



**PeeringDB**

# PeeringDB Operations & Product Update

Arnold Nipper  
arnold@peeringdb.com

# What is PeeringDB?

**PeeringDB** is a freely available, user-maintained, **database of networks**, and the go-to location for interconnection data. It facilitates the global interconnection of networks at **IXPs**, **data centers**, and **other interconnection facilities**. It is the first stop in making interconnection decisions.

## Global System Statistics

- 1037 Exchanges
- 25806 Networks
- 4842 Facilities
- 45748 Connections to Exchanges
- 41172 Connections to Facilities
- 5474 Automated Networks
- 42749 Registered Users
- 24120 Organizations

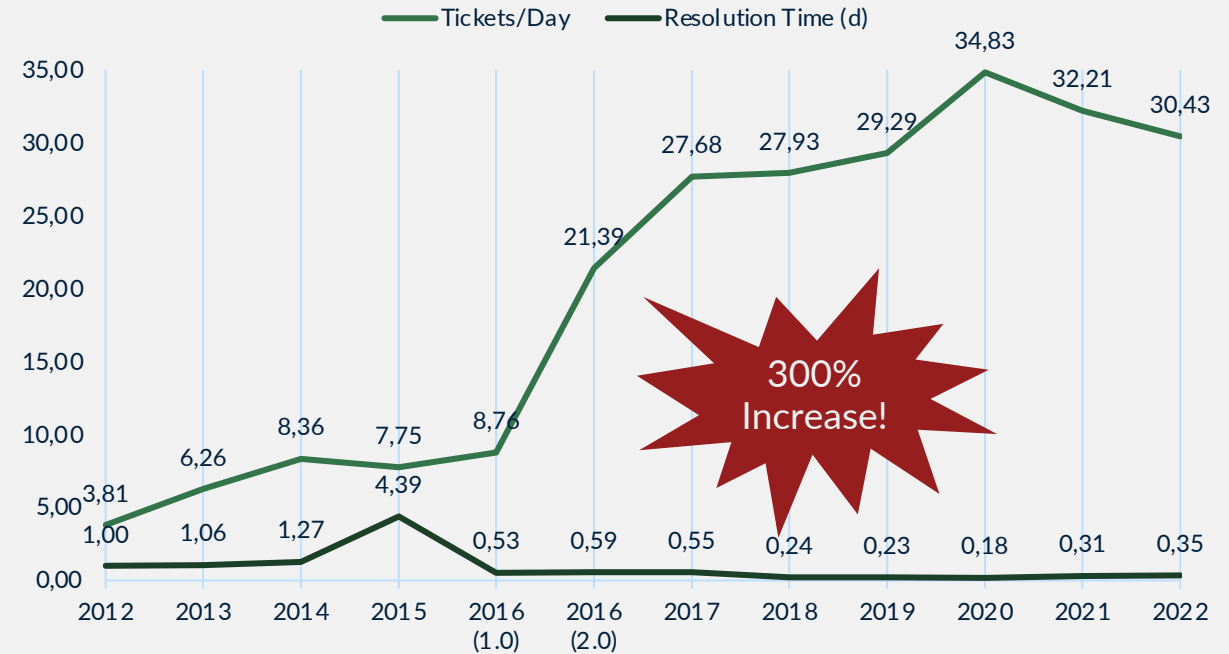
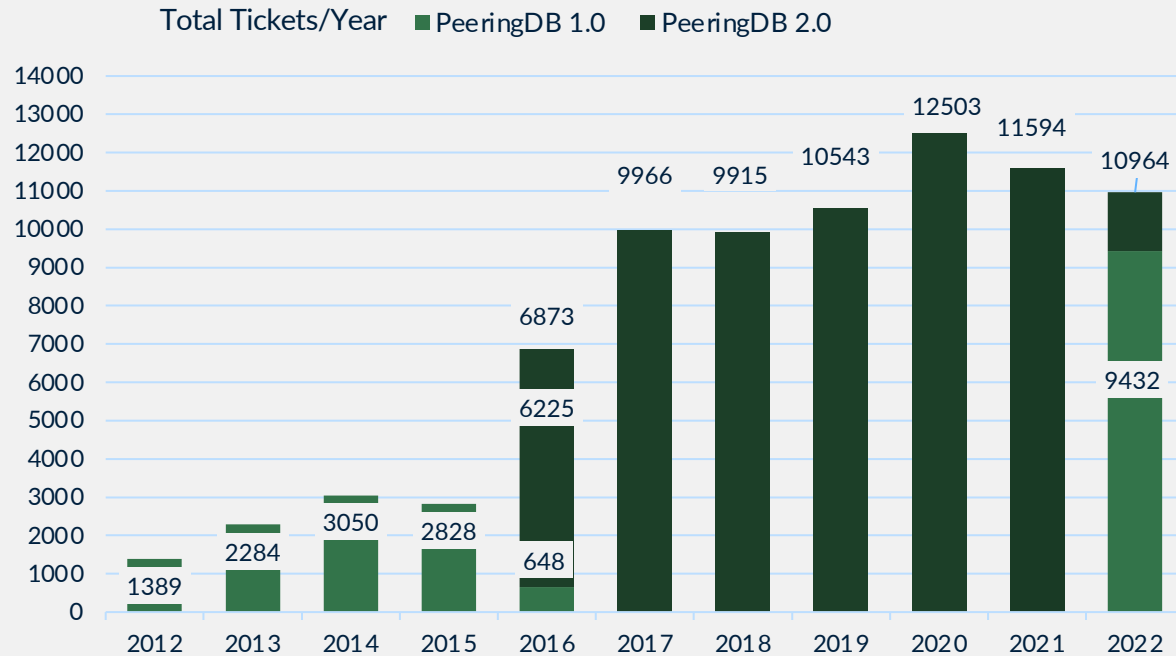
# Committees

