# PeeringDB Operations & Product Update

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# What is PeeringDB?

**PeeringDB** is a freely available, user-maintained, **database** of **networks** and **carriers**, 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**
1091 Exchanges
27458 Networks
5108 Facilities
28 Campuses
71 Carriers
48878 Connections to Exchanges
43980 Connections to Facilities
5983 Automated Networks
47436 Registered Users
25606 Organizations

# Governance and Membership

- PeeringDB is a United States 501(c)(6) volunteer organization that is 100% funded by sponsorships

- Healthy organization, building financial reserves and executing the long term strategic plan

- Membership rules

  - A corporation, limited liability company, partnership or other legal business entity may be a Member of the Corporation

  - Membership is determined by having both an active PeeringDB.com account and an individual representative or role subscription to the PeeringDB Governance mailing list

  - 374 addresses subscribed to the Governance mailing list (as of March 06, 2023)

  - Governance list is at http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov

  - More information available at http://gov.peeringdb.com/

  - 3 new board members (**Livio Morina from Airbeam**)

# Committees

| Admin Committee | Operations Committee | Outreach Committee | Product Committee |
|---|---|---|---|
| • Manage administration of user accounts and PeeringDB records<br>• Answer support tickets<br>• Cleansing and completion of PeeringDB records | • Manage PeeringDB infrastructure | • Manage marketing and social media<br>• Develop and maintain presentations, workshops and webinars<br>• Coordinate presentations and attendance at events | • Manage roadmap and development priorities<br>• Ask for input from the community on desired features<br>• Write SoWs to solicit bids to complete requested features |
| Leads: Patrick Gilmore (Chair)<br>Contact: admincom@ lists.peeringdb.com | Leads: Job Snijders (Chair) and Aaron Hughes (Vice Chair)<br>Contact: pdb-ops@ lists.peeringdb.com | Leads: Ben Ryall (Chair) and Bijal Sanghani (Vice Chair)<br>Contact: outreachcom@ lists.peeringdb.com | Leads: Stephen McManus (Chair) and Matt Griswold (Vice Chair)<br>Product Manager: Leo Vegoda<br>Contact: productcom@ lists.peeringdb.com |

