



PeeringDB 2.0

Arnold Nipper
arnold@peeringdb.com

Agenda

- **PeeringDB 2.0**
- Membership and Governance
- Committees
- Sponsorship
- Information and Resources

What is PeeringDB?

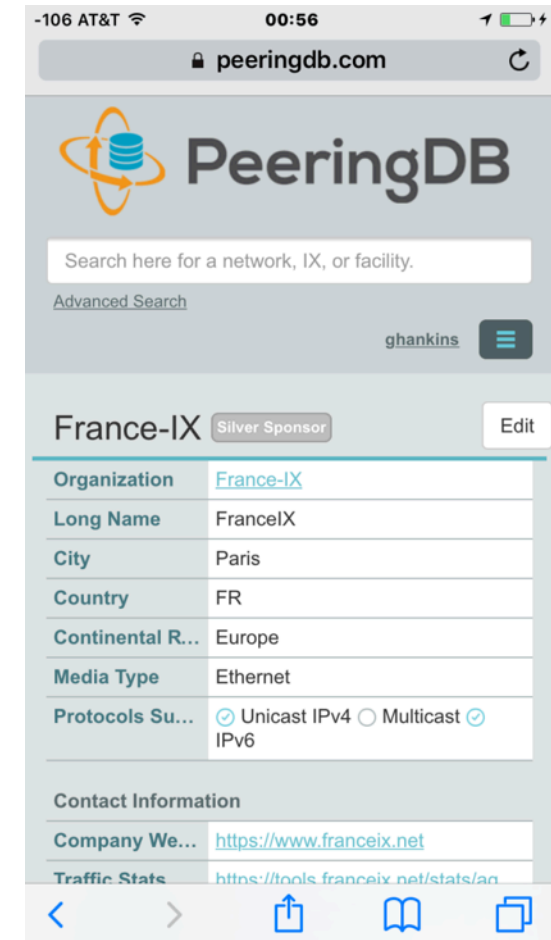
- PeeringDB is the database of peering information on the Internet
- Contains peering location and contact information for
 - Networks
 - Exchanges
 - Facilities
- A PeeringDB record makes it easy for people to find you, and helps you to establish peering
- If you aren't registered in PeeringDB, you can register at <https://www.peeringdb.com/register>
- We use basic verification for new accounts and require current whois information
 - Please update your whois information
 - Please register from a company email address

PeeringDB 2.0 is Here!

- PeeringDB 2.0 launched 15 March, 2016
 - Backend database (1.0) discontinued simultaneously
 - Last legacy SQL dump for public consumption:
<https://peeringdb.com/v1/dbexport/peeringdb.sql>
 - Investigating 404s for old SQL to contact users
 - Questions to support@peeringdb.com
- Challenges during the launch
 - Very minor bug fixes required, but overall a success!
 - Lots of support tickets
 - 20C (developer contractor) very responsive to community - thanks!
- Current release: 2.0.10

Key New Infrastructure Features

- Complete rewrite in Python
 - Python: fast and clean, widely used and supported
 - HTML5: adaptive design for desktop and mobile
 - Support for a multideveloper environment
- Redesigned schema with data validation
 - All data is permissioned and editable
 - Input validation on fields: IP addresses, email addresses, etc.
 - Validation in PeeringDB record: dropdown box to select ASN at exchange
- Data versioning
 - Revision history for every data change
 - Easy to restore and roll back
 - Historical data import from CAIDA going back to 2010 (not available yet)
- RESTful API
 - Stateless
 - Incremental database syncs
 - With documentation and tools, oh my!



Key New User Features

- Facilities and exchanges can now update their own info
 - Networks are still required to associate their record at a facility or exchange
- Multiple records of any type can be associated with an organization
 - Simpler organization management with a single account for network, facility, exchange records
- One account can manage multiple organizations
 - Manage all of the things with a single account
- Users can manage their accounts
 - Admin account for an organization can delegate fine-grained permissions
- Contact info has permissions
 - Private/users/public permissions
 - All users must register, no more guest account
 - Public view can see all info except contact info (no login needed)
- APIs and local database sync
 - Sync PeeringDB to a local database in any engine format

Multiple Records Under a Single Organization

LINX Silver Sponsor

Website	https://www.linx.net
Address 1	The London Internet Exchange Ltd
Address 2	5th Floor, 24 Monument Street
Location	London, , EC3R 8AJ
Country Code	GB

