

Hierarchical PCE Discovery

draft-chen-pce-h-discovery-00

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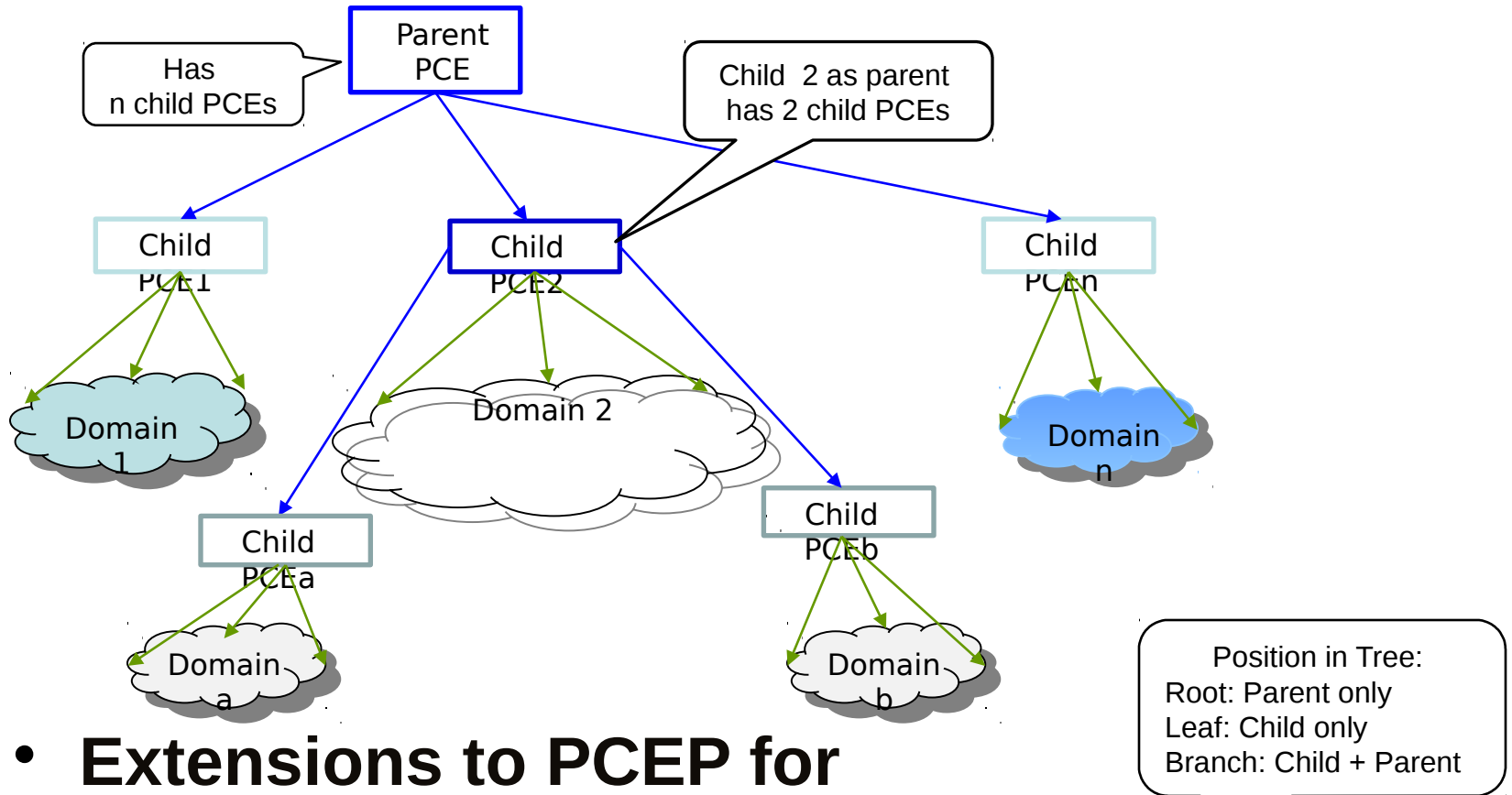
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Introduction

- Hierarchical PCE Architecture in RFC 6805



- **Extensions to PCEP for**

- **Parent to obtain info about its child PCEs** (ID, Domain, Position)
- **Child PCE to get info about its parent** (ID of parent,)

