PeeringDB Update

Aaron Hughes
aaronh@peeringdb.com
• Slide overview and content
  • We’re developing a new 2017 slide deck with a short/medium/long format for presentation at conferences
  • A 101 introduction tutorial is at the end after the main deck
  • Planning to expand the tutorial into more detailed 201, 301, etc. versions

• Highlight integration with PeeringDB
  • We want to promote the lastest tools and integration developments
  • If you have a tool you’d like us to announce, please get in touch at productcom@lists.peeringdb.com

• We want your feedback on PeeringDB’s presence at conferences!
  • Goal is to educate and evangelize PeeringDB to facilitate interconnection
  • How can we be most effective in building the peering community?
1. Organization and Election Update
2. Strategic Goals and Organizational Objectives
3. Feature Planning Process and Roadmap Update
4. Third Party Integration
What is PeeringDB?

**Mission statement:** “PeeringDB, a nonprofit member-based organization, facilitates the exchange of user maintained interconnection related information, primarily for Peering Coordinators and Internet Exchange, Facility, and Network Operators.”

- 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](https://www.peeringdb.com/register)
- We use basic verification for new accounts and require current whois information, so please
  - Update and maintain your whois information
  - Register from a company email address
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
  • 327 addresses subscribed to the Governance mailing list (as of 25 Apr, 2017)
  • Governance list is at http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov
  • More information available at http://gov.peeringdb.com/
## Committees

<table>
<thead>
<tr>
<th>Admin Committee</th>
<th>Product Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Manage administration of user accounts and PeeringDB records</td>
<td>• Ask for input from the community on desired features</td>
</tr>
<tr>
<td>• Answer support tickets</td>
<td>• Manage roadmap and development priorities</td>
</tr>
<tr>
<td>• Board members Job Snijders (Chair) and Arnold Nipper (Vice Chair)</td>
<td>• Write SoWs to solicit bids to complete requested features</td>
</tr>
<tr>
<td>• Seeking 2 community volunteers (1 year term)</td>
<td>• Board members Aaron Hughes (Chair) and Matt Griswold (Vice Chair)</td>
</tr>
<tr>
<td>• Language experience is helpful, especially Portuguese (Brazilian dialect)</td>
<td>• Contact: <a href="mailto:productcom@lists.peeringdb.com">productcom@lists.peeringdb.com</a></td>
</tr>
<tr>
<td>• Contact: <a href="mailto:admincom@lists.peeringdb.com">admincom@lists.peeringdb.com</a></td>
<td></td>
</tr>
</tbody>
</table>
Admin Committee

Samer Abdel-Hafez
Hendrik Braasch
Kate Gerry
Christoffer Hansen
Peter Helmenstine
Florian Hibler
Eric Lindsjö
Julimar Mendes
Arnold Nipper – Vice Chair
Job Snijders – Chair
Michael Still
• Admin Committee volunteers are based around the world in a variety of time zones
• Goal is to resolve support tickets within 24 hours

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Tickets/Year</th>
<th>PeeringDB 1.0</th>
<th>PeeringDB 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1389</td>
<td>1389</td>
<td></td>
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<tr>
<td>2013</td>
<td>2284</td>
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<td>2016</td>
<td>648</td>
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<td>6873</td>
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<tr>
<td>2017</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>Tickets/Day</th>
<th>Resolution Time (d)</th>
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<tbody>
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<tr>
<td>2016</td>
<td>21.84</td>
<td>25.39</td>
</tr>
<tr>
<td>2017</td>
<td>25.39</td>
<td>30.00</td>
</tr>
</tbody>
</table>

300% Increase!
Product Committee

Karthik Arumugham
Matt Griswold – Vice Chair
Greg Hankins
Aaron Hughes – Chair
Martin Levy
Eric Loos
Stephen McManus
Arnold Nipper
Kay Rechthien
Bijal Sanghani
Job Snijders
Agenda

1. Organization and Election Update
2. Strategic Goals and Organizational Objectives
3. Feature Planning Process and Roadmap Update
4. Third Party Integration
2017 – 2018 Strategic Direction

• Ensure reliability, security and support of PeeringDB services
• Maintain, develop, and enhance functionality of PeeringDB services as sought by the users and supported by the membership and community
• Educate the community on effective use of PeeringDB
• Educate the community on interconnection
• Evangelize use of PeeringDB

