Matt Griswold, 20C/United IX
Greg Hankins, Alcatel-Lucent
IX (PTT) Fórum 9 - São Paulo, Brazil
Agenda

• PeeringDB Introduction
• Organization Update
• PDB 1.0 vs. PDB 2.0
• Automation Examples
PeeringDB Overview

- PeeringDB is the de facto reference database for peering information on the Internet
- Contains location information and contacts for
  - Networks
  - Exchange points
  - Facilities
- A PeeringDB entry for your network makes it easy for people to find you, and helps you establish peering
- Required for peering with certain networks, for example
  - Apple
  - Facebook
  - Microsoft
## Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Networks</td>
<td>8,293</td>
</tr>
<tr>
<td>Exchange Points</td>
<td>617</td>
</tr>
<tr>
<td>Facilities</td>
<td>1,863</td>
</tr>
<tr>
<td>Exchange Point Presences</td>
<td>25,508</td>
</tr>
<tr>
<td>Facility Presences</td>
<td>14,444</td>
</tr>
</tbody>
</table>

- Several new registrations from Brazil each week!
### Network Example

#### Company Information
- **Company Name**: Alcatel-Lucent IP Labs
- **Also Known As**: 
- **Company Website**: http://www.alcatel-lucent.com/
- **Primary ASN**: 38016
- **IRR Record**: 
- **Network Type**: Educational/Research
- **Approx Prefixes**: 10
- **Traffic Levels**: 0-20 Mbps
- **Traffic Ratios**: Balanced
- **Geographic Scope**: Global
- **Looking Glass URL**: 
- **Route Server URL**: 
- **Notes**: Alcatel-Lucent IP Labs for peering R&D.
- **Protocols Supported**: Unicast IPv4, Multicast, IPv6
- **Date Last Updated**: 2015-08-25 05:12:35 UTC

#### Public Peering Exchange Points
<table>
<thead>
<tr>
<th>Exchange Point Name</th>
<th>ASN</th>
<th>IP Address</th>
<th>Mbit/sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE-CIX Frankfurt</td>
<td>38016</td>
<td>2001.78.9480:0.1</td>
<td>1000</td>
</tr>
<tr>
<td>DE-CIX Frankfurt</td>
<td>38016</td>
<td>80.81.193.192</td>
<td>1000</td>
</tr>
<tr>
<td>DE-CIX New York</td>
<td>38016</td>
<td>2001.50436.9480:0.1</td>
<td>1000</td>
</tr>
<tr>
<td>DE-CIX New York</td>
<td>38016</td>
<td>206.130.10.12</td>
<td>1000</td>
</tr>
</tbody>
</table>

#### Private Peering Facilities
<table>
<thead>
<tr>
<th>Facility Name</th>
<th>ASN</th>
<th>City</th>
<th>Country</th>
<th>SONET</th>
<th>Ethr</th>
<th>ATM</th>
</tr>
</thead>
<tbody>
<tr>
<td>325 Hudson Street</td>
<td>38016</td>
<td>New York</td>
<td>US</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Peering Policy Information
- **General Policy**: Open
- **Multiple Locations**: Not Required
- **Ratio Requirement**: No
- **Contract Requirement**: Not Required

#### Contact Information
<table>
<thead>
<tr>
<th>Role</th>
<th>Contact Name</th>
<th>Telephone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOC</td>
<td>Greg Hankins, Alastair Johnson</td>
<td></td>
<td><a href="mailto:as38016@alcatel-lucent.com">as38016@alcatel-lucent.com</a></td>
</tr>
<tr>
<td>Technical</td>
<td>Greg Hankins, Alastair Johnson</td>
<td></td>
<td><a href="mailto:as38016@alcatel-lucent.com">as38016@alcatel-lucent.com</a></td>
</tr>
</tbody>
</table>
### Exchange Point Example

#### Public Exchange Point Detailed View

<table>
<thead>
<tr>
<th>Common Name</th>
<th>PTT-SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Name</td>
<td>PTT Sao Paulo</td>
</tr>
<tr>
<td>City</td>
<td>Sao Paulo/SP</td>
</tr>
<tr>
<td>Country</td>
<td>BR</td>
</tr>
<tr>
<td>Continental Region</td>
<td>South America</td>
</tr>
<tr>
<td>Media Type</td>
<td>Ethernet</td>
</tr>
<tr>
<td>Protocols Supported</td>
<td>Unicast IPv4 ✓, Multicast ☐, IPv6 ✓</td>
</tr>
</tbody>
</table>

