

IXPDB Snapshots

Automated Regional Benchmarking

Kyle Spencer <kyle@stormzero.com> - AfPIF 2023 - Accra Ghana

The African IXP Association



A group of IXP operators from across Africa, brought together by a shared need to coordinate and exchange knowledge.

- Founded in 2012; member of the Internet Exchange Federation (IX-F)

Our purpose is to provide an enabling environment for IXPs to maximize their value, improve connectivity within the continent, and increase the Internet's value for all:

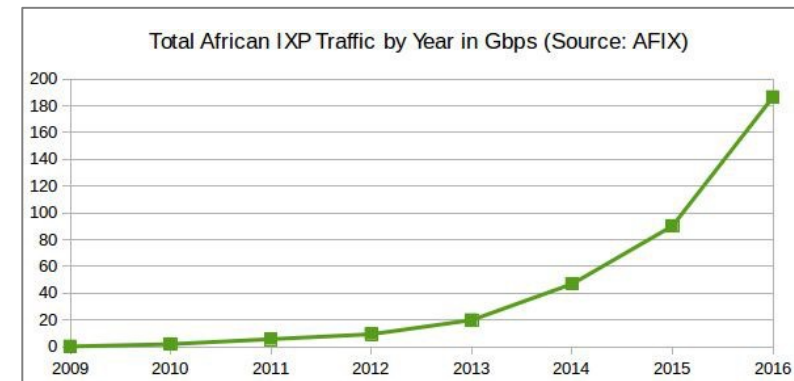
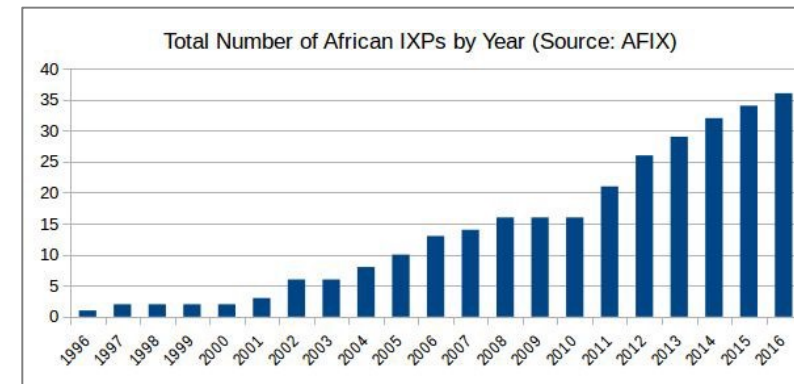
- Facilitate engagement with and within the regional industry
- Help IXPs address operational issues, deploy new services, and scale
- Encourage communities, networks, data centers, and governments to support IXPs
- Produce and share knowledge, tutorials, and best practices
- Catalyze new ideas, projects, and research

Regional Landscape



51 IXPs in 47 countries in 36 cities in Africa:

- IXPs now carry **~3 Tbps** of peak daily traffic
- Over 2000 ports connected; up from 130 in 2009
- Charts below outdated! Manual collection sucks!



What is the IXPDB?



The IXP Database is an authoritative public source of data related to IXPs:

- Collects data directly from IXPs through a recurring automated process.
- Uses **IXP Manager** & manually configured JSON exports.
- Data can be viewed and exported through a web-based interface and API.

The IXPDB is an Internet Exchange Federation (IX-F) project:

- Began life as the Euro-IX Database
- Re-engineered to support other regions and more data points

Facilitates automated regional benchmarking:

- Minimizes the need for surveys and manual data collection

What are IXPDB Snapshots?



IXPDB does not record historical data so I made a system that does!

A Python script running on a cron-job:

- Queries the IXPDB API on a daily basis (started June 17, 2023)
- Filters out IXPs that don't publish live data to ensure accuracy
- Records traffic and participant data (more to come)
- Exports CSVs to a public web server

Public Google Spreadsheet w/ charts:

- Automatically imports the public CSVs and charts the data
- Link: <https://tinyurl.com/IXPDBSnapshots>

