

RIFT YANG

draft-ietf-rift-yang-02

RIFT WG

IETF110

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RIFT YANG 02 version update

- Add Bruno Rijsman as co-author.
- Updated according to the implementation experience and YANG rules.

RIFT YANG

- This data model is defined according to [draft-ietf-rift-rift].
- The model includes protocol configuration, state information and some notifications. Some features are added to enhance the protocol.
- Acknowledgement to Tony Przygienda, Benchong Xu for their detailed review and valuable comments.

RIFT Model overview

- Multiple RIFT instances supported
- Node configuration and state
- Interface configuration and state
- Neighbor state
- Database state
- Notification

```
.....
+--rw interface* [name]
  ...
+--ro miscabled-links*      linkid-type
+--rw (algorithm-type)?
| +--:(spf)
| +--:(all-path)
+--ro hal?                  level
+--rw instance-label?      uint32 {label-switching}?
+--ro neighbor* [system-id]
  ...
+--ro database
  ...
```

```
module: ietf-rift
augment /rt:routing/rt:control-plane-protocols
  /rt:control-plane-protocol:
+--rw rift
  +--rw name?                string
  +--ro level?               level
  +--rw system-id            system-id
  +--rw pod?                 uint32
  +--rw configured-level?   level
  +--rw overload?           boolean
  +--ro protocol-major-version  uint8
  +--ro protocol-minor-version  uint16
  +--ro hierarchy-indications?  enumeration
  +--rw flood-reduction?      boolean
  +--rw nonce-increasing-interval?  uint16
  +--rw maximum-nonce-delta?    uint8 {nonce-delta-adjust}?
  +--rw rx-lie-multicast-address
  | +--rw ipv4?  inet:ipv4-address
  | +--rw ipv6?  inet:ipv6-address
  +--rw tx-lie-multicast-address
  | +--rw ipv4?  inet:ipv4-address
  | +--rw ipv6?  inet:ipv6-address
  +--rw lie-tx-port?          inet:port-number
  +--rw global-link-capabilities
  | +--rw bfd?                boolean
  | +--rw v4-forwarding-capable?  boolean
  +--rw rx-flood-port?        inet:port-number
  +--rw holdtime?
  |   rt-types:timer-value-seconds16
  +--rw tide-generation-interval?
  |   rt-types:timer-value-seconds16
  +--rw tie-security-key-id?  uint32
```

RIFT interface

- Interface configuration and state
- The configurable parameters for message exchange
- The information received by this interface

```
+--rw interface* [name]
| +--ro link-id?          linkid-type
| +--rw name              if:interface-ref
| +--rw cost?             uint32
| +--rw address-families
| | +--rw address-family* [address-family]
| |   +--rw address-family iana-rt-types:address-family
| +--rw advertised-source-addresses
| | +--rw ipv4?          inet:ipv4-address
| | +--rw ipv6?          inet:ipv6-address
| +--ro direction-type?  enumeration
| +--ro was-the-last-lie-accepted? boolean
| +--ro last-lie-reject-reason? string
| +--ro advertised-in-lies
| | +--ro you-are-flood-repeater? boolean
| | +--ro not-a-ztp-offer?          boolean
| | +--ro you-are-sending-too-quickly? boolean
| +--rw link-capabilities
| | +--rw bfd?          boolean
| | +--rw v4-forwarding-capable? boolean
| +--ro state            enumeration
| +--ro number-of-flaps?  uint32
| +--ro last-state-change? yang:date-and-time
```

