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An I2RS BGP Information Model  
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## Abstract

This document introduces an information model for i2RS BGP protocol and network policy that aligns with the I2RS BGP use cases. This draft utilizes the general Policy based routing structured found in the RIB Information Model (IM) and Policy Base Policy.

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## Table of Contents

1.	Introduction	2
2.	Definitions and Acronyms	3
3.	BGP Data	3
3.1.	BGP Protocol	3
3.1.1.	Yang Data Model for I2RS BGP IM Protocol Block	4
3.1.2.	Elements in I2RS Protocol Block	5
3.2.	bgp_ipv4_instance	8
3.2.1.	Yang Data Model bgp ipv4 unicast instance	8
3.2.2.	Elements in bgp ipv4 unicast instance	8
3.3.	bgp local rib	11
3.3.1.	bgp-local-rib for IPv4 routes	12
3.4.	BGP Peer	16
3.4.1.	Yang Top Level for BGP Peer	16
3.4.2.	Elements in BGP peer Structure	17
3.4.3.	Reading/Writing Policy in I2RS IM model for BGP Peer	20
3.5.	Additional variable used within all RIBS	20
4.	BGP Yang top-level description	22
5.	IANA Considerations	79
6.	Security Considerations	79
7.	Informative References	79
	Authors' Addresses	80

## 1. Introduction

The Interface to the Routing System (I2RS) provides read and write access to the information and state within the routing process within routing elements via protocol message exchange between an I2RS Client and an I2RS Agent associated with the a routing system. The [I-D.ietf-i2rs-architecture] describes the basic interactions of this exchange. One of the important functions of this messages exchange is for the I2RS client to interact with one or more I2RS agents to collect information from network routing systems.

One of the key information pieces that I2RS clients may collect from I2RS agents is the BGP information regarding BGP peers, BGP routes, and network topologies created within BGP. This document introduces a basic information model for BGP policies. This policy model can be linked with other information models such as the I2RS RIB informational model [I-D.ietf-i2rs-rib-info-model], and uses the generic policy found in the Policy Routing modules in [I-D.hares-i2rs-info-model-policy]. This basic BGP Information Model is an extendable policy model is a product of the industry approach to I2RS.

## 2. Definitions and Acronyms

BGP: Border Gateway Protocol

Information Model: An abstract model of a conceptual domain, independent of a specific implementation or data representation

NETCONF: The Network Configuration Protocol as defined in [RFC6536]

RESTCONF: The REST-like protocol that provides a programmatic interface over HTTP for accessing data defined in YANG, using datastores defined in NETCONF Protocol [I-D.ietf-netconf-restconf] as defined in RBNF: Routing Backus-Naur Form [RFC5511].

## 3. BGP Data

BGP data includes information related to the BGP protocol instances, BGP Peer information, BGP Route information, and BGP policy. This section describes the information associated with the I2RS agent accessible via BGP.

### 3.1. BGP Protocol

BGP protocol support within a router (or virtual routing device) may have multiple instances of the BGP protocol. This section describes the information regarding the BGP protocol available to the I2RS Agent. The section begins with a top-level diagram of the Yang Data Model, and then goes to define the Yang data model in text.

#### Protocol

The BGP protocol information stores a group of information associated with a BGP protocol implementation. This group of informational includes:

- \* Router-ID (R/W) - Router-ID for BGP protocol,
- \* AS(R/W)- Autonomous System Number,
- \* protocol\_status (R) - administrative status of the protocol,
- \* shutdown\_protocol (R/W) - Shutdown the BGP protocol,
- \* ROLES (R) - a composite set of roles BGP peers play,
- \* bgp-ipv4-uni-instance (R/W) - instance for IPv4 unicast

- \* `bgp-labeled-ipv4instance` (R/W) - instance for IPv4 unicast with labels
- \* `bgp-ipv4-multi-instance` (R/W) - instance for IPv4 multicast
- \* `bgp-vpn4-instance` (R/W) - instance for IPv4 VPNs
- \* `bgp-vpn-l3vp-instance-list` (R/W) list of L3VPN instances indexed by the BGP instance name
- \* `bgp-ipv6-uni-instance` (R/W) - instance handling IPv6 unicast
- \* `bgp-label-ipv6-instance` (R/W) - instance with IPv6 prefix plus labels
- \* `bgp-ipv6-multi-instance` (R/W) - bgp IPv6 multicast instance
- \* `bgp-ipv6-vpn-instance-list` (R/W) - list of IPv6 L3VPN instances

The sections below describe these elements.

