A YANG Data Model for Segment Routing

draft-ietf-spring-sr-yang-07

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Tree


```
module: ietf-segment-routing
  augment /rt:routing:
    +--rw segment-routing
      +--rw transport-type?      identityref
      +--ro node-capabilities
      |  +--ro transport-planes* [transport-plane]
      |  |  +--ro transport-plane    identityref
      |  +--ro readable-label-stack-depth?   uint8
      +--rw msd {msd}?
      | ....
      +--rw bindings
      |  +--rw mapping-server {mapping-server}?
      |  |  +--rw policy* [name]
      |  |     +--rw name    string
      |  |     +--rw ipv4
      |  |     |  +--rw mapping-entry* [prefix algorithm]
      |  |     |     ....
      |  |     +--rw ipv6
      |  |        +--rw mapping-entry* [prefix algorithm]
      |  |           ....
      |  +--rw connected-prefix-sid-map
      |  |  +--rw ipv4
      |  |  |  +--rw ipv4-prefix-sid* [prefix algorithm]
      |  |  |     .....
      |  |  +--rw ipv6
      |  |     +--rw ipv6-prefix-sid* [prefix algorithm]
      |  |        ....
      |  +--rw local-prefix-sid
      |     +--rw ipv4
      |     |  +--rw ipv4-prefix-sid-local* [prefix algorithm]
      |     |     ....
      |     +--rw ipv6
      |        +--rw ipv6-prefix-sid-local* [prefix algorithm]
      |           ....
      +--rw global-srgb
      | ....
      +--rw srlb
      | .....
      +--ro label-blocks*
      | ....
      +--ro sid-list
        +--ro sid* [target sid source
                    source-protocol binding-type]
          +--ro target          string
          +--ro sid             uint32
          +--ro algorithm?      uint8
          +--ro source          inet:ip-address
          +--ro used?           boolean
          +--ro source-protocol    -> /rt:routing
          +                        /control-plane-protocols
          +                        /control-plane-protocol
          +                        /name
          +--ro binding-type      enumeration
          +--ro scope?            enumeration
```

Segment Routing Global Block

- Defines a list of label blocks represented by a pair of lower-bound/upper-bound labels.

```
grouping srgb-cfg {
  description
    "Grouping for SR Label Range configuration.";
  list srgb {
    key "lower-bound upper-bound";
    ordered-by user;
    description
      "List of global blocks to be
       advertised.";
    uses srlr;
  }
}
feature protocol-srgb {
  description
    "Support per-protocol srgb configuration.";
}
container global-srgb {
     description
       "Global SRGB configuration.";
     uses sr-cmn:srgb-cfg;
   }
```

```
module: ietf-segment-routing
 augment /rt:routing:
     +--rw global-srgb
     |  +--rw srgb* [lower-bound upper-bound]
     |     +--rw lower-bound    uint32
     |     +--rw upper-bound    uint32
```

Segment Routing Local Block (SRLB)

- Defines a list of label blocks represented by a pair of lower-bound/upper-bound labels, reserved for local SIDs.

```
grouping srlb-cfg {
  description
    "Grouping for SR Local Block range configuration.";
  list srlb {
    key "lower-bound upper-bound";
    ordered-by user;
    description
      "List of SRLBs.";
    uses srlr;
  }
 }
container srlb {
      description
        "SR Local Block configuration.";
      uses sr-cmn:srlb-cfg;
}
```

```
augment /rt:routing:
 +--rw segment-routing
 |    ....
  +--rw srlb
       |  +--rw srlb* [lower-bound upper-bound]
       |     +--rw lower-bound    uint32
       |     +--rw upper-bound    uint32
```

Maximum SID Depth (MSD)

```
feature msd {
  description
    "Support of signaling MSD (Maximum SID Depth)
     in IGP.";
 }
grouping msd-cfg {
  description
    "MSD configuration grouping.";
  leaf node-msd {
    type uint8;
    description
      "Node MSD is the lowest MSD supported by the
node.";
  }
 container link-msd {
    description
      "Link MSD is a number represetns the particular
       link MSD value.";
    list link-msds {
      key "interface";
      description
        "List of link MSDs.";
      leaf interface {
        type if:interface-ref;
        description
          "Name of the interface.";
      }
      leaf msd {
        type uint8;
        description
          "SID depth of the interface associated
           with the link.";
      }
    }
  }
}
container msd {
    if-feature "msd";
    description
      "MSD configuration.";
    uses msd-cfg;
}
```

