Yang Model for PCEP

draft-pkd-pce-pcep-yang-02

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Introduction

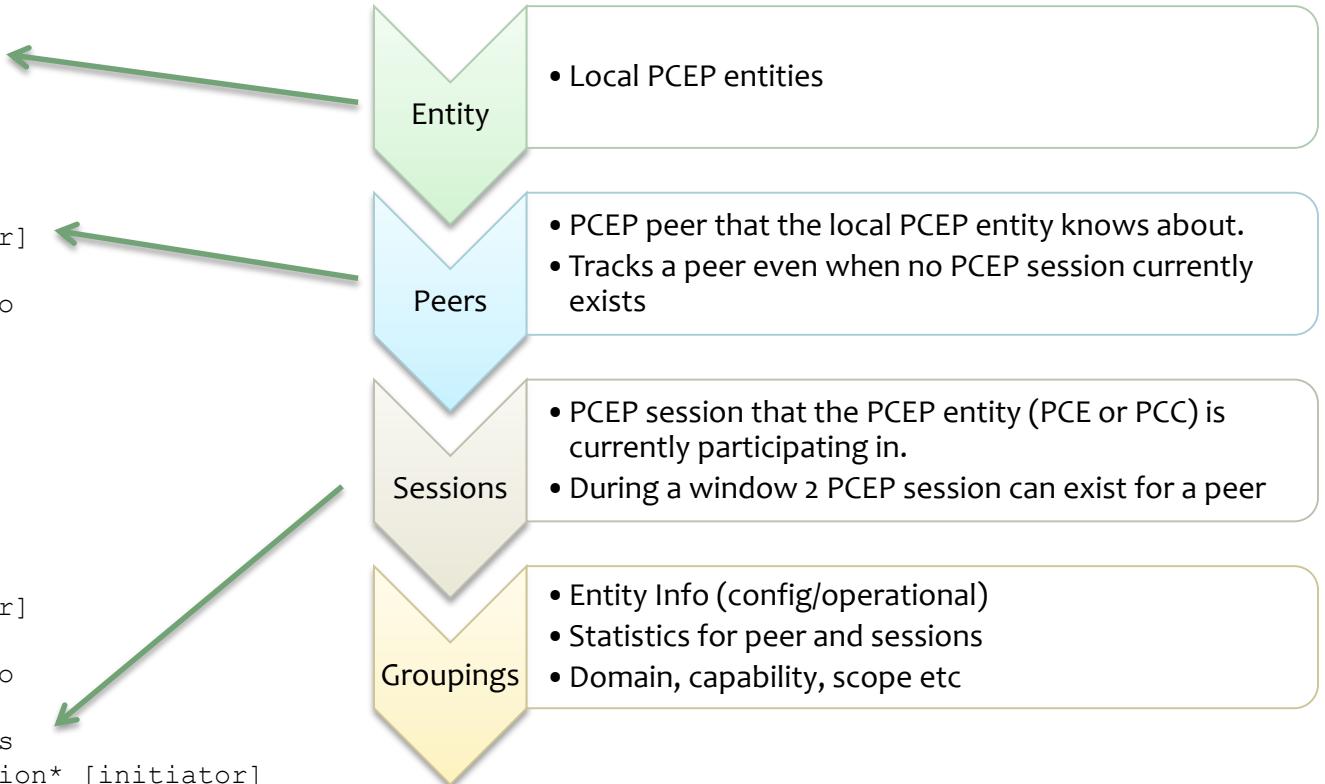A YANG data model for the management of PCEP

- Includes configuration data, operational state and notifications

Base PCEP specification as per RFC 5440

- This update adds PCE Information
  - Domains
  - Path Scope
  - Capability

PCEP Data Model

```
module: ietf-pcep
    +--rw pcep
    |   +--rw entity* [addr]
    |       +--rw addr
    |       +--...
    |       +--rw pce-info
    |           +--...
    |       +--rw peers
    |           +--rw peer* [addr]
    |               +--rw addr
    |               +--rw pce-info
    |                   +--...
    +--ro pcep-state
        +--ro entity* [addr]
            +--ro index?
            +--ro addr
            +--ro pce-info
            |   +--...
            +--ro peers
                +--ro peer* [addr]
                    +--ro addr
                    +--ro pce-info
                    |   +--...
                    +--ro sessions
                        +--ro session* [initiator]
                            +--ro initiator
                            +--ro state-last-change?
                            +--ro state?
```

Entity
- Local PCEP entities

Peers
- PCEP peer that the local PCEP entity knows about.
- Tracks a peer even when no PCEP session currently exists

Sessions
- PCEP session that the PCEP entity (PCE or PCC) is currently participating in.
- During a window 2 PCEP session can exist for a peer

Groupings
- Entity Info (config/operational)
- Statistics for peer and sessions
- Domain, capability, scope etc

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PCEP Data Model - Update

```
module: ietf-pcep
    +--rw pcep
    |   +--rw entity* [addr]
    |       +--rw addr                         inet:ip-address
    |       |   ...
    |       +--rw pce-info
    |       |   +--rw scope
    |       |   |   +--rw intra-area-scope?            boolean
    |       |   |   +--rw intra-area-pref?             uint8
    |       |   |   +--rw inter-area-scope?            boolean
    |       |   |   +--rw inter-area-scope-default?    boolean
    |       |   |   +--rw inter-area-pref?             uint8
    |       |   |   +--rw inter-as-scope?              boolean
    |       |   |   +--rw inter-as-scope-default?      boolean
    |       |   |   +--rw inter-as-pref?               uint8
    |       |   |   +--rw inter-layer-scope?           boolean
    |       |   |   +--rw inter-layer-pref?            uint8
    |       |   +--rw domain
    |       |   |   +--rw domain-type?    pce-domain-type
    |       |   |   +--rw domain?         pce-domain
    |       |   +--rw neigh-domains
    |       |   |   +--rw domain* [domain-type domain]
    |       |   |       +--rw domain-type     pce-domain-type
    |       |   |       +--rw domain          pce-domain
    |       |   +--rw capability
    |       |       +--rw gmpls?                boolean
    |       |       +--rw bi-dir?               boolean
    |       |       +--rw diverse?              boolean
    |       |       +--rw load-balance?         boolean
    |       |       +--rw synchronize?          boolean
    |       |       +--rw objective-function?   boolean
    |       |       +--rw add-path-constraint?  boolean
    |       |       +--rw prioritization?       boolean
    |       |       +--rw multi-request?        boolean
    |       |       +--rw gco?                  boolean
    |       |       +--rw p2mp?                 boolean
```

Scope

- Path computation scope and preference
  - Intra area
  - Inter area
  - Inter AS
  - Inter layer
- Default PCE

Domain / Neighboring domain

- Local and neighboring domain information
  - AS
  - OSPF / ISIS Area

Capability

- PCE capabilities for GMPLS, OF, P2MP etc

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Offline Discussion during IETF 92

Judicious use of 'feature' in the Yang.

Update Yang for Stateful PCE extensions next

Gather more feedback on Entity List

- Initial opinion on removing it

Thanks for the discussion, authors and contributors welcome more feedback...

Next Steps

Stateful PCE

- Start work
- LSP-DB in stateful PCE
  - Augment with PCEP related information
  - Discussion on going on generic / TE LSP in TEAS
- PCE-Initiation of LSP
  - Augment the TE model

Call for reviews and collaborations...

Good base to be adopted as WG draft...

Thanks!