Peering API

A Proposal for Programmatic Handling of Peering Requests
draft-ietf-grow-peering-api

Operations & Management Area Open Meeting (opsarea)
IETF 123

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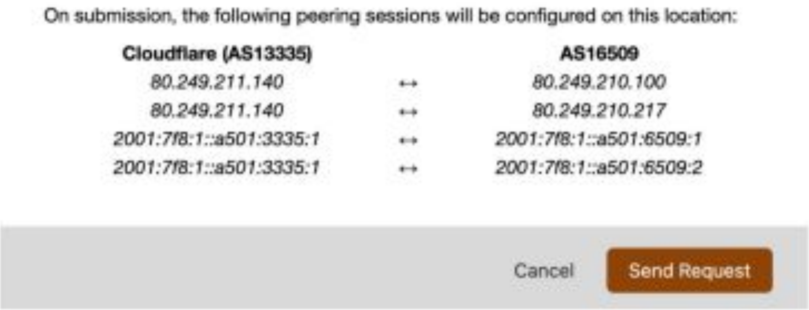
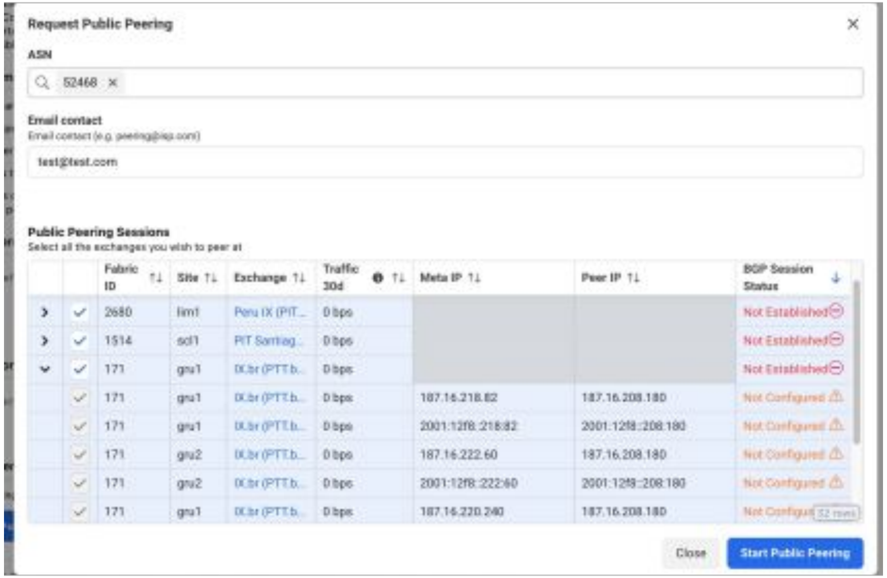
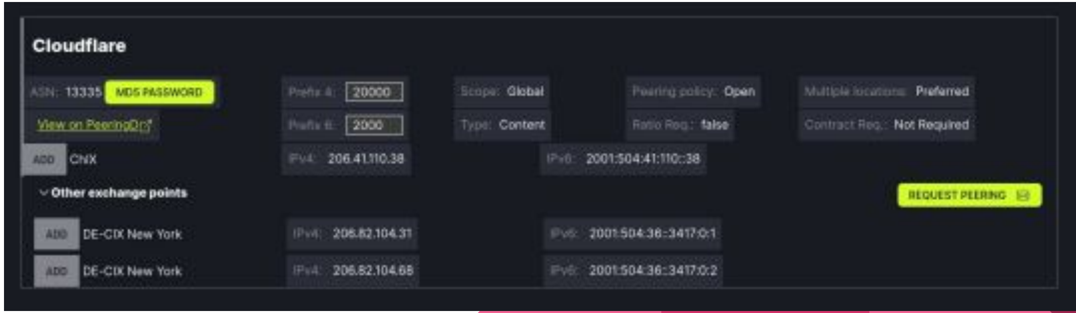
Peering, Before

- Slow coordination
- Coordinated over email
- Multiple emails exchanged per request
- Manual configuration of devices