#### 3.1.1.1. Yang Data Model for I2RS BGP IM Protocol Block

```

+--rw bgp-protocol
  +--rw router-id?                inet:ip-address
  +--rw as-number?                uint32
  +--ro protocol-status?          enumeration
  +--rw shutdown-protocol?        boolean
  +--ro bgp-role?                 enumeration
  +--rw bgp-ipv4-uni-instance
  |   ...
+--rw bgp-labeled-ipv4-instance
  |   ...
+--rw bgp-ipv4-multi-instance
  |   ...
+--rw bgp-ipv4-uni-instance
  |   ...
+--rw bgp-ipv4-l3vpn-instance-list* [bgp-l3vpn-instance-name]
  |   ...
+--rw bgp-ipv6-uni-instance
  |   ...
+--rw bgp-labeled-ipv6-instance
  |   ...
+--rw bgp-ipv6-multi-instance
  |   ...
+--rw bgp-ipv6-uni-instance
  |   ...
+--rw bgp-ipv6-l3vpn-instance-list* [bgp-l3vpn-instance-name]
  |   ...

```

### 3.1.2. Elements in I2RS Protocol Block

This section describes each element of the I2RS Protocol Block.

#### Router-ID (R)

This I2RS BGP IM element stores the ROUTER-ID which is configured in the BGP protocol as the default router-id. Instances of a protocol may configure unique router-IDs. The router-ID is a 32 bit unsigned value imported from the running BGP process.

#### Router-ID (W)

Upon a write from the I2RS Client to this I2RS BGP IM element, this I2RS Agent will temporarily change this default in the BGP protocol. I2RS Agent-routing system software must be able to handle both the original value (from node configuration systems), and the I2RS value as valid defaults. This change in the ROUTER-ID default is passed to the BGP instances spawned from the BGP

protocol. After the I2RS Client stops the relationship with the I2RS Agent, the Router-ID value reverts to the configured value.

#### AS(R/W)

This I2RS BGP IM element stores the default AS number configured in the BGP implementation. This value is 8 byte value represented as a decimal value. This value is a read-write value. The initial value of the AS is imported by the I2RS Agent from the BGP protocol in the BGP routing system. This the normal case. If this data element is written to, I2RS stores the default AS number value in the BGP protocol as the new default AS in the BGP protocol. This does not change the default AS number in existing BGP instances with the existing peers. New BGP instances spawned after the I2RS changes the default AS value, should have the I2RS specified default AS. Upon the completion of the I2RS client-I2RS Agent association, the default AS value should be returned to the configured value.

#### protocol\_status (R)

This I2RS BGP IM element stores an administrative status for the protocol activity of "no-shutdown" (0x00) or "shutdown" (0x01). If the routing entity the I2RS protocol is attached has BGP "shutdown", no data will be available from any BGP instances. This is a read-only variable.

#### shutdown\_protocol(R/W)

A write of "TRUE" to the "shutdown\_protocol" status in the I2RS Agent indicates the I2RS agent should request a shutdown of the BGP protocol from the routing function. The default value is "FALSE" for this I2RS variable. The read of the "shutdown\_protocol" indicate the current status of the "shutdown\_protocol" variable in the I2RS Agent. This is different than the "protocol\_status" which indicates the status of the protocol: shutdown or not "shutdown" (running).

#### bgp\_role (R)

The BGP\_ROLE provides a list of BGP Roles found within the BGP Instances associated with the BGP protocol function on the device associated with the I2RS agent. These can be ASBR (AS border router E-BGP), PE (Provider Edge E-BGP), IBGP peer, or RR (Route Reflector).