IXPDB Participation Statistics



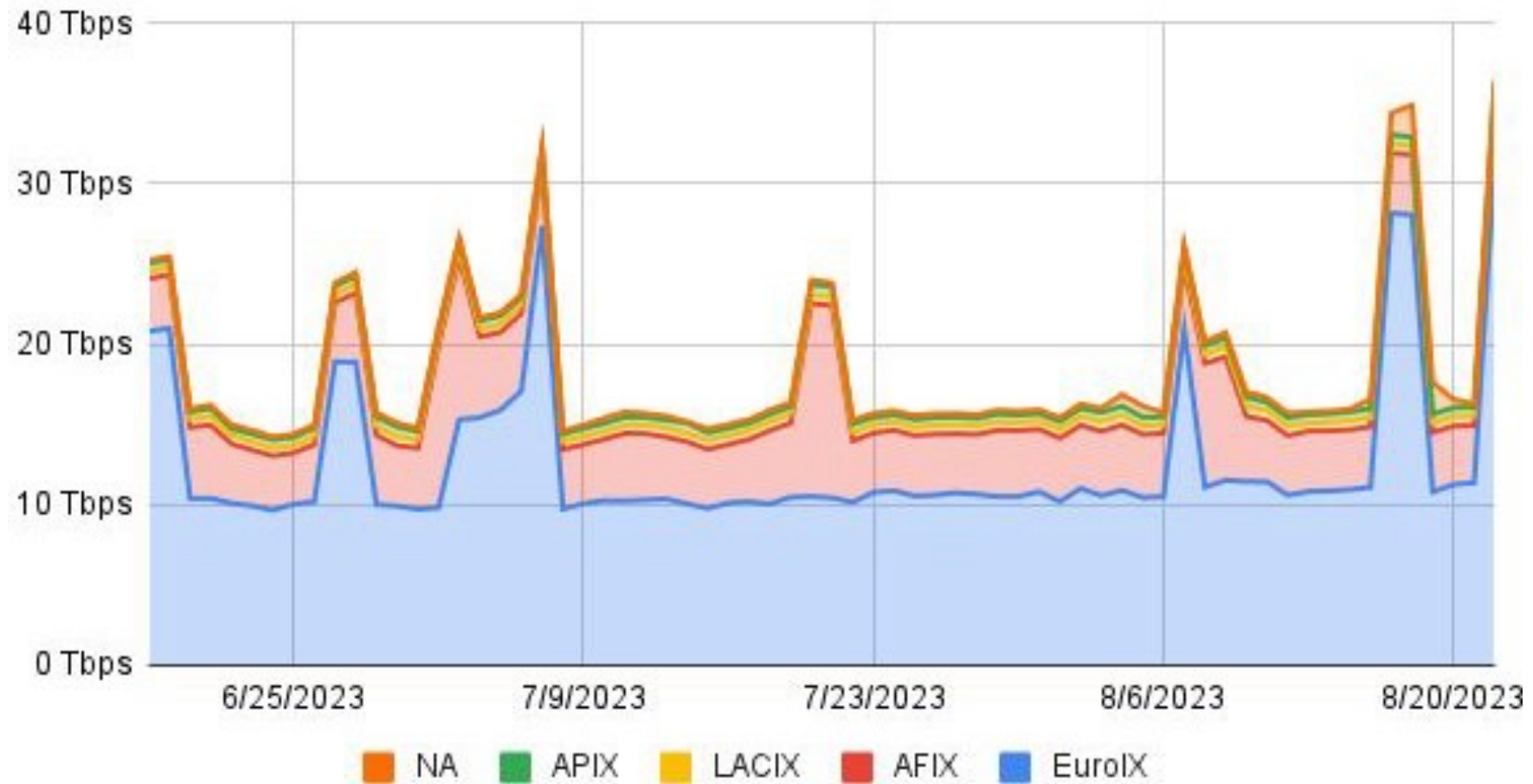
424 IXPs upload data to the IXPDB on an automated basis!

