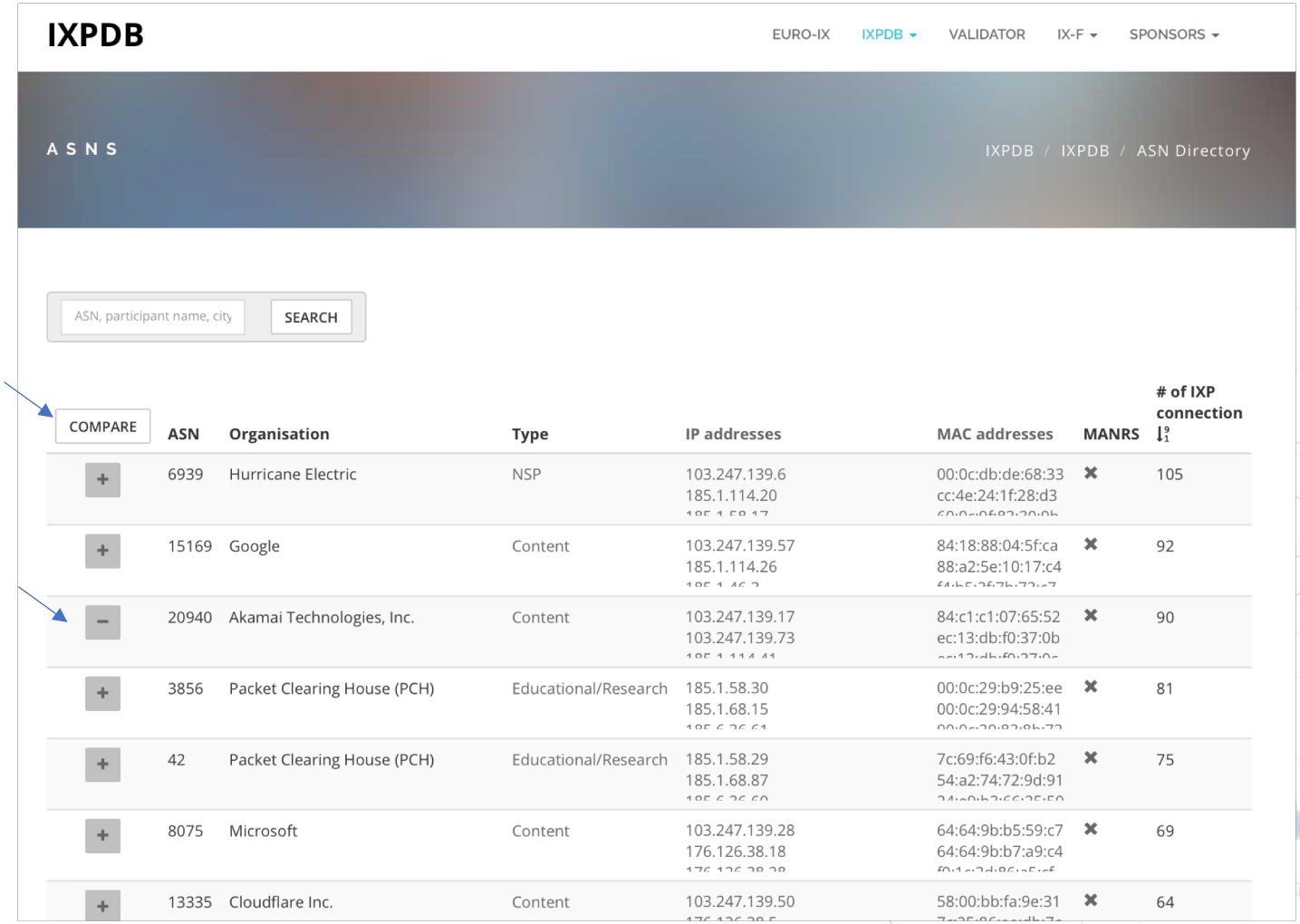
	BIX (Budapest Internet Exchange)	NIX.CZ (NIX.CZ, z.s.p.o.)	VIX (Vienna Internet Exchange)
Speed 10M	–	–	–
Speed 100M	–	–	–
Speed 1G	–	2000 CZK	400 EUR
Speed 10G	–	14000 CZK	550 EUR
Speed 40G	–	40000 CZK	–
Speed 100G	–	50000 CZK	3500 EUR
Number of ASNs	66	162	142
Common ASNs	#9 Cloudflare Inc. VEON Wholesale Services B.V. Liberty Global Services B.V. Interoute Czech, s.r.o. British Telecommunications plc (2) Hurricane Electric Microsoft Serbia Broadband Turk Telekom International AT AG		
Unique ASNs	#50 23VNet 3C Telecom ACE Telecom ActivCom Antenna Hungária BH Telecom Deninet Kft. DIGI Docler Holding S.à r.l. DoclerNet Hosting Drávanet Externet EZIT Giganet	#130 2 connect a.s. a-net Liberec s.r.o. ACTIVE 24, s.r.o. ALKOM Security, a.s. AmigoNet s.r.o. ANTIK Telecom, s.r.o. AVAST Software s.r.o. AVONET online, s.r.o. C2NET s.r.o. Casablanca INT, s.r.o. CC INTERNET s.r.o. ČD-Telematika, a.s. CentralNic Ltd. CentralNic Ltd.	#109 ACOnet Akton d.o.o. ANEXIA Internetdienstleistungs GmbH APA ASFINAG AtNOC Clemens Zauner e. U. Automattic AZISTA GmbH BIOS Cablevision Citycom Telekommunikation GmbH COLT Telecom Ltd. COSYS DATA Gmbh CZ.NIC