#### bgp-ipv4-uni-instance (R-W)

This element BGP instances provides support for IPv4 unicast , and contains the associated bgp local rib, bgp peer list, bgp rib-in, and bgp-rib-out associated with IPv4 Unicast.

bgp-labeled-ipv4-instance (R-W)

This element provides the bgp instance with routes associated with label routes. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-ipv4-multi-instance (R-W)

This element contains an bgp instance for IPv4 multicast. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-vpnv4-instance (R-W)

This element contains BGP instance IPv4 VPNs. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-ipv4-L3vpn-instance-list\* (R-W)

This element contains BGP instance IPv4 VPNs. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-ipv6-uni-instance (R-W)

This element contains BGP instance IPv6 unicast routes. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-labeled-ipv6-instance (R-W)

This element provides the bgp instance with routes associated with label routes. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-ipv6-multi-instance(R-W)

This element contains an bgp instance for IPv6 multicast. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

bgp-vpnv6-instance (R-W)

This element contains BGP instance IPv6 VPNs. (Contains bgp local rib, bgp peer list, bgp rib-in, and bgp rib-out for these routes).

`bgp-ipv6-L3vpn-instance-list*` (R-W)

This element contains BGP instance IPv4 VPNs. (Contains `bgp local rib`, `bgp peer list`, `bgp rib-in`, and `bgp rib-out` for these routes).

3.2. `bgp_ipv4_instance`

BGP protocol support within a router(or virtual routing device) may have multiple instances of the BGP protocol. This section describes the information regarding the BGP protocol available to the I2RS Agent. The section begins with a top-level diagram of the Yang Data Model, and then goes to define the Yang data model in text.

3.2.1. Yang Data Model `bgp ipv4 unicast instance`

This figure below the yang model at `bgp instance` to handle the `bgp instance`. Within Yang, the definition is based on a a grouping which has name, I2rs creation flags, standard instance type, vendor type, `afi`, `safi`, `bgp local RIB`, and BGP peers. The standard instances types are: IPv4 unicast, IPv4 multicast, IPv4 L3vpn, VPLS, MDT, EVPN, BGP-ls, IPv4-mpls-vpn, IPv4-mpls-mvpn, BGP route-targets, IPv4 flow, IPv4 vpn-flow, IPv4 vrf-list, IPv6 vrf-list, and IPv6 unit, and IPv6 vpv6. It also could contain instance types defined by vendors (`bgp-vendor-type`). This informational model contains the details of the instance grouping and its subcomponents: `bgp-instance-name`, `bgp-instance-create`, `bgp-instance-type` `bgp-vendor-type`, `afi`, `safi`, `bgp-local-rib`, and `bgp-peer list`. It does not enumerate these for each of the instance types, but provides a full yang tree of this definition in section x.

```

+--rw bgp-ipv4-uni-instance
|   +--rw bgp-instance-name?      string
|   +--rw bgp-instance-create?    enumeration
|   +--rw bgp-instance-type?      enumeration
|   +--rw bgp-vendor-type?        enumeration
|   +--rw afi?                    afi-def
|   +--rw safi?                   safi-def
|   +--rw bgp-local-rib
=.....
|   +--rw bgp-peer-list* [bgp-peer-name]
.....

```

3.2.2. Elements in `bgp ipv4 unicast instance`

The definitions of the fields in BGP Instance are:

`BGP_INSTANCE_NAME` (R/W)



The BGP\_INSTANCE\_NAME provides a name to uniquely identify the BGP instance.

#### BGP\_INSTANCE\_CREATION(R/W)

is the flag to indicate whether the I2RS client is requesting the I2RS agent to have the BGP routing protocol create a new BGP instance for these I2RS parameters. The internal status includes:

- \* Not I2RS created (NOT-I2RS),
- \* I2RS client requests creation (I2RSCLIENT\_CREATE\_BGP\_INSTANCE),
- \* I2RS Agent rejects creation (I2RSAGENT\_REJECTS\_BGP\_INSTANCE\_CREATE),
- \* I2RS Agent attempting creation (I2RSAGENT\_ATTEMPTS\_BGP\_INSTANCE\_CREATE), and
- \* I2RS Agent failed creation (I2RSAGENT\_FAILS\_BGP\_INSTANCE\_CREATE)
- \* I2RS Agent created BGP instance (I2RSAGENT\_CREATED\_BGP\_INSTANCE)

#### BGP\_INSTANCE\_TYPE (R/W)

contains flag field that summarizes common AFI-SAFIs within a flag word. This enumeration