Message Extensions and Discovery Procedures

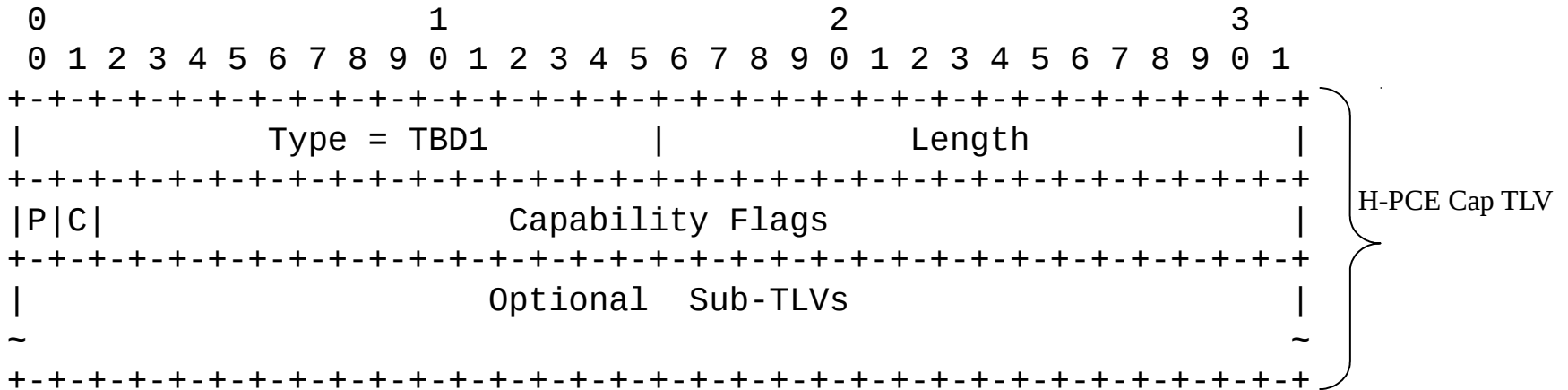
Message Extensions:

- **Open Message**
New H-PCE Cap TLV in OPEN Object of **Open Message**
- **Notification (PCNtf) Message**
New H-PCE Cap TLV in NOTIFICATION Object

Discovery Procedures:

- **Using Open messages in Initialization phase**
 - ❖ **If session exists already, bring it down and then up.**
Thus procedure is triggered in Initialization phase
- **Using Notification (PCNtf) messages over existing session**
 - ✓ **The existing session is not interrupted**

H-PCE Capability TLV



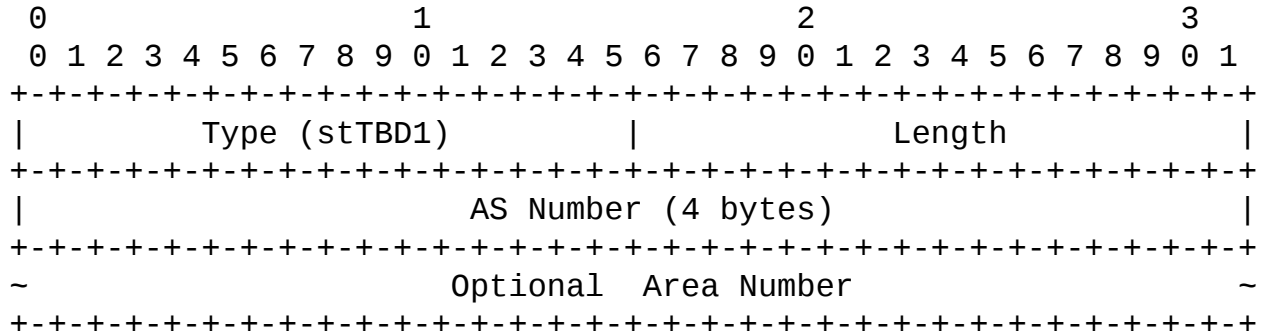
- o P (Parent - 1 bit): It is set to 1 indicating a parent.
- o C (Child - 1 bit): It is set to 1 indicating a child.

