

# SR-MPLS FRR Extension

draft-chen-spring-srmpls-frr-ex-00

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# Overview

## SR-MPLS FRR Extension

### by Examples

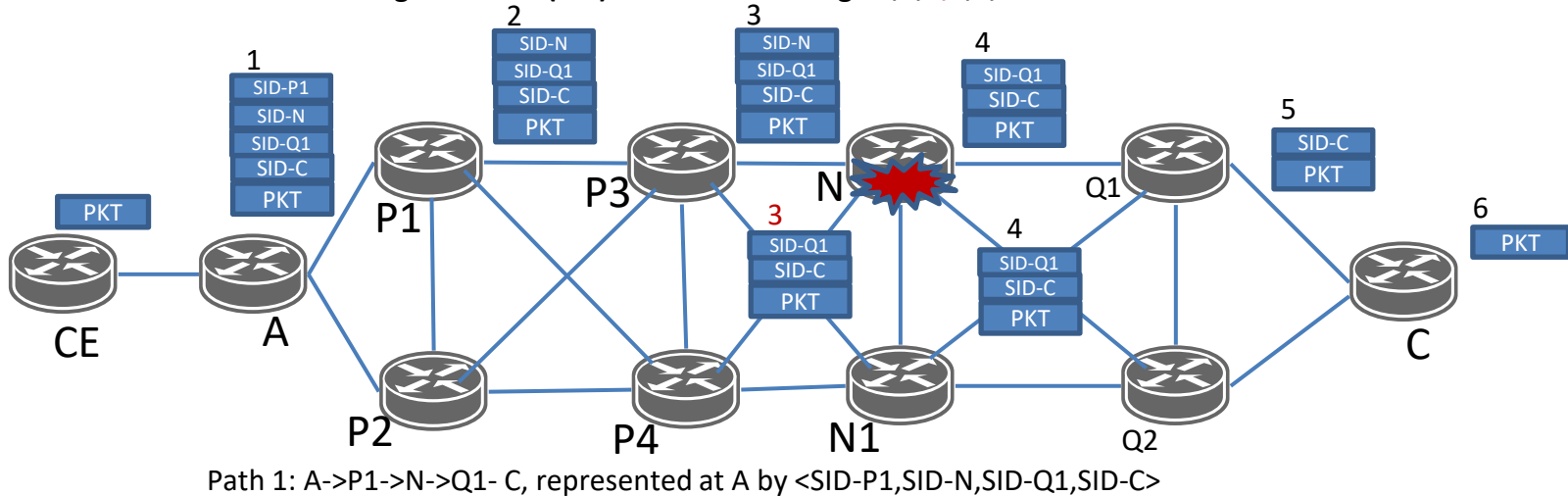
- SR-MPLS Path without BSID (Binding SID)
  - After IGP Converges on Failure
- SR-MPLS Path with BSID
  - Without any Failure
  - Before IGP Converges on Failure
  - After IGP Converges on Failure