#### Contact Information

- Website: [http://ptt.br](http://ptt.br)
- Traffic Statistics Website: [http://ptt.br/trafego/agregado/sp](http://ptt.br/trafego/agregado/sp)
- Technical E-Mail: noc@ptt.br
- Technical Phone: +55 11 5509-3550
- Policy E-Mail: info@ptt.br
- Policy Phone: +55 11 5509-3550

#### IP Address Blocks

<table>
<thead>
<tr>
<th>Type</th>
<th>Address Block</th>
<th>Reverse DNS Scan</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 Unicast</td>
<td>187.16.216.0/21</td>
<td>Link</td>
</tr>
<tr>
<td>IPv6 Unicast</td>
<td>2001:128/64</td>
<td>Unsupported</td>
</tr>
</tbody>
</table>

#### Local Facilities

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>City</th>
<th>Country</th>
<th>Participant Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No records</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### List of Peers at this Exchange Point (Total: 509)

<table>
<thead>
<tr>
<th>Peer Name</th>
<th>Local ASN</th>
<th>IP Address</th>
<th>IPs</th>
<th>Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3E TELECOM</td>
<td>61924</td>
<td>187.16.220.133</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>3Ws Telecom</td>
<td>263265</td>
<td>187.16.216.26</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>ABASE Telecom</td>
<td>22431</td>
<td>187.16.216.26</td>
<td>2</td>
<td>Open</td>
</tr>
<tr>
<td>abcRede Telecom Informatica ME</td>
<td>26162</td>
<td></td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>Acer Telecom Comunicacao LTDA</td>
<td>28287</td>
<td>187.16.221.17</td>
<td>2</td>
<td>Open</td>
</tr>
<tr>
<td>Acesse Facil Telecomunicacoes LTDA</td>
<td>262828</td>
<td>187.16.217.93/21</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>AdyTelecom</td>
<td>28283</td>
<td>187.16.218.92</td>
<td>4</td>
<td>Open</td>
</tr>
<tr>
<td>AFINET SOLUCOES EM TECNOLOGIA DA INFORMACAO</td>
<td>262854</td>
<td>187.16.217.226</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>AGYONET</td>
<td>53113</td>
<td>187.16.218.82/21</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>AIRLIFE COMUNICACAO VIRTUAL LTDA</td>
<td>262952</td>
<td>187.16.219.30</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>Akamai Technologies</td>
<td>20940</td>
<td>187.16.220.8</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>Alt Telecom</td>
<td>52988</td>
<td>187.16.219.63/21</td>
<td>1</td>
<td>Selective</td>
</tr>
<tr>
<td>Algar Telecom</td>
<td>16735</td>
<td>187.16.217.48</td>
<td>4</td>
<td>Selective</td>
</tr>
<tr>
<td>ALOG DataCenters do Brasil - RJ</td>
<td>26592</td>
<td>187.16.216.42</td>
<td>4</td>
<td>Open</td>
</tr>
<tr>
<td>Alonet - Internet sem Fronteiras</td>
<td>262560</td>
<td>187.16.218.63</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>ALPHASYS - SERVICOS E COMUNICACAO LTDA</td>
<td>28364</td>
<td>187.16.219.201</td>
<td>3</td>
<td>Selective</td>
</tr>
<tr>
<td>ALOG Tecnologia</td>
<td>52550</td>
<td>187.16.218.229</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>Alto Vale Net LTDA</td>
<td>262575</td>
<td>187.16.219.118</td>
<td>1</td>
<td>Open</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>16509</td>
<td>187.16.217.20</td>
<td>4</td>
<td>Open</td>
</tr>
<tr>
<td>Americana Digital</td>
<td>28289</td>
<td>187.16.216.104</td>
<td>2</td>
<td>Open</td>
</tr>
<tr>
<td>Ampinet Telecom</td>
<td>28158</td>
<td>187.16.217.176</td>
<td>2</td>
<td>Open</td>
</tr>
<tr>
<td>AmplitudeNet</td>
<td>262721</td>
<td>187.16.218.69</td>
<td>1</td>
<td>Restrictive</td>
</tr>
<tr>
<td>Ananke</td>
<td>262446</td>
<td>187.16.216.116</td>
<td>1</td>
<td>Open</td>
</tr>
</tbody>
</table>
Access to PeeringDB

- PDB 1.0 is available at www.peeringdb.com
  - Current production version
- PDB 2.0 is in beta at beta.peeringdb.com
  - New version with many new features
Registration