RIFT neighbor

The state information of the neighbor

- The base info of the neighbor, includes the level, system-id, protocol-version, etc..
- The capabilities of the neighbor
- The potential parallel link pair to the neighbor

```
+--ro neighbor* [system-id]
| +--ro name?          string
| +--ro level?         level
| +--ro system-id     system-id
| +--ro pod?          uint32
| +--ro protocol-version?  uint16
| +--ro protocol-minor-version?  uint16
| +--ro sent-offer
| | +--ro level?      level
| | +--ro not-a-ztp-offer?  boolean
| +--ro received-offer
| | +--ro level?      level
| | +--ro not-a-ztp-offer?  boolean
| | +--ro best?       boolean
| | +--ro removed-from-consideration?  boolean
| | +--ro removal-reason?  string
| +--ro received-source-addresses
| | +--ro ipv4?  inet:ipv4-address
| | +--ro ipv6?  inet:ipv6-address
| +--ro link-id-pair* [remote-id]
| | +--ro local-id?  uint32
| | +--ro remote-id  uint32
| | +--ro if-index?  uint32
| | +--ro if-name?  if:interface-ref
| +--ro cost?        uint32
| +--ro bandwidth?   uint32
| +--ro flood-reduction?  boolean
| +--ro received-link-capabilities
| | +--ro bfd?        boolean
| | +--ro v4-forwarding-capable?  boolean
| +--ro received-in-lies
| | +--ro you-are-flood-repeater?  boolean
| | +--ro not-a-ztp-offer?  boolean
| | +--ro you-are-sending-too-quickly?  boolean
| +--ro tx-flood-port?  inet:port-number
| +--ro bfd-up?         boolean
| +--ro outer-security-key-id?  uint8
```

RIFT database

+--ro database

+--ro tie* [direction-type originator tie-type tie-number]

+--ro direction-type enumeration

+--ro originator system-id

+--ro tie-type enumeration

+--ro tie-number uint32

+--ro seq? uint64

+--ro origination-time? uint32

+--ro origination-lifetime? uint32

+--ro node

| +--ro name? string

| +--ro level? level

| +--ro system-id system-id

| +--ro pod? uint32

| +--ro flood-reduction? boolean

| +--ro overload? boolean

| +--ro startup-time? uint64

| +--ro neighbor* [system-id]

| | +--ro name? string

| | +--ro level? level

| | +--ro system-id system-id

| | +--ro pod? uint32

| | +--ro link-id-pair* [remote-id]

| | | +--ro local-id? uint32

| | | +--ro remote-id uint32

| | | +--ro if-index? uint32

| | | +--ro if-name? if:interface-ref

| | +--ro cost? uint32

| | +--ro bandwidth? uint32

| | +--ro flood-reduction? boolean

.....

The database state

- Base TIE info
- node TIE
- Prefix TIE
- Key-value

.....

| | +--ro received-link-capabilities

| | +--ro bfd? boolean

| | +--ro v4-forwarding-capable? boolean

| +--ro miscabled-links* linkid-type

+--ro prefix

| +--ro prefix? inet:ip-prefix

| +--ro (type)?

| | +---:(prefix)

| | +---:(positive-disaggregation)

| | +---:(negative-disaggregation)

| | +---:(external)

| | +---:(positive-external-disaggregation)

| | +---:(pgp)

| +--ro metric? uint32

| +--ro tags* uint64

| +--ro monotonic-clock

| | +--ro prefix-sequence-type

| | +--ro timestamp

| | | ieee802-1as-timestamp-type

| | +--ro transaction-id? uint8

| +--ro loopback? boolean

| +--ro directly-attached? boolean

| +--ro from-link? linkid-type

+--ro key-value

+--ro key? binary

+--ro value? binary

RIFT notification

Unexpected TIE and
neighbor's error should be notified.

notifications:

```
+---n error-set
  +--ro tie-level-error
  | +--ro tie* [originator]
  |   +--ro direction-type?    enumeration
  |   +--ro originator         system-id
  |   +--ro tie-type?          enumeration
  |   +--ro tie-number?        uint32
  |   +--ro seq?               uint64
  |   +--ro origination-time?  uint32
  |   +--ro origination-lifetime? uint32
  +--ro neighbor-error
    +--ro neighbor* [system-id]
    .....
```

- Any comments welcomed 😊
- Request more review
- WGLC?

Thanks!