SRv6 SFC Architecture with SR-aware Functions

draft-watal-spring-srv6-sfc-sr-aware-functions-03

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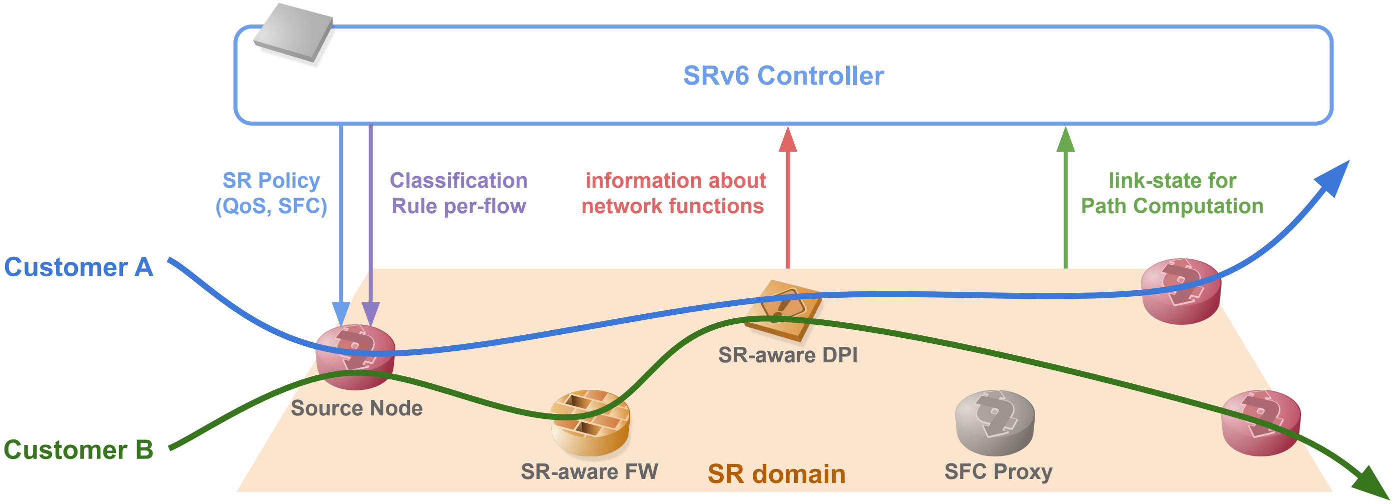
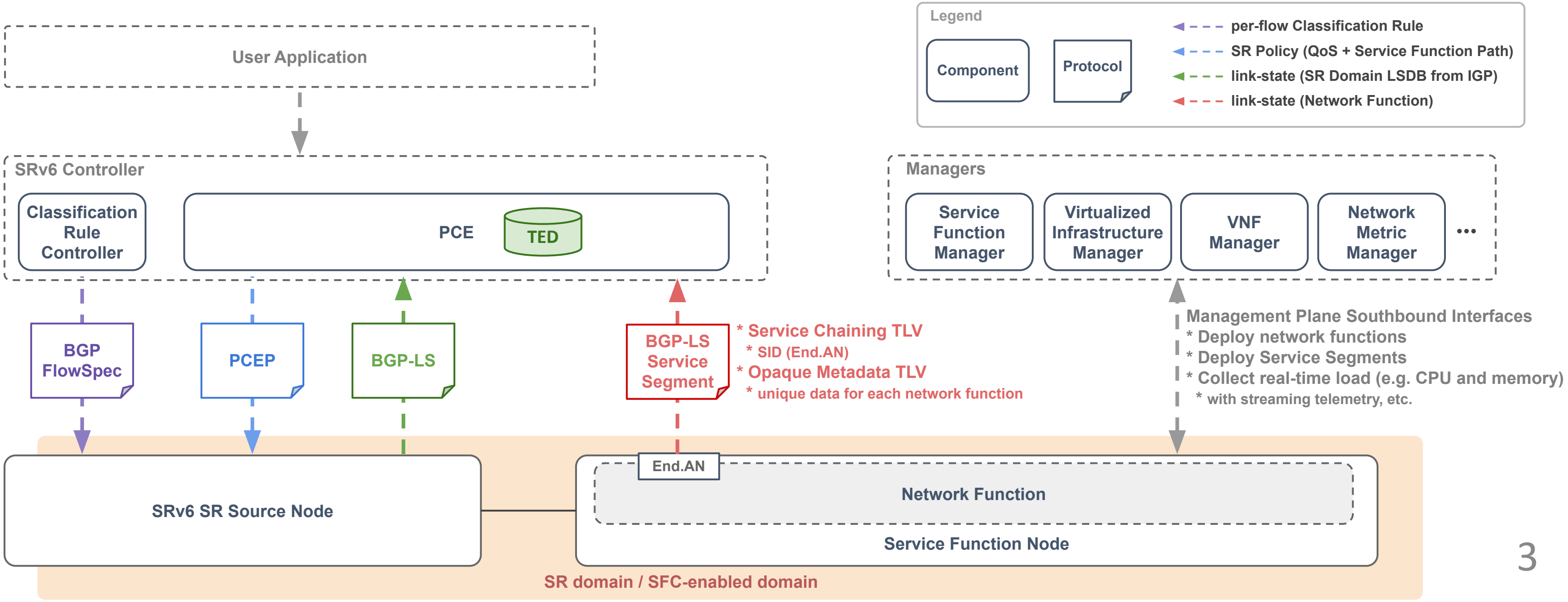
Motivation

