~~JSON Export Schema~~
IX-F Member Export
& Centralised Database

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Problem

- There is a real and current **and continuing** requirement for a centralised IXP database which can answer questions such as:
  - At what IXPs does AS65500 peer?
  - What is their peering IPv4/6 address(es)?
  - Do they peer with the route servers?

Database Requirements

- Must be comprehensive
- Must be accurate
- Must be up to date

Database Requirements

- These requirements can only be met if that data comes from each IXP
- What's needed to make this happen?
- PeeringDB does not solve this problem for us! *May make it worse?*

Implement the IX-F Member Export

- https://github.com/euro-ix/json-schemas
- 17 organisations implement it *as of April 2016*
- It *just works* with IXP Manager
- It's not difficult - honest!
  - SQL query -> JSON
  - https://github.com/euro-ix/json-schemas/tree/master/examples
- We will help you if you have trouble doing this

Version Timeline

- V0.1 - initial release (pre April 2014)
- V0.2 - added feedback from Steven Bakker (pre April 2014)
- V0.3 feedback from Nick Hilliard - April 2014
- V0.4 Feb 2015
- V0.5 May 2015
- V0.6 April 2016 (tagged today)

Status as of April 2017

- 17 organisations implement it *as of April 2016*
- 24 IXPs listed in 2017 - just 7 more. *(We asked for 20 more 😭)*

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- **How do we improve this?**

Better Sample Scripts

- https://github.com/euro-ix/json-schemas/tree/master/examples

- Examples in:
  - PHP
  - Python
  - Perl

- **This is why we're here today!**

IX-F Member Export Directory

IX-F Member Export Directory

http://ml.ix-f.net/

IX-F Member Export Directory

http://ml.ix-f.net/

- Better documentation / raison d'être
- Directory (and exportable as JSON)
- Test / validate your JSON export
- Add new IX-F Member Export's
- Simple tool to create a static JSON export

Demo

Spot the Difference

Implementations

1. INEX
2. ECIX (BER, DUS, FRA, HAM, MUC)
3. BCIX
4. NAPAfrica
5. AMS-IX
6. FL-IX
7. LONAP
8. United IX
9. SIX
10. SwissIX
11. GR-IX
12. TREX
13. SFMIX
14. RIX
15. Telx
16. CATNIX
17. Megaport
18. NIX.CZ
19. NIX.SK
20. Gigapix
21. FranceIX (PARIS, MARSEILLE, BOTH)
22. VIX
23. MIX Milan
24. LINX

Directory of IXPs with a IX-F Export List

Get this information as JSON here.

IXP	Link / Version / State
INEX LAN1	0.5
INEX LAN2	0.5
INEX Cork	0.5
LONAP	0.5
VIX	0.6

Failing Validation?

Uh oh! Your JSON schema has failed validation. Please see below for details.

In validating your JSON export, we found the following errors:

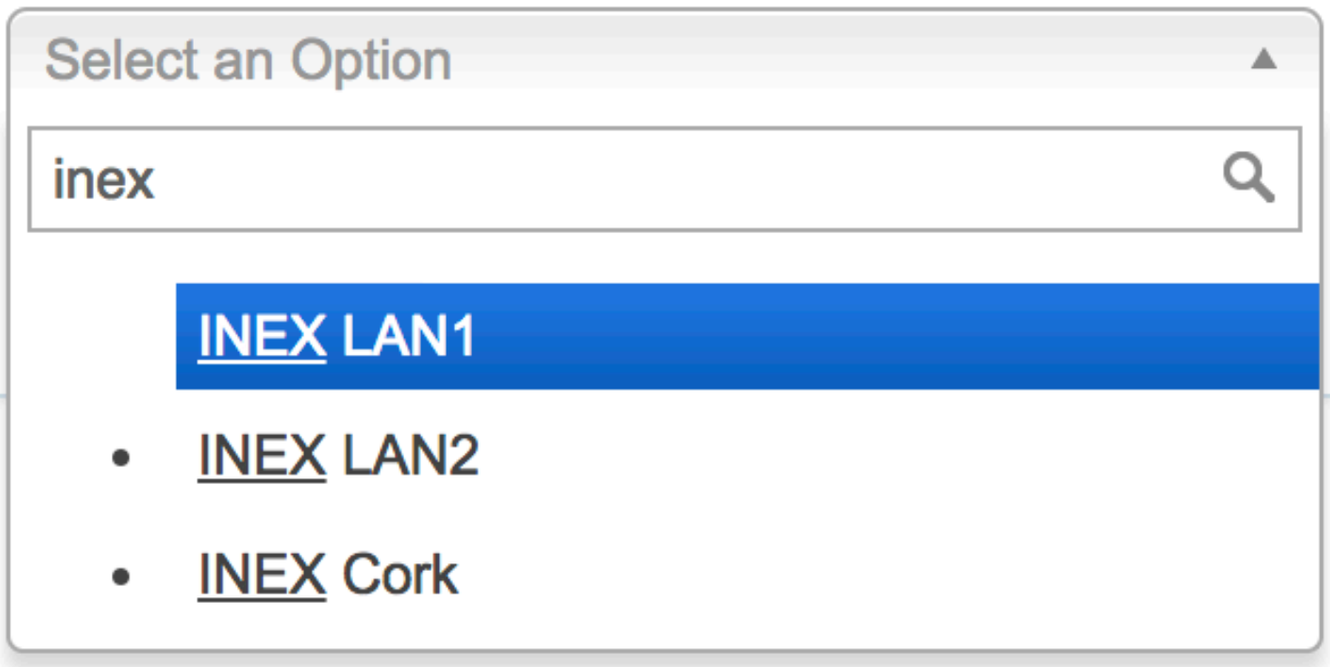
- **member_list[0].member_since:** Invalid date-time "2005-09-01", expected format YYYY-MM-DDThh:mm:ssZ or YYYY-MM-DDThh:mm:ss+hh:mm
- **member_list[0].connection_list[0].vlan_list[0].ipv4.max_prefix:** String value found, but an integer is required
- **member_list[0].connection_list[0].vlan_list[0].ipv4.routeserver:** String value found, but a boolean is required
- **member_list[0].connection_list[0].vlan_list[0].ipv6.max_prefix:** String value found, but an integer is required
- **member_list[0].connection_list[0].vlan_list[0].ipv6.routeserver:** String value found, but a boolean is required
- **member_list[0].connection_list[0].vlan_list[1].ipv4.max_prefix:** String value found, but an integer is required
- **member_list[0].connection_list[0].vlan_list[1].ipv4.routeserver:** String value found, but a boolean is required
- **member_list[0].connection_list[0].vlan_list[1].ipv6.max_prefix:** String value found, but an integer is required
- **member_list[0].connection_list[0].vlan_list[1].ipv6.routeserver:** String value found, but a boolean is required
- **member_list[1].member_since:** Invalid date-time "2014-07-05", expected format YYYY-MM-DDThh:mm:ssZ or YYYY-MM-DDThh:mm:ss+hh:mm

IXP vs Infrastructure

IXF ID

The IXF ID is the ID assigned to your IXP by PeeringDB.com.
IXP. We believe this is in the benefit of developers and consur

You can find your ID through PeeringDB's web interface, via tl



IXP vs Infrastructure

- We were surprised to see this
- Not sure how PeeringDB came to their reasoning
- Logically / conceptually, they are right:
    - One connection, multiple peering LANs: VLAN
    - Multiple connections required for different LANs: IXP (in IXP Manager we refer to this as an *infrastructure*)

Public vs Private

Just make it public.

Seriously.

Public vs Private
Helpful Rationale

- PeeringDB
- Route collectors (your own, PCH, members' own, …)
  - Looking glasses
- Traceroutes (https://www.inex.ie/ard/)
- RIPE RRC's / RIS, RIPE Atlas
- Commercial products (Noction, …)

Public vs Private

Worst Case:

Minimalistic Public Version

Resources

- http://ml.ix-f.net/
- https://github.com/euro-ix/json-schemas
- Contact us if you're willing to help / need help:
  - Richard Yule - richard@euro-ix.net