What we've been working on – ASN Directory

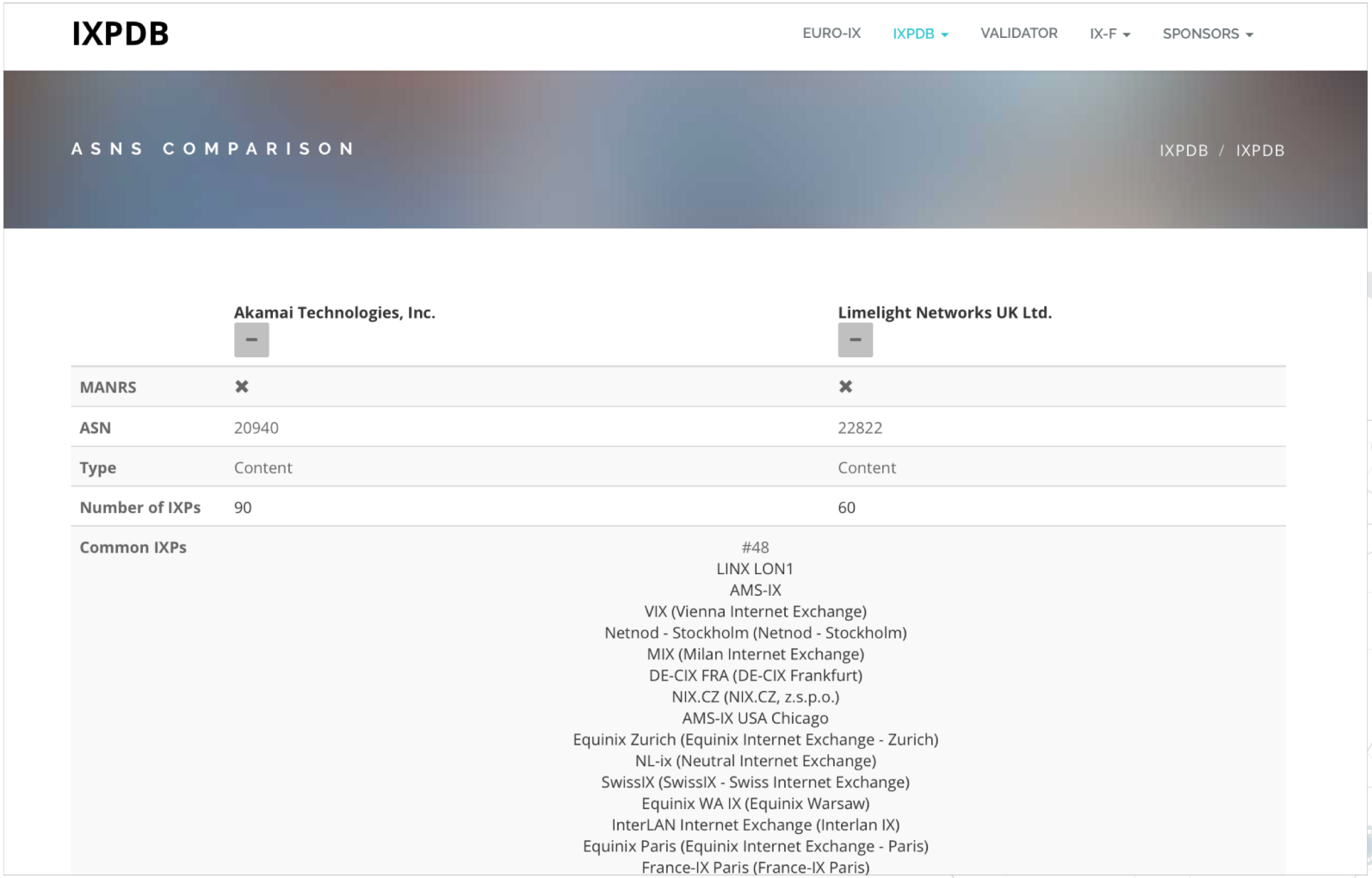
https://ixpdb.euro-ix.net/en/ixpdb/asns/