- **Provide Comprehensive Management and Simplicity for SRv6 SFC**
  - **Comprehensive Management**: A centralized controller for SFC handles SR policies, link-state, and network metrics
  - **Simplicity**: No SFC proxies, reducing the number of nodes and address resource consumption



Protocols in SRv6 SFC Architecture

- **BGP Flowspec with SR Policy extension**: **Classifies target flows** at the SR source node
- **PCEP / BGP SR Policy**: **Establishes service function chains** at the SR source node
- **BGP-LS**: Collects link-state information from the SR domain for **SR policy computation**
- **BGP-LS Service Segment extension**: **Collects information about network functions** at the SR segment endpoint
    - A PCE receives **link-state and service SIDs (End.AN)** via **BGP-LS** and computes segment lists that satisfying both QoS and SFC requirements



Updates in Ver. 03

- **Updated Handling of Network Function Failure**
  - Clarified SID removal process
  - Added ICMP error message handling when no alternate node is available

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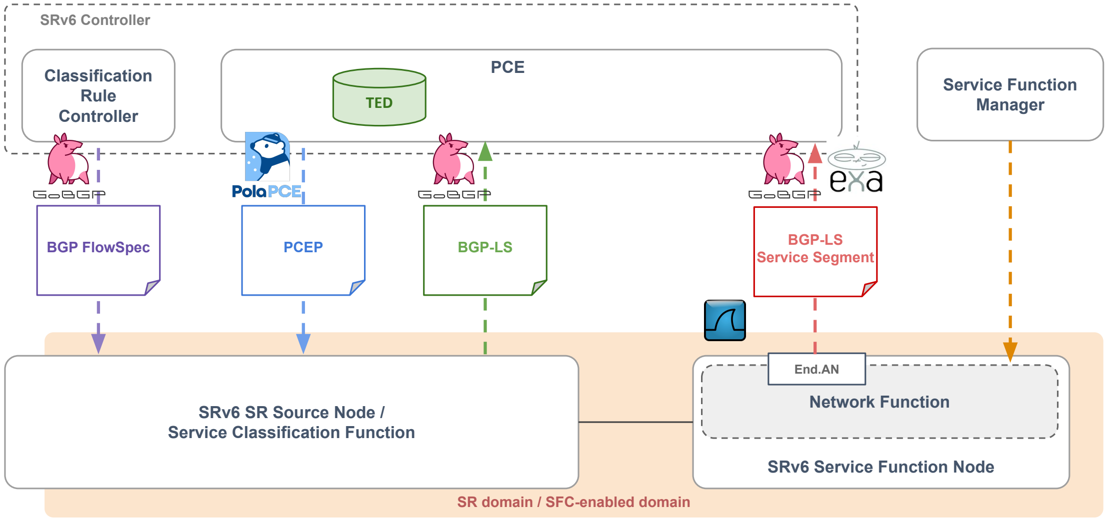
5.1.1.  When a Network Function Becomes Unavailable

   When a network function becomes unavailable, the node removes the SID
   from its routing table.  If an anycast SID is used, packets are
   redirected to another node.  If no other nodes are available, the
   node drops the packets and sends an ICMP message (Type 3: Destination
   Unreachable, Code 0: Net Unreachable).
```

Implementations in IETF Hackathons

Key protocols and components have been implemented:

- **BGP Flowspec with SR Policy**
  - [Hackathon - Traffic Steering using BGP FlowSpec with SR Policy]
- **SFC Path Computation (Loose Source Routing) and send SR Policy via PCEP**
  - [Hackathon - SRv6 SFC Architecture with SR-aware Functions]
- **BGP-LS Advertisement of Segment Routing Service Segments**
  - [Hackathon - BGP-LS Extensions for SRv6 Service Chaining]
- **Service Function Manager**
  - [Hackathon - SRv6 SFC Architecture with SR-aware Functions]



Next Steps

- **Comments are welcome**
  - Please review and participate via GitHub:
    - https://github.com/watal/draft-watal-spring-srv6-sfc-sr-aware-functions
- **Ready for WG Adoption?**

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