Facilities

Filter

Name ▼	Country City
IXCardiff	United Kingdom Cardiff

Networks

Filter

Name ▼	ASN
LINX Route Servers	8714
London Internet Exchange (LINX)	5459

Exchanges

Filter

Name ▼	Country City
IXCardiff	United Kingdom Cardiff
IXManchester	United Kingdom Manchester
IXScotland	United Kingdom Scotland
LINX Extreme LAN	United Kingdom London
LINX Juniper LAN	United Kingdom London
LINX NoVA	United States Northern Virginia

Facilities are
Shown Here
LINX has 1
Facility

Networks are
Shown Here
LINX has 2
Network
Records

Exchanges are Shown Here
LINX has 6 Exchange Records

One Account Managing Multiple Organizations

PeeringDB

Search here for a network, IX, or facility.
[Advanced Search](#)

job

Affiliate with Organization

To affiliate with an Organization, please enter a valid ASN or Organization name below.

ASN

Organization

Affiliate

Existing Affiliations

Your affiliation with [NTT Communications \(Global\)](#) has been approved

Your affiliation with [NLNOG RING](#) has been approved

Your affiliation with [Netwerkvereniging Coloclue](#) has been approved

Your affiliation with [Snijders IT](#) has been approved

Account “job” is
Affiliated with 4
Organizations

Request Ownership of an Existing Organization

- Network records should already have an organization admin copied from PeeringDB 1.0
- Facility and exchange records will need to have an organization admin assigned

The screenshot shows the PeeringDB interface. At the top, there's a search bar and a user profile 'ghankins-example'. Below the search bar, there's a link to 'Advanced Search' and a prominent blue link 'Click "Request Ownership"'. A blue arrow points from this link to a button labeled 'Request Ownership' in the 'Example-IX' section. The 'Example-IX' section contains a table with details about the organization and a 'Peers at this Exchange Point' section.

PeeringDB Search here for a network, IX, or facility. ghankins-example

[Advanced Search](#) **Click "Request Ownership"**

Example-IX Generates a Support Ticket for Validation and Approval [Request Ownership](#)

Organization	Example-IX
Long Name	Example-IX, the only ATM multicast IX on the planet!
City	Atlanta
Country	US
Continental Region	North America
Media Type	ATM
Protocols Supported	<input type="radio"/> Unicast IPv4 <input checked="" type="radio"/> Multicast <input type="radio"/> IPv6

Peers at this Exchange Point Filter

Peer Name ▼ ASN	IPv4 IPv6	Speed Policy
Nothing matched your filter You may filter by Exchange , ASN , Policy or Speed		

Register or Request Affiliation to an Existing Organization

The screenshot shows the PeeringDB website interface. At the top left is the PeeringDB logo. To its right is a search bar with the placeholder text "Search here for a network, IX, or facility." and a link to "Advanced Search". In the top right corner, the user "ghankins" is logged in, with a menu showing "Nokia IP/Optical Networks Labs", "Profile", and "Logout". The "Profile" link is circled in blue. A blue arrow points from this "Profile" link to the instruction "1. Go to Your Profile".

In the center of the page is a box titled "Affiliate with organization". It contains three paragraphs of instructions: "To affiliate with an existing organization, please enter the ASN or organization name below.", "To register a new network organization, please enter the ASN and organization name below.", and "To register a new facility or exchange organization, please enter the organization name below (ASN is optional).". Below these instructions are two input fields: "ASN" and "Organization". Both fields are circled in blue. A blue arrow points from the "Organization" field to the instruction "3. Enter ASN or Organization Here Autocomplete on Existing ASNs and Organizations in PeeringDB".

Below the input fields is a blue button labeled "Affiliate", which is also circled in blue. A blue arrow points from this button to the instruction "4. Click 'Affiliate' Existing: Organization Admin Needs to Approve New: Generates a Support Ticket for Validation and Approval".

At the top of the central box, a message says "You have confirmed your email address!". This message is circled in blue, and a blue arrow points from it to the instruction "2. Confirm Email Address (Click Here if not Confirmed)".

At the bottom of the central box, a message states: "Your affiliation with [Nokia IP/Optical Networks Labs](#) has been approved."

