



# PeeringDB 2.0 for IXPs

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euro-IX

# Agenda

- **PeeringDB 2.0**
- Membership / Governance
- Committees
- April 2016 Elections
- Sponsorship
- Contact Information

PeeringDB

# What is PeeringDB?

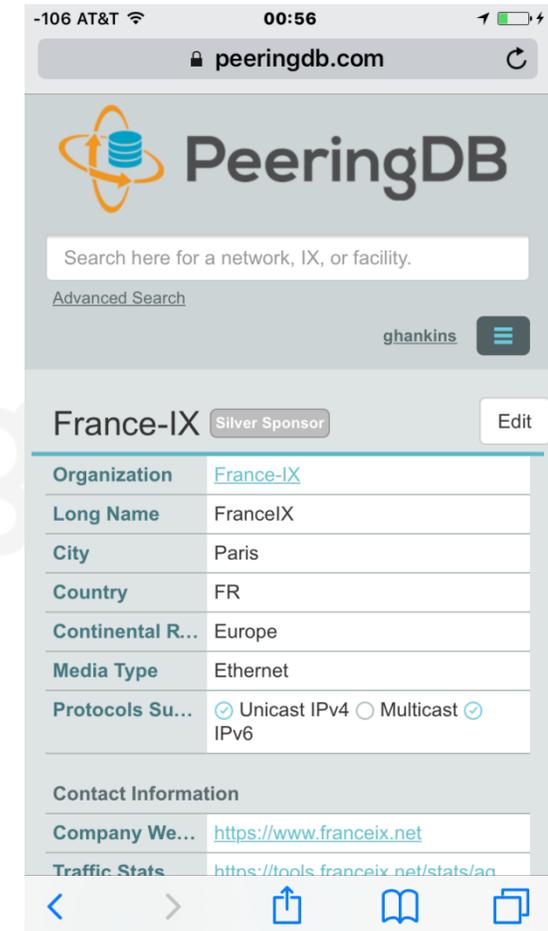
- PeeringDB is the database of peering information on the Internet
- Contains peering location and contact information for
  - Networks
  - Exchanges
  - Facilities
- A PeeringDB record makes it easy for people to find you, and helps you to establish peering
- If you aren't registered in PeeringDB, you 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

- 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](mailto:support@peeringdb.com)
- Challenges during the launch
  - Very minor bug fixes required, but overall a success!
  - Lots of support tickets
  - 2.0.9 current release
  - 20C (developer contractor) very responsive to community - thanks!

# 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	<a href="https://www.linx.net">https://www.linx.net</a>
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
<a href="#">IXCardiff</a>	United Kingdom	Cardiff

## Networks

Filter

Name	ASN
<a href="#">LINX Route Servers</a>	8714
<a href="#">London Internet Exchange (LINX)</a>	5459

## Exchanges

Filter

Name	Country	City
<a href="#">IXCardiff</a>	United Kingdom	Cardiff
<a href="#">IXManchester</a>	United Kingdom	Manchester
<a href="#">IXScotland</a>	United Kingdom	Scotland
<a href="#">LINX Extreme LAN</a>	United Kingdom	London
<a href="#">LINX Juniper LAN</a>	United Kingdom	London
<a href="#">LINX NoVA</a>	United States	Northern Virginia

Exchanges are Shown Here  
LINX has 6 Exchange Records

Facilities are Shown Here  
LINX has 1 Facility

Networks are Shown Here  
LINX has 2 Network Records

# One Account Managing Multiple Organizations

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 profile "job" is circled in blue, with a blue arrow pointing from it to the "Existing Affiliations" section of the form below.