Peering, today

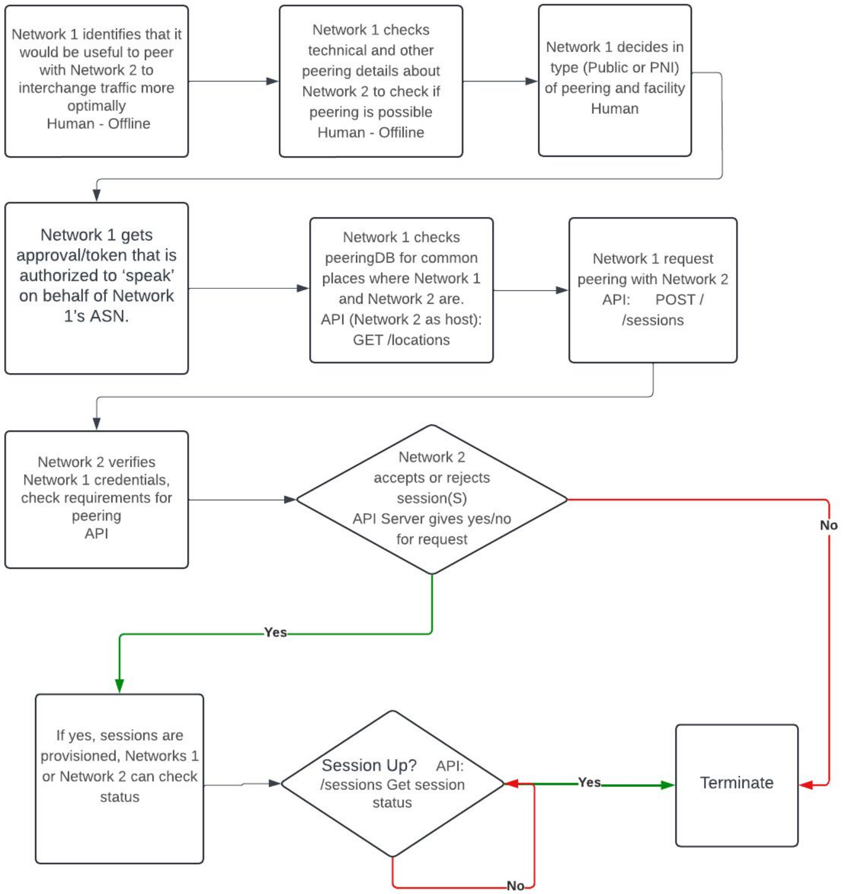






Peering API Goals

- Machine-to-Machine Configuration
- Goals:
    - Reduce human time spent configuring peering
    - Improve network latency (by peering)
- Requirement:
    - (Security) PeeringDB OAuth support (original) and RPKI (recently added)
    - Use well know database(s) of Peering Information (facilities, exchanges, ASNs)



Peering Request Process

Overview

draft-ietf-grow-peering-api goal: provide an API standard to manage ***public peering*** connections

- Request new connections
- List connections and locations
- Delete connections
- Authentication: OAuth support, RPKI-Signed Checklists

API Flow

- REQUEST
  - ADD SESSION
- APPROVAL CASE
- PARTIAL APPROVAL CASE
- REJECTION CASE
- MONITORING
- COMPLETION

Authentication

- Authentication to this API is performed with Bearer tokens. Two methods are defined
  - OAuth with RPKI Attested OAuth (recommended)
  - OAuth with PeeringDB (currently supported by running code)

Data Types and Discovery

Data Types

- Peering Location
- Session Status
- Session Array
- BGP Session
- Error

Discovery

We do not specify how to discover an ASN's Peering API endpoint. Some possible options are:

- Via the RPKI using [rpki-discovery]
- Publication in WHOIS/RDAP
- Manual configuration

Endpoints

- Public Peering over an Internet Exchange (IX)
  - /sessions: ADD/RETRIEVE sessions visible to the calling PEER
    - Batch create new session resources
    - List all session resources. The response is paginated.
  - /sessions/{session_id}: Operate on individual sessions
    - Retrieve an existing session resource
    - Delete a session.

- Utility API Calls
  - /locations: LIST POTENTIAL PEERING LOCATIONS
    - List potential peering locations, both public and private.
- Private Peering (DRAFT)
  - ADD/AUGMENT PNI
  - REMOVE PNI

Peering API, Future (new draft)

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

Questions?