Organization User Management

Manage

[Add Facility](#) [Add Network](#) [Add Exchange](#) **Users** Permissions

Approve or Deny Pending Requests

Delegate Permissions for Members
Admins Have Access to Everything

Users requesting affiliation

Name User	Email Confirmed	Date
Currently no users requesting affiliation with Nokia IP/Optical Networks Labs		

Users in Organization

Name User	Email	Group
Greg Hankins ghankins	greg.hankins@alcatel-lucent.com	<div>admin</div> <div>member</div> <div>admin</div>

Change User Access Levels
Admin – Administrator
Member – Delegate Permissions

Remove Users From the Organization
Does not Remove the User Account From PeeringDB

Remove

Save

Administrative Permission Delegation

User “equinix-uk” can Manage Several Network Records, but no Exchanges or Facilities

The screenshot displays the PeeringDB administrative interface. At the top, a header bar shows the user 'Paul Cairney <paul.cairney@eu.equinix.com> equinix-uk'. Below this, a table lists permissions for various network records. The 'Create', 'Update', and 'Delete' columns are circled in blue. Arrows point from these circles to a legend on the right. The legend states: 'Create – New Entries in Record', 'Update – Change Existing Entries in Record', and 'Delete – Delete Entries in Record'. The table shows that 'equinix-uk' has permissions for 'Network - Equinix Netherlands', 'Network - Equinix UK', 'Network - Equinix Germany', 'Network - Equinix France', and 'Network - Equinix Switzerland'. Below the table, there is a dropdown menu for 'Any Exchange' and an 'Add' button. The bottom section shows the user 'Raphael Ho <raphael.ho@ap.equinix.com> rho'. This user has permissions for 'Network - Equinix Connect', 'Any Exchange', and 'Any Facility'. The table for 'rho' shows permissions for 'Create', 'Update', and 'Delete' for these three categories. Below the table, there is a dropdown menu for 'Any Exchange' and an 'Add' button.

User	Create	Update	Delete
Paul Cairney <paul.cairney@eu.equinix.com> equinix-uk	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network - Equinix Netherlands	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network - Equinix UK	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network - Equinix Germany	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network - Equinix France	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network - Equinix Switzerland	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Any Exchange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Create – New Entries in Record
Update – Change Existing Entries in Record
Delete – Delete Entries in Record

User	Create	Update	Delete
Raphael Ho <raphael.ho@ap.equinix.com> rho	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Network - Equinix Connect	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Any Exchange	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Any Facility	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Any Exchange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

User “rho” can Manage the “Equinix Connect” Network Record, and Any Exchange or Facility

Network Record Contact Information Permissions

Contact Information

Role ▼	Name Visibility	Phone E-Mail
<input checked="" type="checkbox"/> NOC	Greg Hankins, Alastair Users	 as38016@alcatel-lucent.com
<input checked="" type="checkbox"/> Technical	Greg Hankins, Alastair Users	 as38016@alcatel-lucent.com

Role	Abuse
Name	
Email	name@example.com
Phone	
Visibility	Private Private Users Public

Separate Visibility Preferences for Each Role

Private – Organization Only (Default)

Users – Registered Users Only

Public – Anyone (no Login Required)

Roles:

Abuse

Policy

Technical

NOC

Public Relations

Sales

Networks from ENOG area (selected)

IXP	#networks @ PeeringDB	#networks seen @IXP
MSK-IX	133	380
DATA-IX	80	
DTEL-IX	58	95
UA-IX	44	102
SPB-IX	38	85
GigaNET	26	22
Global-IX	12	
EKT-IX	12	43
PIRIX	11	
NSK-IX	10	48

RESTful API Designed for Automation

- All operations are supported and are designed to be automated
 - Read
 - Create
 - Update
 - Delete
- Each object type has an associated tag
 - org
 - net
 - ix
 - fac
- List of objects: <https://peeringdb.com/apidocs/>
- API documentation: http://docs.peeringdb.com/api_specs/

Quick Examples Return Output in JSON

- List all networks: `curl -X GET https://<username>:<password>@www.peeringdb.com/api/net`
- Show a specific network: `curl -X GET https://<username>:<password>@www.peeringdb.com/api/net/20`

```
{ "meta": {}, "data": [{"id": 20, "org_id": 10356, "org": {"id": 10356, "name": "20C", "website": "http://20c.com", "notes": "", "net_set": [20], "fac_set": [], "ix_set": [], "address1": "", "address2": "", "city": "Chicago", "country": "US", "state": "IL", "zipcode": "", "created": "2014-11-17T14:59:34Z", "updated": "2016-03-23T20:39:18Z", "status": "ok"}, "name": "20C", "aka": "", "website": "http://20c.com", "asn": 63311, " ... }
```