**Affiliate with Organization**

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

ASN

Organization

Affiliate

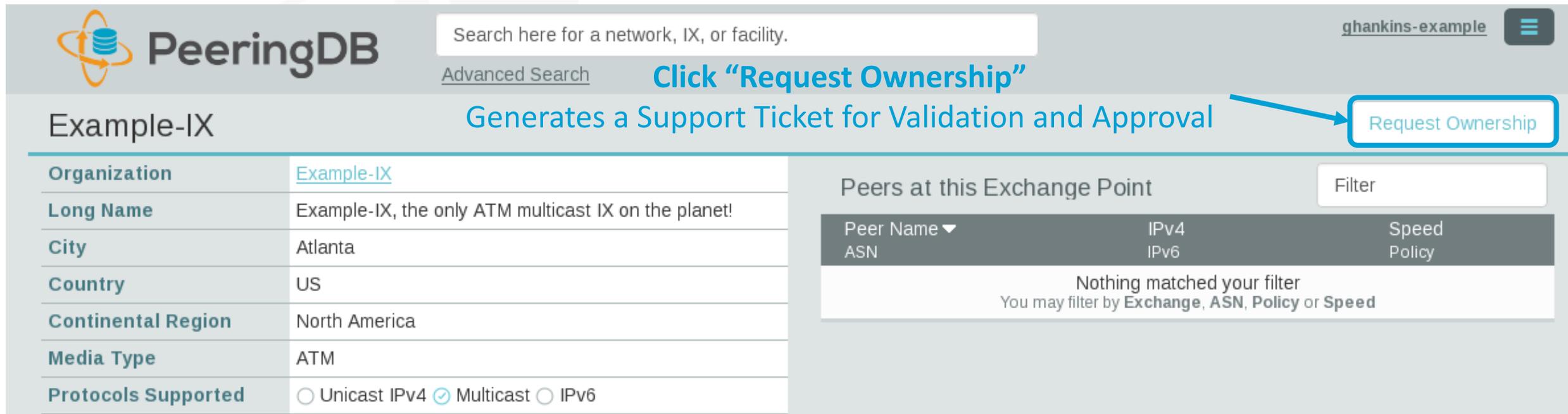
**Existing Affiliations**

- 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 for an organization named 'Example-IX'. The page includes a search bar, a navigation menu, and a table of organization details. A blue arrow points to the 'Request Ownership' button, which is highlighted with a blue box. Below the table, there is a section for 'Peers at this Exchange Point' with a filter input and a message indicating that no peers matched the filter.

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

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

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

Organization	<a href="#">Example-IX</a>
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 <b>Exchange</b> , <b>ASN</b> , <b>Policy</b> or <b>Speed</b>		

# Register or Request Affiliation to an Existing Organization

**2. Confirm Email Address**  
(Click Here if not Confirmed)

**3. Enter ASN or Organization Here**  
Autocomplete on Existing ASNs and Organizations in PeeringDB

**1. Go to Your Profile**

**4. Click "Affiliate"**  
Existing: Organization Admin Needs to Approve  
New: Generates a Support Ticket for Validation and Approval

**You have confirmed your email address!**

**Affiliate with organization**

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.

To register a new facility or exchange organization, please enter the organization name below (ASN is optional).

ASN

Organization

**Affiliate**

Existing affiliations

Your affiliation with [Nokia IP/Optical Networks Labs](#) has been approved.

ghankins

[Nokia IP/Optical Networks Labs](#)

[Profile](#)

[Logout](#)

# 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	Email	Date
User	Confirmed	

Currently no users requesting affiliation with Nokia IP/Optical Networks Labs

**Users in Organization**

Name	Email	Group
User		
Greg Hankins ghankins	greg.hankins@alcatel-lucent.com	admin

Remove Save

**Change User Access Levels**  
Admin – Administrator  
Member – Delegate Permissions

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

# Administrative Permission Delegation

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

User	Selected Records	Create	Update	Delete	
Paul Cairney <paul.cairney@eu.equinix.com> equinix-uk	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"/>	
Raphael Ho <raphael.ho@ap.equinix.com> rho	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"/>
			<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 “rho” can Manage the “Equinix Connect” Network Record, and Any Exchange or Facility

# Network Record Contact Information Permissions

Contact Information

Role	Name	Phone
<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:

Phone:

Visibility:

- 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

# Adding a New Exchange to Your Organization

Manage

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

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

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

**Generates a Support Ticket for Validation and Approval**

**Enter Exchange Info Here, Then Click "Submit Exchange"**

# Editing Your Exchange Record

Example-IX Cancel Save

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 displays the PeeringDB interface for editing an exchange record. It is divided into two main sections: LANs and Local Facilities.

**LANs Section:** A table lists existing LANs. The first entry is "Peering LAN" with a checked "DOT1Q" box and an "MTU" of 9000. Below the table is an "Add LAN" button. A blue box highlights the form for adding a new LAN, which includes fields for Name, DOT1Q (checkbox), MTU, IPv4, and Prefix. Below this form is another "Add LAN" button.

**Local Facilities Section:** A table lists local facilities with columns for Facility, Country, and City. A search filter is present. Below the table is a search input field with "atlanta" entered. A dropdown menu shows suggestions: "Equinix Atlanta (AT2/3)", "Telx Atlanta", and "Level(3) Atlanta Courtland".

