IETF 90 Toronto
Yang Data Model for OSPF Protocol draft-yeung-netmod-ospf-01 and beyond

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History

- Changes between netmod-*-00 and netmod-*-01

  - Align with draft-ietf-netmod-routing-cfg-13.txt

- OSPF WG ospf-yang-00 is in progress

  - Multiple vendors involved

  - Dependency on update requested on draft-ietf-netmode-routing-cfg-15.txt

    - LR vs VRF

    - Default instance

    - MT support

Goals

- Define OSPF data model that work for multiple vendors

- Support various configuration options for different vendors

- Support OSPFv2 & OSPFv3 in one model

- Support optional features

    - augment

    - feature

Configuration Style

- Protocol centric

```
router ospf 1
   vrf red

   …
router ospf 2
   vrf blue

   …
```

- VRF centric

```
vrf red
   router ospf 1

       …
vrf blue
   router ospf 2

       …
```

Inheritance

```
router ospfv3 201
  area 1 stub
  address-family ipv4 unicast
    router-id 4.1.1.4
  address-family ipv6 unicast
    router-id 4.1.1.6
  address-family ipv4 unicast vrf red
    router-id 4.1.2.4
```

Data Model OSPFv2 Config

```
+--rw routing
    +--rw routing-instance [name]
        +--rw routing-protocols
            +--rw routing-protocol [name]
                +--rw ospf:ospf
                            .
                    +--rw ospf:ospf-afs
                        +--rw ospf:ospf-af [vrf af]
                            +--rw ospf:ospf-areas
                                        .
                                +--rw ospf:ospf-area [area-id]
                                            .
                                    +--rw ospf:ospf-interfaces
                                                .
                                        +--rw ospf:ospf-interface [interface]
                                                    .
```

Data Model OSPFv2 Oper

```
+--ro routing-state
    +--ro routing-instance [name]
       +--ro routing-protocols
          +--ro routing-protocol [name]
             +--ro ospf:ospf
                +--ro ospf:ospf-afs
                   +--ro ospf:ospf-af [vrf af]
                      +--ro ospf:ospf-neighbors
                         +--ro ospf:ospf-neighbor [area-id interface neighbor-id]
                            .
                      +--ro ospf:ospf-interfaces
                         +--ro ospf:ospf-interface [area-id interface]
                            .
                      +--ro ospf:ospf-areas
                         +--ro ospf:ospf-area [area-id]
                            .
                      +--ro ospf-databases
                         +--ro ospf:area-scope-lsas [area-id lsa-type]
                           .
                         +--ro ospf:as-scope-lsas [lsa-type]
                           .
```

Data Model OSPFv3 Config

```
+--rw routing
    +--rw routing-instance [name]
        +--rw routing-protocols
            +--rw routing-protocol [name]
                +--rw ospf:ospf
                        .
                    +--rw ospf:ospf-afs
                        +--rw ospf:ospf-af [vrf af]
                            .
                            +--rw ospf:ospf-areas
                                .
                                +--rw ospf:ospf-area [area-id]
                                    .
                                    +--rw ospf:ospf-interfaces
                                        .
                                        +--rw ospf:ospf-interface [interface]
                                            .
```

Data Model OSPFv3 Oper

```
+--ro routing-state
    +--ro routing-instance [name]
        +--ro routing-protocols
            +--ro routing-protocol [name]
                +--ro ospf:ospf
                    +--rw ospf:ospf-afs
                        +--rw ospf:ospf-af [vrf af]
                            +--ro ospf:ospf-neighbors
                                +--ro ospf:ospf-neighbor [area-id interface neighbor-id]
                                    .
                            +--ro ospf:ospf-interfaces
                                +--ro ospf:ospf-interface [area-id interface]
                                    .
                            +--ro ospf:ospf-areas
                                +--ro ospf:ospf-area [area-id]
                                    .
                            +--ro ospf-databases
                                +--ro ospf:link-scope-lsas [area-id interface lsa-type]
                                    .
                                +--ro ospf:area-scope-lsas [area-id lsa-type]
                                    .
                                +--ro ospf:as-scope-lsas [lsa-type]
                                    .
```

Next steps

- Submit -00 to OSPF WG

- Collaborate with OSPF WG

- Is the WG interested to adopt this work as WG doc?