- \* BGP\_IPV4\_UNI flag - is a flag for AFI of IPV4 and a SAFI of Unicast (1).
- \* BGP\_IPV4\_MULTI flag - is a flag for AFI of IPV4 and a SAFI Multicast (2).
- \* BGP\_L3VPN I is a flag for AFI of IPv4 and a SAFI of MPLS labels (4).
- \* BGP\_IPv4\_MVPN- is a flag for AFI of IPv4 and a SAFI of MCAST VPN (5).
- \* BGP\_VPLS - is a flag for an AFI of IPv4 and a SAFI VPLS (65).
- \* BGP\_IPV4\_MDT - is a flag for AFI of IPv4 and a SAFI of BGP MDT (66).
- \* BGP\_EVPN - is a flag for APFI of IPv4 and SAFI of EVPNs (70)

- \* BGP\_LS - is a flag for an AFI of IPv4 and a SAFI of BGP link state (LS) (71).
- \* BGP\_IPV4\_MPLS\_VPN - is a flag for an AFI of IPv4 and a SAFI MPLS-labeled Unicast VPNS (128).
- \* BGP\_IPv4\_MPLS\_MVPN - is a flag for an AFI of IPv4 and a SAFI MPLS-labeled Multicast VPNS (129).
- \* BGP\_IPv4\_ROUTE\_TARGET - is a flag for the AFI of IPv4 and a SAFI of Route Target Constraints (132)
- \* BGP\_IPv4\_FLOW - is a flag for an AFI of IPv4 and a SAFI of IPv4 dissemination of flow specification rules (133).
- \* BGP\_IPv4\_VPN\_FLOW - is a flag for an AFI of IPv4 and a SAFI of IPv4 VPN dissemination of flow specification rules(134).
- \* BGP\_L2AD - is a flag for an AFI of IPv4 and a SAFI L2 Auto-discovery (140)
- \* BGP\_IPv6\_UNI - is a flag for AFI of IPv6 and SAFI of Unicast (1)
- \* BGP\_IPv6\_MULTI - is a flag for API of IPv65 and a SAFI of Multicast (2)
- \* BGP\_IPV6\_MPLS\_VPN - is a flag for AFI of IPV4 and SAFI of Unicast MPLS VPNS.

#### BGP\_VENDOR\_TYPE(R/W)

contains a field to specify Vendor to identify different mechanism of BGP configuration.

#### AFI (R/W)

The AFI value from the standard values found in IANA's Address Family Numbers.

#### SAFI (R/W)

The AFI value from the standard values found in IANA's SAFI values.

#### bgp-local-rib (R/W)

The `bgp-local-rib` contains the contains a local RIB for BGP associated with this BGP instance. Every BGP instance has its own local RIB which contains the routes received by all Peers (Adj-RIB-IN per Peer), and selected by policy as the active route by the local BGP speaker's Decision Process.

#### `bgp-peer-list` (R/W)

contains a list of BGP Peer information (`BGP_PEER`) associated with this BGP instance. A write to this BGP Peer list adds a BGP Peer to this BGP instance.

#### `rib-in` (R/W)

This contains `bgp-rib-in` route list.

#### `rib-out` (R/W)

This contains `bgp-rib-out` route list.

### 3.3. `bgp local rib`

The routes associated with each BGP instance are the BGP local RIB, the AdjRIBIn, and the AdjRIBOut. The BGP local RIB is described below. The AdjRIBIn is the `bgp_rib_in` described in the `BGP_Peer` section. The policy that sets preferences on the routes received by the peer is identified by the `Peer_policy_in` (an policy set name), and fully readable by the `Peer_policy_in_pset` (policy set pointer) entry.

The AdjRIBOut is contained in `bgp_rib_out` (a route list) described in the BGP Peer Section. The Policy associated with the AdjRIBOut is identified by the `Peer_policy_out` (a policy set name) and fully readable by the `Peer_policy_out_pset` (policy set pointer).

This section describes the `bgp local ribs` for IPv4 unicast routes as a prototype for all rib routes.

Each `bgp local RIB` listed below may be created and stored as a prefix tree. However, yang model descriptions describe it as a list of routes with an index of prefix and length. The above top-level yang demonstrates this. This yang mechanism requires a unique definition per AFI/SAFI.

Each rib is indexed by the prefix/prefix-length and contains route type, attribute list, route creation information, and state information. The IPv4 local RIB shows the full definition of the

route type, attribute list, route creation, and state information. Subsequent RIBs do not repeat this information.