# Support Ticket Statistics
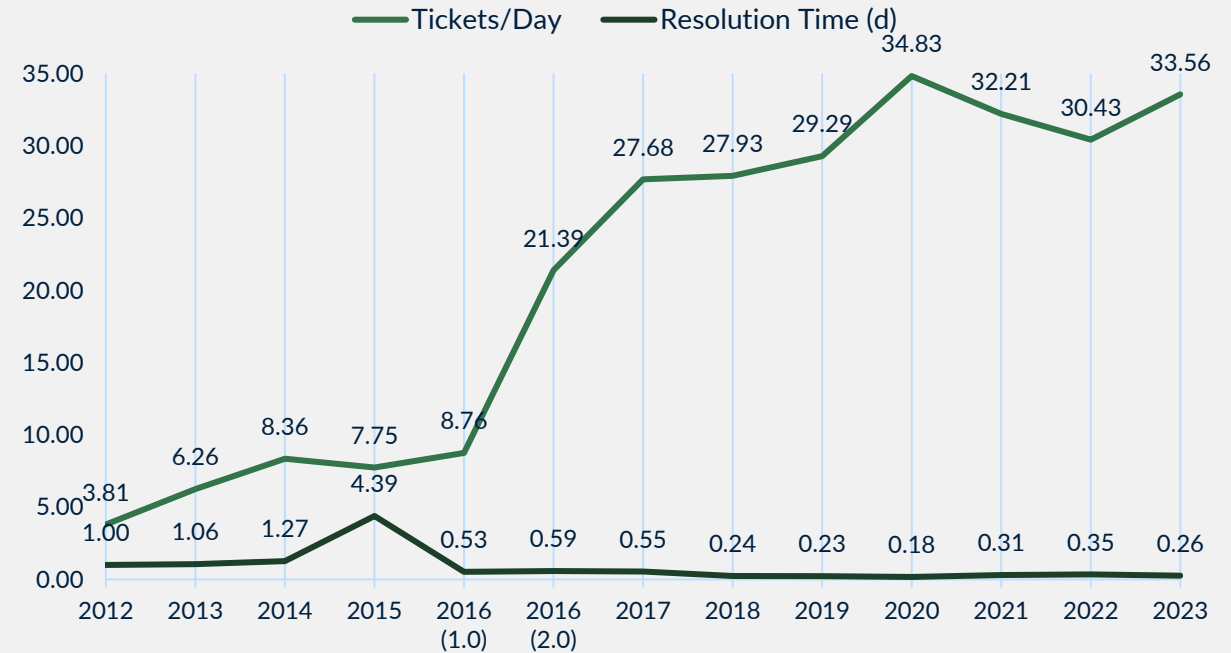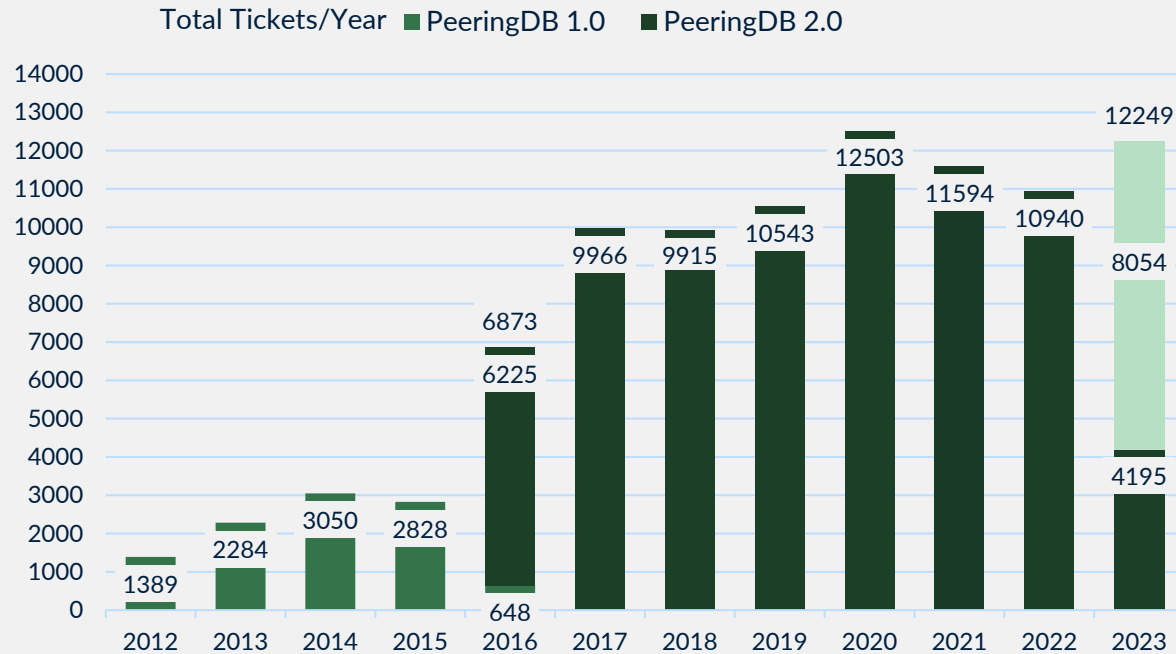


- Admin Committee volunteers are based around the world in a variety of time zones with diverse language skills
- Goal is to resolve support tickets within 24 hours