What we've been working on – Compare ASNs



What we've been working on – Compare ASNs



IXPDB

EURO-IX IXPDB VALIDATOR IX-F SPONSORS

ASNS COMPARISON

IXPDB / IXPDB

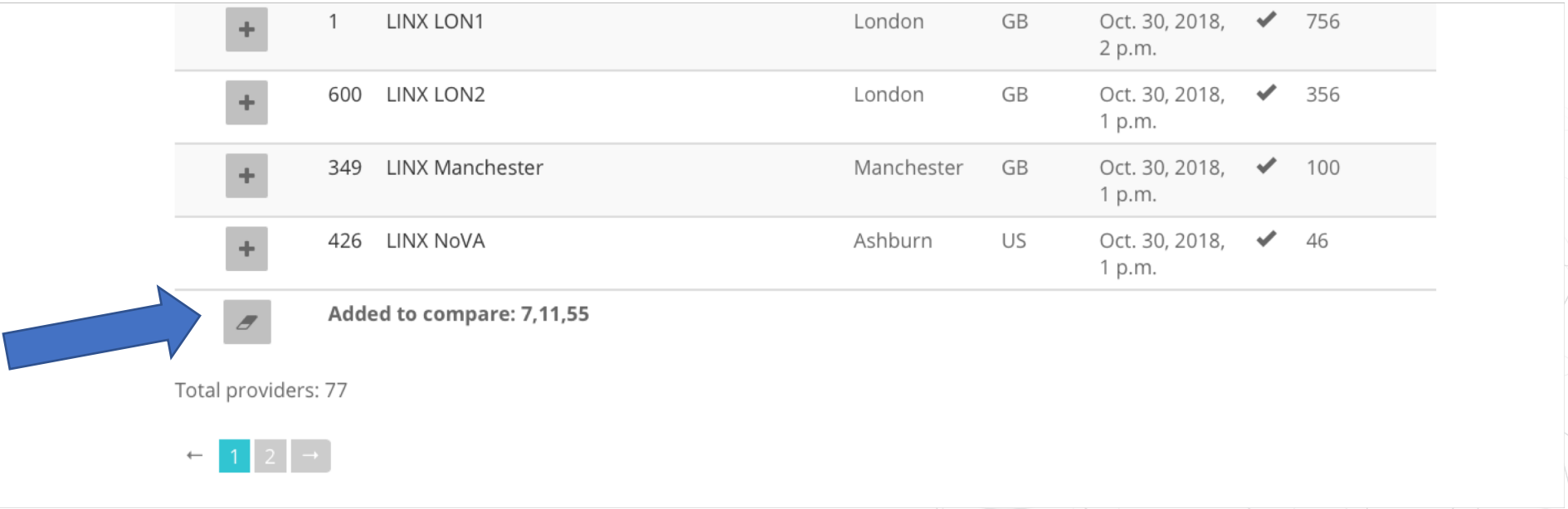
	Akamai Technologies, Inc.	Limelight Networks UK Ltd.
MANRS	✖	✖
ASN	20940	22822
Type	Content	Content
Number of IXPs	90	60
Common IXPs	#48 LINX LON1 AMS-IX VIX (Vienna Internet Exchange) Netnod - Stockholm (Netnod - Stockholm) MIX (Milan Internet Exchange) DE-CIX FRA (DE-CIX Frankfurt) NIX.CZ (NIX.CZ, 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 ☺



+	1	LINX LON1	London	GB	Oct. 30, 2018, 2 p.m.	✔	756
+	600	LINX LON2	London	GB	Oct. 30, 2018, 1 p.m.	✔	356
+	349	LINX Manchester	Manchester	GB	Oct. 30, 2018, 1 p.m.	✔	100
+	426	LINX NoVA	Ashburn	US	Oct. 30, 2018, 1 p.m.	✔	46
	Added to compare: 7,11,55						