- Euro-IX: 171
- AFIX: 25
- LACIX: 50
- APIX: 96
- North America: 82

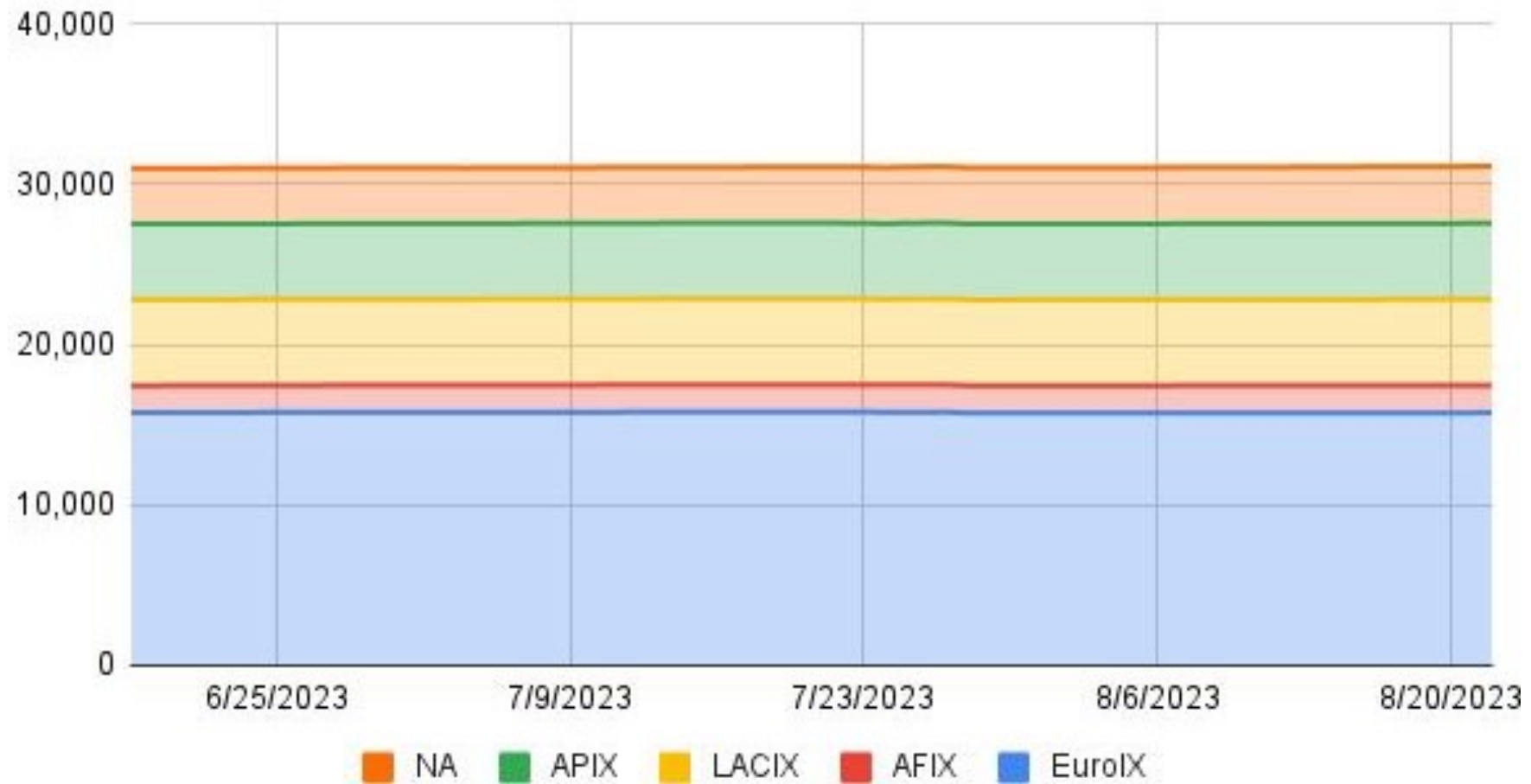
Traffic data is separate and fewer IXPs have this configured:

- Euro-IX: 23
- AFIX: 12
- LACIX: 9
- APIX: 10
- North America: 11

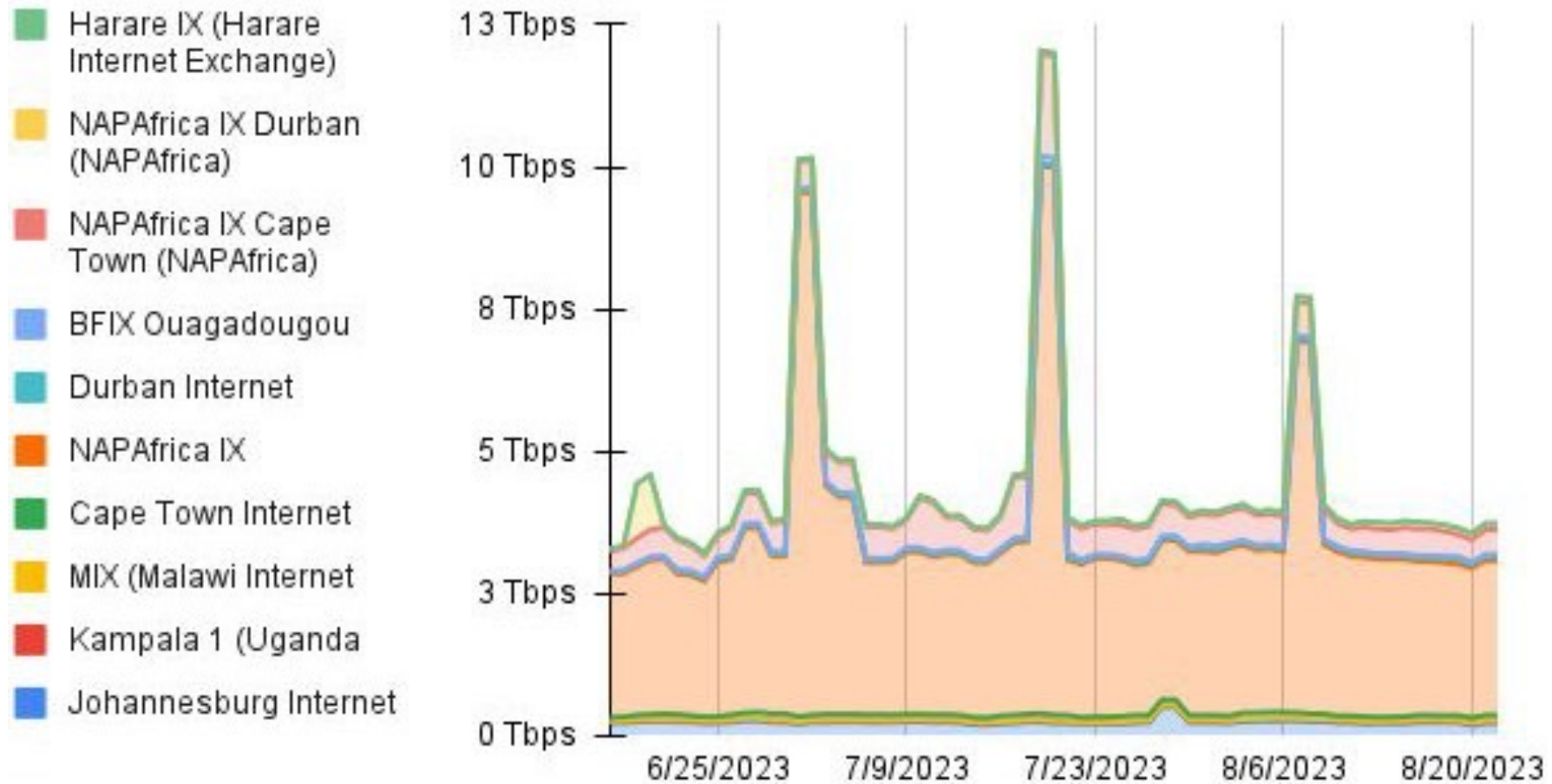
IXPDB - Peering Traffic by Region



IXPDB - Connected ASNs by Region



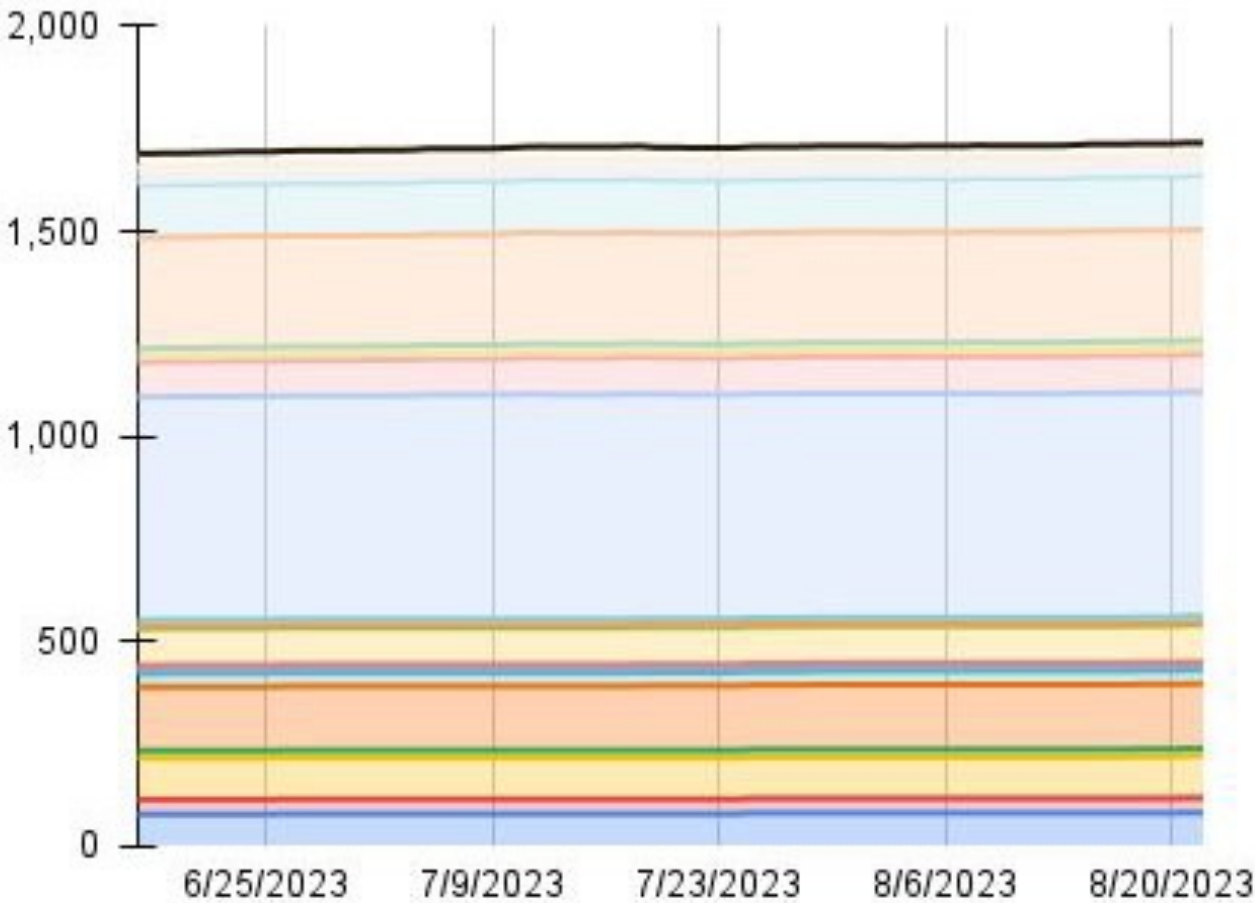
IXPDB - African IXPS: Traffic by IXP



IXPDB - African IXPS: Participants by IXP



- IXPN_PHC (INTERNET
- IXPN_ABUJA (INTERNET
- IXPN_KANO (INTERNET
- BFIX Bobo-Dioulasso
- GABIX LIBREVILLE
- KIXP Icolo Mombasa
- Harare IX (Harare Internet
- NAPAfrica IX Durban
- NAPAfrica IX Cape Town
- BFIX Ouagadougou
- angonix
- Durban Internet Exchange
- 13 more