### by Procedure

- Procedure on Upstream Node

# SR-MPLS Path without BSID

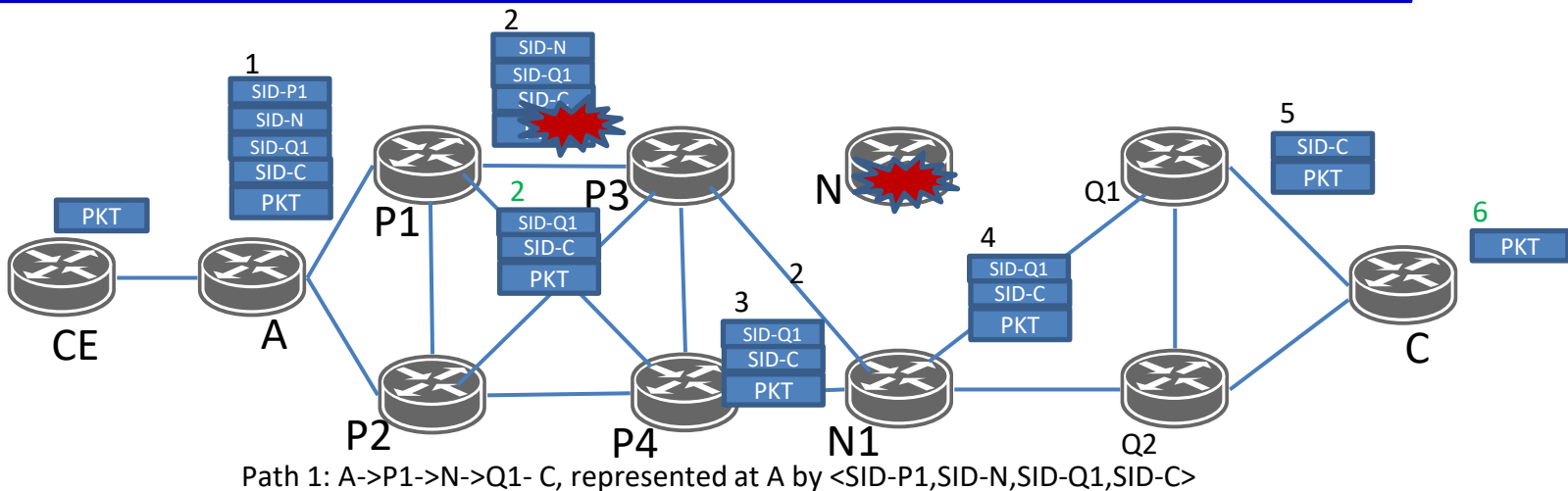
- No failure: Packet (Pkt) is sent to C through 1,2,3,4,5,6
- N failed before IGP converges: Packet (Pkt) is sent to C through 1,2,3,4,5,6



**N failed after IGP converges: Packet (Pkt) dropped at P1 since no route to N (SID-N)**

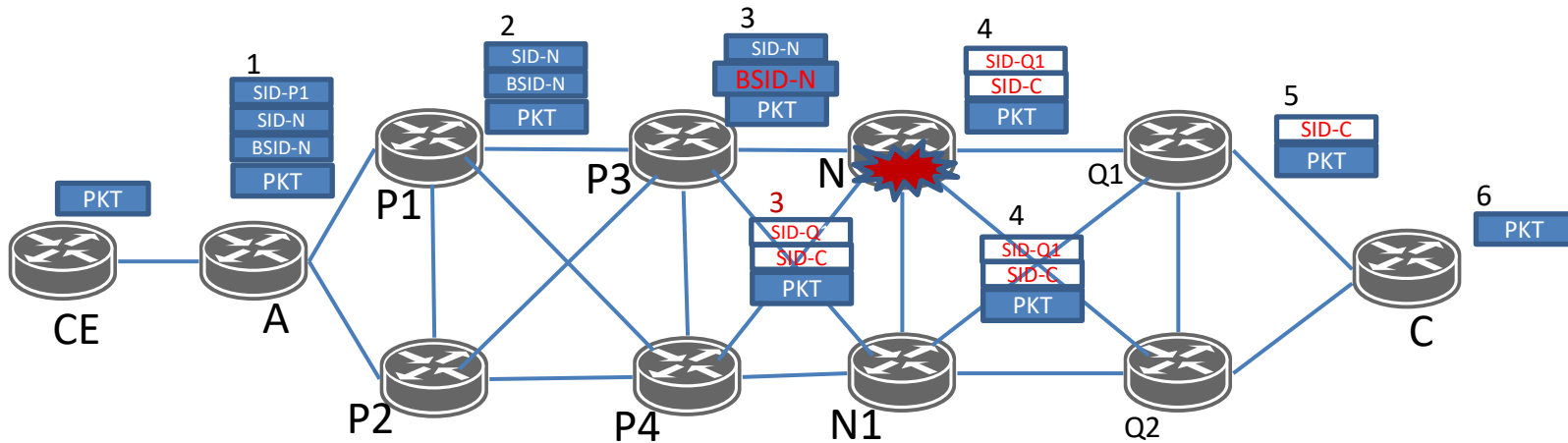
**FRR extension:**

2. P1 **pops SID-N, sends** packet to P4 **using FIB** (along shortest path to) Q1 (SID-Q1),



# SR-MPLS Path with BSID

- No failure: Packet (Pkt) is sent to C through 1,2,3,4,5,6
- N failed before IGP converges: Packet (Pkt) is sent to C through 1,2,3,4,5,6

