PeeringDB

What's new on PeeringDB?

Livio Morina – Director of PeeringDB
livio@peeringdb.com

Elisa Peirano – LACNIC
elisa@lacnic.net

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 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, so please
  - Update and maintain your Whois information
  - Register from an email address associated with your ASN /company

What is PeeringDB?

Why should my exchange, network or facility be listed in PeeringDB?

- Helps establish new peering more efficiently, with all information easy to find in one place
  - Maintain all of your contact and connection info
  - Find other network's peering contact and connection info
  - Find interconnection facility and IXP info
- A PeeringDB record is required by many networks to peer
- Can be used for automation to generate router configurations
  - Initial configuration to setup peering quickly
  - Update configuration if maximum prefixes change

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
  - 344 addresses subscribed to the Governance mailing list (as of April 16, 2019)
  - Governance list is at http://lists.peeringdb.com/cgi-bin/mailman/listinfo/pdb-gov
  - More information available at http://gov.peeringdb.com/

Board of Directors and Officers

Shawna Bong – Secretary and Treasurer (Officer)

Aaron Hughes – Vice President (Term Expires 2026)

Rahul Makhija – Director (Term Expired 2025)

Christopher Malayter – President (Term Expired 2025)

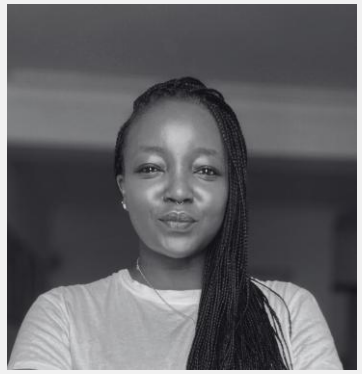
Livio Morina – Director (Term Expires 2027)

Job Snijders – Director (Term Expires 2026)

Board of Directors and Officers (new elected)

Shawna Bong – Secretary and Treasurer (Officer)

Aaron Hughes – Vice President (Term Expires 2026)



Isabel Odida– Director (Term Expires 2027)

Alex Corso – Director (Term Expires 2027)

Livio Morina – Director (Term Expires 2027)

Job Snijders – Director (Term Expires 2026)

Committees

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

PeeringDB is Open Source Software!

- Open source release announcement on 2018-11-10
  - Released under the 2-Clause BSD License: https://opensource.org/licenses/BSD-2-Clause
- Beneficial to the peering and interconnection community by promoting innovation
  - Allows volunteers to contribute
  - Makes it easier for third parties to bid on new features specified by the Product Committee
  - A process for accepting contributions will be announced
- Source code is available on GitHub: https://github.com/peeringdb/peeringdb

We (always) Need Beta Testers

Consider using the Beta environment as default

- Just over half a percent of users visit beta.peeringdb.com each month
  - We recognize that there are good and bad reasons for this!
- As of release 2.57.0, beta.peeringdb.com refreshes once an hour
- Early access to improvements
- Easy feedback mechanism
- Try it at https://beta.peeringdb.com

- Contact us at pc@peeringdb.com with any questions

2024 Year in Review

	2023	2024	Difference	% Increase
Campuses	-	556	n/a	n/a
Carriers	-	8,164	n/a	n/a
Exchanges	1,152	1,239	87	7.6
Facilities	5,282	5,633	351	6.7
Networks	29,148	31,597	2,449	8.4
Organizations	27,714	30,008	2,834	10.2
Users	41,975	46,657	4,682	11.2

2024 New Feature Highlights

- New Carrier and Campus objects
  - Carrier: for providers offering L1 or L2 services in a Facility
    - Different from a Network which is for L3 services with an ASN
    - HOWTO: Get Started with PeeringDB as a Carrier Operator (https://docs.peeringdb.com/howto/get-started-carrier/)
  - Campus: two or more Facilities owned by the same organization with inter-Facility cross connects
    - HOWTO: Get Started with PeeringDB as a Facility or Campus Operator (https://docs.peeringdb.com/howto/get-started-facility/)
- Many other smaller enhancements, bug fixes, and security updates
  - Refer to the 2024 Release Notes for complete details (https://docs.peeringdb.com/release_notes/release_notes_2024/)