Total providers: 77

← 1 2 →

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

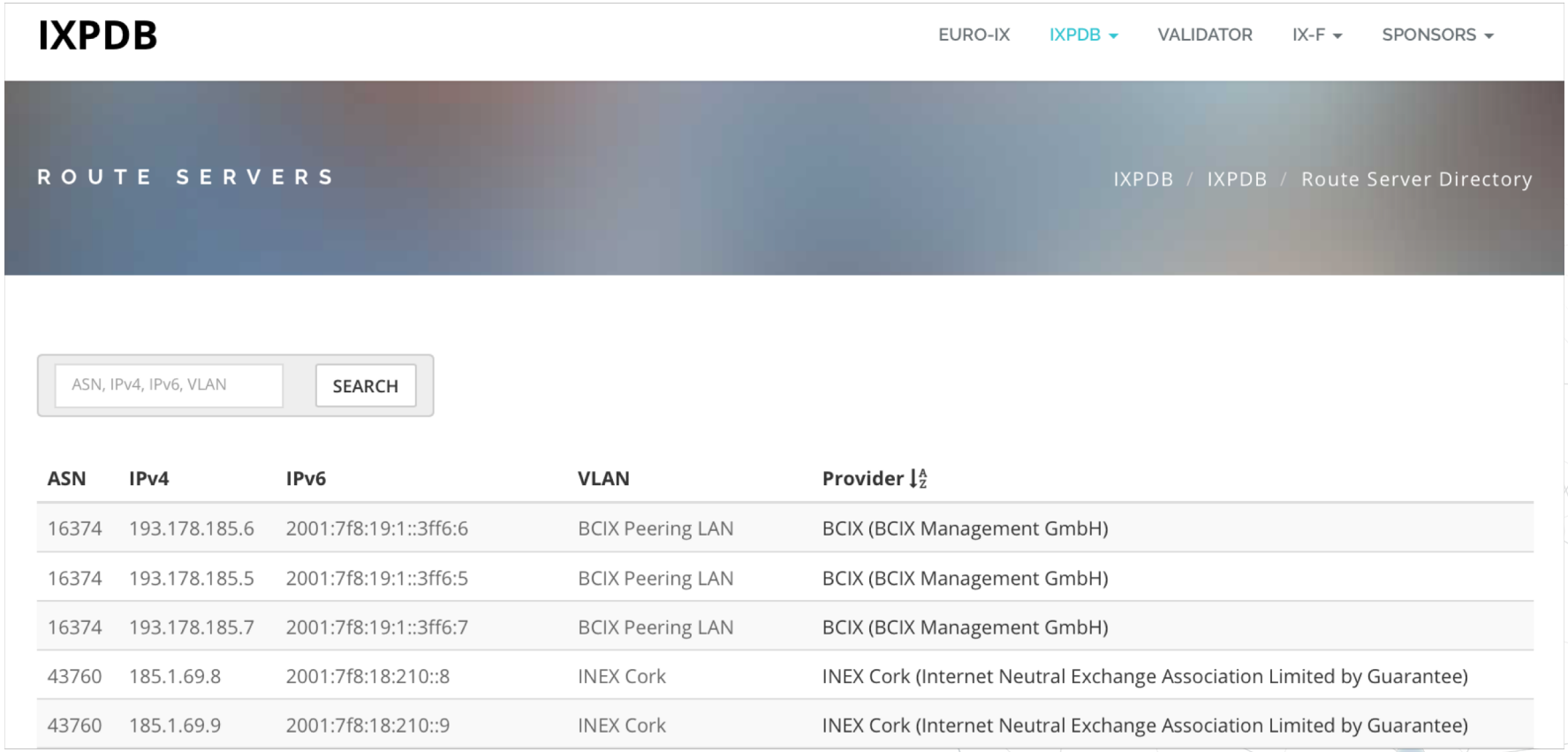
AKAMAI TECHNOLOGIES, INC.