Local Database Sync

- Database sync gives you a local copy of PeeringDB for customization or internal use
 - Sync as often as you like
 - Incremental sync is supported
- Improves performance and reduces load on PeeringDB servers
- Build custom indexes and interfaces
- Add custom fields
- Choice of database engines
 - Currently supported: MySQL, Postgres, SQLite
- Sync using the provided tools or build your own using the API

Django Library

- django-peeringdb is a Django library with a local PeeringDB database sync
- Defines the database schema to create a local database copy
- Easy to integrate in a common framework for locals tools and custom interfaces
- Supports multiple database engines (MySQL, Postgres, SQLite)
- Available at <http://peeringdb.github.io/django-peeringdb/>

Python Client

- peeringdb-py is a Python client for PeeringDB
- Gets objects and outputs in JSON or YAML format
- Provides a whois-like display of records
- Integrated local database sync
- Python library for integration with custom tools
- Available at <http://peeringdb.github.io/peeringdb-py/>
- Examples at <https://github.com/grizz/pdb-examples>

Agenda

- PeeringDB 2.0
- **Membership and Governance**
- **Committees**
- **Sponsorship**
- **Information and Resources**

Membership and Governance

- PeeringDB organization formally formed 16 Dec, 2015
- PeeringDB 501(c)(6) filed 7 Jan, 2016 (approved 24 Feb, 2016)
- 2nd elections held April 2016: 94 organizations registered, 80 voted
- 292 addresses subscribed to the Governance mailing list (as of 16 May 2016)
- 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:
 - <http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov>
 - More information available at <http://gov.peeringdb.com/>

Board of Directors and Officers



Chris Caputo – Secretary & Treasurer
(Non-Board Member)



Patrick Gilmore – Director
(Term Expires 2017)



Matt Griswold – Director
(Term Expires 2017)



Aaron Hughes – President
(Term Expires 2018)



Arnold Nipper – Director
(Term Expires 2017)



Job Snijders – Vice President
(Term Expires 2018)

Committees

Admin Committee

- Manage administration of user accounts and PeeringDB records
- Answer support tickets
- Board members Job Snijders (Chair) and Arnold Nipper (Vice Chair)
- Seeking 0 community volunteers (1 year term)
- Contact: support@peeringdb.com

Product Committee

- Ask for input from the community on desired features
- Manage roadmap and development priorities
- Write SoWs to solicit bids to complete requested features
- Board members Aaron Hughes (Chair) and Matt Griswold (Vice Chair)
- Seeking 0 community volunteers (1 year term)
- Contact: productcom@lists.peeringdb.com

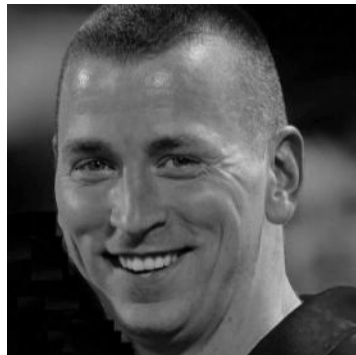
Admin Committee



Kate
Gerry



Patrick
Gilmore



Charles
Gucker



Greg
Hankins



Florian
Hibler



Eric
Lindsjö



Arnold Nipper –
Vice Chair



Robert
Philips



Eduardo
Ascenço Reis



Job Snijders –
Chair



Michael
Still



Walt
Wollny

Product Committee



Karthik
Arumugham



Matt Griswold –
Vice Chair



Greg
Hankins



Aaron Hughes –
Chair



Martin J.
Levy



Eric
Loos



Stephen
McManus



Arnold
Nipper



Kay
Rechthien

Become a PeeringDB Sponsor!

- Diamond Sponsorship - \$25,000 / year
 - Limited to 2 sponsors
 - Very large logo on top line of Sponsors page
 - Diamond Sponsor badge display on all records
- Platinum Sponsorship - \$10,000 / year
 - Large logo on second line of Sponsors page
 - Platinum Sponsor badge display on all records
- Gold Sponsorship - \$5,000 / year
 - Medium logo on third line of Sponsors page
 - Gold Sponsor badge display on all records
- Silver Sponsorship - \$2,500 / year
 - Small logo on fourth line of Sponsors page
 - Silver Sponsor badge display on all records
- Contact sponsorship@peeringdb.com for sponsorship info



DE-CIX Frankfurt Platinum Sponsor	
Organization	DE-CIX Management GmbH
Long Name	Deutscher Commercial Internet Exchange
City	Frankfurt
Country	DE
Continental Region	Europe
Media Type	Ethernet
Protocols Supported	Unicast IPv4 Multicast IPv6

Thank you to our sponsors!

