

IPv6 Segment Routing (SRv6) Interoperability Results



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MPLS World Congress

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Why are we here?

- Provide an overview of IPv6 Segment Routing (SRv6) testing conducted at EANTC 2019
- Second year of SRv6 testing at EANTC
- But what is SRv6?

SR - Two data plane instantiations

Source Routing

- topological and service (NFV) path is encoded in the packet header

MPLS

- 1 segment = 1 label
- a segment list = a label stack

IPv6

- 1 segment = 1 address
- a segment list = an address list in source routing extension header (SRH)

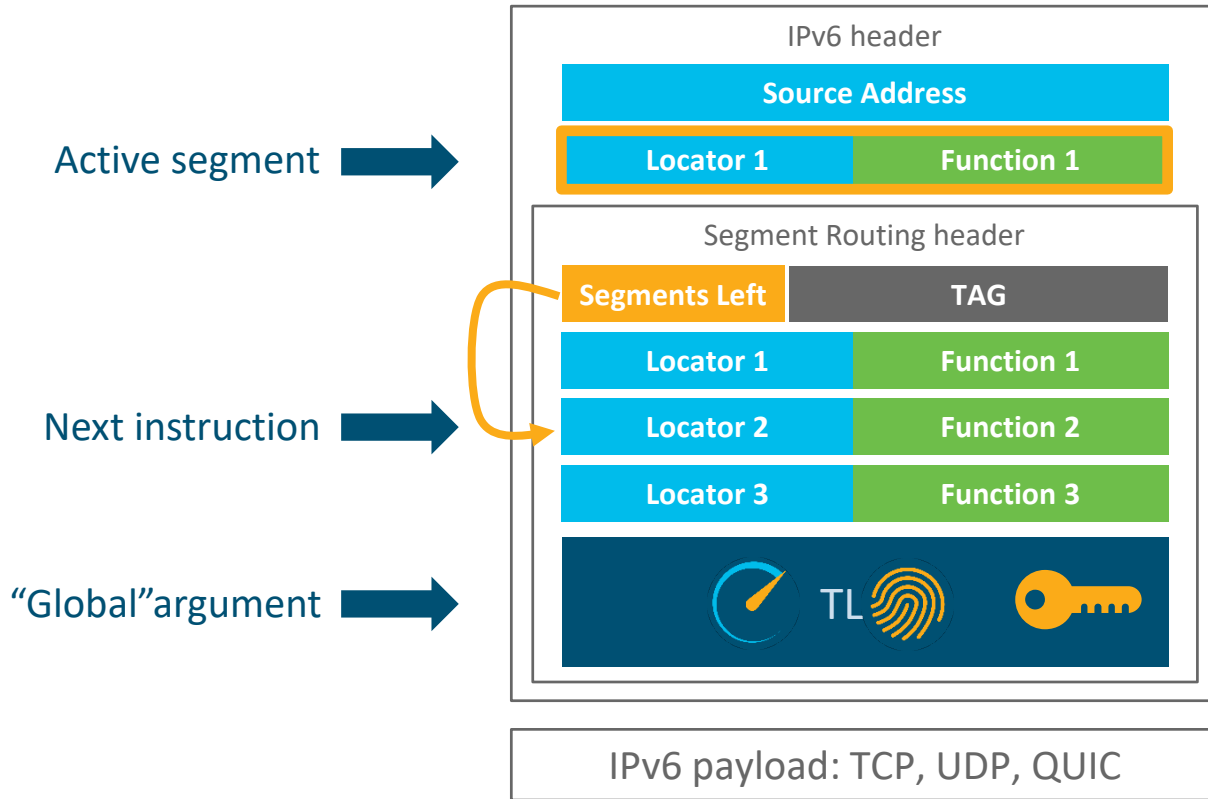
Network instruction

128-bit SRv6 SID

- Locator: routed to the node performing the function
- Function: any possible function
either local to NPU or app in VM/Container
- Flexible bit-length selection



Network Program in the Packet Header



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Spirent
A Keylight Business
Promise. Assured.

