

draft-ietf-isis-yang-isis-cfg-01

IETF 91

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Design team

- Vendors : Cisco, Juniper, Brocade
- Service Provider : Orange

Configuration hierarchy

- Pretty aligned with OSPF, we still need to align few parameters and naming conventions
- We face high level of discrepancies between vendor CLIs that are hard to manage even on some critical parameters like « area-address », we are at least trying to analyse Cisco, Juniper, ALU, Brocade CLIs.
- Each vendor would like to push its own CLI, consensus is not so easy ...
- Solutions to manage discrepancies :
 - YANG Feature
 - YANG Deviation
 - Ask vendor for CLI mapping or new feature implementation in the box (not really welcomed by vendors 😊)
 - Remove non essential parameters (will be added by augmentation of vendor specific models)

Configuration hierarchy

```
augment /rt:routing/rt:routing-instance/rt:routing-protocols/rt:routing-protocol:
```

```
+--rw isis
  +--rw instance* [routing-instance]
    +--rw routing-instance      rt:routing-instance-ref
    +--rw level-type?           level
    +--rw system-id?            system-id
    +--rw maximum-area-addresses? uint8 {maximum-area-addresses}?
    +--rw area-address*         area-address
    +--rw mpls-te
      | +--rw ipv4-router-id?   inet:ipv4-address {ipv4-router-id}?
      | +--rw ipv6-router-id?   inet:ipv6-address {ipv6-router-id}?
    +--rw reference-bandwidth?   uint32 {reference-bandwidth}?
    +--rw lsp-mtu?               uint16
    +--rw lsp-lifetime?          uint16
    +--rw lsp-refresh?           uint16 {lsp-refresh}?
    +--rw graceful-restart {graceful-restart}?
      | +--rw enabled?          boolean
    +--rw authentication* [level]
      | ..
    +--rw metric-type* [level]
      | +--rw value?            enumeration
      | +--rw level            level
    +--rw preference* [level]
      | ..
    +--rw default-metric* [level]
      | +--rw value?            wide-metric
      | +--rw level            level
    +--rw af* [af] {nlpid-control}?
      | +--rw af                string
      | +--rw enabled?          boolean
    +--rw topologies* [name] {multi-topology}?
      | ..
    +--rw overload* [level]
      | ...
    +--rw overload-max-metric* [level] {overload-max-metric}?
      | ..
    +--rw interfaces
      +--rw interface* [name]
```

Interface Configuration hierarchy

```
+--rw interfaces
  +--rw interface* [name]
    +--rw name                string
    +--rw level-type?         level
    +--rw lsp-pacing-interval? uint16
    +--rw lsp-retransmit-interval? uint16
    +--rw passive?            boolean
    +--rw csnp-interval?      uint16
    +--rw hello-padding
      | +--rw enabled?        boolean
    +--rw mesh-group-enabled?  mesh-group-state
    +--rw mesh-group?          uint8
    +--rw interface-type?     interface-type
    +--rw enabled?            boolean
    +--rw tag*                 uint32 {prefix-tag}?
    +--rw tag64*               uint64 {prefix-tag64}?
    +--rw hello-authentication* [level]
      | +--rw type?           authentication-type
      | +--rw key?            string
      | +--rw level           level
    +--rw hello-interval* [level]
      | +--rw value?          uint16
      | +--rw level           level
    +--rw hello-multiplier* [level]
      | +--rw value?          uint16
      | +--rw level           level
    +--rw priority* [level]
      | +--rw value?          uint8
      | +--rw level           level
    +--rw metric* [level]
      | +--rw value?          wide-metric
      | +--rw level           level
    +--rw af* [af]
      | +--rw af              string
      | +--rw bfd {bfd}?
      | ...
    +--rw topologies* [name]
      +--rw name              rt:rib-ref
      +--rw metric* [level]
        ...
```

Configuration missing pieces

- Routing policies :
 - Huge work, more global, out of ISIS model work
- Summary-address :
 - May be related to routing policies depending of implementations
 - We did not decide yet how to address it
- SPRING
- IPFRR
- Others ?

Operational/rpcs/notifications states

- Quite aligned with MIB (and even more), but was not reviewed yet by the draft team
- We want first to finish and agree on the configuration part

Operational states

```
augment /rt:routing-state/rt:routing-instance/rt:routing-protocols/rt:routing-protocol:
  +--ro isis
    +--ro system-counters
      | +--ro level* [level]
      | ...
    +--ro interface-counters
      | +--ro interface* [interface]
      | ...
    +--ro packet-counters
      | +--ro level* [level]
      | ...
    +--ro interfaces
      | +--ro interfaces* [interface]
      | ...
    +--ro adjacencies
      | +--ro adjacency*
      | ...
    +--ro spf-log
      | +--ro event* [id]
      | ...
    +--ro lsp-log
      | +--ro event* [id]
      | ...
    +--ro database
      | +--ro level-db* [level]
      |   +--ro level    level-number
      |   +--ro lsp* [lsp-id]
      |   ...
    +--ro hostnames
      +--ro hostname* [system-id]
      +--ro system-id  system-id
      +--ro hostname?  string
```


RPCs

rpcs:

```
+---x clear-adjacency
|  +--ro input
|    +--ro routing-instance-name          rt:routing-instance-state-ref
|    +--ro routing-protocol-instance-name instance-state-ref
|    +--ro level?                          level
|    +--ro interface?                       string
+---x clear-database
    +--ro input
        +--ro routing-instance-name          rt:routing-instance-state-ref
        +--ro routing-protocol-instance-name instance-state-ref
        +--ro level?                          level
```

Notifications

notifications:

```
+---n database-overload
...
+---n lsp-too-large
...
+---n corrupted-lsp-detected
...
+---n attempt-to-exceed-max-sequence
...
+---n id-len-mismatch
...
+---n max-area-addresses-mismatch
...
+---n own-lsp-purge
...
+---n sequence-number-skipped
...
+---n authentication-type-failure
...
+---n authentication-failure
...
+---n version-skew
...
+---n area-mismatch
...
+---n rejected-adjacency
...
+---n protocols-supported-mismatch
...
+---n lsp-error-detected
...
+---n adjacency-change
...
+---n lsp-received
...
+---n lsp-generation
```

What's next ?

- Finish review of config parameters and align namings with OSPF
- Start review of operational parameters
- We need the feedback from the WG !