Admin Committee	Operations Committee	Outreach Committee	Product Committee
<ul style="list-style-type: none"><li>• Manage administration of user accounts and PeeringDB records</li><li>• Answer support tickets</li><li>• Cleansing and completion of PeeringDB records</li></ul> <p>Leads: Patrick Gilmore (Chair) and Darwin Costa (Vice Chair) Contact: <a href="mailto:admincom@lists.peeringdb.com">admincom@lists.peeringdb.com</a></p>	<ul style="list-style-type: none"><li>• Manage PeeringDB infrastructure</li></ul> <p>Leads: Job Snijders (Chair) and Aaron Hughes (Vice Chair) Contact: <a href="mailto:pdb-ops@lists.peeringdb.com">pdb-ops@lists.peeringdb.com</a></p>	<ul style="list-style-type: none"><li>• Manage marketing and social media</li><li>• Develop and maintain presentations, workshops and webinars</li><li>• Coordinate presentations and attendance at events</li></ul> <p>Leads: Ben Ryall (Chair) and Bijal Sanghani (Vice Chair) Contact: <a href="mailto:outreachcom@lists.peeringdb.com">outreachcom@lists.peeringdb.com</a></p>	<ul style="list-style-type: none"><li>• Manage roadmap and development priorities</li><li>• Ask for input from the community on desired features</li><li>• Write SoWs to solicit bids to complete requested features</li></ul> <p>Leads: Stephen McManus (Chair) and Matt Griswold (Vice Chair) Product Manager: Leo Vegoda Contact: <a href="mailto:productcom@lists.peeringdb.com">productcom@lists.peeringdb.com</a></p>

# We are looking for volunteers

- For Admin Committee
  - who speak languages other than English
- For Outreach Committee
  - Folks with marketing experience are highly welcome
- For Operations Committee
  - Small and highly trusted
  - Experience with containers is a plus
- **Apply to [stewards@lists.peeringdb.com](mailto:stewards@lists.peeringdb.com)**

# Support Ticket Statistics



- Admin Committee volunteers are based around the world in a variety of time zones with diverse language skills
- Goal is to resolve support tickets within 24 hours

# Recent Volunteer Contributions

- Focus on volunteer contributions
- Security changes from Amazon
- UX changes from Google
- Various other changes from individuals

## HOWTO: Get Started with Developing for PeeringDB

### Technology

We use Python with Django and MySQL. Django manages interaction with the database. We publish all [our code](#) on GitHub. We [have documented](#) how to set up our development environment.

### What to develop

PeeringDB users can request features and report bugs by creating [issues on GitHub](#). Review open issues to either find a project you'd like to work on, or to see if there's an existing issue for the feature you want.

If you want to develop a feature that has not been discussed on GitHub, you should either create an issue or contact us to discuss what you need. You can send a message to [productcom@lists.peeringdb.com](mailto:productcom@lists.peeringdb.com) or contact any of the members of the [Product Committee](#).

If you want to develop code for an issue that has achieved consensus on GitHub, we suggest starting with issues labeled as [Good first issue](#). These are simple issues that will help you get a feel for PeeringDB.

