IS-IS Routing Protocol – Cheatsheet – Part-2

Version 2

IS-IS Routing Process

1. **UPDATE** – LSPs are generated and flooded throughout the network
2. **DECISION** – Create SPT & Routing table based on Dijkstra's algorithm
3. **FORWARDING** – forwarding database is created
4. **RECEIVE** – After receiving a frame, IS-IS checks it, passes user data and error reports to the FORWARDING process & Routing info to UPDATE process

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IS-IS Hello Types

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1 ESH (ES Hello)	2 ISH (IS Hello)	3 IIH (IS to IS Hello)
Sent by ES to an IS	*Sent by IS to an ES*	*Sent between two ISs*

IS-IS Packet Format

8	16	24	32
IRPD	Length	Version / Protocol ID	ID Length
Reserved	PDU Type	Version	Reserved
Max Area Address	Type	Length	
Value			

L2 Header	IS-IS Header	IS-IS Data

IS-IS Tables

NEIGHBOUR Table	All Adjacent Routers List
TOPOLOGY Table	LSA's Table (complete info about the networks in same area)
ROUTING Table	Best Routes

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IS-IS Route Types

i*	IS-IS Default Route
i L1	IS-IS Level-1 Route
i L2	IS-IS Level-2 Route
i su	IS-IS Summary Route

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IS-IS DIS (DR) Election

1. Highest Interface Priority (Default interface priority = 64)
2. Highest SNPA (MAC/DLCI)
3. Highest System-ID

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IS-IS Rules to find best Route

- ✓ Internal paths are always preferred over External paths
- ✓ Level-1 paths within the area are preferred over Level-2 paths outside the area
- ✓ If there is no path, the forwarding database sends the packet to the nearest Level-2 Router

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Other IS-IS Intervals

Timer/Interval	Value
LS AGING	1,200 sec or 20 min (counts down)
LS REFRESH	Every 15 min
SPF DELAY /HOLDTIME	5.5 sec / 10 sec

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