### 3.3.1. bgp-local-rib for IPv4 routes

This section contains the overview of the bgp-local-rib for IPv4 routes, and serves as a prototype for all other ribs.

#### 3.3.1.1. Yang Top-level for bgp-local-rib for IPv4 routes

This section describes the high-level yang definition for a local RIB with IPv4 routes. This serves as an prototype of all bgp-local-ribs.

```

+--rw bgp-local-rib
|
|  +--rw bgp-route-list* [ipv4-route ipv4-prefix-length]
|  |
|  |  +--rw ipv4-route          inet:ipv4-prefix
|  |  +--rw ipv4-prefix-length  uint8
|  |  +--rw bgp-route-type?     enumeration
|  |  +--rw bgp-attribute-list
|  |  |
|  |  |  +--rw bgp-origin?      enumeration
|  |  |  +--rw bgp-aspath
|  |  |  |
|  |  |  |  +--rw usascount?     uint16
|  |  |  |  +--rw ulrefcount?    uint16
|  |  |  |  +--rw asstring?     string
|  |  |  |  +--ro usascountfrcomp? uint16
|  |  |  |  +--rw usastotalcount? uint16
|  |  |  |  +--rw usas4pathlen?  uint16
|  |  |  |  +--rw as4pathvalue?  string
|  |  |  +--rw bgp-nexthop?     inet:ip-address
|  |  |  +--rw bgp-med?         uint32
|  |  |  +--rw bgp-localpref?   uint32
|  |  |  +--rw bgp-atomic-aggregate? uint32
|  |  |  +--rw bgp-aggregator
|  |  |  |  +--rw ulipaddress?    uint32
|  |  |  |  +--rw ulasnumber?    uint32
|  |  |  +--rw bgp-commattr
|  |  |  |  +--rw uscommsize?     uint16
|  |  |  |  +--rw ulrefcomm?     uint32
|  |  |  |  +--rw commattr-value? string
|  |  |  +--rw bgp-extcommattr
|  |  |  |  +--rw usextcommsize?  uint16
|  |  |  |  +--rw ulrefcount?    uint32
|  |  |  |  +--rw extcommattr-value? string
|  |  |  +--rw bgp-clusterlist
|  |  |  |  +--rw uscluslen?     uint16
|  |  |  |  +--rw ulrefclus?    uint32
|  |  |  |  +--rw clusterlist-value? string
|  |  |  +--rw bgp-originator-id? uint32
|  |  +--ro bgp-route-create?    enumeration
|  |  +--ro bgp-rt-state-info
|  |  |  +--ro rib-current-state?  rib-state-def
|  |  |  +--ro rib-last-state?    rib-state-def
|  |  |  +--ro rib-rejected-reason? enumeration
|  |  |  +--ro not-preferred-reason? enumeration

```

### 3.3.1.2. Common definitions for bgp-local-rib for IPv4 routes

The BGP Local RIB Entries are:

BGP\_ROUTE\_TYPE(R/W)

contains a ROUTE TYPE indicator (enumerated type). The enumerated types are:

- \* `bgp-route-type-rd` - route with RD information
- \* `bgp-route-type-ipv4` - IPv4 unicast route
- \* `bgp-route-type-ipv6` - IPv6 unicast route
- \* `bgp-route-labeled-ipv4` - IPv4 with labels attached
- \* `bgp-route-labeled-ipv6` - IPv6 associated labels
- \* `bgp-route-type-flow` - flow specifications
- \* `bgp-route-type-evpn` - EVPN API/SAFI
- \* `bgp-route-type-mvpn` - Multicast VPN
- \* `bgp-route-type-vpls` - VPLS routes
- \* `bgp-route-type-bgp-ls` - BGP Link-state distribution info
- \* `bgp-route-type-l2vpn-signaling-nlri` - L2VPN signalling NLRI
- \* `bgp-rt-constraint` - constraint RT AFI/SAFI
- \* `pw-route` - pseudo-wire route