Uptime Status: http://status.peeringdb.com/
Encourage support of PeeringDB via sponsorship

Build a reserve of 2 years of operational funds for the longterm stability of the organization

Strengthen relationships with operator and peering forums, and other related databases, to work cooperatively on interconnection topics

Legal review of liabilities, and insurance (D&O)

Succession planning
2017 Organizational Objectives

- Obtain contracts for all supporting service providers
- Ensure supporting services are always available
- Ensure regular backups for all services
- Ensure security for private user data
- Conduct redundancy and restoration test bi-annually
- Support the Admin Committee to ensure user expectations are met
- Manage contractor for maintenance, minor development and basic support for underlying PeeringDB platform
- Support the Product Committee for major development and feature enhancements to ensure user expectations are met
- Provide education material in the form of a quick start guide, embedded online assistance, webinars and tutorials
- Participate in peering discussions globally where possible
- Expand social media presence as new material is created
- Survey the existing sponsors
- Write and implement surplus plan
- Present at major conferences where possible
- Conduct one election in April each year
- Conduct one member meeting in April each year
- Engage council for annual review of liabilities and insurance
- Write succession plan

2017-06-05  NANOG 70, Bellevue, USA
Agenda

1. Organization and Election Update
2. Strategic Goals and Organizational Objectives
3. Feature Planning Process and Roadmap Update
4. Third Party Integration
All features tracked using GitHub at https://github.com/peeringdb/peeringdb/issues with the ZenHub overlay

- Anyone can open a feature requests, there are no internal or hidden requests
- Open and transparent process for feature development
- Workflow is at http://docs.peeringdb.com/workflow/

Product Committee feature process
- Evaluate and prioritize the requests
- Request a quote for development costs
- Request budget from the board
- Manage implementation and scheduling

Example Categories
- AC (Support Workflow)
- Bug
- Enhancement
- Usability

Your input is needed on features!
New Release Process

• Announced at least one week in advance with all changes to give the community notice
  • Beta site is already running the development version for testing
  • Announced on PDB Announce list, Twitter, Facebook

• Released on Wednesdays at 0400Z and avoids
  • Mondays and Fridays
  • International holidays
  • Large conferences and events (APRICOT, EPF, GPF, NANOG, RIPE, etc.)

• List of current changes (release notes) for each version are on GitHub at
  https://github.com/peeringdb/peeringdb/milestones
Beta Development

• **Beta server**
  • Available at [https://beta.peeringdb.com/](https://beta.peeringdb.com/)
  • Runs the latest beta software version
  • Full access over HTTP and the API
  • Database is local to the beta server only, changes are not reflected on the production servers

• **Latest changes**
  • Available at [https://beta.peeringdb.com/changes](https://beta.peeringdb.com/changes)
  • Redirects to the list of issues on GitHub
  • Documents all of the changes in the current beta version

• **Anyone can log bugs and feature requests in GitHub at [https://github.com/peeringdb/peeringdb/issues](https://github.com/peeringdb/peeringdb/issues)
2017 Roadmap

• Several maintenance releases with small features have been released since PeeringDB 2.0 was launched

• We will have major releases with larger features in 2017

• Roadmap focus areas
  • Data quality, privacy, confidentiality
  • Usability and API
  • Platform stability and reliability
  • Product evolution

• Communication focus areas
  • Partner management
  • Communication outreach
  • Membership engagement
1. Organization and Election Update
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4. Third Party Integration
Third Party Integration

• PeeringDB maintains interconnection data
  • Permissions and privacy on user information are set by the user
  • Accuracy is essential
  • Exchange sources are vetted
  • Data conflicts are resolved by the Admin Committee

• Third party integration with PeeringDB has started in two ways
  • Data exchange with organizations
  • Use by free and commercial software, full list at http://docs.peeringdb.com/#tools
**Data Exchange**

- PeeringDB’s goals are to
  - Maintain data integrity
  - Provide complete data needed for interconnection

- Working to exchange data with organizations that maintain data on facilities, IXPs, and networks
  - Open and transparent process and integration
  - Not for user data

- IXP data: IX-F, Euro-IX, PCH
- Network data: RIRs (ASNs)
- Facility data: Inflect
Software Highlight: TraceMON