2024 New Feature Highlights

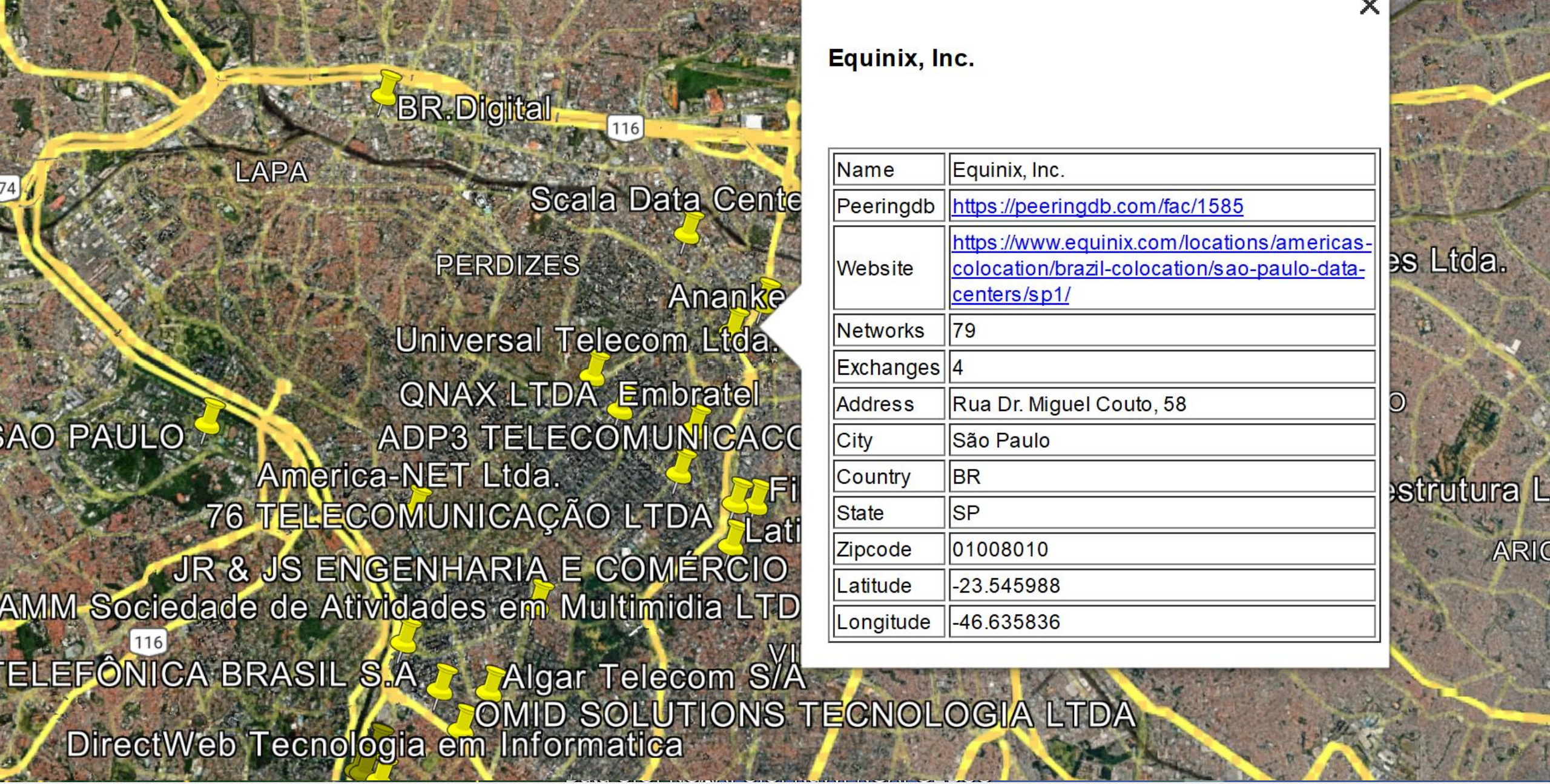
- We automatically remove ASNs after they are reclaimed by an RIR or NIR
- peeringdb-py (HOWTO) enhancements
  - Run queries locally on your infrastructure to avoid query limits and to get the best response time
  - Reduces PeeringDB load (= cost)
- We have containerized
- Keyhole Markup Language (KML) export of geographic data
  - Import into GIS applications
  - Export relevant searches as a .KMZ file

Search for a Facility

JSON CSV KMZ

1

Name A↕Z Management	CLLI NPA-NXX	City Country	State Postal Code	Networks
Ananke Ananke	- -	Sao Paulo BR	SP 01314000	-
PIX Embratel SP Embratel	- -	São Paulo BR	SP 01329-000	4
Equinix SP1 - São Paulo Equinix, Inc.	- -	São Paulo BR	SP 01008010	79
ADP3 TELECOMUNICAÇõES LTDA ADP3 TELECOMUNICACOES LTDA.	- -	São Paulo BR	São Paulo 01412-000	-
Qnax Data Center do Brasil QNAX LTDA	- -	Sao Paulo BR	SP 14407415	1
Smart Telecom Telecomunicações LTDA 76 TELECOMUNICAÇÃO LTDA	- -	Sao Paulo BR	- -	3
FIBRAREDE GESTAO E SERVICOS DE INFRAESTRUTURA FibraRede Gestao e Serviços de Infraestrutura Ltda	- -	Sao Paulo BR	SP 04103001	-
Unitelco SP Universal Telecom Ltda.	- -	São Paulo BR	São Paulo 01310-300	-
Scala Data Centers SGRUSP02 Scala Data Centers	- -	São Paulo BR	SP 01215-001	6
Ultranet SP1 Ultranet Telecom	- -	Sao Paulo BR	SP 01538000	1
Latitude.sh MH1 Latitude.sh	MH1 -	Sao Paulo BR	SP 04013-050	6
Nextel MSO SPO Nextel Telecomunicacoes Ltda	-	São Paulo BR	State of São Paulo 03045	-