**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

# 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/](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
  - Redis: <https://github.com/netflix/peeringdb-py>
- 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 output 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 / Governance**
- **Committees**
- **April 2016 Elections**
- **Sponsorship**
- **Contact Information**

PeeringDB

# Membership / Governance

- PeeringDB organization formally formed 16 Dec, 2015
- PeeringDB 501(c)(6) filed 7 Jan, 2016 (approved 24 Feb, 2016)
- 5 Board meetings have been held
- 86 members registered and voted in the first election
- 288 addresses subscribed to the Governance mailing list (as of 6 Apr 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/>

# Committees

- Admin Committee
  - Will write charter
  - Will seek individuals from the community to serve on Admin Committee
  - Will define roles, responsibilities and assist with schedule for Admin Committee
  - Seeking 0 community volunteers (1 year term)
  - Board members Job Snijders and Patrick Gilmore (Snijders as Chair)
  - Interested in volunteering? Contact [admincom@lists.peeringdb.com](mailto:admincom@lists.peeringdb.com)
- Product Development Committee
  - Will write charter
  - Will seek input from the community on desired features
  - Will write SoW's to solicit bids to complete requested features
  - Will manage priorities for selected development vendor(s)
  - Seeking 4 community volunteers (1 year term)
  - Board members Aaron Hughes and Matt Griswold (Hughes as Chair)
  - Interested in volunteering? Contact [productcom@lists.peeringdb.com](mailto:productcom@lists.peeringdb.com)

# Admin Committee

Big thanks to our awesome team of admins!



Kate Gerry



Patrick Gilmore (Vice Chair)



Matt Griswold



Greg Hankins



Florian Hibler



Eric Lindsjö



Arnold Nipper



Eduardo Ascenço Reis



Job Snijders (Chair)



Walt Wollny

# Product Development Committee

- A Product Development Committee is needed
  - Direct feature requests
  - Maintain the product roadmap
- Interested in volunteering? Contact [productcom@lists.peeringdb.com](mailto:productcom@lists.peeringdb.com)
- Feature requests can be sent to [support@peeringdb.com](mailto:support@peeringdb.com) for tracking

# 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](mailto:sponsorship@peeringdb.com) for sponsorship info



Proud Sponsor of  
**PeeringDB**

DE-CIX Frankfurt	Platinum Sponsor
Organization	<a href="#">DE-CIX Management GmbH</a>
Long Name	Deutscher Commercial Internet Exchange
City	Frankfurt
Country	DE
Continental Region	Europe
Media Type	Ethernet
Protocols Supported	<input checked="" type="checkbox"/> Unicast IPv4 <input checked="" type="checkbox"/> Multicast <input checked="" type="checkbox"/> IPv6

# Thank you to our sponsors!

Platinum  
Sponsor



PeeringDB

Silver  
Sponsors



# Board Elections (April 2016)

- PeeringDB Board election in April 2016 (1 and 2 year terms)
- 5 seats up for election
- Current (initial) Board serves through April 2016
- April 15th 2016: ballots, with candidate statements, will be submitted to the PeeringDB Governance mailing list ([pdb-gov@lists.peeringdb.com](mailto:pdb-gov@lists.peeringdb.com))
- Make sure to register until April 28<sup>th</sup> 2016 UTC to be able to vote. Registrations received after that are not guaranteed to be processed in time
- April 15th through 29th 23:59:59 UTC 2016: voting

# Board Elections (April 2016)

- Board candidates
  - Patrick W. Gilmore
  - Matt Griswold
  - Florian Hibler
  - Aaron Hughes
  - Arnold Nipper
  - Job Snijders

PeeringDB

# Mailing Lists and Social Media

- 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>



[@PeeringDB](https://twitter.com/PeeringDB)



<https://www.facebook.com/peeringdb/>

# Have questions?

- PeeringDB Officers & Board ([stewards@lists.peeringdb.com](mailto:stewards@lists.peeringdb.com))
  - Aaron Hughes – President, Director
  - Patrick Gilmore – Vice President, Director
  - Chris Caputo – Secretary & Treasurer (non-board member)
  - Matt Griswold – Director
  - Arnold Nipper – Director
  - Job Snijders – Director
- PeeringDB Admins ([support@peeringdb.com](mailto:support@peeringdb.com))

# 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?