IXPDB Snapshots: Raw Data Available



id	country	city	name	6/17/2023	6/18/2023	6/19/2023	6/20/2023	6/21/2023	6/22/2023	6/23/2023	6/24/2023
95	ZA	Johannesburg	Johannesburg Internet Exchange Point (INX)	226542	235015	246785	256238	256238	245432	245432	230070
96	UG	Kampala	Kampala 1 (Uganda Internet Exchange Point)	31677	31677	32233	31804	30962	33851	35191	34954
207	MW	Blantyre	MIX (Malawi Internet Exchange)	607	303	659	659	724	631	516	334
209	ZA	Cape Town	Cape Town Internet Exchange (INX)	68318	66749	90871	92056	102759	102759	79490	69929
351	ZA	Johannesburg	NAPAFrica IX Johannesburg (NAPAFrica)	2519081	2519081	2610127	2713759	2713759	2464230	2464230	2383950
487	ZA	Durban	Durban Internet Exchange Point (INX)	47761	49001	49001	46855	48202	47039	45677	46741
556	BF	Ouagadougou	BFIX Ouagadougou (Burkina Faso Internet Exchange Point)						32851	34836	34836
648	ZA	Cape Town	NAPAFrica IX Cape Town (NAPAFrica)	350492	394931	447432	485241	511177	511177	448475	363712
649	ZA	Durban	NAPAFrica IX Durban (NAPAFrica)	41634	44783	960159	960159	42782	42694	42432	37192
730	Harare	Harare	Harare IX (Harare Internet Exchange)	1003	969	1032	986	976	981	977	922
807	Libreville	Libreville	GABIX LIBREVILLE (Gabon Internet eXchange)	77	77	77	77	77	77	77	77
907	BF	Bobo-Dioulasso	BFIX Bobo-Dioulasso (Burkina Faso Internet Exchange Point)						465	632	632
id	country	city	name	6/17/2023	6/18/2023	6/19/2023	6/20/2023	6/21/2023	6/22/2023	6/23/2023	6/24/2023
49	KE	Nairobi	KIXP ADC Nairobi (Kenya Internet Exchange Point)	79	79	79	79	79	79	79	79
50	TZ	Dar es Salaam	TIX - Tanzania (Tanzania Internet eXchange)	36	36	36	36	36	36	36	36
60	NG	LAGOS	IXPN-LOS (INTERNET EXCHANGE POINT OF NIGERIA)	101	101	101	101	101	101	101	101
92	GH	Accra	GIX - Accra (Ghana Internet Exchange)	18	18	18	18	18	18	18	18
95	ZA	Johannesburg	Johannesburg Internet Exchange Point (INX)	156	156	156	156	156	156	156	156
96	UG	Kampala	Kampala 1 (Uganda Internet Exchange Point)	32	32	33	33	33	33	33	33
204	CD	Kinshasa	KINIX (KINshasa Internet eXchange point)	10	10	10	10	10	10	10	10
205	CI	Abidjan	CIVIX (Cote d'Ivoire Internet eXchange Point)	10	10	10	10	10	10	10	10
209	ZA	Cape Town	Cape Town Internet Exchange (INX)	87	87	87	87	87	87	87	87
212	TZ	Arusha	AIXP (Arusha Internet eXchange)	5	5	5	5	5	5	5	5
295	RW	Kigali	RINEX (Rwanda Internet Exchange)	5	5	5	5	5	5	5	5
338	MZ	Maputo	MOZ-IX (Mozambique Internet Exchange Point)	14	14	14	14	14	14	14	14
351	ZA	Johannesburg	NAPAFrica IX Johannesburg (NAPAFrica)	543	543	543	543	543	543	544	544
487	ZA	Durban	Durban Internet Exchange Point (INX)	86	86	86	86	86	86	86	86
531	AO	Luanda	angonix	14	14	14	14	14	14	14	14
556	BF	Ouagadougou	BFIX Ouagadougou (Burkina Faso Internet Exchange Point)	19	19	19	19	19	20	20	20
648	ZA	Cape Town	NAPAFrica IX Cape Town (NAPAFrica)	270	270	270	270	270	270	270	270
649	ZA	Durban	NAPAFrica IX Durban (NAPAFrica)	128	128	128	128	129	129	129	129
730	Harare	Harare	Harare IX (Harare Internet Exchange)	10	10	10	10	10	10	10	10
800	KE	Nairobi	KIXP Icolo Mombasa (Kenya Internet Exchange Point)	15	15	15	15	15	15	15	15
807	Libreville	Libreville	GABIX LIBREVILLE (Gabon Internet eXchange)	10	10	10	10	10	10	10	10
907	BF	Bobo-Dioulasso	BFIX Bobo-Dioulasso (Burkina Faso Internet Exchange Point)	7	7	7	7	7	7	7	7
952	NG	Kano	IXPN_KANO (INTERNET EXCHANGE POINT OF NIGERIA)	6	6	6	6	6	6	6	6
953	NG	Abuja	IXPN_ABUJA (INTERNET EXCHANGE POINT OF NIGERIA)	25	25	25	25	25	25	25	25
954	NG	Port Harcourt	IXPN_PHC (INTERNET EXCHANGE POINT OF NIGERIA)	4	4	4	4	4	4	4	4

Watch this space!



