IS-IS Multi-Instance
draft-ietf-isis-mi-bis-00

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Draft History

December 2015:

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No IS-IS WG meeting in Buenos Aires

May 2016 – became a WG document

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Motivation

RFC 6822 prohibited the use of RFC 5120 Multi-Topology (MT) support in a non-zero instance.

Deployment experience since the writing of RFC 6822 has revealed a desire to be able to support RFC 5120 style MT using multiple non-zero instances e.g. to utilize a link in multiple L1 areas yet also support incongruent IPv4 and IPv6 topologies.

IID-TLV Format

Type: 7

Length: 2 - 254

Value:

No. of octets

```
+------------------------+
| IID (0 - 65535)     |    2
+------------------------+
| Supported ITID        2
+------------------------+
:                       :
+------------------------+
| Supported ITID    |    2
+------------------------+
```

Changes: Support RFC 5120 MT in non-zero instance: ITID #0 only

**"ITID #0 is reserved for a specific use case as described later
in this document. ITID #0 MUST NOT be supported in combination
with any non-zero ITID. If multiple ITIDs are advertised in
an IIH and one of the ITIDs is #0 then the PDU MUST be ignored."**

**"When multiple ITIDs are supported by an instance ITID #0 MUST NOT be
supported."**

**"An MI-RTR MAY support [RFC5120] multi-topology within a non-zero
instance when ITID #0 is supported. When ITID #0 is supported it
MUST be the only ITID supported by that instance. In such cases if
an MI-RTR uses the extensions in support of the BFD Enabled TLV
[RFC6213] , the [RFC5120] MTID MUST be used as specified in
[RFC6213]."**

Changes: Support RFC 5120 MT in non-zero instance: ITID #0 only (2)

RFC 6822 states MT TLVs in an LSP associated w non-zero instance MUST be ignored:

TLV 222 - MT IS Neighbors

TLV 235 - MT IP Reachability

TLV 237 - MT IPv6 Reachability

This is changed to state:

"An MI-RTR MUST NOT support [RFC5120] multi-topology within a non-zero instance when any non-zero ITID is supported. The following TLVs MUST NOT be sent in an LSP associated with a non-zero instance which supports a non-zero ITID and ~~such an LSP~~ MUST be ignored when received:"

Backwards Compatibility

This change is NOT backwards compatible with RFC 6822 which prohibited the use of RFC 5120 MTIDs in non-zero instances.

Are there existing implementations of RFC 6822 for which this would be a problem?

Two implementations known – both of these have implemented the changes and interoperability testing has been done successfully

Other Changes

A suggestion has been added to place the IID-TLV as the first TLV in a PDU to speed recognition of the correct instance when parsing a received PDU.

Clarification that the IID-TLV is only included in Pt-Pt IIHs associated with non-zero instances has been added. This addresses Errata ID #4519.

Clarification of the appropriate MAC multicast addresses to use when sending PDUs on a broadcast interface for both standard instance and non-zero instances has been provided. This addresses Errata ID #4520.

Errata 4521

Clarification that following text does NOT apply to Pt-Pt operation on a LAN:

"In order for an MI-RTR to interoperate over a point-to-point
circuit with a router that does NOT support this extension, the
MI-RTR MUST NOT send IS-IS PDUs for instances other than IID #0
over the point-to-point circuit as these PDUs may affect the state
of IID #0 in the neighbor."

Authors feel that existing text in the draft is clear i.e. text in Section 2.6.1 covers
Point-Point operation on a LAN.

No changes made.

Next Steps

Authors believe this is ready for WGLC