Path Computation Element (PCE) Discovery using Domain Name System(DNS)
draft-wu-pce-dns-pce-discovery-05

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Status of this I-D

- First presented in IETF 87, Berlin meeting, agreed to address differences between the PCE and DNS domains
- Follow-up in IETF 88 Vancouver meeting
  - Allow NAPTR query for a specific PCE domain by linking PCE domain with DNS domain name (i.e., PCE domain added as subdomain of DNS domain name)
  - Define format of TXT record value field using syntax defined in RFC1464
  - Allow feature Negotiation capability by extending NAPTR service field format
  - Support Discovery of PCE server with TLS support by extending NAPTR transport field format
- Follow-up in IETF 89 Toronto meeting
  - Use "pce+acronym" instead of "pce+apX" in the NAPTR service field format
  - Remove text record format for path computation scope
- The latest Update is v-05, Change compared to v-04:
  - Add a DCI use case to clarify IGP inefficiency to handle a large number of PCE instances discovery.
  - DNS based discovery provide better means
    - Secure inter-domain discovery
      - E.g., discover PCE with TLS support across domain
    - Handling PCE Identity change
    - Provide better load balance in case of multiple PCE instances

Next Steps

- Well discussed on PCE list
  - Integrated cross WG input
- Good progress of Open Daylight plan
- (Re)requesting WG adoption

Questions?

Recap.

- Gaps exist using IGP based PCE discovery mechanism for:
    - Inter-AS Path Computation
        - PCE in each AS participating in different IGP
    - Hierarchical PCE
        - parent PCEs and child PCEs are not a part of the same routing domain.
    - Northbound distribution using BGP
        - A external PCE doesn't participate in the same IGP
    - SDN Controller/NMS/OSS
        - PCC is Controller/NMS/OSS that doesn't participate in IGP
        - PCE is part of an NMS/OSS that doesn't support IGP and collects topology info from other means.
- Additional benefits of using DNS based PCE discovery
    - Inherent load sharing
    - Avoid generating unwanted traffic due to IGP flooding
    - Flexible for transport protocol selection
    - Feature negotiation

Implementation plan for Open Source prototype