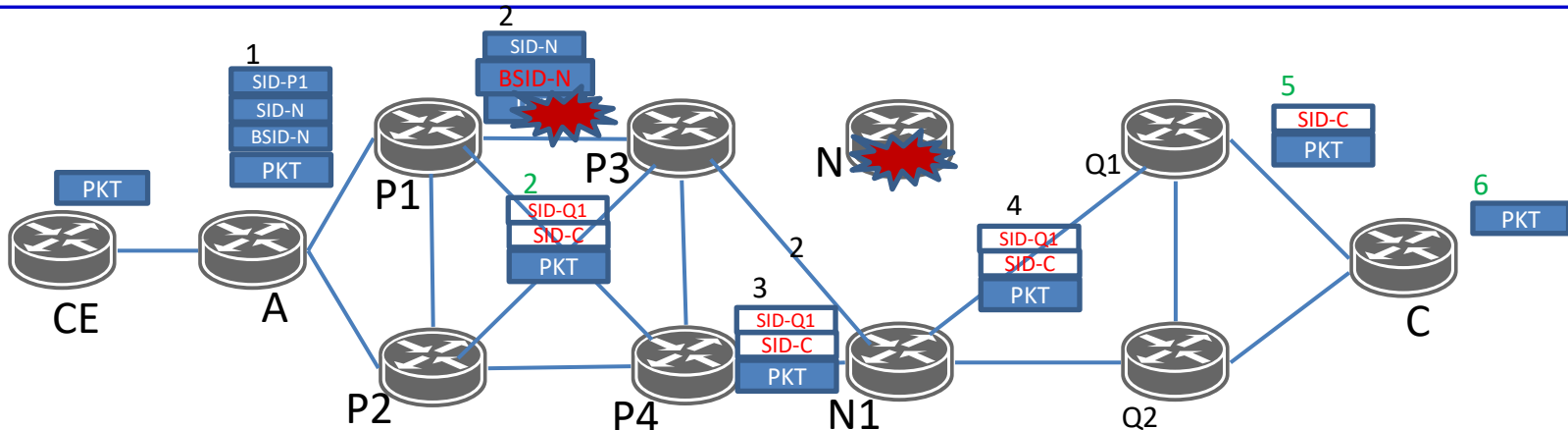


Path 2: A->P1->N->Q1->C, represented at A by <SID-P1,SID-N,BSID-N>, BSID-N associated with <SID-Q1,SID-C>

**N failed after IGP converges: Packet (Pkt) dropped at P1 since no route to N**

**FRR extension:**

2. P1 **pops SID-N, replaces BSID-N with <SID-Q1,SID-C>, sends packet to P4 using FIB** (along shortest path) to Q1 (SID-Q1),



Path 2: A->P1->N->Q1->C, represented at A by <SID-P1,SID-N,BSID-N>, BSID-N associated with <SID-Q1,SID-C>

# Procedure on Upstream Node of N

**After N failed and IGP converges**, upstream node (such as P1) of N (**no route to SID-N**) pops its SID (such as SID-P1) if any,

**pops SID-N** and does one of the following:

- a) **sends** packet **using FIB** to Nx if top SID is a **node SID** of Nx, .
- b) **replaces BSID with SID list**, and **does a) or c)** if top SID is **BSID of N**
- c) **replaces adjacency SID with node SID of remote node**, and **sends** packet **using FIB** if top SID is **an adjacency SID of N**

# Next Steps

- Welcome comments