BR.Digital
LAPA
Scala Data Cente
PERDIZES
Ananke
Universal Telecom Ltda.
QNAX LTDA
Embratel
ADP3 TELECOMUNICACC
SAO PAULO
America-NET Ltda.
76 TELECOMUNICAÇÃO LTDA
JR & JS ENGENHARIA E COMÉRCIO
AMM Sociedade de Atividades em Multimidia LTD
TELEFÔNICA BRASIL S.A
Algar Telecom S/A
OMID SOLUTIONS TECNOLOGIA LTDA
DirectWeb Tecnologia em Informatica
116
74
Equinix, Inc.
Name
Equinix, Inc.
Peeringdb
https://peeringdb.com/fac/1585
Website
https://www.equinix.com/locations/americas-colocation/brazil-colocation/sao-paulo-data-centers/sp1/
Networks
79
Exchanges
4
Address
Rua Dr. Miguel Couto, 58
City
São Paulo
Country
BR
State
SP
Zipcode
01008010
Latitude
-23.545988
Longitude
-46.635836

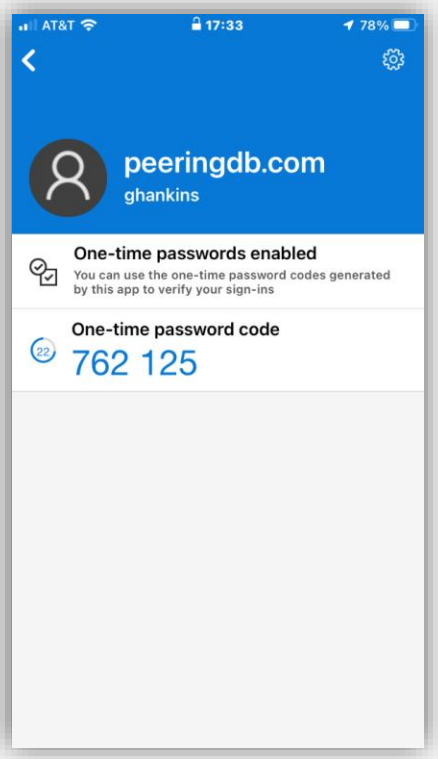
2024 New Feature Highlights

- Our blog describes other improvements and changes
- Or follow us on social media!

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

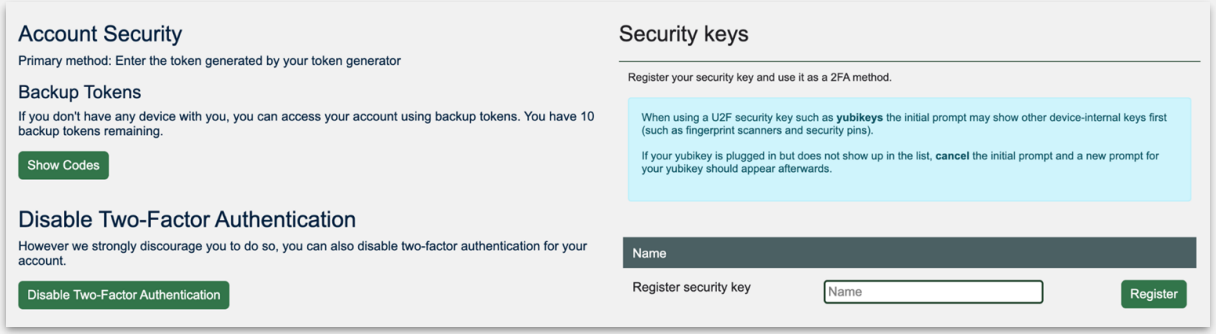
2025 Roadmap: MFA

- Multi-factor authentication (MFA) has been available for years and will be mandatory from 1 July 2025
- Two-factor authentication (2FA)
  - Using time-based one-time password (TOTP) - no SMS, no email
  - Provision for backup codes and recovery tokens
- Fast IDentity Online (FIDO) Universal 2nd Factor (U2F) 2FA support
  - 2FA without relying on a TOTP app
- HOWTO: https://docs.peeringdb.com/howto/authenticate/