SRv6 VPN

No new protocol (just BGP)

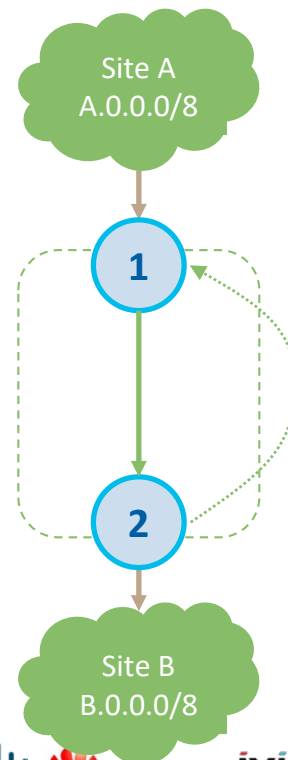
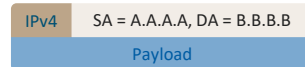
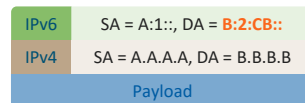
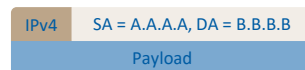
- No new SAFI
- Light ext. to BGP Prefix-SID attribute

Automated

- No tunnel to configure

Efficient

- SRv6 for everything
- No other protocol, just IPv6 with SRv6
 - In fact, SRH not even needed (one single SID fits DA)
 - “go to node 2, decaps and lookup in VRF B”







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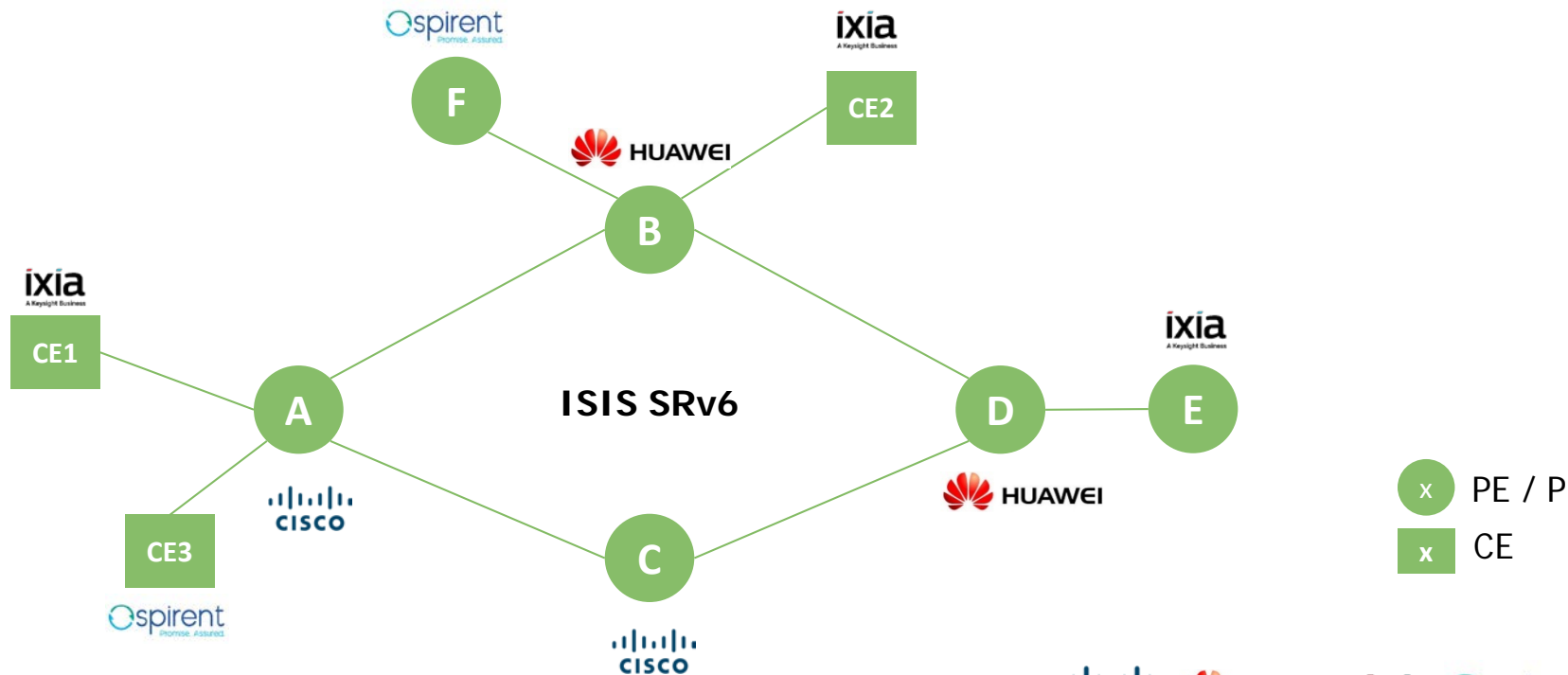


