

# Peering API Automation

Automating the Handling of Peering Requests

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# Joint Work

- Meta
- FullCtl
- Cloudflare
- AWS
- 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
>	2680	lim1	Peru IX (PIT...	0 bps			Not Established
>	1514	scl1	PIT Santiag...	0 bps			Not Established
✓	171	gru1	IX.br (PTT.b...	0 bps			Not Established
✓	171	gru1	IX.br (PTT.b...	0 bps	187.16.218.82	187.16.208.180	Not Configured
✓	171	gru1	IX.br (PTT.b...	0 bps	2001:12f8::218:82	2001:12f8::208:180	Not Configured
✓	171	gru2	IX.br (PTT.b...	0 bps	187.16.222.60	187.16.208.180	Not Configured
✓	171	gru2	IX.br (PTT.b...	0 bps	2001:12f8::222:60	2001:12f8::208:180	Not Configured
✓	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:

<b>Cloudflare (AS13335)</b>	↔	<b>AS16509</b>
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

View on PeeringDB

ADD ChIX

Prefix 4: 20000

Prefix 6: 2000

IPV4: 206.41.110.38

IPV6: 2001:504:41:110::38

Scope: Global

Type: Content

Peering policy: Open

Ratio Req.: false

Multiple locations: Preferred

Contract Req.: Not Required

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 and Requirements

- Machine-to-Machine Configuration
  - Reduce human time spent configuring peering
  - Improve network latency
- Security Requirement
  - PeeringDB OAuth support

# Peering API Demo

- V0 (Public Peering)
  - `/auth`
  - `/list_locations`
  - `/add_sessions`
  - `/get_status`

# Peering API Demo

## - Proof-of-Concept: List Peering Locations

- GET: [https://autopeer.as13335.net/v0/list\\_locations?location\\_type={type}&asn={asn}](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_lo  
cations?location_type=PUBLIC&asn=13335
```

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](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 Demo

- **Proof-of-Concept: Get Request Status**
- **GET: [https://autopeer.as13335.net/v0/get\\_status?asn={asn}&request\\_id={id}](https://autopeer.as13335.net/v0/get_status?asn={asn}&request_id={id})**

GET Request Status:

To:

```
https://autopeer.as13335.net/v0/get_status?asn=13335&request_id=b300478a-5b27-489e-8239-bd940382851b
```

Reply: 200 OK