#### `bgp-attribute-list` (R/W)

contains a list of bgp attributes of the following BGP attributes

- \* `bgp-origin` - origin of BGP route (IGP, EGP or incomplete)
- \* `bgp-aspath` structure which contains use count (`usascount`), reference count (`ulrefcount`), AS (in string form), length of as sequence (`usascountfrcmp`), total number of as in path count (`usastotalcount`), length of 4-byte AS path tlvs (`usaspathlen`), and string with 4-byte AS path value (`as4pathvalue`).
- \* `bgp-nexthop` - BGP next hop
- \* `bgp-med` - Multi-Exit Discriminator
- \* `bgp-localpref` - Local Preference for route
- \* `bgp-atomic-aggregation` - ID for aggregator

- \* `bgp-aggregator` -IPv4 address (4 bytes) (`ulipaddress`), AS number (4 byte) (`ulasnumber`)
- \* `bgp-community` attribute (`bgp-comm-attr`) which contains: size of community attribute (`uscommsize`), reference count (`ulrefcomm`), and value (`string`).
- \* `bgp extended community` which contains: size of community attribute (`usexcommsize`), reference count (`ulrefcount`), and external community value (`string`)(`extcommattr-value`),
- \* `bgp cluster list` which contains: lengthof cluster lists (`uscluslen`), reference count (`ulrefclus`), list of values (`string`)(`clusterlist-value`)

#### `bgp_route_creation` (R/W)

provides the status of the creation of a BGP route requested by a I2RS Client to I2RS agent to be created in the BGP instance's local route. The status includes the following:

- \* `not-i2rs` - routes created by non-I2RS sources
- \* `i2rs-client-create-bgp-route` - client requests a bgp local route created
- \* `i2rsagent-fails-bgp-route-create` - I2rs agent fails to create bgp local rib route
- \* `i2rsagent-bgp-route-created` - I2rsagent created this bgp local rib route
- \* `i2rsagent-rejects-bgp-route-create` - I2rs agent policy rejects attempt
- \* `i2rsagent-attempts-bgp-route-create` - route create in process

#### `bgp_status_info` (R/W)

contains a set of BGP status that includes:

- \* `rt_rib_current_state`
- \* `rt_rib_last_state`
- \* `rt_rib_reject_reason`
- \* `rt_not_preferred`

### 3.4. BGP Peer

This section describes the BGP peer structure.

#### 3.4.1. Yang Top Level for BGP Peer

```

+--rw bgp-peer-list* [bgp-peer-name]
  +--rw peer-session-address
  |   +--rw local-ipv4-address?    inet:ipv4-prefix
  |   +--rw remote-ipv4-address?  inet:ipv4-prefix
  +--rw bgp-peer-name              string
  +--ro bgp-peer-type?             enumeration
  +--ro bgp-peer-create?          enumeration
  +--rw bgp-policy-in
  +--rw bgp-policy-out
  +--ro peer-policy-in-pset
  +--ro peer-policy-out-pset
  +--rw peer-state-info
  |   +--ro peer-current-state?    peer-state
  |   +--ro peer-last-state?      peer-state
  |   +--ro peer-down-reason
  |   |   +--ro error-code?        enumeration
  |   |   +--ro sub-error-code
  |   |   |   +--ro (sub-error-code-type)?
  |   |   |   |   +--:(head-error-sub-code)
  |   |   |   |   |   +--ro head-error-sub-value?  enumeration
  |   |   |   |   +--:(open-error-sub-code)
  |   |   |   |   |   +--ro open-error-sub-value?  enumeration
  |   |   |   |   +--:(update-error-sub-code)
  |   |   |   |   |   +--ro update-error-sub-value? enumeration
  |   |   |   |   +--:(route-refresh-error-sub-code)
  |   |   |   |   |   +--ro route-refresh-error-sub-value?
  |   |   |   |   |   |   enumeration
  |   +--ro peer-received-update-cnt?  uint64
  |   +--ro peer-transmit-update-cnt?  uint64
  |   +--ro peer-received-route-cnt?   uint64
  |   +--ro peer-send-route-cnt?      uint64
  |   +--rw max-prefix-rcv-limit?     uint64
  |   +--rw max-prefix-xmt-limit?     uint64
  |   +--ro peer-prefix-high?        uint64
  |   +--ro peer-prefix-low?         uint64
  |   +--ro peer-prefix-ave?         uint64
  |   +--ro peer-prefix-time?        uint64
  |   +--ro peer-prefix-max?         uint64
  |   +--ro publish-version?         uint64
  +--rw bgp-rib-in
  |   +--rw bgp-rib-in-list* [ipv4-route ipv4-prefix-length]