- What was successfully tested?
 - SRv6 IS-IS extensions
 - SRv6 VPN
 - SRv6 Topology-Independent LFA (TI-LFA)
 - SRv6 OAM (ping / traceroute)

Interop Highlights - Participants

Vendor	Model	Role
	NCS 5500, NCS 540	PE, P
	NE9000-8, NE40E-X8A	PE, P
 A Keysight Business	IxNetwork	PE, CE
 Promise. Assured.	TestCenter	PE, CE

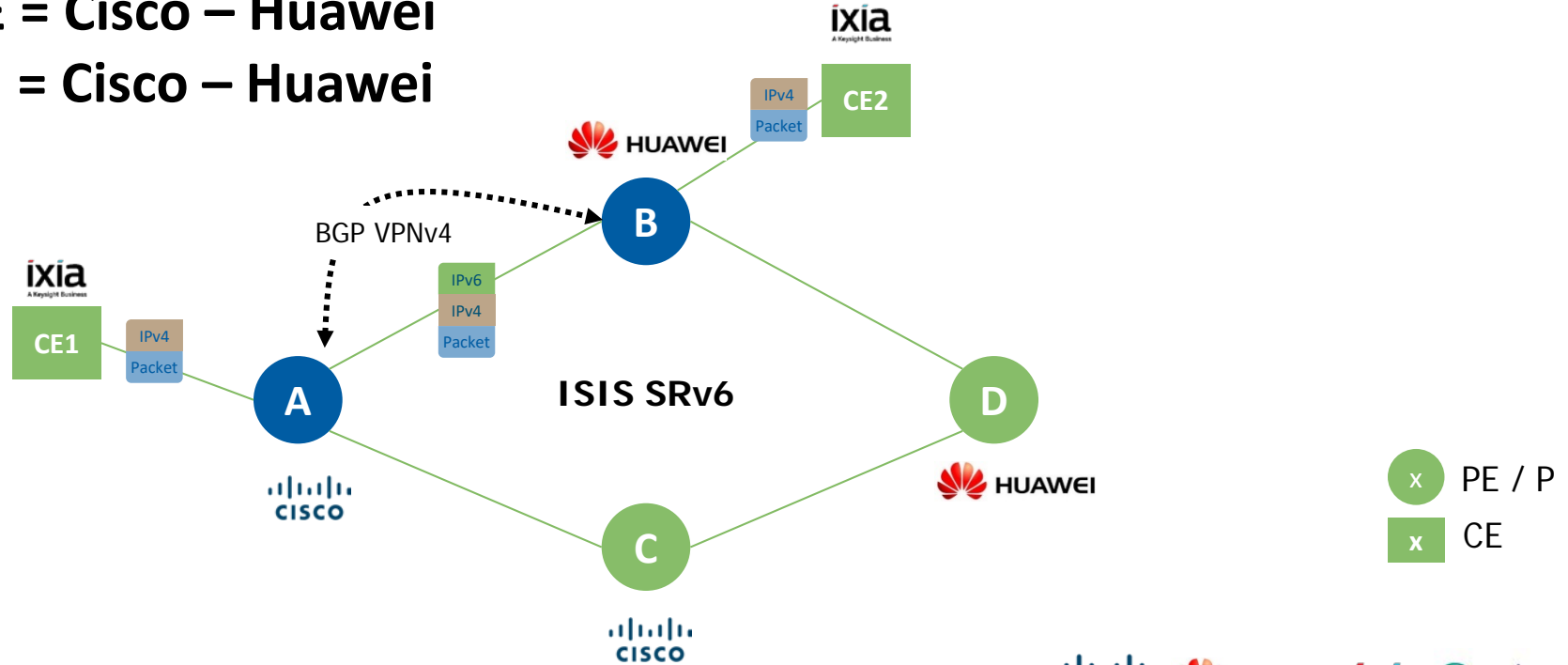
Topology Setup



Topology Setup

PE = Cisco – Huawei

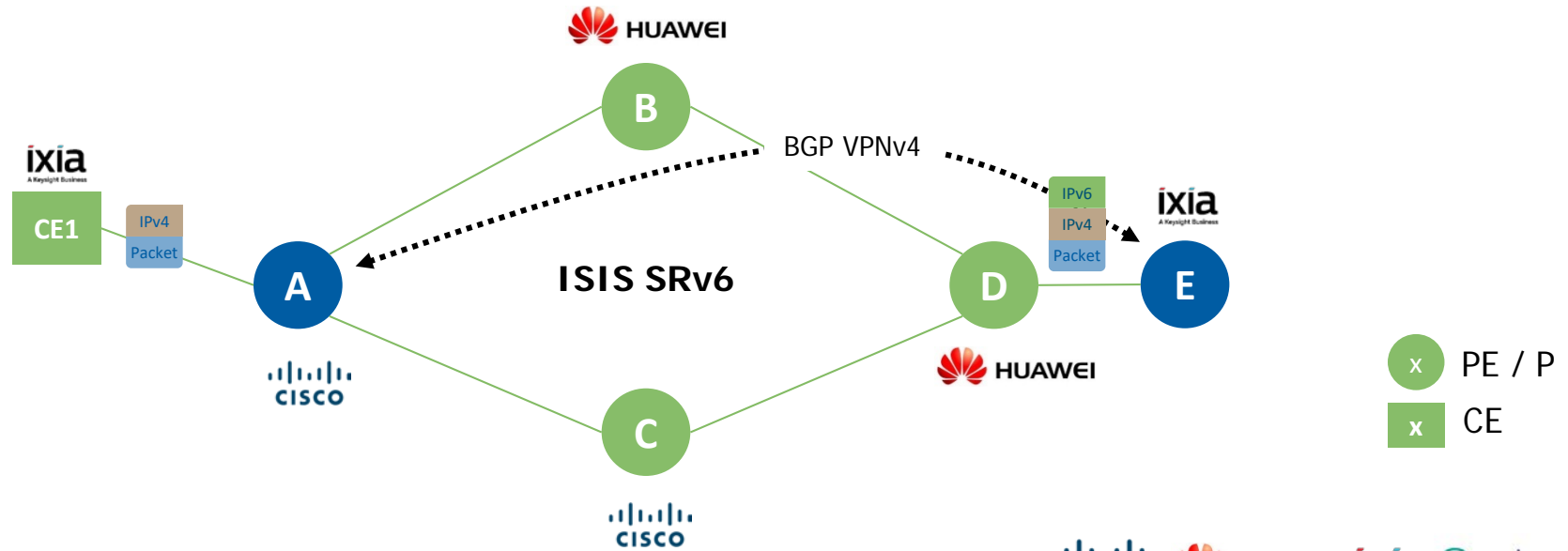
P = Cisco – Huawei