# 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 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.
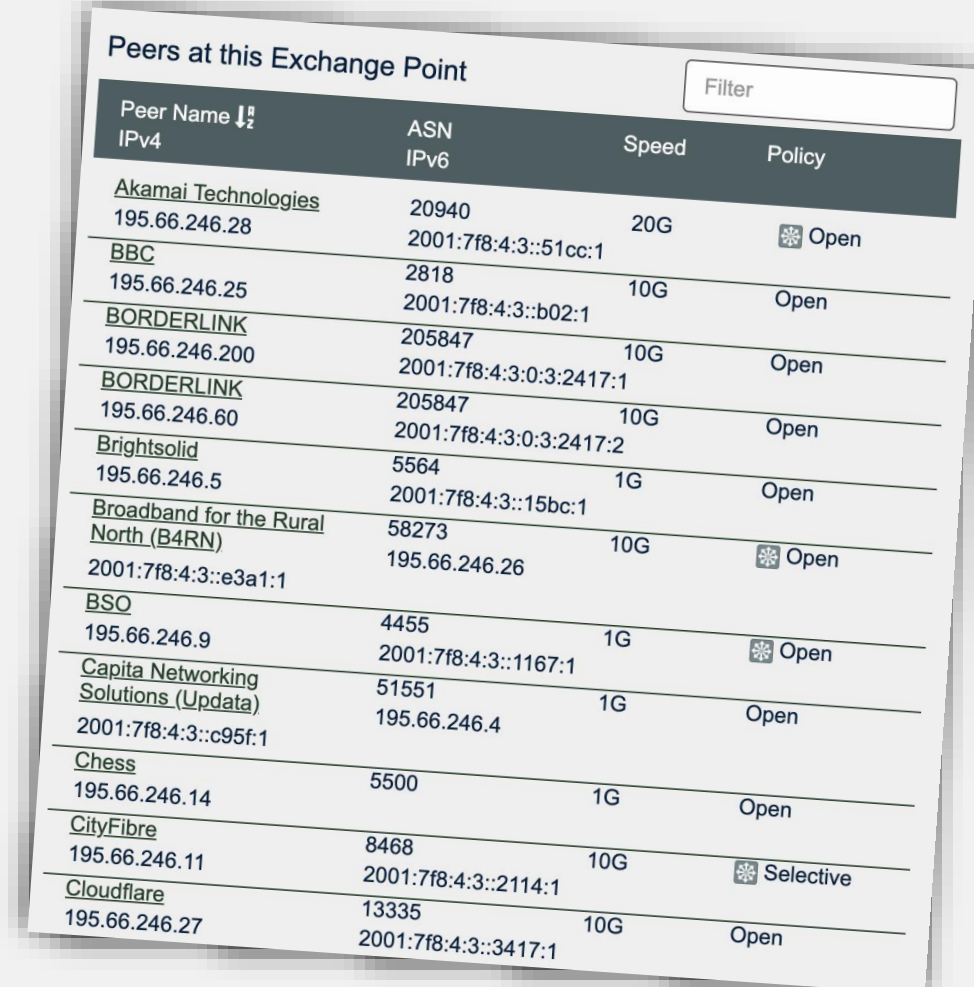
### Style

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

# General Updates

- [https://www.peeringdb.com](https://www.peeringdb.com) is enforced (2.35.0)

- 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/

- 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/

# 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/
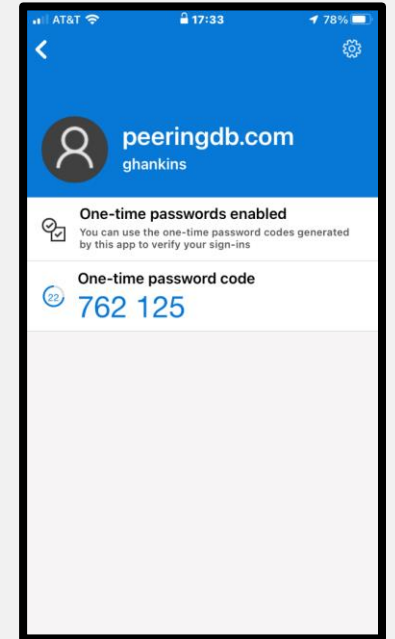
# Self-Selection Fields – Exchanges (2.27.0)