Sub-TLVs for

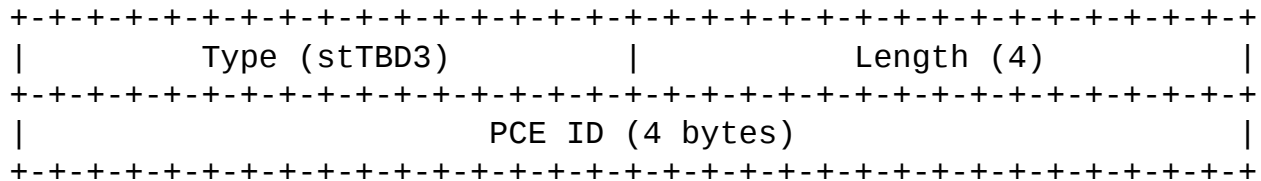
- o Domain Sub-TLV for a domain (child responsible)
- o PCE ID Sub-TLV for ID of PCE
- o PCE IPv4/IPv6 Address Sub-TLV (for ID of PCE)

New Sub-TLVs

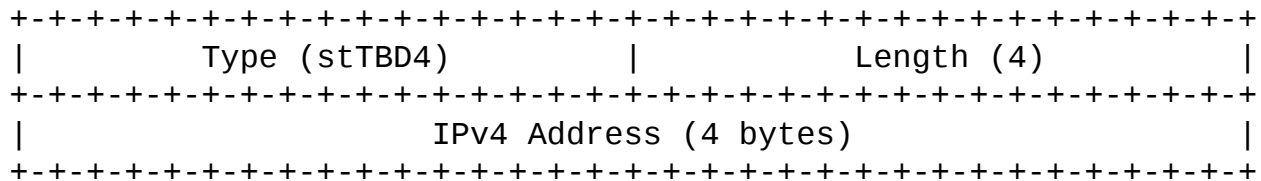
Domain Sub-TLV:



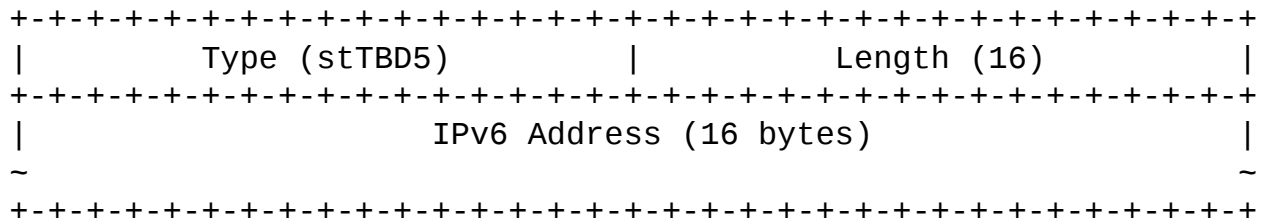
PCE ID Sub-TLV:



PCE IPv4 Address Sub-TLV:

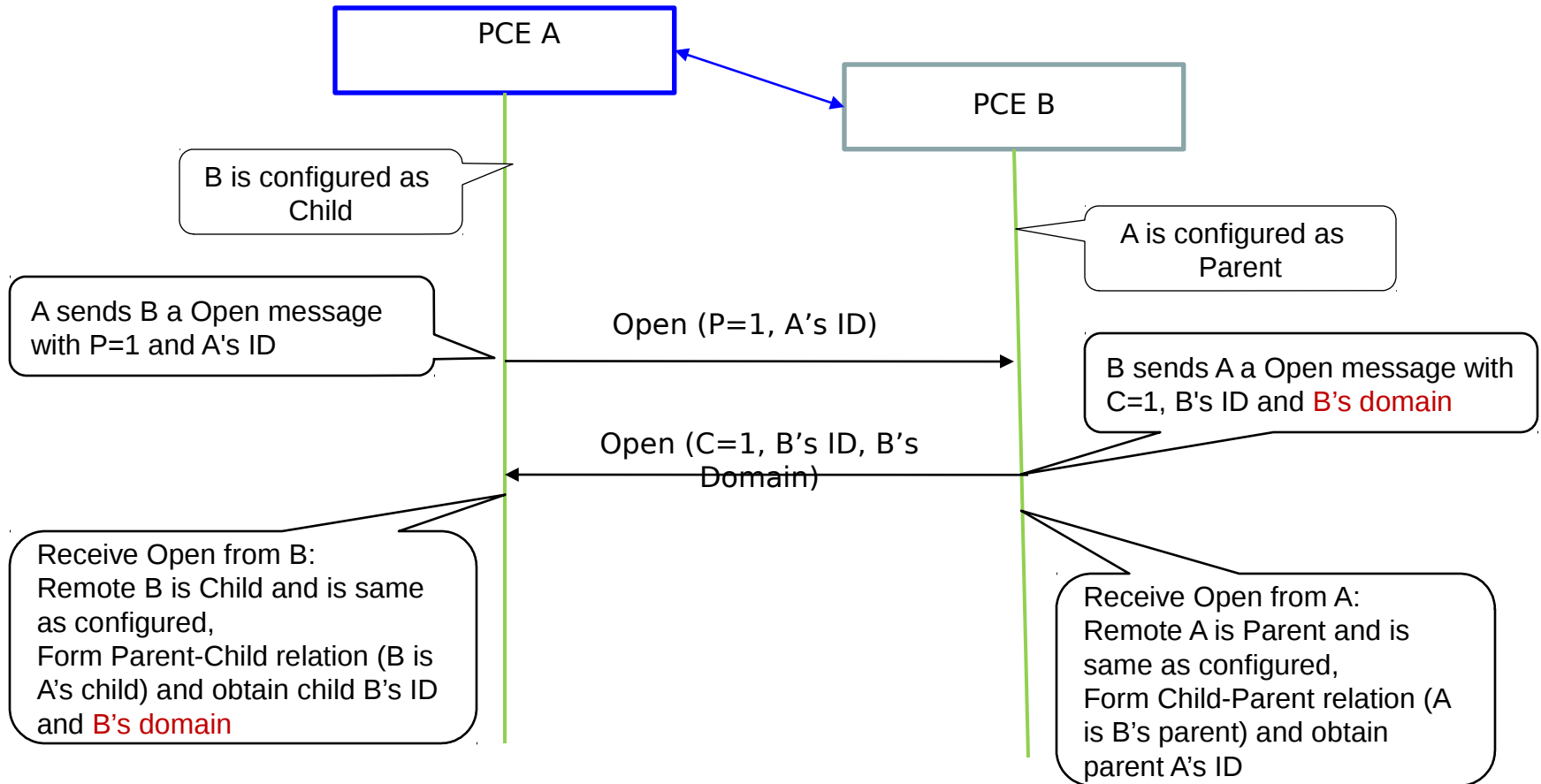


PCE IPv6 Address Sub-TLV:



Discovery Procedures – Open Message

- Using Open Messages with capability TLV
 - flag P: Parent PCE, flag C: Child PCE
- ◆ An example sequence of events for H-PCE discovery during initialization



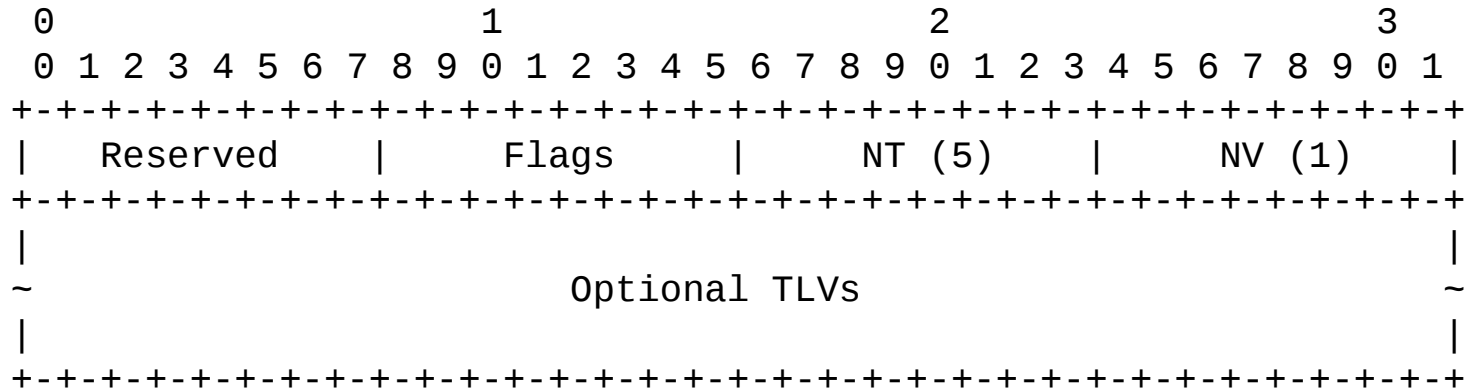
New Notification-type/value (NT/NV)

NT=5 (TBD): Discovery of H-PCE

- * NV=1: The information about a parent PCE or a child PCE
NT=5 and NV=1

indicates that the PCE sends its remote the information about it and a TLV containing the information is in NOTIFICATION object. The format and contents of the TLV is the same as the H-PCE capability TLV described above. The only difference may be the type of the TLV.

