PCEP extensions for GMPLS

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Cyril Margaria

Oscar González de Dios
Telefonica Investigacion y Desarrollo

Fatai Zhang
Huawei Technologies

Status

Resolved the comments (Editorial and encoding) received on the mailing list, during the meetings and privately:

1. Allow GMPLS capability discovery
2. Use BANDWIDTH semantic
3. Simplify processing rules

Discovery and OPEN extension

Added section on Discovery and capability negotiation.

IGP based discovery for GMPLS-capable PCE is already supported by RFC5088 and RFC5089

OPEN extension to negotiate the capability of computing GMPLS paths. A PCEP Peer can detect early if it connecting to the wrong peer, rather than waiting for a request.

BANDWIDTH

Change : move GENERALIZED-BANDWIDTH encoding in BANDWIDTH OT, and allow an optional reverse bandwidth

→The size/OT binding has been clarified

→ BANDWIDTH indicates how many TE-resources will be used by the LSP, with GMPLS encoding

→ RFC5440 object rule presence kept, extensions are simpler

Simplified processing

No extension needed

<request>::= <RP>
<segment-computation>|<path-key-expansion>

<segment-computation> ::=
<END-POINTS>
[<LSPA>]
[<BANDWIDTH>][<GENERALIZED-BANDWIDTH>...]
[<metric-list>]
[<OF>]
[<RRO> [<BANDWIDTH>][<GENERALIZED-BANDWIDTH>...]]
[<IRO>]
[<LOAD-BALANCING>]
[<GENERALIZED-LOAD-BALANCING>...]
[<XRO>]

<path-key-expansion> ::= <PATH-KEY>

<response>::=<RP>
[<NO-PATH>]
[<attribute-list>]
[<path-list>]

<path-list>::=<path>[<path-list>]
<path>::= <ERO><attribute-list>
<metric-list>::=<METRIC>[<metric-list>]

Where:

<attribute-list>::=[<LSPA>]
[<BANDWIDTH>]
[<GENERALIZED-BANDWIDTH>...]
[<GENERALIZED-LOAD-BALANCING>...]
[<metric-list>]
[<IRO>]

For point-to-multipoint(P2MP) computations, the grammar is:

<segment-computation> ::=
<end-point-rro-pair-list>
[<OF>]
[<LSPA>]
[<BANDWIDTH>]
[<GENERALIZED-BANDWIDTH>...]
[<metric-list>]
[<IRO>]
[<LOAD-BALANCING>]
[<GENERALIZED-LOAD-BALANCING>...]
[<XRO>]

<end-point-rro-pair-list>::=
<END-POINTS>[<RRO-List>][<BANDWIDTH>]
[<GENERALIZED-BANDWIDTH>...]
[<end-point-rro-pair-list>]

<RRO-List>::=<RRO>[<BANDWIDTH>]
[<GENERALIZED-BANDWIDTH>...][<RRO-List>]

Next Steps

- The document addressed the comments raised
- Authors think the solution is ready for Last Call.

Questions?