- **TraceMON** is a tool for visualizing a network topology generated by traceroutes
  - Provides one-click access to IXP and network info
  - Displays PeeringDB info and allows the user to update their record
- RIPE Atlas users can access it by selecting a traceroute measurement and clicking on the TraceMON tab at [https://atlas.ripe.net/measurements/?search=&status=&af=&kind=2%2C4&age=#!tab-public](https://atlas.ripe.net/measurements/?search=&status=&af=&kind=2%2C4&age=#!tab-public)
- Full article is at [https://labs.ripe.net/Members/massimo_candela/tracemon-traceroute-visualisation-network-debugging-tool](https://labs.ripe.net/Members/massimo_candela/tracemon-traceroute-visualisation-network-debugging-tool)
Information and Resources

• Announce list: http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-announce

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

• Technical list: http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-tech

• User Discuss list: http://lists.peeringdb.com/cgi-bin/mailman/listinfo/user-discuss

• Docs, presentations, guides, tools: http://docs.peeringdb.com/

• Board and Officers: stewards@lists.peeringdb.com

• Admins: support@peeringdb.com

• Presentation requests: productcom@lists.peeringdb.com

• Uptime status: http://status.peeringdb.com/

• Bugs and feature requests: https://github.com/peeringdb/peeringdb/

• Social media:
  • @PeeringDB
  • https://www.facebook.com/peeringdb/
  • https://www.linkedin.com/company/peeringdb

2017-06-05
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NYIIX Laiix PeeringManager RIPE NCC TeraCO Workonline
Zenlayer

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Questions?
Tutorial Slides
PeeringDB 2.0 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!
PeeringDB 2.0 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
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


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

```json
{
  "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,
    "..."
  }
}
```
List All Peers at an IXP (CATNIX)

```bash
% curl -s -X GET https://www.peeringdb.com/api/netixlan\?ixlan_id=62 \\
| jq ".data[]"
{
  "id": 459,
  "net_id": 91,
  "ix_id": 62,
  "name": "CATNIX",
  "ixlan_id": 62,
  "notes": "",
  "speed": 1000,
  "asn": 8220,
  "ipaddr4": "193.242.98.13",
  "ipaddr6": null,
  "is_rs_peer": false,
  "created": "2010-07-29T00:00:00Z",
  "updated": "2016-03-14T21:09:42Z",
  "status": "ok"
}
```
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)
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
Register or Request Affiliation to an Existing Organization

1. Go to Your Profile

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

3. Enter ASN or Organization Here

4. Click “Affiliate”

Existing: Organization Admin Needs to Approve

New: Generates a Support Ticket for Validation and Approval
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

Click “Request Ownership”
Generates a Support Ticket for Validation and Approval
### Facilities

<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXCardiff</td>
<td>United Kingdom</td>
</tr>
</tbody>
</table>

LINX has 1 Facility

### Networks

<table>
<thead>
<tr>
<th>Name</th>
<th>ASN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINX NoVA (LINX USA Inc.)</td>
<td>21010</td>
</tr>
<tr>
<td>LINX Route Servers</td>
<td>6714</td>
</tr>
<tr>
<td>London Internet Exchange (LINX)</td>
<td>5459</td>
</tr>
</tbody>
</table>

LINX has 2 Network Records

### Exchanges

<table>
<thead>
<tr>
<th>Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>IXCardiff</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>IXManchester</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>IXScotland</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>LINX LON1</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>LINX LON2</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>LINX NoVA</td>
<td>United States of America</td>
</tr>
</tbody>
</table>

LINX has 6 Exchange Records
One Account Managing Multiple Organizations

Account “job” is Affiliated with 4 Organizations
Organization User Management

Approve or Deny Pending Requests

Delegate Permissions for Members
Admins Have Access to Everything

Manage

Users requesting affiliation

Name | Email | Date
--- | --- | ---
User | User | User

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

Users in Organization

Name | Email | Group
--- | --- | ---
Greg Hankins | greg.hankins@alcatel-lucent.com | member
ghankins

Remove

Change User Access Levels
Admin – Administrator
Member – Delegate Permissions

Remove Users From the Organization
Does not Remove the User Account From PeeringDB
User “equinix-uk” can Manage Several Network Records, but no Exchanges or Facilities

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

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

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.

Enter Exchange Info Here, Then Click “Submit Exchange”

Generates a Support Ticket for Validation and Approval
Enter Exchange Info Here, Then Click “Save”

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

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
Questions?