2025 Roadmap: MFA

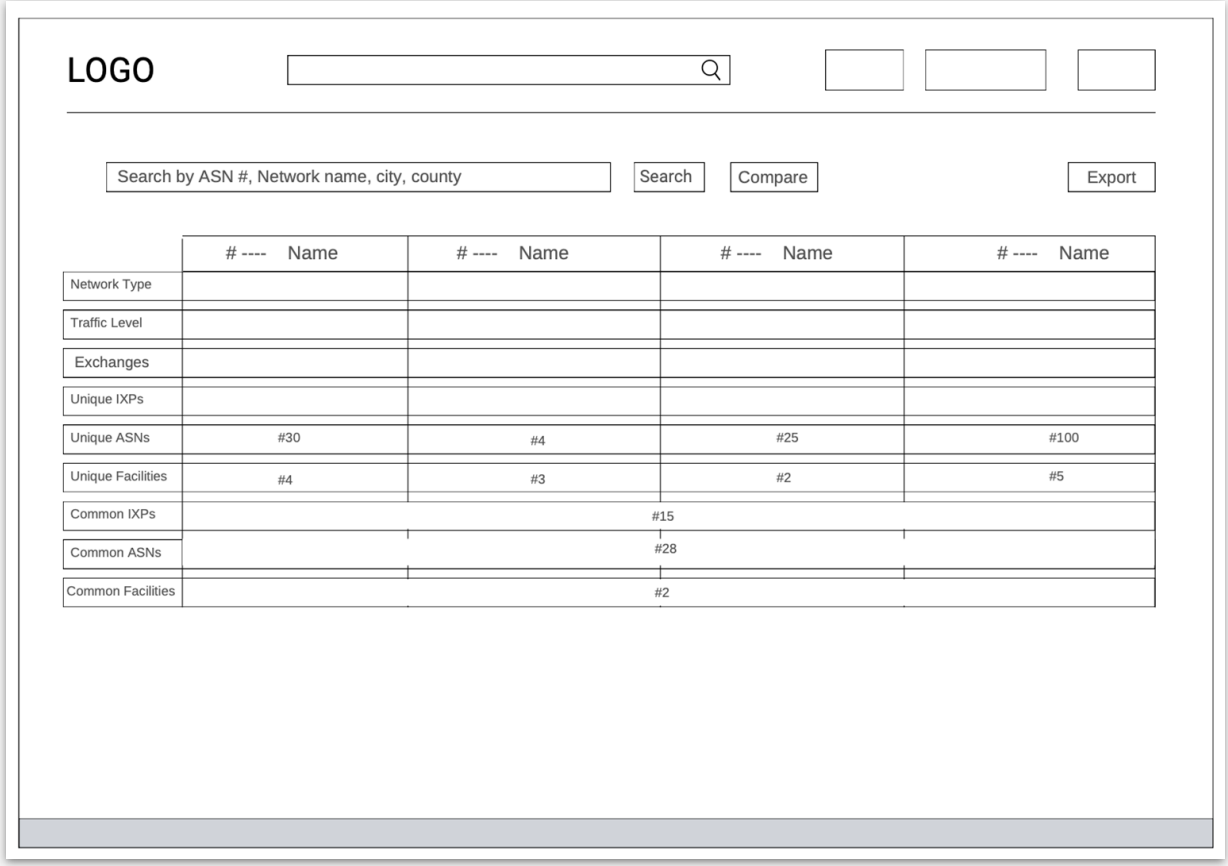
- We are keeping anonymous use but will require MFA for all authenticated users
  - We are integrating MFA management in the user profile so managing options is easier
  - API users will need to create an API Key, no more username and password authentication
- More blog posts and announcements will be made on social media in advance
- Direct communications to users who haven't set up MFA



July 1st !

2025 Roadmap: Analysis

- Adding a web tool to help users compare interconnection opportunities at facilities
- Add ASNs, add locations, view and export results



2025 Roadmap: Operations and Bug Fixes

- We’re working on making both the API and website more responsive
  - You can sync using peeringdb-py to keep queries local and integrate PeeringDB data with other sources
- We’ll be developing
  - Additional support tools
  - Minor features
  - Bug fixes

LATAM from PeeringDB POV

CC	IXP/OP	ASN	LASN	Colo/OP	ASN	LASN	TASN	TLASN	PDB	RIR	Rtd	%
BR	52/10	2444	2274	335/221	1142	978	2665	2427	5258	9000	8626	58,42%
AR	4/4	398	346	67/29	365	308	443	365	619	1292	1046	47,91%
MX	9/8	70	25	51/15	95	33	133	46	133	720	486	18,47%
CO	7/4	99	43	22/15	114	37	147	52	101	500	359	20,20%
CL	8/5	165	92	51/35	124	53	215	114	181	420	320	43,10%
EC	7/5	27	14	14/8	15	6	34	17	107	250	208	42,80%
VE	2/2	6	3	7/5	18	15	21	15	72	244	177	29,51%
PE	14/8	114	69	15/13	68	36	137	78	109	221	156	49,32%
DO	4/4	56	54	3/3	13	10	63	58	105	187	150	56,15%
PA	2/2	32	15	8/6	15	4	41	16	30	147	90	20,41%
CR	3/3	42	29	8/7	4	2	42	29	41	117	78	35,04%
HN	2/2	28	22	1/1	0	0	28	22	36	110	88	32,73%
PY	2/2	40	29	8/7	14	8	44	30	55	106	91	51,89%
GT	3/2	34	20	6/5	12	8	38	22	39	91	60	42,86%

LASN: Local ASN, ie. ASN in CC TASN: Total ASN (IXP + Colo) TLASN: Total Local ASN

LATAM from PeeringDB POV (2)

CC	IXP/OP	ASN	LASN	Colo/OP	ASN	LASN	TASN	TLASN	PDB	RIR	Rtd	%
BO	2/2	20	16	2/2	2	1	21	16	31	66	51	46,97%
SV	1/1	0	0	1/1	0	0	0	0	12	54	37	22,22%
UY	0/0	0	0	1/1	2	1	2	1	17	47	27	36,17%
CW	1/1	9	4	2/2	4	2	10	4	11	37	19	29,73%
BZ	0/0	0	0	0/0	0	0	0	0	10	34	22	29,41%
NI	0/0	0	0	1/1	0	0	0	0	12	33	25	36,36%
TT	2/1	14	10	5/3	7	5	17	11	12	17	14	70,59%
HT	1/1	4	1	0/0	0	0	4	1	3	13	7	23,08%
CU	0/0	0	0	0/0	0	0	0	0	1	7	3	14,29%
GF	1/1	3	1	1/1	4	1	4	1	2	7	3	28,57%
GY	0/0	0	0	0/0	0	0	0	0	4	7	5	57,14%
SR	1/1	8	6	2/2	0	0	8	6	7	7	5	100,00%
AW	0/0	0	0	0/0	0	0	0	0	2	4	3	50,00%
SX	1/1	5	3	1/1	2	2	5	3	4	4	3	100,00%