### Style

Before you start developing code look at how similar functions have been implemented. Use the same design as existing functions and develop unit tests for your code. We aim for 80% unit test coverage. You also need to run [black](#) on your code before submitting a Pull Request. We use black to ensure that all of our code has the same formatting. Reusing designs, developing unit tests, and using consistent formatting makes it easier for us to maintain the code over time.

We keep the feature parity between the web interface and the API. A feature added to one needs to be added to the other.

The implementation details documented in issues should be detailed enough to use as documentation for the web interface. Documentation is also needed for the API. The minimum we need for API documentation is an example of how to format the request and a pointer to the document section to update.



# Recent Product Improvements

- Better support tools
- Better IX-F Export handling
- Networks peering with Route Servers now more visible
- Organizational policy features allow to require your users to:
  - Enable MFA
  - Use a specific email domain
  - Periodically revalidate their accounts
- And users can associate multiple addresses with an account

Peers at this Exchange Point

Filter

Peer Name ↓ IPv4	ASN IPv6	Speed	Policy
<u>Akamai Technologies</u> 195.66.246.28	20940 2001:7f8:4:3::51cc:1	20G	Open
<u>BBC</u> 195.66.246.25	2818 2001:7f8:4:3::b02:1	10G	Open
<u>BORDERLINK</u> 195.66.246.200	205847 2001:7f8:4:3:0:3:2417:1	10G	Open
<u>BORDERLINK</u> 195.66.246.60	205847 2001:7f8:4:3:0:3:2417:2	10G	Open
<u>Brightsolid</u> 195.66.246.5	5564 2001:7f8:4:3::15bc:1	1G	Open
<u>Broadband for the Rural North (B4RN)</u> 2001:7f8:4:3::e3a1:1	58273 195.66.246.26	10G	Open
<u>BSO</u> 195.66.246.9	4455 2001:7f8:4:3::1167:1	1G	Open
<u>Capita Networking Solutions (Updata)</u> 2001:7f8:4:3::c95f:1	51551 195.66.246.4	1G	Open
<u>Chess</u> 195.66.246.14	5500	1G	Open
<u>CityFibre</u> 195.66.246.11	8468 2001:7f8:4:3::2114:1	10G	Selective
<u>Cloudflare</u> 195.66.246.27	13335 2001:7f8:4:3::3417:1	10G	Open

# General Updates

- <https://www.peeringdb.com> is enforced (2.35.0)
- Please check your scripts (e.g. -L for curl)
- Enables better delivery via CDNs
- Lots of bug fixes and small features
  - Users especially like the logo feature
  - Various counters for fac, ix and net objects
  - Updated fields allow for easy tracking of changes
    - netixlan\_updated
    - netfac\_updated
    - poc\_updated

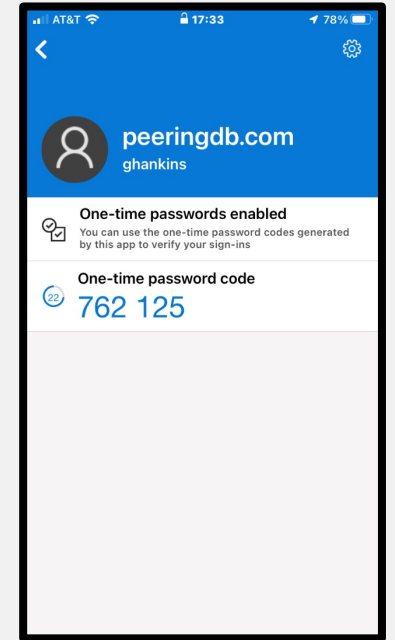


# Authentication Changes

- API keys (2.26.0)
  - 256-bit random number, base-62 encoded
  - On org level (additional tabs)
    - Needs an email associated with it (ideally role-account)
    - Can be created by any Admin
    - Same granular (CRUD) permissions as users
  - On user level
  - HOWTO: [https://docs.peeringdb.com/howto/api\\_keys/](https://docs.peeringdb.com/howto/api_keys/)
- Substantially rate-limit unauthenticated API queries (2.34.0)
  - Wild running scripts
  - Bad code
  - See [tech-list](#) for details
  - HOWTO: [https://docs.peeringdb.com/howto/work\\_within\\_peeringdbs\\_query\\_limits/](https://docs.peeringdb.com/howto/work_within_peeringdbs_query_limits/)