Diamond Sponsors



Microsoft

Platinum Sponsors





Gold Sponsors



Silver Sponsors



Information and Resources

- Announce:
<http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-announce>
 - Governance:
<http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov>
 - Technical:
<http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-tech>
 - User Discuss:
<http://lists.peeringdb.com/cgi-bin/mailman/listinfo/user-discuss>
 - Docs, presentations, guides:
<http://docs.peeringdb.com/>
 - Board and Officers:
stewards@lists.peeringdb.com
 - Admins: support@peeringdb.com
-  [@PeeringDB](https://twitter.com/PeeringDB)
-  <https://www.facebook.com/peeringdb/>

Thanks to Richard Turkbergen

The PeeringDB Board hereby expresses its enormous appreciation to Richard A. Turkbergen (née Steenbergen) for his creation and donation of PeeringDB to the organization.





Questions?

Adding a New Exchange to Your Organization

Manage

[Add Facility](#) [Add Network](#) **[Add Exchange](#)** [Users](#) [Permissions](#)

Add a new Exchange to your Organization. Note that the newly created Exchange will need to be approved by PeeringDB staff before it will appear in the search results or the API listings

Submit Exchange

Generates a Support Ticket for Validation and Approval

Enter Exchange Info Here, Then Click "Submit Exchange"

Name

Website

City

Country

Continental Region

Media Type

Unicast IPv4

Multicast

IPv6

Traffic Stats Website

Technical E-mail

Technical Phone

Policy E-mail

Policy Phone

http://www.example.com

United States

North America

Ethernet

☐

☐

☐

http://www.example.com

name@example.com

name@example.com

Editing Your Exchange Record

Example-IX

CancelSave

Organization	Example-IX
Long Name	Example-IX, the only ATM multicast IX on the planet!
City	Atlanta
Country	United States
Continental Region	North America
Media Type	ATM
Protocols Supported	<input type="checkbox"/> Unicast IPv4 <input checked="" type="checkbox"/> Multicast <input type="checkbox"/> IPv6
Contact Information	
Company Website	http://www.example.com
Traffic Stats Website	http://www.example.com
Technical Email	name@example.com
Technical Phone	
Policy Email	name@example.com
Policy Phone	

Peers at this Exchange Point

Filter

Peer Name ▼	IPv4	Speed
ASN	IPv6	Policy
Nothing matched your filter		
You may filter by Exchange, ASN, Policy or Speed		

Enter Exchange Info Here, Then Click "Save"

Networks are Still Required to Associate their Record at a Facility or Exchange

Editing Your Exchange Record

The screenshot shows the PeeringDB interface for editing an exchange record. The top section is titled 'LANs' and contains a table with columns 'Name', 'DOT1Q', and 'MTU'. Below the table is a form to add a new LAN. The form includes fields for 'Name' (with a dropdown), 'DOT1Q' (with a checkbox), 'MTU' (with a text input), and 'IPv4' (with a dropdown and a text input). An 'Add' button is at the bottom right of the form. The bottom section is titled 'Local Facilities' and contains a table with columns 'Facility', 'Country', and 'City'. Below the table is a search bar with the text 'atlanta' entered. A dropdown menu shows search results for 'atlanta', including 'Equinix Atlanta (AT2/3)', 'Telx Atlanta', and 'Level(3) Atlanta Courtland'.

Name	DOT1Q	MTU
<input type="checkbox"/> Peering LAN	<input checked="" type="checkbox"/>	9000
<input type="checkbox"/> IPv4	127.0.0.0/8	

IPv4 Prefix

Name

DOT1Q ☒

MTU

Local Facilities

Facility

Nothing matched your filter
You may filter by Exchange or Long Name

Equinix Atlanta (AT2/3)
56 Marietta St NW

Telx Atlanta
56 Marietta St

Level(3) Atlanta Courtland
345 Courtland St Ne

Enter LAN Info Here
Name – Optional Name
DOT1Q – 802.1Q Tag
MTU
IPv4/IPv6 Addresses

Add Facilities Here
Autocomplete on
Existing Facilities, Must
Contact Support to Add
a New Facility