SR Service Programming

YANG Model

draft-jags-spring-sr-service-programming-yang-00

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MUST READ !!!

draft-ietf-spring-sr-service-programming
Overview

- **YANG data model for SR Service Programming**
  - provides base framework for configuring and managing a SR aware/unaware services
  - expected to be augmented by other SR-aware technology models accordingly

- **Additional YANG model for Service Proxy (for SR-unaware service)**
  - allows a user to configure and manage specific attributes relate to an SR Proxy (for SR-unaware service)
YANG modules

- `ietf-srv6-base` (SRv6 base)
- `ietf-segment-routing` (SR base)
- `ietf-sr-service-programming-types` (common type definitions for SR Service Programming)
- `ietf-sr-service-function-types` (common type definitions for SF)

- `ietf-sr-service-programming` (base framework for both SR-aware and SR-unaware services)

- `ietf-sr-service-programming-proxy` (Service Proxy for SR-unaware service)
Service Programming: Configuration

module: ietf-sr-service-programming
augment /rt: routing/sr: segment-routing:
  +-rw service-programming
    +-rw service-program* [name]
      |  +-rw name string
      |  |  +-rw behaviour identityref
      |  |  +-rw service-type identityref
      |  |  +-rw service-instance uint32
      |  |  |  +-rw dataplane sr-svc-pgm-types: dataplane-type
      |  |  |  +-rw admin-status? sr-svc-pgm-types: admin-status-type
      |  |  |  +-rw sid-binding
      |  |  |  |  +-rw alloc-mode sr-svc-pgm-types: sid-alloc-mode-type
      |  |  |  |  +-rw mpls
      |  |  |  |  |  +-rw sid? rt-types: mpls-label
      |  |  |  |  +-rw srv6
      |  |  |  |  |  +-rw sid? srv6-types: srv6-sid
      |  |  |  |  |  |  srv6: srv6: locators/locator/name
      |  |  |  |  +-rw sr-sr-services

SR service programming behavior like SR-aware, static-proxy, dynamic-proxy, masq-proxy, masq-nat-proxy, masq-cache-proxy, masq-nat-cache-proxy

Represents a service

SR-aware and SR-unaware services could augment this container to add service specific parameters
module: ietf-sr-service-programming
augment /rt:routing/sr:segment-routing:
  +--rw service-programming
      +--rw service-program* [name]
          +--ro oper-status: identityref
      +--ro statistics
         +--ro in-packet-count? yang:counter64
         +--ro in-bytes-count? yang:counter64
         +--ro out-packet-count? yang:counter64
         +--ro out-bytes-count? yang:counter64
         +--ro in-drop-packet-count? yang:counter64
         +--ro out-drop-packet-count? yang:counter64

Service Programming: Operational State
Service Programming: Notifications

module: ietf-sr-service-programming
notifications:
  ---n service-program-oper-status
    +--ro name                   -> /rt:routing/sr:segment-routing/
    |                          sr-svc-pgm:service-programming/
  |                          service-program/name
  +---ro oper-status              -> /rt:routing/sr:segment-routing/
      sr-svc-pgm:service-programming/
      service-program/oper-status
Service Proxy: Static

module: ietf-sr-service-programming-proxy
augment /rt:routing/sr:segment-routing/
sr-svc-pgm:service-programming/
sr-svc-pgm:service-program/
sr-svc-pgm:sr-services:
  +++rw service-proxy
    +++rw (proxy-type)
    +++: (static)
    +++rw static-proxy
      +++rw inner-packet-type identityref
      +++rw next-hop? yang:mac-address
      +++rw out-interface-name string
      +++rw in-interface-name string
      +++rw packet-cache-info
        +++rw (cache-type)
          +++: (mpls)
            | +++rw mpls-sids* [index]
            | | +++rw index uint8
            | | +++rw mpls-label rt-types:mpls-label
            +++: (srv6)
              +++rw ipv6-source-address? inet:ipv6-address
              +++rw srv6-sids* [index]
                | +++rw index uint8
                +++rw srv6-sid srv6-types:srv6-sid
Service Proxy: Dynamic

module: ietf-sr-service-programming-proxy
augment /rt:routing/sr:segment-routing/
    sr-svc-pgm:service-programming/
    sr-svc-pgm:service-program/
    sr-svc-pgm:sr-services:
      +--rw service-proxy
          +--rw (proxy-type)
              +--:(dynamic)
                  +--rw dynamic-proxy
                      +--rw out-interface-name    string
                      +--rw in-interface-name    string
Service Proxy: Masquerading

```plaintext
module: ietf-sr-service-programming-proxy
augment /rt:routing/sr:segment-routing/
    sr-svc-pgm:service-programming/
    sr-svc-pgm:service-program/
    sr-svc-pgm:sr-services:
      +--rw service-proxy
      +--rw (proxy-type)
      +--:(masquerading)
        +--rw masquerading-proxy
          +--rw next-hop! yang:mac-address
          +--rw out-interface-name string
          +--rw in-interface-name string
```
Next Steps

- Seeking WG input and feedback