# Account Security

- Two-factor authentication (2FA) (2.21.0)
  - Using time-based one-time password (TOTP) - no SMS, no email
  - Setup via User Profile
  - Highly recommended
  - Provision for backup codes and recovery tokens
- Fast Identity Online (FIDO) Universal 2nd Factor (U2F) 2FA support (2.33.0)
  - Allowing users to enable 2FA without relying on a TOTP app
- HOWTO: <https://docs.peeringdb.com/howto/authenticate/>




# Self-Selection Fields – Exchanges (2.27.0)


- Service Level
  - Best Effort (no SLA)
  - Normal Business Hours
  - 24/7 Support
  - Not Disclosed (default)
- Terms
  - No Commercial Terms
  - Bundled with other Services
  - NRC only
  - Recurring Fees
  - Not Disclosed (default)

## SIX Seattle

Peers **355**   Connections **409**   Open Peers **244**   Total Speed **16.0T**   % with IPv6 **89**

Organization	<a href="#">Seattle Internet Exchange</a>
Also Known As	
Long Name	Seattle Internet Exchange (MTU 1500)
City	Seattle
Country	US
Continental Region	North America
Media Type	Ethernet
Service Level	24/7 Support
Terms	Non-recurring Fees Only
Last Updated	2021-05-27T00:08:55Z
Notes 	<p>SIX port fees:</p> <ul style="list-style-type: none"><li>• 100G: \$7.5k NRC, no MRC</li><li>• 10G: \$1.5k NRC, no MRC</li><li>• 1G: \$100 NRC, no MRC</li></ul> <div>Translate »</div>


## Peers at this E


Peer Name   
IPv4

 [AARNet](#)

2001:504:16::1d

[Accel Net](#)  
206.81.81.240

 [Access Communications operative](#)

 [Acronis US](#)

[Adobe Systems](#)  
206.81.81.13

[Adobe Systems](#)  
206.81.81.14

[Advanced Communications Technology](#)

# Self-Selection Fields – Facilities (2.30.0)

- Property
  - Lessee
  - Owner
  - Not Disclosed (default)
- Diverse Serving Substations
  - Yes
  - No
  - Not Disclosed (default)
- Available Voltage Services
  - 48 VDC
  - 120 VAC
  - 208 VAC
  - 240 VAC
  - 480 VAC

NPFA-XXXX	
Last Updated	2022-04-20T20:03:43Z
Notes ?	
	
Technical Email	<a href="mailto:support@aubix.net">support@aubix.net</a>
Technical Phone ?	
Sales Email	<a href="mailto:sales@aubix.net">sales@aubix.net</a>
Sales Phone ?	
Property ?	Owner
Diverse Serving Substations ?	Yes
Available Voltage Services ?	208 VAC
Health Check	

# Searching

- Improvement from NANOG 83 Hackathon (2.33.0)
- Searching for numbers return the most relevant results
- Searching for a short ASN returns just that ASN
- Searching for two segments of an IP address return related ix and netixlan objects
- HOWTO: <https://docs.peeringdb.com/howto/search/>

# Searching – Facilities

- The address is mapped to coordinates
  - Search a radius from any location
  - Filter searches on criteria
  - Export as JSON or CSV
- Additional information
  - Property Ownership
  - Redundancy
  - Power Provided

www.peeringdb.com/advanced\_search

Exchanges Networks **Facilities** Organizations

Name

Address

City/ State/ Postal

Country (ctrl/cmd click to select multiple) 

Antarctica  
Antigua and Barbuda  
Argentina  
Armenia  
Aruba  
Australia

Continental Region (ctrl/cmd click to select multiple) 

North America  
Asia Pacific  
Europe  
South America  
Africa  
Australia

Within Distance  km

Management

CLLI

NPA-NXX

Property 

Does not matter

Diverse Serving Substations 

Does not matter

Available Voltage Services 

Does not matter  
48 VDC  
120 VAC  
208 VAC  
240 VAC  
480 VAC

Network Presence

My organization presence (ctrl/cmd click to select multiple)

Name	CLLI	City	State	Networks
Management	NPA-NXX	Country	Postal Code	
AAPT Brisbane	-	Brisbane	QL	1
AAPT (TNZA)	-	AU	4000	
Christie Systems DC1	-	Brisbane	Queensland	1
Christie Systems Services	-	AU	4000	
NEXTDC B1	-	Brisbane	QL	78
NEXTDC	-	AU	-	
Over the Wire - 24 Little Edward	-	Spring Hill	QLD	0
Over The Wire Pty Ltd	-	AU	4200	
PIPE Networks Brisbane	-	BRISBANE	QL	13
PIPE Networks	-	AU	4000	
Rail Centre 1	-	Brisbane	QL	0
QR - Rail Centre 1	-	AU	4000	