- If you aren’t registered in PeeringDB, you can register at www.peeringdb.com/registration/register.php
- We use basic verification for new accounts and require current whois information
  - Please update your whois information
  - Please register from a company email address
- Many new registrations from Brazil have mismatched information
  - Email address != company email address
  - Email address != whois email address
  - Company name != whois company name
Mailing Lists and Contacts

- PeeringDB Announce: lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-announce
- PeeringDB Governance: lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov
- PeeringDB Technical: lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-tech
- PeeringDB User Discuss: lists.peeringdb.com/cgi-bin/mailman/listinfo/user-discuss
- Support questions: support@peeringdb.com
- Administrative questions: admin@peeringdb.com
- Sponsorship info: sponsorship@peeringdb.com
Agenda

- PeeringDB Introduction
- **Organization Update**
- PDB 1.0 vs. PDB 2.0
- Automation Examples
Organization

• Until now, PeeringDB has been run by an informal group of admins using donated infrastructure
• PeeringDB needs funds for
  ◦ Operations
  ◦ Software development
  ◦ Feature requests and enhancements
• Many organizations have offered donations to support PeeringDB
• Unable to handle finances or contracts
Elections

- Voting for the PeeringDB initial Board of Directors just finished on November 30th, 2015
- Initial Board of Directors
  - Patrick W. Gilmore (Markley Group) - Vice President
  - Matt Griswold (20C)
  - Aaron Hughes (6connect) - President
  - Arnold Nipper (DE-CIX)
  - Job Snijders (NTT)
- First board meeting takes place today
- Forming United States 501(c)(6) nonprofit corporation
- All governance info is available at [gov.peeringdb.com](http://gov.peeringdb.com)
Agenda

• PeeringDB Introduction
• Organization Update
• PDB 1.0 vs. PDB 2.0
• Automation Examples
PDB 1.0

- Old, auto-generated code, unmaintainable
- Schema issues
  - One network per user, requires multiple registrations
  - No data validation, lots of typos
- MySQL is the only "API"
  - Insecure, doesn't scale
- Exposes contact information to potential spammers
PDB 2.0

- New, clean, shiny Python
- Completely redesigned schema
- RESTful API
- All data is cleaned and validated
- Contact info has permissions
  - Guest login won’t see contact details
PDB 2.0

- Everything is permissioned and editable
  - Data centers and IXPs can update their own info
  - Multiple networks can be associated with one login
  - Manage users and permissions
- Documented APIs at docs.peeringdb.com/api_specs
- Many new features planned after release
- Beta version is live now at beta.peeringdb.com
Agenda

- PeeringDB Introduction
- Organization Update
- PDB 1.0 vs. PDB 2.0
- Automation Examples
API Specs

• All operations are supported
  ◦ Read
  ◦ Write
  ◦ Create

• Each data type has an associated tag
  ◦ net
  ◦ org
  ◦ ix
API Specs

• To list all networks:
  
curl -X GET
https://<username>:<password>@beta.peeringdb.com/api/net

• To view a specific network:
  
curl -X GET
https://<username>:<password>@beta.peeringdb.com/api/net/20
Python Library

- Python seems to be the go-to language for network people
- Very early in life cycle
  - Expect more tests and features in the near future
- More languages and libraries will show up
  - PHP will probably be next
- Available at [github.com/peeringdb/peeringdb-py](https://github.com/peeringdb/peeringdb-py)
Python Library

• Advantages
  ◦ Local (not dependent on servers being up, etc.)
  ◦ Custom indexes can be built
  ◦ Custom fields can be added
  ◦ Database engine can be chosen (MySQL, Postgres, SQLite)

• To install:
  pip install peeringdb
Python Library

- To configure a local database:
  `peeringdb configure`
- To keep in sync after configuration:
  `peeringdb sync`
Python Library

- To output YAML:
  `peeringdb get net20`
- To output JSON:
  `peeringdb get -O json net20`
Django PeeringDB

- PeeringDB models and local synchronization for Django
- Available at github.com/peeringdb/django-peeringdb
- Easy to integrate in a common web framework
- Multiple database options
- Used by peeringdb-py to sync data
United IX Example

- Customer signs up
- Backend system queries PeeringDB
- Auto populates IXP Manager data
  - NOC info
  - Max prefix
  - Very easy to generate peering router configuration
Companies Using PDB 2.0

• Apple
  ◦ Couchbase database sync
  ◦ Not available to the public

• Netflix
  ◦ Redis database sync
  ◦ Available at [github.com/netflix/peeringdb-py](https://github.com/netflix/peeringdb-py)
Questions?