PCECC Extensions

draft-ietf-pce-pcep-extension-for-pce-controller-01

draft-zhao-pce-pcep-extension-pce-controller-sr-04

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PCECC – PCE as a Central Controller

• RFC 8283 is published a while back
  • An architecture for use of PCE/PCEP in a network with central control.
  • Introduces the architecture for PCE as a central controller and examines the motivations/applicability for PCEP as a control protocol in this environment.

• PCECC Extensions
  • Basic PCECC [I-D.ietf-pce-pcep-extension-for-pce-controller]
    • Recently adopted
  • PCECC-SR [I-D.zhao-pce-pcep-extension-pce-controller-sr]
    • In WG adoption Queue
Major Updates to both I-Ds

• Support for Binding SID
  • PCECC can assign the Binding SID itself
  • Reuses the TE-PATH-BINDING TLV as per [I-D.sivabalan-pce-binding-label-sid]

• Support for PCC Allocations (as instructed by PCECC)
  • PCECC can request the PCC to allocate a label for a particular instruction
  • No need to control the label space at the PCECC (useful in some scenarios)
PCC Allocated Labels in PCECC

• A new flag in CCI object called C-Bit for ‘PCC Allocation’.
  • Indicates that the allocation needs to be done by the PCC
• PCECC sets the flag and Label=0
• PCC allocates a label and report it to the PCECC with flag set and Label=L1
1) PCECC instructs the egress via PCInitiate:
   - PLSP-ID=1
   - CC-ID=1, \{C=1, O=0\}, Label = 0

2) Egress allocates and reports the label via PCRpt:
   - PLSP-ID=1
   - CC-ID=1, \{C=1, O=0\}, Label = Green
PCC Allocated Labels in PCECC

1) PCECC instructs the Transit
PCInitiate
PLSP-ID=1
CC-ID=1, \{C=0, O=1\}, Label = \textcolor{green}{Green}
CC-ID=2, \{C=1, O=0\}, Label = \textcolor{green}{Green}

2) Transit allocates and report the label
PCRpt
PLSP-ID=1
CC-ID=1, \{C=0, O=1\}, Label = \textcolor{green}{Green}
CC-ID=2, \{C=1, O=0\}, Label = \textcolor{green}{Yellow}
PCC Allocated Labels in PCECC

1) PCECC instructs the Ingress
PCInitiate
PLSP-ID=1
CC-ID=1, \{C=0, O=1\}, Label = Yellow

2) Ingress allocates and report the label
PCRpt
PLSP-ID=1
CC-ID=1, \{C=0, O=1\}, Label = Yellow
PCC Allocated Labels in PCECC

In this case, label allocation is done sequentially from egress towards ingress.
Our Ask

• Comments on the recent changes?
• Feedback from other implementers!
• *Hope to see PCECC-SR adoption call soon.*
Thanks!

Any Questions?