

# IS-IS Support for Unidirectional Links

draft-ietf-isis-udl-01.txt

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# V1 Changes

Only covering changes since WG V0 - more details at:

<http://tools.ietf.org/html?draft=draft-ginsberg-isis-udl-00.txt>

## Additional UDL sub-TLVs:

- Protocols Supported

- IP Address

- IPv6 Interface Address

- IPv6 Global Address

- MT

## Clarify BFD and GR Support

# Goals

Modest Protocol Extensions

No IP Encapsulation

No Static Configuration of neighbor Information

Allow UDL on the Return Path

Reliable Adjacency Maintenance

Reliable LSP Updates

Minimum Additional Network Wide Protocol Traffic

Support for Pt-Pt and LAN subnetworks

# Basic Mechanisms

## Sending Hellos

- IS-T sends hellos as normal

- IS-R sends hello information in “UDL-LSPs”

## Adjacency Maintenance

- IS-T relies on existence of return path rooted at IS-R to IS-T

- IS-R maintains as normal

## Update Process

- IS-T operates as DIS on LAN (even on Pt-Pt links)

- IS-R operates as non-DIS on LAN (even on Pt-Pt links)

- IS-R may use UDL-LSPs to send PSNP equivalent

- Special rules for UDL-LSPs

# Protocols Supported sub-TLV

## Sub-TLV Format

	# octets
+-----+	
Type (129)	1
(To be assigned by IANA)	
+-----+	
Length	Number of NLPIDs
+-----+	
: NLPIDs	: 1 octet/NLPID
+-----+	

Specifies the set of Network Layer Protocol Identifiers that the originating system is capable of forwarding (RFC 1195)

# IP Address sub-TLV

## Sub-TLV Format

	# octets
+-----+	
Type (132)	1
(To be assigned by IANA)	
+-----+	
Length	4 * # of addresses
+-----+	
: IP Address(es)	: 4 octets/address
+-----+	

Specifies the set of IP Addresses configured on the interface (RFC 1195)

# IPv6 Interface Address sub-TLV

## Sub-TLV Format

	# octets
+-----+	
Type (232)	1
(To be assigned by IANA)	
+-----+	
Length	16 * # of addresses
+-----+	
: IPv6 Address(es)	: 16 octets/address
+-----+	

Specifies the set of IPv6 Addresses configured on the interface (RFC 5308). Link local addresses.

# IPv6 Global Interface Address sub-TLV

## Sub-TLV Format

	# octets
+-----+	
Type (233)	1
(To be assigned by IANA)	
+-----+	
Length	16 * # of addresses
+-----+	
: IPv6 Address(es) :	16 octets/address
+-----+	

Specifies the set of global IPv6 Addresses configured on the interface (RFC 6119). Addresses are global or unique local.



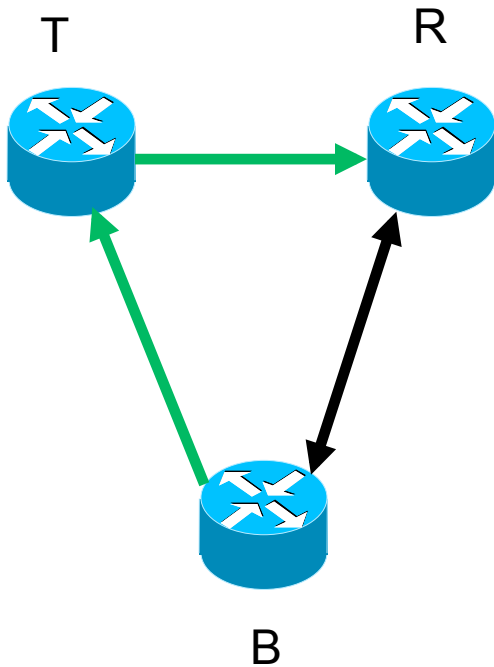
# Multi-Topology sub-TLV

## Sub-TLV Format

	# octets
+-----+	
Type (229)	1
(To be assigned by IANA)	
+-----+	
Length	2 * # of MTIDs
+-----+	
: MTID(s)	2 octets/MTID
+-----+	

Specifies the set of topology identifiers supported as per (RFC 5120).

# BFD Support w UDL in return path



## Multihop BFD Required

When using RFC6213 BFD must come up before IS-IS adjacency comes up.

If UDL link on the return path then circular dependency if both T-R and B-T try to come up at the same time.

**RFC 6213 NOT supported on UDL links**

# Graceful Restart Support (RFC 5306)

## IS-R Restarting

As hello information is sent in LSPs by IS-R this would require IS-R to generate new versions of UDL-LSPs prior to LSPDB sync

## IS-T Restarting

IS-R is required to send CSNPs to IS-T. This is not supported and would require many UDL-LSPs to be flooded in support of GR.

**No Support for RFC 5306 on UDL Links**

# QUESTIONS?