Topology Setup

PE = Cisco – Ixia

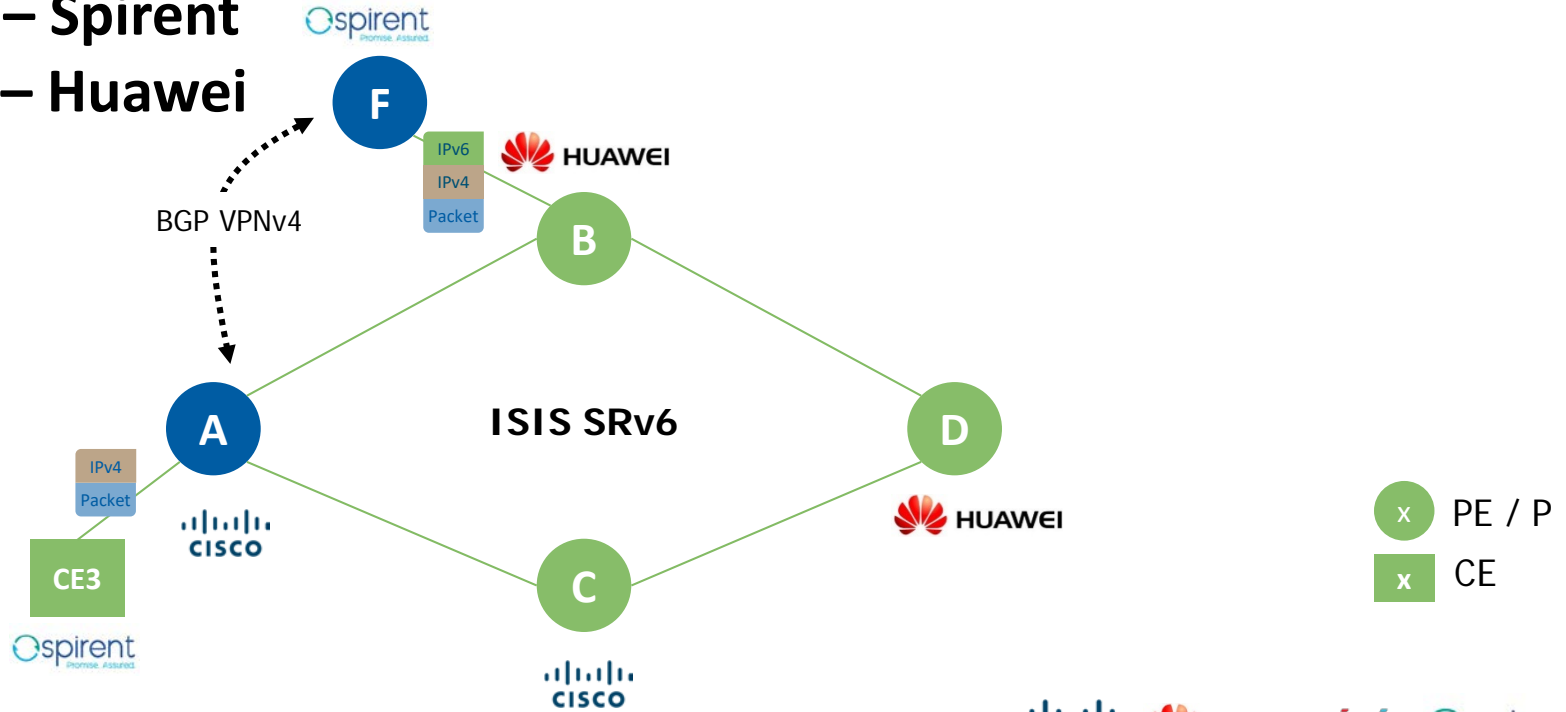
P = Cisco – Huawei



Topology Setup

PE = Cisco – Spirent

P = Cisco – Huawei



Let's watch the demo !!!



THANK YOU



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