A YANG Data Model for Segment Routing
draft-ietf-spring-sr-yang-09

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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 entropy-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
```
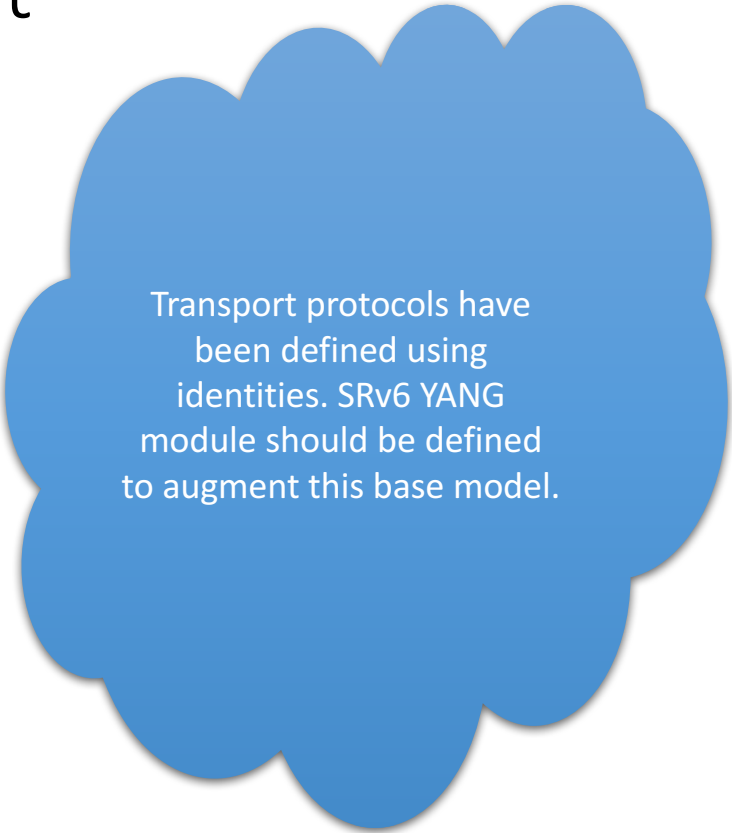
Segment Routing Transport

```
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.";
}
```

Transport protocols have been defined using identities. SRv6 YANG module should be defined to augment this base model.

Next Steps

- Collect/address comments
- Request YANG Doctor review
- WGLC soon

Question?

Thank You