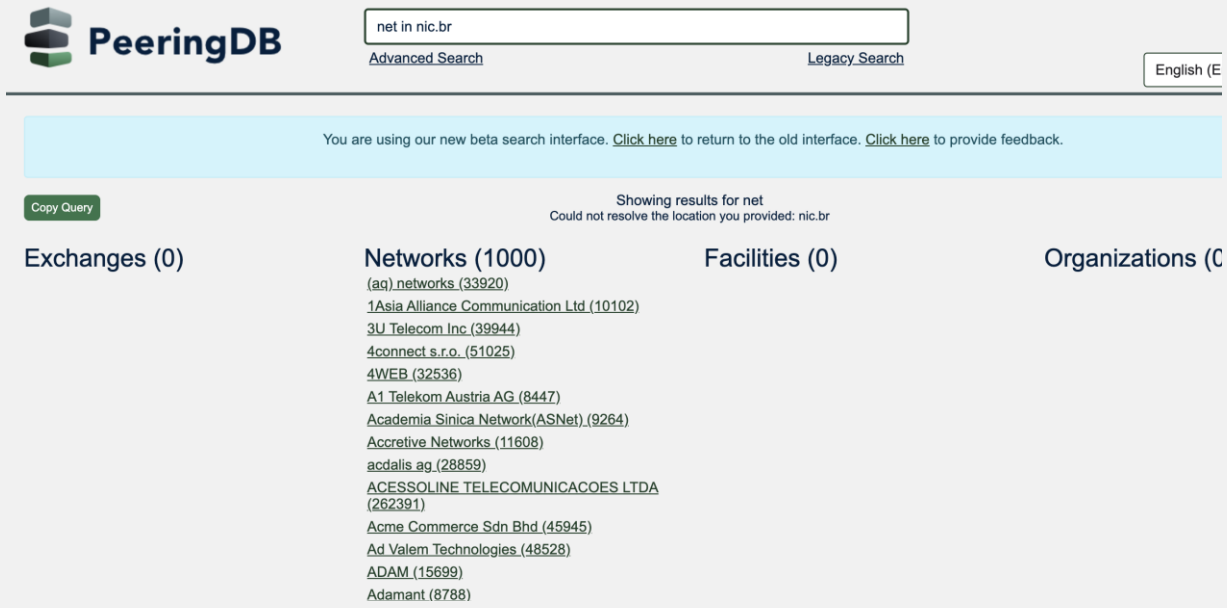
LASN: Local ASN, ie. ASN in CC TASN: Total ASN (IXP + Colo) TLASN: Total Local ASN

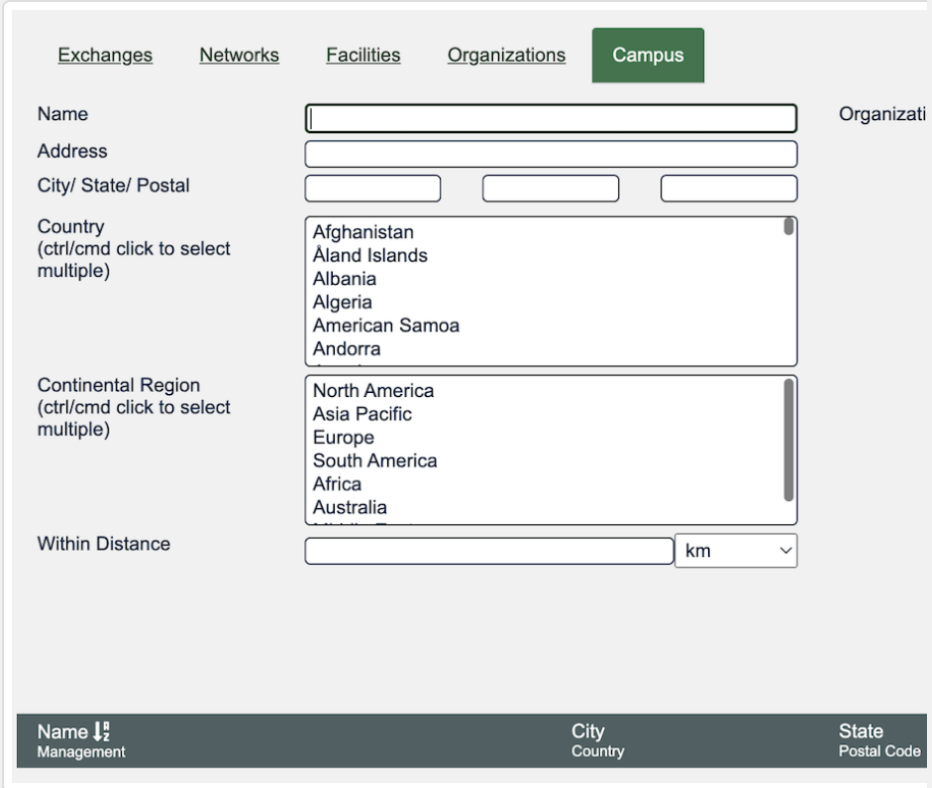
How can PeeringDB help me to interconnect?