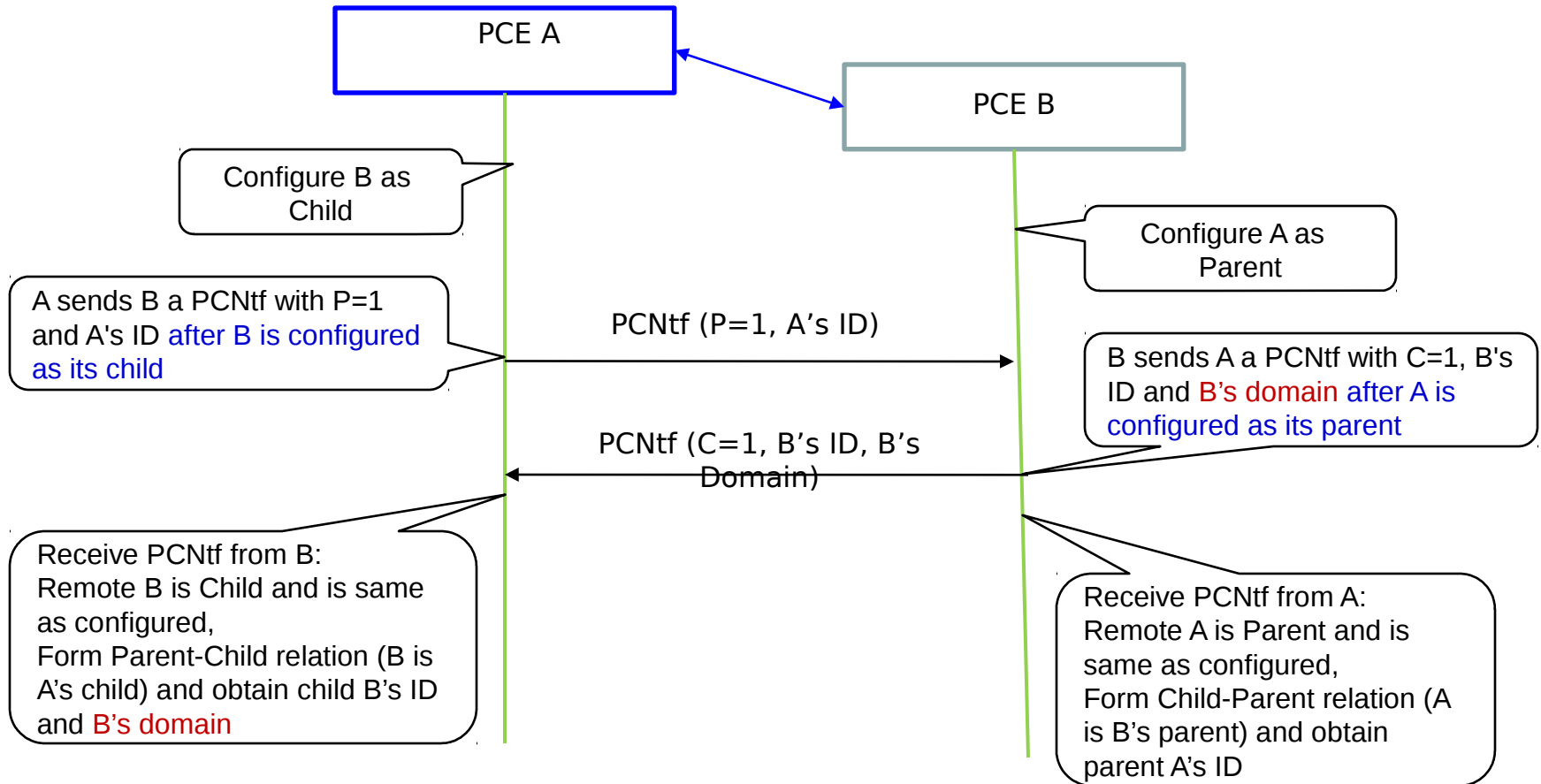
The format of the NOTIFICATION body object:



TLV: H-PCE capability TLV equivalent

Discovery Procedures – Notification Message

- Using Notification (PCNtf) Messages with capability TLV over existing PCEP session between two PCEs
- ◆ An example sequence of events for H-PCE discovery over existing session



Summary

Presented

•Message Extensions

- New H-PCE Cap TLV in OPEN Object of [Open Message](#)
- New NT, NV, and H-PCE Cap TLV in NOTIFICATION Object of [PCNtf Message](#)

•Discovery Procedures

- Discover H-PCE in Initialization using Open Message
- Discover H-PCE over existing session using PCNtf Message

Do we need extensions to Open and PCNtf messages?
Which one is preferred if one is selected?

Next Step

- Request for comments and suggestions