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



IXPDB

EURO-IX IXPDB VALIDATOR IX-F SPONSORS

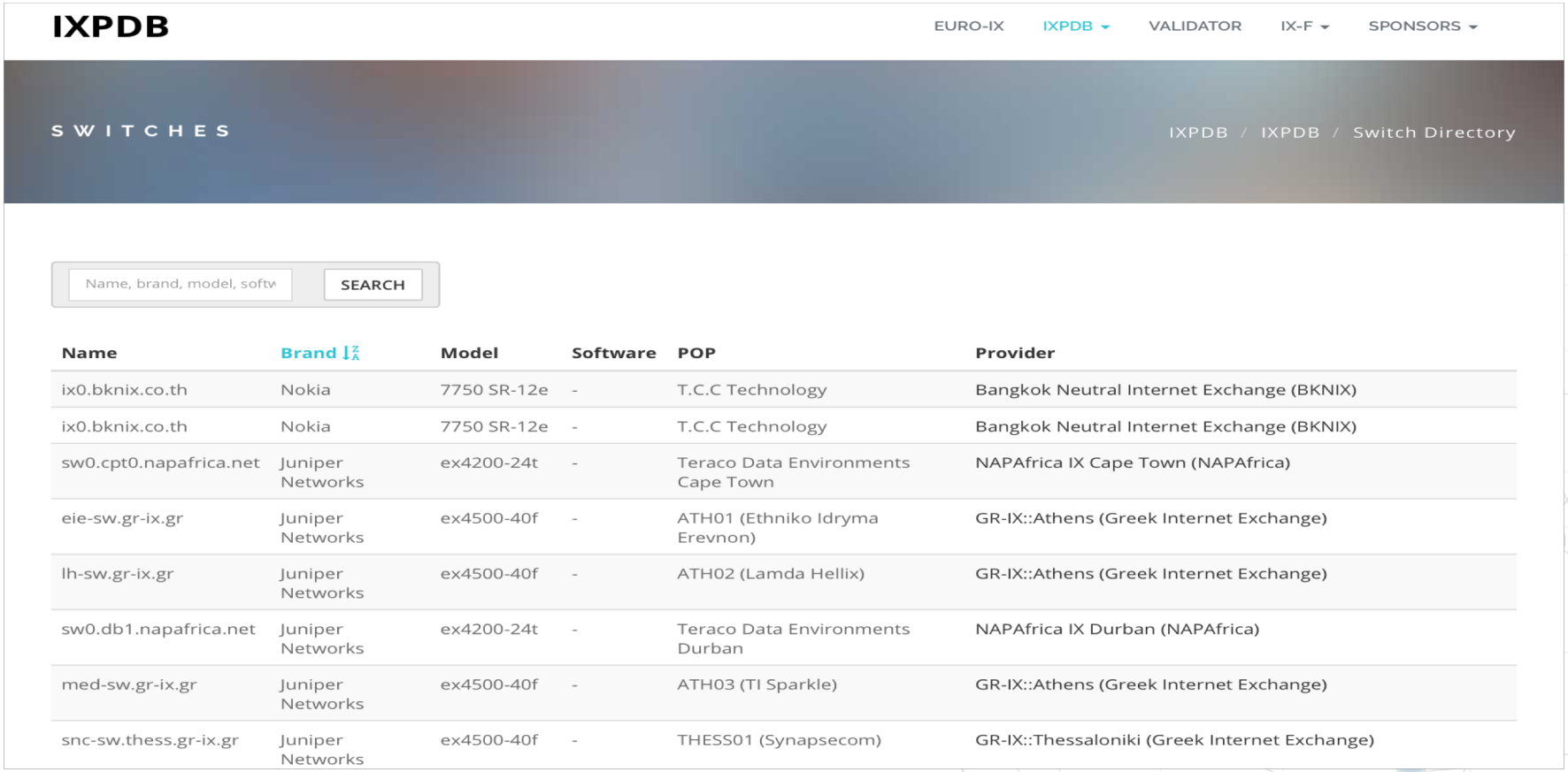
ROUTE SERVERS

IXPDB / IXPDB / Route Server Directory

ASN, IPv4, IPv6, VLAN SEARCH

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
- API Authentication – IXPs can choose what data they want public and private (IXPs/Members only)
- Highlight ASNs not in PeeringDB IXP profile (managed by networks)
- Other data collection work with Route Servers – prefix / ASNs
- 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
- 88 APIs today!

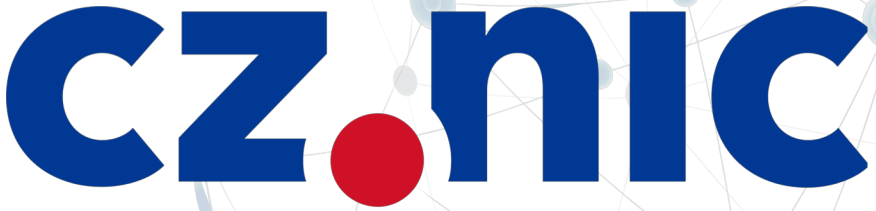
Other Information

- 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