```
json: {
  'sessions': [
    {
      'localAsn': 13335,
      'localIp': '38.32.60.90',
      'peerAsn': 32934,
      'peerIp': '27.111.228.65',
      'peerType': '',
      'md5': '',
      'location': {
        'name': 'pdb:ix:158',
        'type': 'PUBLIC'
      },
      'status': 'Configured',
      'uuid': ''
    }
  ],
  'requestId': 'b300478a-5b27-489e-8239-bd940382851b',
  'error': None
}
```

# Peering API, Future

- **Proof of concept**
- **Keep it simple**
- **Establish definitions**

# Peering API, Future

- Security Concerns
  - PeeringDB OAuth
  - Additional Checks

# Peering API, Future

- PNI Connections
  - Add PNI
  - Augment PNI
  - Configurable PNI options
  - Remove peer

# Peering API, Future

- Query Peer Status
  - Query connection status
  - Query private peering parameters
  - Query for maintenance

**Check it out!**

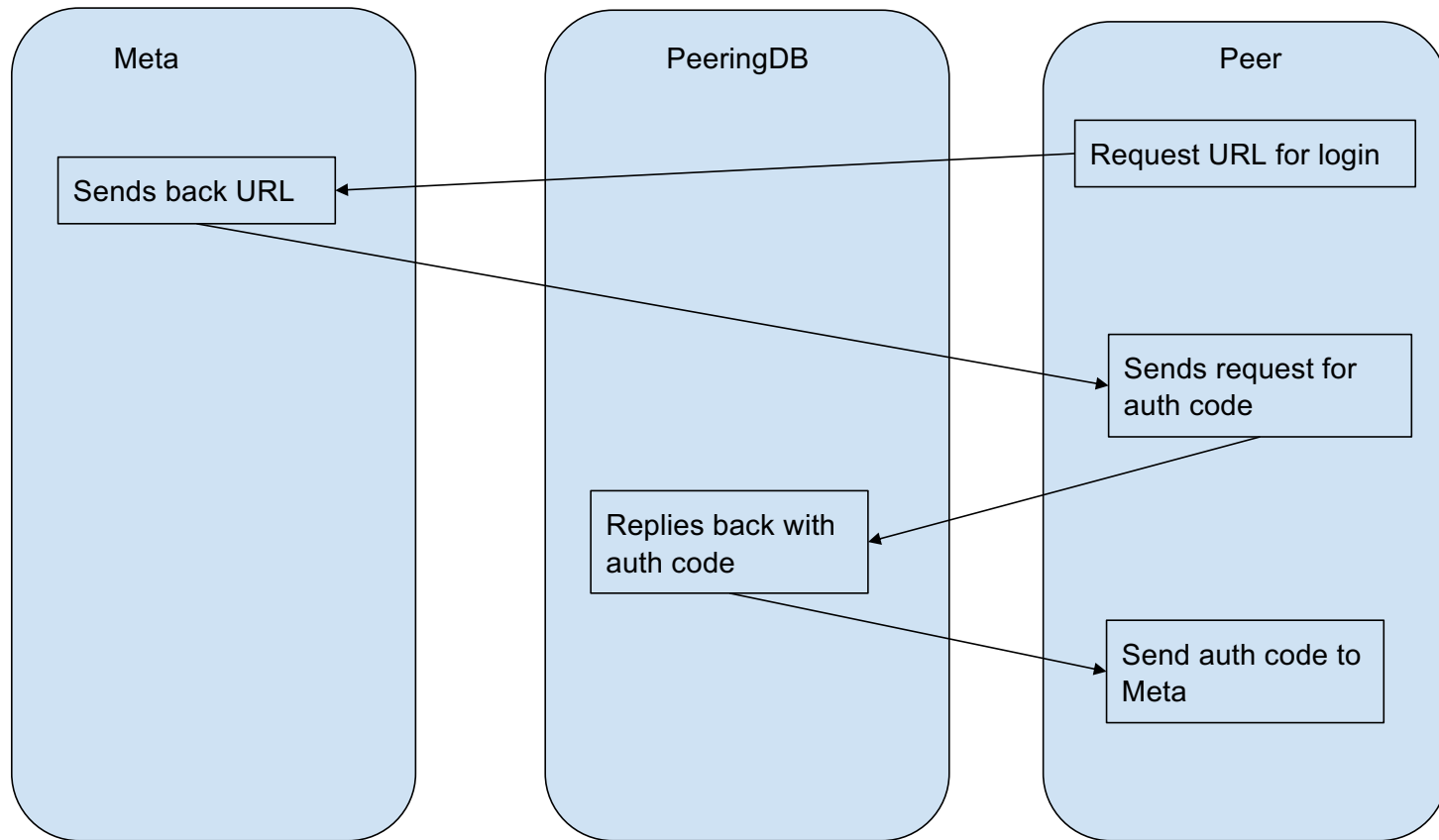
<https://github.com/grizz/autopeer>



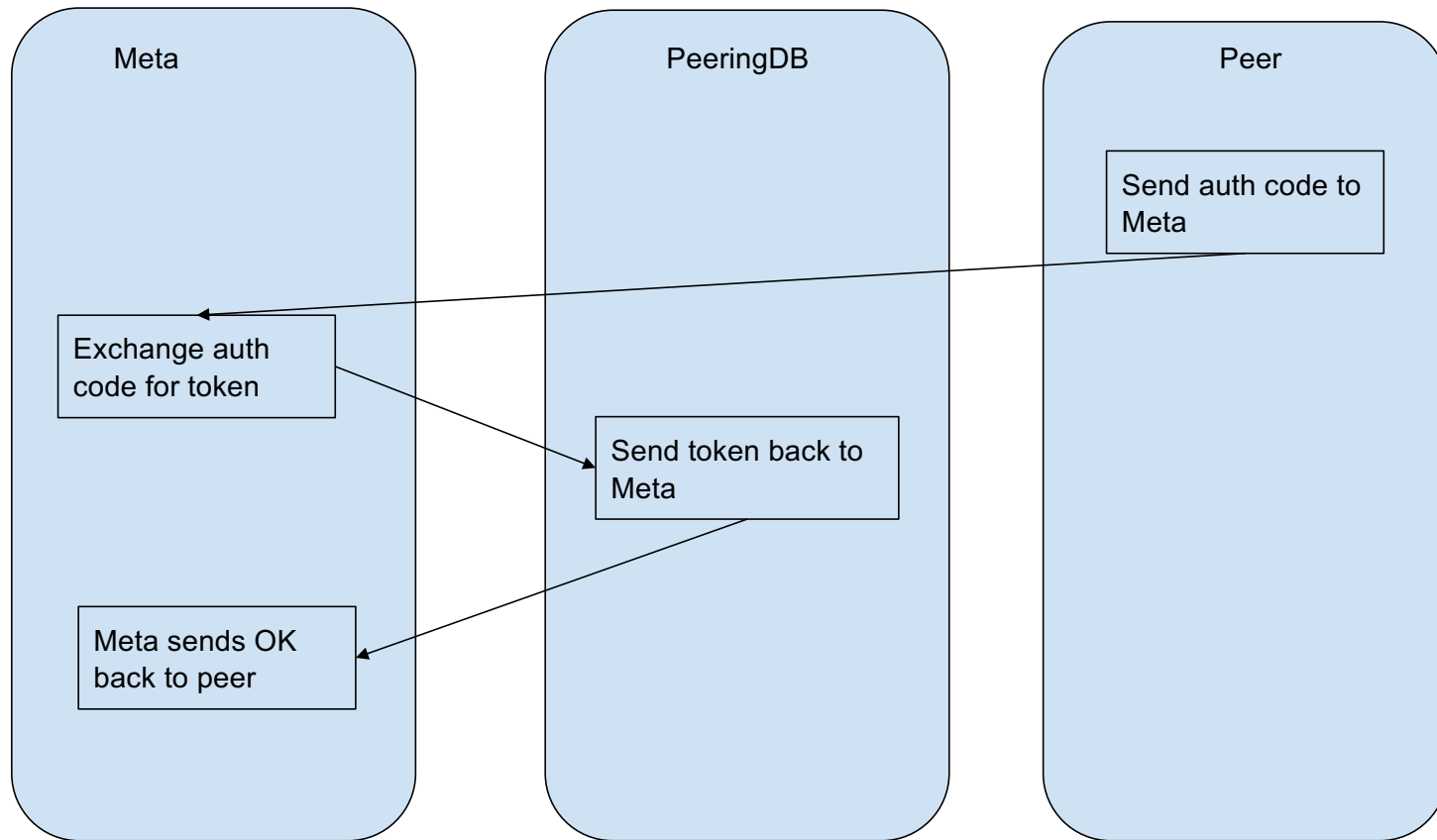
Questions?



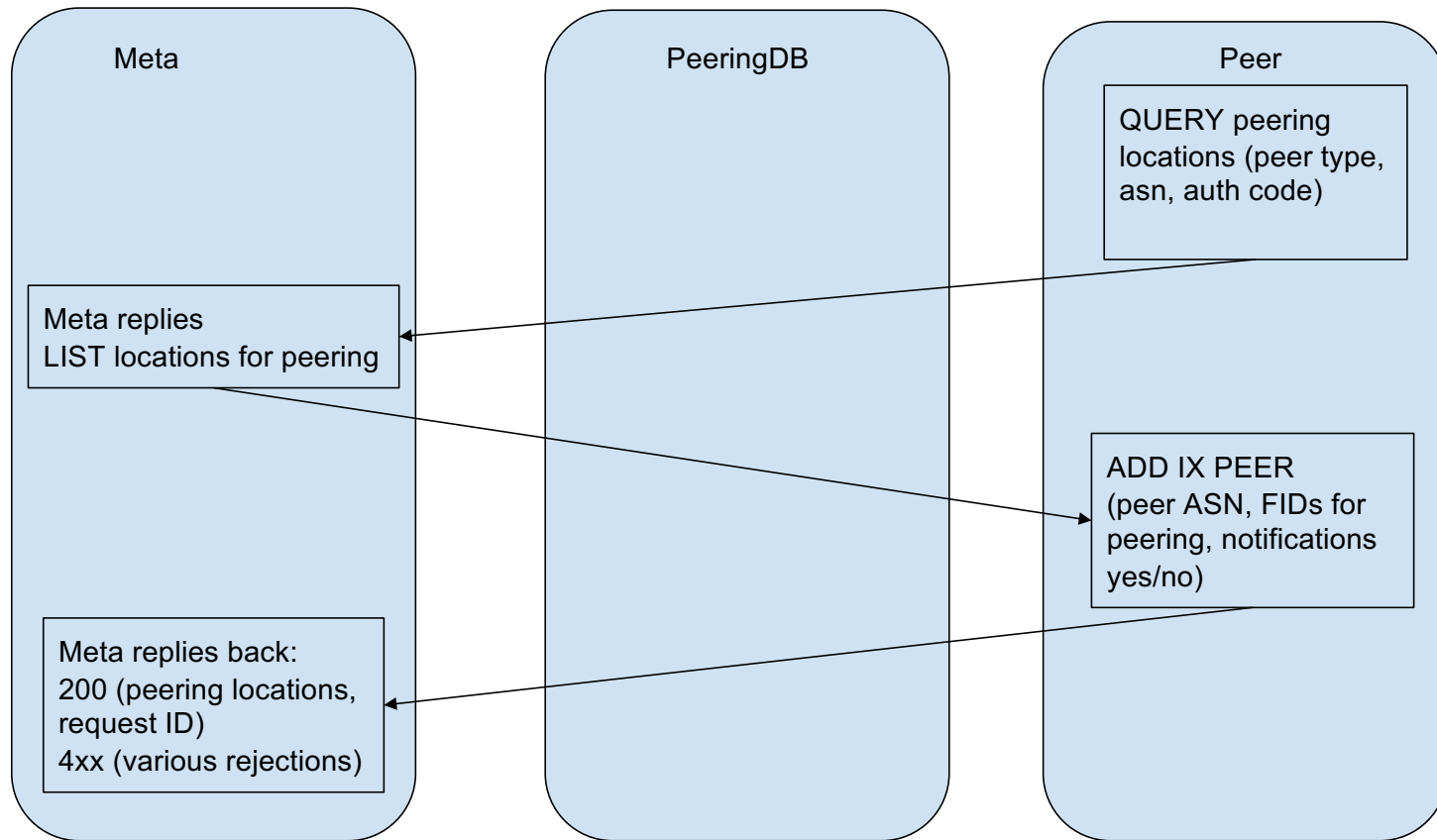
# Message Diagram



# Message Diagram



# Message Diagram



# Message Diagram

