

Peering API

A Proposal for Programmatic Handling of Peering Requests

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Joint Work with Carlos Aguado (Amazon), Matt Griswold (20c), and Arturo Servin (Google)

Joint Work

- Meta
- 20c
- Cloudflare
- Amazon
- Google

Agenda

- Previous Work
- Present State
- Solution
- Proof-of-Concept
- Future Work

Peering, Before

- Coordinated over email
- Multiple emails exchanged per request

Peering, Now

Request Public Peering

ASN

52468

Email contact
Email contact (e.g. peering@isp.com)

test@test.com

Public Peering Sessions
Select all the exchanges you wish to peer at

	Fabric ID	Site	Exchange	Traffic 30d	Meta IP	Peer IP	BGP Session Status
<input checked="" type="checkbox"/>	2680	lim1	Peru IX (PIT...	0 bps			Not Established
<input checked="" type="checkbox"/>	1514	scl1	PIT Santiag...	0 bps			Not Established
<input checked="" type="checkbox"/>	171	gru1	IX.br (PTT.b...	0 bps			Not Established
<input checked="" type="checkbox"/>	171	gru1	IX.br (PTT.b...	0 bps	187.16.218.82	187.16.208.180	Not Configured
<input checked="" type="checkbox"/>	171	gru1	IX.br (PTT.b...	0 bps	2001:12f8::218:82	2001:12f8::208:180	Not Configured
<input checked="" type="checkbox"/>	171	gru2	IX.br (PTT.b...	0 bps	187.16.222.60	187.16.208.180	Not Configured
<input checked="" type="checkbox"/>	171	gru2	IX.br (PTT.b...	0 bps	2001:12f8::222:60	2001:12f8::208:180	Not Configured
<input checked="" type="checkbox"/>	171	gru1	IX.br (PTT.b...	0 bps	187.16.220.240	187.16.208.180	Not Configur

Close Start Public Peering

On submission, the following peering sessions will be configured on this location:

Cloudflare (AS13335)		AS16509
80.249.211.140	↔	80.249.210.100
80.249.211.140	↔	80.249.210.217
2001:7f8:1::a501:3335:1	↔	2001:7f8:1::a501:6509:1
2001:7f8:1::a501:3335:1	↔	2001:7f8:1::a501:6509:2

Cancel

Send Request

Cloudflare

ASN: 13335 MD5 PASSWORD

Prefix 4: 20000

Scope: Global

Peering policy: Open

Multiple locations: Preferred

View on PeeringDr

Prefix 6: 2000

Type: Content

Ratio Req.: false

Contract Req.: Not Required

ADD ChIX

IPv4: 206.41.110.38

IPv6: 2001:504:41:110::38

Other exchange points

ADD DE-CIX New York

IPv4: 206.82.104.31

IPv6: 2001:504:36::3417:0:1

ADD DE-CIX New York

IPv4: 206.82.104.68

IPv6: 2001:504:36::3417:0:2

REQUEST PEERING

Peering API Goals

- Machine-to-Machine Configuration
- GOAL:
 - Reduce human time spent configuring peering
 - Improve network latency
- REQUIREMENT:
 - (Security) PeeringDB OAuth support, additional options like RPKI

Peering API Demo

- V0 (Public Peering)
 - /locations (GET)
 - /sessions (POST, GET, DELETE)

Peering API Demo

- Proof-of-Concept: List Peering Locations

- GET: https://autopeer.as13335.net/v0/list_locations?location_type={type}&asn={asn}

GET Locations:

With:

```
{  
  "asn": 32934,  
  "location_type": "PUBLIC"  
}
```

To:

```
https://autopeer.as13335.net/v0/list_  
locations?location_type=PUBLIC&asn=13  
335
```

Reply:

```
200: {  
  'items': [  
    {  
      'id': 'pdb:ix:2130',  
      'type': 'PUBLIC'  
    }  
  ],  
  'requestId': 'b300478a-5b27-489e-8239-bd940382851b',  
  'error': None  
}
```


Peering API Demo

- Proof-of-Concept: Make a Request
- POST https://autopeer.as13335.net/v0/add_sessions

POST

```
[
  {
    'local_asn': 32934,
    'local_ip': '1.1.1.1',
    'peer_asn': 13335,
    'peer_ip': '2.2.2.2',
    'location': {
      'id': 'pdb:ix:158',
      'type': 'PUBLIC'
    }
  }
]
```

Reply: 200 OK

```
json: {
  'sessions': [
    {
      'localAsn': 32934,
      'localIp': '1.1.1.1',
      'peerAsn': 13335,
      'peerIp': '2.2.2.2',
      'peerType': '',
      'md5': '',
      'location': {
        'id': 'pdb:ix:158',
        'type': 'PUBLIC'
      },
      'status': '',
      'uuid': ''
    }
  ],
  'requestId': 'b300478a-5b27-489e-8239-bd940382851b', 'error':
None
}
```

Peering API, Future

- PNI Connections
 - Add PNI
 - Augment PNI
 - Configurable PNI options
- Maintenance

Peering API, Future

- Security Concerns
 - PeeringDB OAuth
 - Additional Checks

Next Steps

- Industry Adoption? (In Progress)
- Additional Security Requirements or Considerations?
- Does this draft fit under GROW's charter?

Let's Discuss!

- Side Meeting Tomorrow (March 21)
 - 14:00-15:00 in M9 and webex
 - Please join us if you would like to discuss more!
- Draft:

<https://datatracker.ietf.org/doc/draft-ramseyer-grow-peering-api/>



Questions?