The IXPDB Snapshot system will be updated to record and chart more data over time.

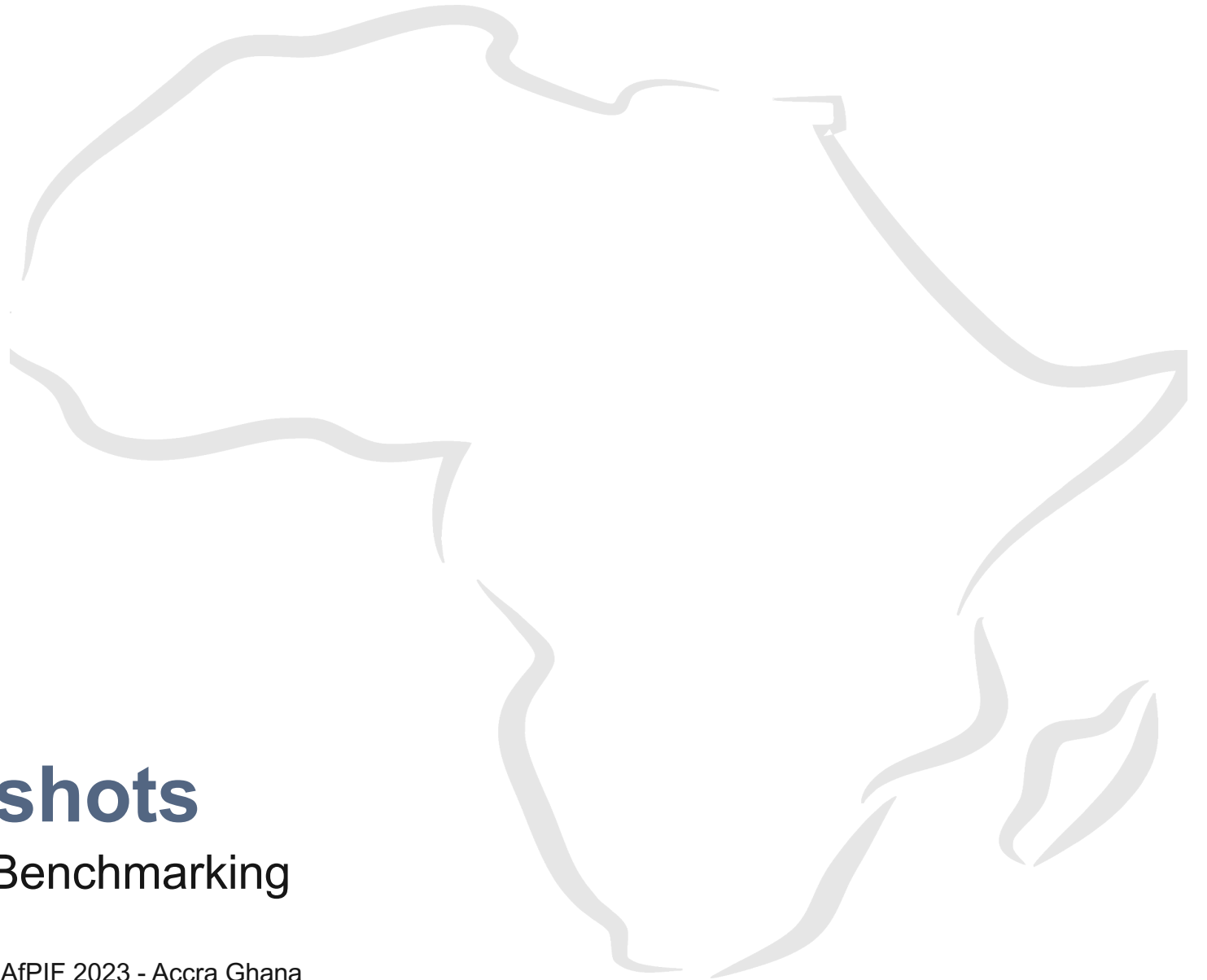
- By AfPIF 2024 it will have more than 12 months of historical data!

In the meantime, get your IXP connected and check out the data:

- IXPDB Website: ixpdb.net
- IXPDB Snapshot Charts: tinyurl.com/IXPDBSnapshots
- IXPDB API documentation: api.ixpdb.net/docs

If you have any questions or want to support the project, please contact me!

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