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

| | |
|---|---|
| Organization | Seattle Internet Exchange |
| 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 ❓ | SIX port fees:<br>• 100G: $7.5k NRC, no MRC<br>• 10G: $1.5k NRC, no MRC<br>• 1G: $100 NRC, no MRC<br>[Translate »] |

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

| | |
|---|---|
| NPA-NXX | |
| Last Updated | 2022-04-20T20:03:43Z |
| Notes ❓ | |
| | AUBix |
| Technical Email | support@aubix.net |
| Technical Phone ❓ | |
| Sales Email | sales@aubix.net |
| 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

# Searching – Exchanges

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

# 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
- See also our 2022 Product Report

## 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?

# 2022 User Survey

- Our 2022 user survey was done in October
- Available in 6 UN languages, Portuguese & Ukrainian
- 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

# Italia from a PeeringDB POV

| Category | | Numbers |
|---|---|---|
| IXP/Operators | | 17/13 |
| Facilities/Operators | | 96/71 |
| Networks at IXP | | 516 |
| Italian Networks at IXP | | 366 |
| Networks in Facilities | | 439 |
| Italian Networks in Facilities | | 310 |
| Total Networks (IXP and Facilities) | | 602 |
| Total Italian Networks (IXP and Facilities) | | 397 |
| Italian Networks in PeeringDB | | 513 |
| Italian Networks in any RIR | | 1281 |
| PeeringDB/RIR | | 40.0% |

# New Object "Carrier"

- New pillar of data besides *net*|work, *fac*|ility and *ix*
- A "Carrier" provides high capacity L1/L2 links between facilities.
- API: carrier and carrierfac

# New Object "Carrier"

- Add a carrier object via your organization "Manage" section
- Add a presence via the carrier object
- Introduced in 2.43.0
- See also the [blog](#) about the carrier object

# New Object "Campus"

- The campus object allows to structure two or more facilities
  - Not well defined in terms of size
  - All facilities should be interconnectable with "cheap" interconnections
  - All facilities must belong to the same owner

- API: campus

- A campus is only shown with at least two members

- Add a campus object via your organization "Manage" section

# What's ahead?

- Regular updates with small features and bug fixes, **carrier and campus object already implemented**
- Improve searching, both for GUI and API
- Finalize tasks from Data Ownership Task Force
  - Automatically remove stale connections to an IX
- Automate Networks, IXPs, Facilities, and Carriers according to the latest Guidelines and Criteria
- Published release schedule on the Release Notes page

| Release number | Internal testing | Beta release | Production release |
|----------------|------------------|--------------|--------------------|
| 2.46.0 | 2023-04-05 | 2023-04-12 | 2023-04-19 |
| 2.47.0 | 2023-05-10 | 2023-05-17 | 2023-05-24 |
| 2.48.0 | 2023-06-14 | 2023-06-21 | 2023-06-28 |
| 2.49.0 | 2023-07-05 | 2023-07-12 | 2023-07-19 |
| 2.50.0 | 2023-08-09 | 2023-08-16 | 2023-08-23 |

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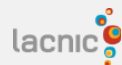
@Tokyo  |  AF-CIX powered by DECIX  |  BBIX Internet Exchange  |  cologix  |  Data4  |  FranceIX Convergence hub  |  INTERLAN INTERNET EXCHANGE  |  jpix
lacnic  |  linx  |  Netrality Data Centers  |  NETNOD  |  NEWBY VENTURES  |  NIX·CZ  |  NLIX
NYIIX  |  STACLAR  |  QiX  |  RIPE NCC RIPE NETWORK COORDINATION CENTRE  |  TERACO AFRICA'S DATA CENTRE  |  zenlayer

# PeeringDB

# Questions?

Need help? Contact support@peeringdb.com

Got a feature idea? Contact productcom@lists.peeringdb.com