

**I E T F**<sup>®</sup>

6MAN WG

# Segment Routing IPv6

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# Segment Routing Header

draft-previdi-6man-segment-routing-header

- Several Comments were received during the adoption call
- The document was re-structured in order to address the comments and improve readability

# Main comments and resolution

1. *Comment:* Header insertion seen as problematic
  - *Resolution:* followed the suggestion of WG and introduced **Outer Encapsulation**
    - Clarified what SR domain is:
      - SP infrastructure (multiple networks, multiples ASes)
      - Overlay: set of nodes connected over one or more infrastructure (Section 2.2.2)
2. *Comment:* Security
  - *Resolution:* integrated *draft-vyncke-6man-segment-routing-security* which specifies HMAC
    - Introduced the outer encapsulation
3. *Comment:* References to SDN controller
  - *Resolution:* removed the text related to SDN controller
    - Out of scope of this document

# Main comments and resolution

## 4. *Comments:* MTU and ICMP errors handling

- *Resolution:* the outer encapsulation allows to send icmp message to the ingress node.

– Additional text similar to the one in RFC 6554 could also be added if the WG feels is needed :

“To avoid fragmentation, it is desirable to employ MTU sizes that take into account the outer header (and its Segment Routing Header) which results in:

- . 1500 +
- . 40 (outer header) +
- . 8 (first 8 bytes of Segment Routing Header)
- . 16\*MAX\_SEGMENTS (expected largest number of segments in the segment list)”

## 5. *Comment:* Some requests to clarify spring terminology

- *Resolution:* detailed descriptions of spring building blocks are contained in *draft-ietf-spring-segment-routing*

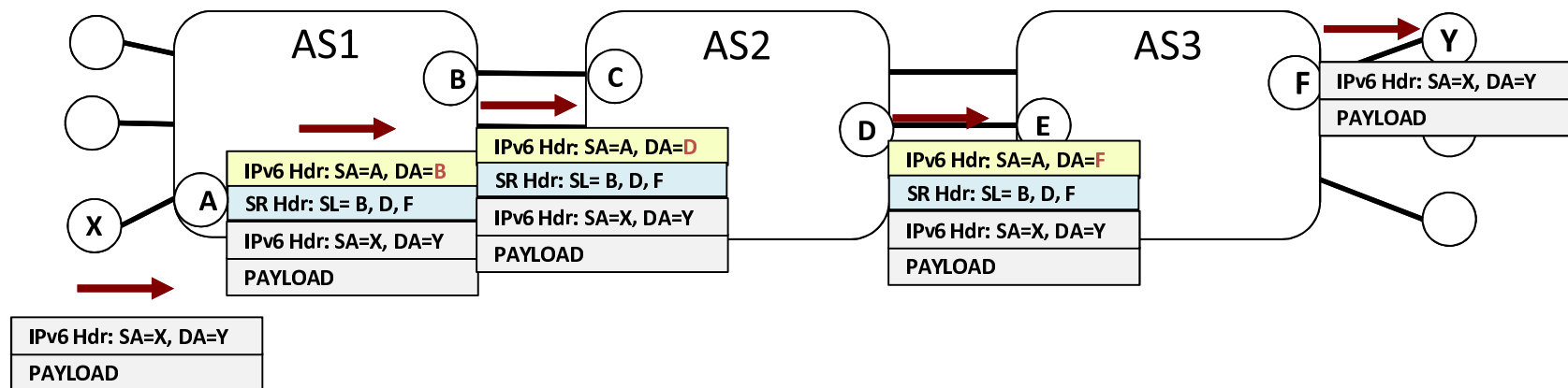
# Segment Routing Header

draft-previdi-6man-segment-routing-header

- Current version: 08
- Changes from 07
  - Integrated draft-vyncke-6man-segment-routing-security as the Security section of draft-previdi-6man-segment-routing-header
  - Definition of “Segment Routing domain”
    - SP infrastructure (multiple networks, multiples ASes)
    - Overlay: set of nodes connected over one or more infrastructure
  - Simplified structure of the document
    - Reduced introduction section
    - Illustration section
    - Segment Routing Identifier (SID): Node-SID / Adj-SID
    - Segment Routing Header format
    - Operations
    - Security (Integrated *draft-vyncke-6man-segment-routing-security* )

# Segment Routing Domain

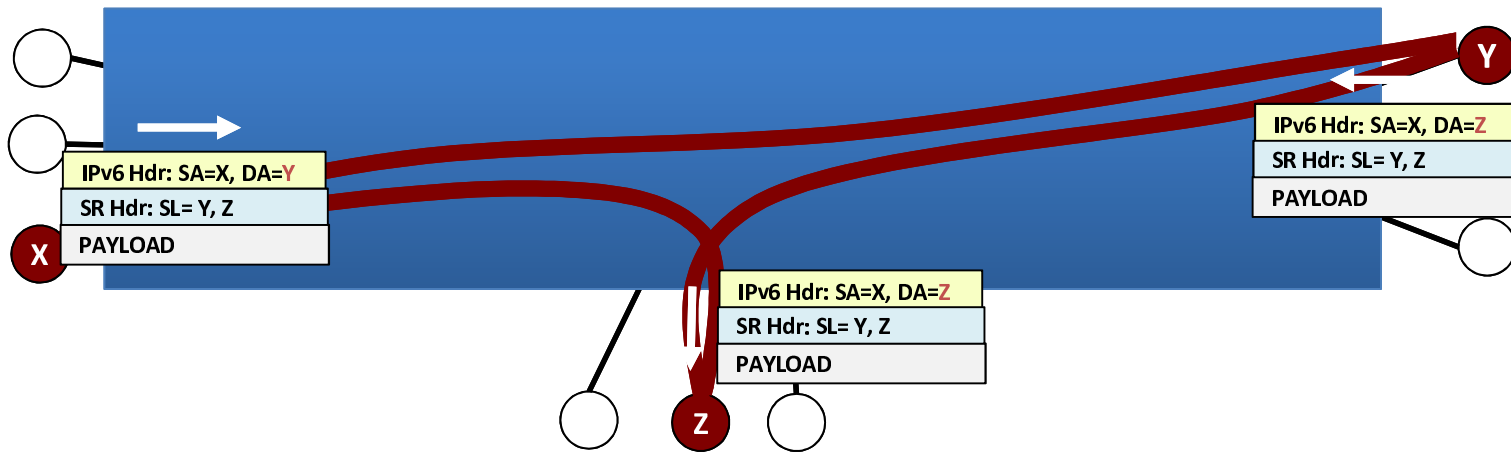
- Segment Routing Domain: SP infrastructure



- Packet is classified at ingress and an outer encapsulation is added
  - Including the SRH
- Packet travels in the SR domain with the SRH
- SRH is removed when outer encapsulation is removed at egress

# Segment Routing Domain

- Segment Routing Domain: SR Overlay



- Packet is originated with a SRH
- Segment addresses are outside the domain of the network operator
- Segment addresses are part of the overlay
  - Packets travels across SP infrastructure with the SRH
  - No inspection of the SRH is done in the operator network (as per RFC2460)
  - Only the DA node inspects the extension header

# Adoption ?

- During IETF93 it has been suggested to merge draft-previdi-6man-segment-routing-header and draft-vyncke-6man-segment-routing-security
- A call for adoption has been issued after IETF93
- Multiple comments on the mailing list related to SRH insertion and SR domain definition have been received and, hopefully, addressed in -08 version
- Authors would like to know if the call for adoption can be positively closed



# Questions?

# Thanks!