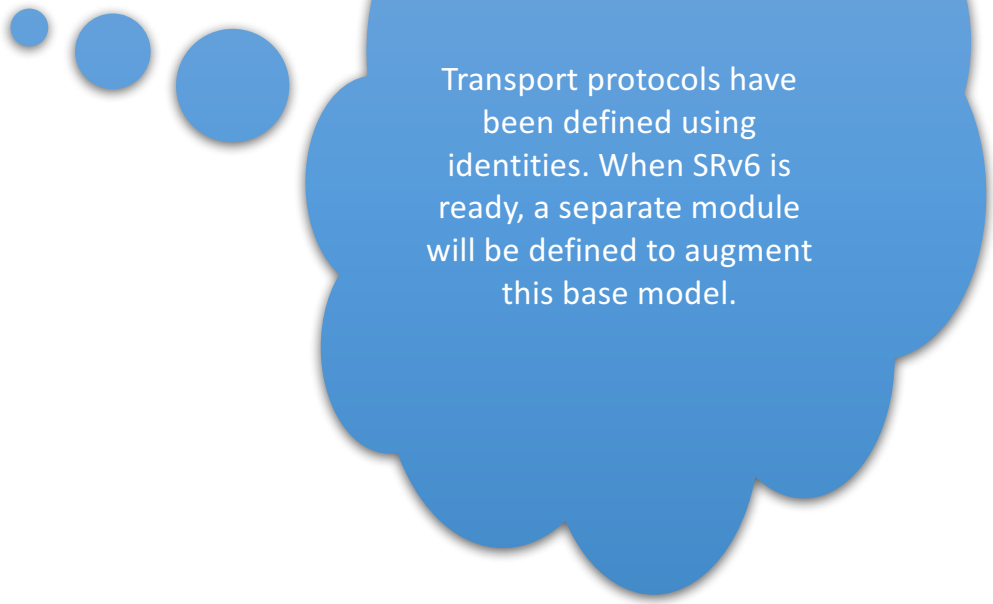
```
module: ietf-segment-routing
  augment /rt:routing:
    +--rw msd {msd}?
       |  +--rw node-msd?   uint8
       |  +--rw link-msd
       |     +--rw link-msds* [interface]
       |        +--rw interface    if:interface-ref
       |        +--rw msd?         uint8
```

Notifications

```
+---n segment-routing-global-srgb-collision
  |  +--ro srgb-collisions*
  |     +--ro lower-bound?          uint32
  |     +--ro upper-bound?          uint32
  |     +--ro routing-protocol?     -> /rt:routing/control-plane-protocols
  |                                       /control-plane-protocol/name
  |     +--ro originating-rtr-id?   router-id
  +---n segment-routing-global-sid-collision
  |  +--ro received-target?       string
  |  +--ro new-sid-rtr-id?        router-id
  |  +--ro original-target?       string
  |  +--ro original-sid-rtr-id?   router-id
  |  +--ro index?                 uint32
  |  +--ro routing-protocol?      -> /rt:routing/control-plane-protocols
  |                                     /control-plane-protocol/name
  +---n segment-routing-index-out-of-range
     +--ro received-target?    string
     +--ro received-index?     uint32
     +--ro routing-protocol?   -> /rt:routing/control-plane-protocols
                                     /control-plane-protocol/name
```

Segment Routing Transport

```
identity segment-routing-transport {
  description
    "Base identity for segment routing transport.";
}
identity segment-routing-transport-mpls {
  base segment-routing-transport;
  description
    "This identity represents MPLS transport for segment
     routing.";
}
identity segment-routing-transport-ipv6 {
  base segment-routing-transport;
 description
    "This identity represents IPv6 transport for segment
     routing.";
}
```



Next Steps

- Will do an update after this IETF
- Collect/address comments
- WGLC soon

Question?

Thank You