- Facilitates global network connections
- Interconnection decisions
- Find information about other networks
- Make your services easier to find

Querying PeeringDB

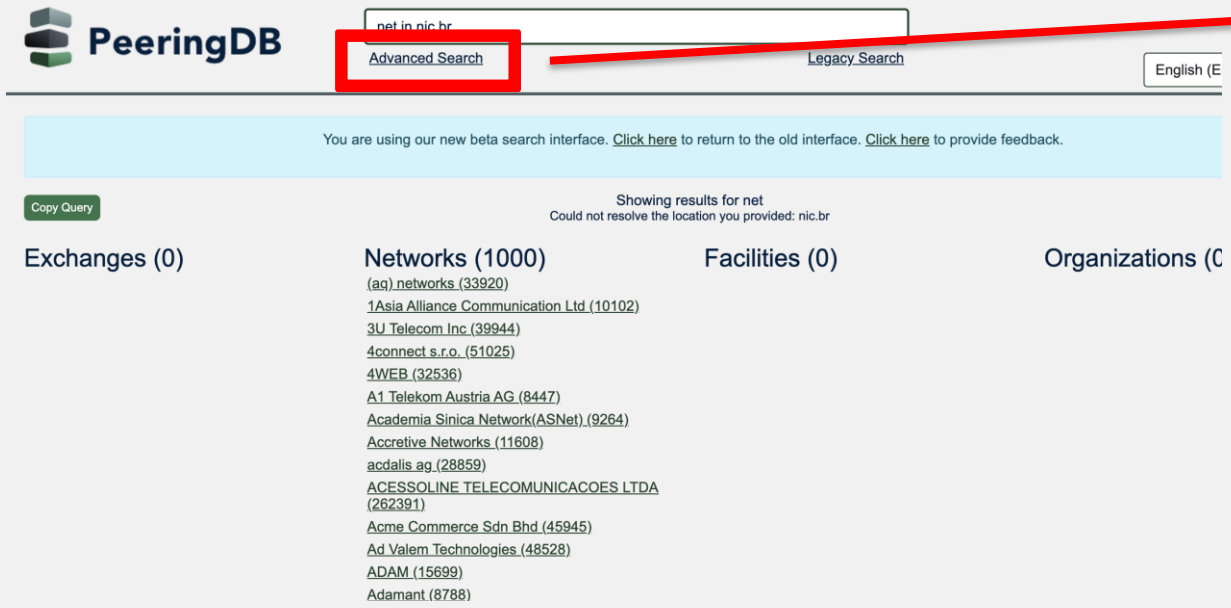
- Documentation: https://docs.peeringdb.com/howto/search/#howto-get-started-with-search-in-peeringdb

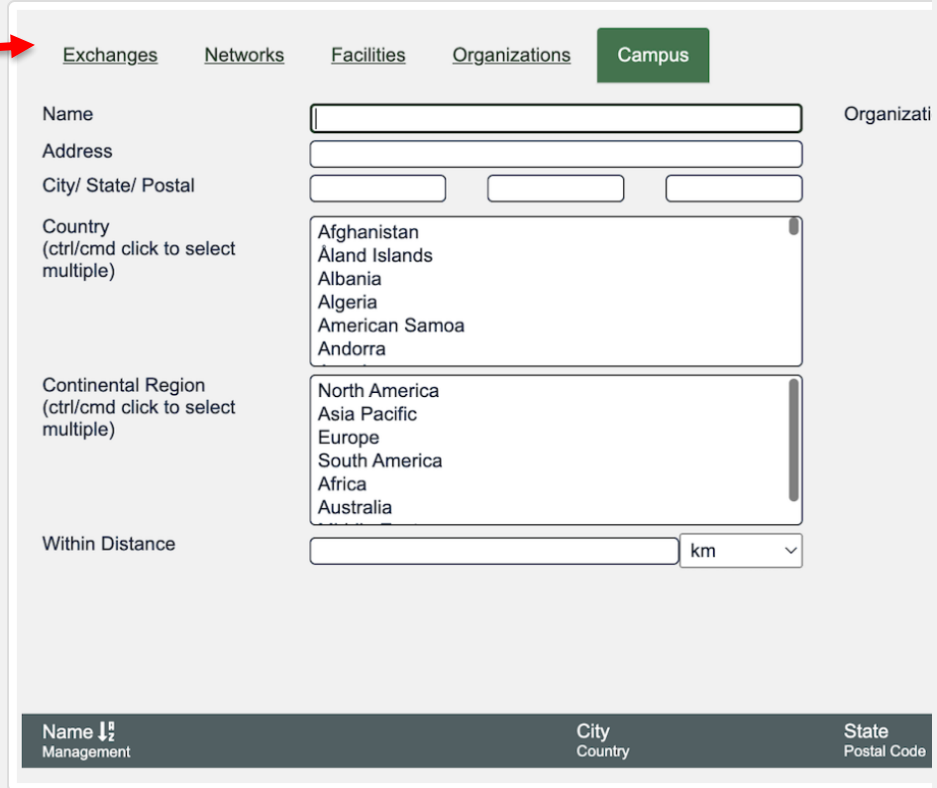




Querying PeeringDB

- Documentation: https://docs.peeringdb.com/howto/search/#howto-get-started-with-search-in-peeringdb