# Searching – Exchanges

- Filter searches on criteria
- Export as JSON or CSV
- Additional information
  - Service Level
  - Terms
  - Network Presence

Exchanges

Networks

Facilities

Organizations

Name

City

Country  
(ctrl/cmd click to select multiple)

Continental Region  
(ctrl/cmd click to select multiple)

French Polynesia

French Southern Territories

Gabon

Gambia

Georgia

Germany

North America

Asia Pacific

Europe

South America

Africa

Australia

Organization

IP Block

Capacity

Media Type  
(ctrl/cmd click to select multiple)

Service Level  
(ctrl/cmd click to select multiple)

Terms  
(ctrl/cmd click to select multiple)

Network Presence

My organization presence  
(ctrl/cmd click to select multiple)

Gbps

Ethernet

ATM

Multiple

Not Disclosed

Best Effort (no SLA)

Normal Business Hours

24/7 Support

Not Disclosed

No Commercial Terms

Bundled With Other Services

Non-recurring Fees Only

Recurring Fees

Search networks ...

All present

Does not matter

Reset

Search

JSON

CSV

Name	Media Type	Country	City	Network...
DE-CIX Frankfurt	Ethernet	DE	Frankfurt	967



# Documentation Updates

- Started series of HOWTOs
  - <https://docs.peeringdb.com/howtos/>
- Regular blogs on new features
  - <https://docs.peeringdb.com/blogs/>
- Announced on social media

## Create entries

- Get Started with PeeringDB as a Exchange Operator
- Get Started with PeeringDB as a Facility Operator
- Get Started with PeeringDB as a Network Operator

## Manage entries

- Manage Organizational Policy
- Manage User Permissions

## Search

- Get Started with Search in PeeringDB
- Work Within PeeringDB's Query Limits

## Authentication and security

- Authenticate to PeeringDB
- Get Started with API Keys
- Report a Security Issue

## Other

- Get Started with Developing for PeeringDB
- Setup a PeeringDB Development Environment
- What is AS112?

# What's ahead?

- Regular updates with [small features and bug fixes](#)
- Improve searching
  - Both for GUI and API
- Finalize tasks from [Data Ownership Task Force](#)
  - Automatically remove stale connections to an IX
- Automate Approving Networks, IXPs, and Facilities according to the latest [Guidelines and Criteria](#)
- Published release schedule on the Release Notes page

Release number	Internal testing	Beta release	Production release
2.41.0	2022-10-04	2022-10-11	2022-10-25
2.42.0	2022-11-01	2022-11-08	2022-11-15
2.43.0	2023-01-10	2023-01-17	2023-01-24
2.44.0	2023-01-31	2023-02-07	2023-02-21
2.45.0	2023-03-07	2023-03-14	2023-03-21

# 2022 User Survey

- Our 2022 user survey was done in October
- Available in 6 UN languages, Portuguese & Ukrainian
- Not fully evaluated yet
- First blog is here (<https://t1p.de/8bnvn>)

Thank you for completing PeeringDB's 2022 User Survey. This survey will improve our understanding of what is important to you and how well you feel we are doing in each area.

The survey takes less than 5 minutes to complete. Only one question is mandatory. Please only provide satisfaction ratings for feature categories you use.

The survey is anonymous. If you want, you can provide information about your location and sector at the end.

**Overall, how satisfied are you with PeeringDB?**

☐ Very satisfied

☐ Somewhat satisfied

☐ Somewhat dissatisfied

☐ Very dissatisfied

# Thank you to our sponsors!

Diamond  
Sponsor



Microsoft

Platinum  
Sponsors



Meta



NTT

YAHOO!

Gold  
Sponsors



edgeuno



DIGITAL REALTY



Internet  
Society



Internet  
Association  
of Australia



TELEHOUSE



STACLAR



cologix



Netrality  
Data Centers



NEWBY VENTURES



NIX-CZ



NYIIX®



RACKCENTRE



QIX



RIPE NCC  
RIPE NETWORK COORDINATION CENTRE



zenlayer



**PeeringDB**

# Questions?

Need help? Contact [support@peeringdb.com](mailto:support@peeringdb.com)

Got a feature idea? Contact [productcom@lists.peeringdb.com](mailto:productcom@lists.peeringdb.com)