Querying with the PeeringDB API

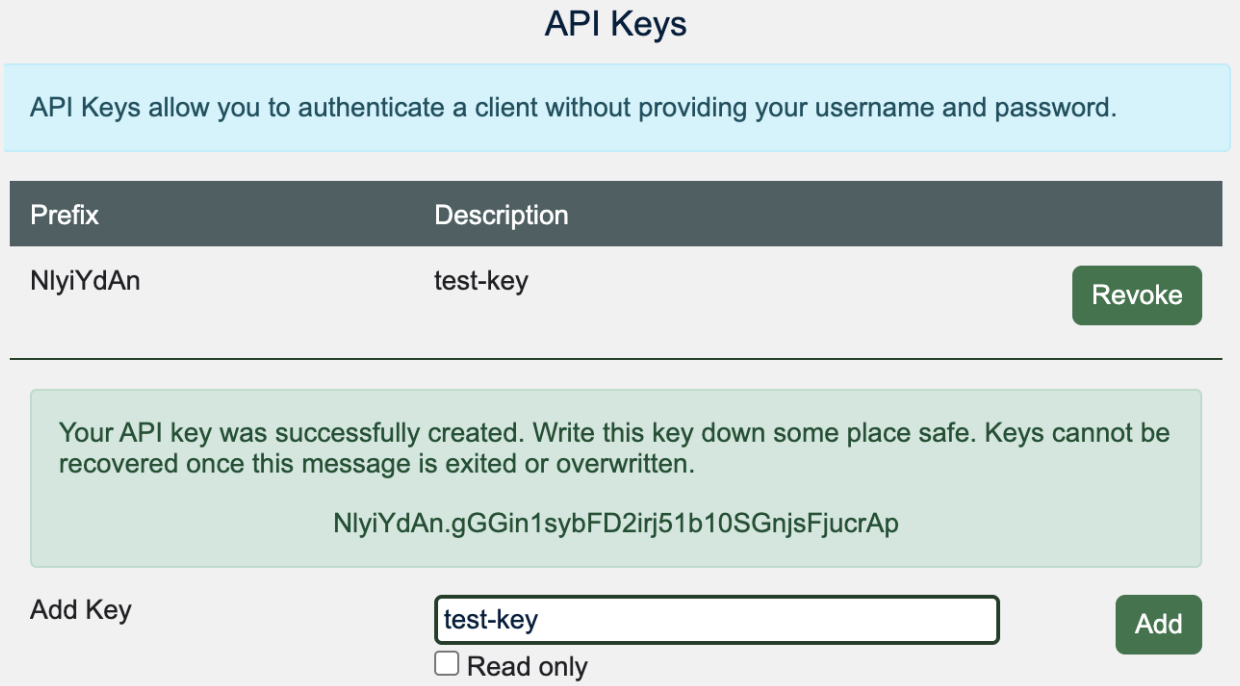
- The PeeringDB website is very helpful in these regards, but using the website still requires a lot of manual work.
- The PeeringDB API makes it easy to integrate PeeringDB in your environment.
- The PeeringDB database can be queried using a REST API.
- All endpoints are rate-limited to 1 request per second.

API Documentation

- https://www.peeringdb.com/apidocs/#tag/api
- You don't need an account to use the basic search functionality
- Basic objects:
  - Org, fac, ix, net, poc, as_set
- Derived objects:
  - Ixlan, ocpfx, netislan, netfac

API KEY

- There are two main forms of API Keys:
  - User-level
  - Organization-level



Using Python

- Get networks for NIC.BR

```python
import requests

api_key = "API_KEY"
url = "https://www.peeringdb.com/api/net?org_id=1245"

headers = {
    "Authorization": "Api-Key "+api_key,
    "Content-Type": "application/json"
}

r = requests.get(url, headers=headers)
data = r.json()['data']
```

```python
for d in range(len(data)):
    print(data[d]['name'])
```

```
NIC.BR
NIC.br - SIMET
NIC.br - IX.br (PTT.br) MLPA Route Servers
NIC.br - SARA
NIC.br - OpenCDN
NIC.BR eventos
NIC.BR a.dns.br
NIC.BR b.dns.br
NIC.BR c.dns.br
NIC.BR d.dns.br
NIC.BR e.dns.br
```

```
Index(['id', 'org_id', 'name', 'aka', 'name_long', 'website', 'social_media',
       'asn', 'looking_glass', 'route_server', 'irr_as_set', 'info_type',
       'info_types', 'info_prefixes4', 'info_prefixes6', 'info_traffic',
       'info_ratio', 'info_scope', 'info_unicast', 'info_multicast',
       'info_ipv6', 'info_never_via_route_servers', 'ix_count', 'fac_count',
       'notes', 'netixlan_updated', 'netfac_updated', 'poc_updated',
       'policy_url', 'policy_general', 'policy_locations', 'policy_ratio',
       'policy_contracts', 'allow_ixp_update', 'status_dashboard',
       'rir_status', 'rir_status_updated', 'created', 'updated', 'status'],
      dtype='object')
```

Using CURL

- Get networks by AS and List all IXPs

```
~ % curl GET https://www.peeringdb.com/api/net?asn=42
```

```
~ % curl -H "Authorization: Api-Key $API_KEY" -H "Content-Type: application/json" -X GET https://www.peeringdb.com/api/ix
```

{"data": [{"id": 1, "org_id": 2, "name": "Equinix Ashburn", "aka": "", "name_long": "Equinix Internet Exchange Ashburn", "city": "Ashburn", "country": "US", "region_continent": "North America", "media": "Ethernet", "notes": "", "proto_unicast": true, "proto_multicast": false, "proto_ipv6": true, "website": "https://ix.equinix.com", "social_media": [{"service": "website", "identifier": "https://ix.equinix.com"}], "url_stats": "https://ix.equinix.com/home/locations-and-traffic/#traffic", "tech_email": "support@equinix.com", "tech_phone": "", "policy_email": "support@equinix.com", "policy_phone": "", "sales_phone": "", "sales_email": "", "net_count": 339, "fac_count": 3, "ixf_net_count": 0, "ixf_last_import": null, "ixf_import_request": null, "ixf_import_request_status": "queued", "service_level": "24/7 Support", "terms": "Recurring Fees", "status_dashboard": "", "created": "2010-07-29T00:00:00Z", "updated": "2024-07-26T15:34:35Z", "status": "ok"}

peeringdb-py

- Local version of PeeringDB's SQL database
- API Key only if you want to synchronize contact information
- peeringdb-py's defaults to an SQLite3 database
- Documentation: https://docs.peeringdb.com/howto/peeringdb-py/

peeringdb-py

- Installation:
  - Install python package
```
pip install --upgrade peeringdb
```
- Run the server setup:
```
peeringdb server --setup
```
  - Clones the peeringdb_server git repo
  - Uses cloned docker-compose.yml to create a local PeeringDB server
  - Loads and syncs data
  - Creates an auto sync process to keep it running
  - Starts serving data on http://localhost:8000

peeringdb-py

```
curl -H "Content-Type: application/json" -X GET localhost:8000/api/ixlan/1514
```


```
{"data": [{"id": 1514, "ix_id": 1514, "ix": {"id": 1514, "org_id": 14704, "org": {"id": 14704, "name": "PIT CHILE
SPA", "aka": "PIT", "name_long": "", "website": "http://www.pitchile.cl", "social_media": [{"service": "website",
"identifier": "http://www.pitchile.cl"}], "notes": "", "require_2fa": false, "address1": "Badajoz 45 - Piso 17", "
address2": "Las Condes", "city": "Santiago", "country": "CL", "state": "", "zipcode": "", "floor": "", "suite": ""
, "latitude": null, "longitude": null, "created": "2016-08-01T21:28:41Z", "updated": "2024-06-04T17:44:36Z", "stat
us": "ok"}, "name": "PIT Santiago - PIT Chile", "aka": "", "name_long": "PIT Chile Santiago/ IXP Chile Santiago",
"city": "Santiago", "country": "CL", "region_continent": "South America", "media": "Ethernet", "notes": "", "proto
_unicast": true, "proto_multicast": false, "proto_ipv6": true, "website": "http://www.pitchile.cl", "social_media"
: [{"service": "website", "identifier": "http://www.pitchile.cl"}], "url_stats": "http://www.pitchile.cl/wp/?page_
id=37", "tech_email": "noc@pitchile.cl", "tech_phone": "+56228409984", "policy_email": "info@pitchile.cl", "policy
_phone": "+56228409984", "sales_phone": "", "sales_email": "", "fac_set": [2093, 5274, 5295, 5301, 5360, 10698, 11
683, 11784, 12705, 12706, 12864, 14340], "ixlan_set": [1514], "net_count": 150, "fac_count": 12, "ixf_net_count":
0, "ixf_last_import": null, "ixf_import_request": null, "ixf_import_request_status": "queued", "service_level": "N
ot Disclosed", "terms": "Not Disclosed", "status_dashboard": null, "created": "2016-11-11T11:54:40Z", "updated": "
2020-01-22T04:24:07Z", "status": "ok"}, "name": "LAN", "descr": "", "mtu": 1500, "dot1q_support": false, "rs_asn":
 0, "arp_sponge": null, "net_set": [], "ixpfx_set": [{"id": 1018, "protocol": "IPv6", "prefix": "2801:14:9000::/64
", "in_dfz": true, "created": "2017-03-10T13:06:11Z", "updated": "2020-08-26T05:23:09Z", "status": "ok"}, {"id": 2
842, "protocol": "IPv4", "prefix": "45.68.16.0/22", "in_dfz": true, "created": "2021-04-15T23:54:14Z", "updated":
"2021-04-15T23:54:14Z", "status": "ok"}], "ixf_ixp_member_list_url_visible": "Private", "ixf_ixp_import_enabled":
false, "created": "2016-11-13T06:02:01Z", "updated": "2020-02-19T04:07:56Z", "status": "ok"}], "meta": {}}%
```

Thank you to our sponsors!

Diamond Sponsor


Platinum Sponsors

Gold Sponsors

Silver Sponsors