```



```

    +--rw ipv4-route                inet:ipv4-prefix
    +--rw ipv4-prefix-length        uint8
    +--rw bgp-route-type?           enumeration
    +--rw bgp-attribute-list
        ....
    +--ro bgp-route-create?         enumeration
    +--ro bgp-rt-state-info
        ....
+--rw bgp-rib-out
  +--rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length]
    +--rw ipv4-route                inet:ipv4-prefix
    +--rw ipv4-prefix-length        uint8
    +--rw bgp-route-type?           enumeration
    +--rw bgp-attribute-list
        ....
    +--ro bgp-route-create?         enumeration
    +--ro bgp-rt-state-info
        ....

```

### 3.4.2. Elements in BGP peer Structure

The following are the elements in the BGP\_Peer structure

#### BGP\_PEER\_NAME (R/W)

This entry uniquely names a BGP Peer. If multiple TCP connections are utilized between two BGP Peers, then the BGP Peer uniquely identifies the Peering. An I2RS Write to a BGP\_PEER\_NAME changes the BGP\_PEER\_NAME For the duration of the I2RS client-agent association for the run-time BGP, but it does not change the configured BGP Peer name.

#### Peer\_Session\_Address (R/W)

provides local peer address information and remote peer address information. Please see the description below for the details of the BGP session address. An I2RS read of this information pulls this information pulls up the the BGP Peer data in ephemeral store. The I2RS write to this causes the peer to attempt to set-up a TCP session either initial TCP session or a second TCP session in with multiple TCP support

#### BGP\_PEER\_TYPE (R/W)

contains the status on the type of BGP such as EBGp, IBGP, RR, RR-Client, PE, or CE. or Vendor specific types. (I2RS Note: Does this match normal configuration expectation or should this be an I2RS special variable)

## BGP\_Peer\_create(R/W)

provides the I2RS creation status for this peer as: not-created by I2RS, requested by client but not processed, or an I2RS agent's response to the request: (agent reject peer creation, agent attempting peer creation, Agent failed peer creation, and Agent created BGP Peer).

## Peer\_policy\_in (R/W)

- This allows reference of the bgp inbound policy by policy set name. Policy sets are defined by [RFC3460], and refers to the name of the policy set. This allows I2RS to read/write the policy set name, and let the I2RS agent link in the appropriate policy set.

## Peer\_policy\_out (R/W)

- This allows reference of the outbound policy by policy set names, and let the I2RS agent load an existing policy set.

## Peer\_policy\_in\_pset (R/W)

Full policy set loaded for Peer\_policy\_in\_pset.

## Peer\_policy\_in\_pset (R/W)

Full policy set loaded for Peer\_policy\_in\_pset.

## Peer state info (ro)

includes the following information:

- \* Peer\_current\_state (R) the the current state of the BGP Peer in the BGP state machine.
- \* Peer\_last\_state (R)
- \* Peer\_down\_reason (R) which includes the reason and the sub-error codes for bgp header errors, bgp open errors, bgp update errors, and bgp route refresh errors
- \* peer-received-update-cnt (ro) - received
- \* peer-transmit-update-cnt (ro)
- \* peer-received-route-cnt (ro)

- \* peer-send-route-cnt (ro)
- \* peer-max-prefix-rcv-limit (rw)
- \* peer-max-prefix-xmt-limit(rw)
- \* peer-prefix-high (ro)
- \* peer-prefix-low (ro)
- \* peer-prefix-ave (ro)
- \* peer-prefix-time (ro)
- \* peer-prefix-max (ro)
- \* publish-version (ro)

#### bgp\_rib\_in

Route received (AdjRIBIn) in tree expressed in yang as a list of routes index by IPv4-route and Ipv4-prefix-length. Each route contains the following:

- \* bgp-route-type (rw) - type of route (described above)
- \* bgp-attribute-list (rw) - described above)
- \* bgp-route-create (ro) - source config or I2RS create status (described above)
- \* bgp-route-state (ro) - state of route (described above)

#### bgp\_rib\_out (R/W)

- Route output (AdjRIBOut) in tree expressed in yang as a list of routes index by IPv4-route and Ipv4-prefix-length. Each route contains the following:

- \* bgp-route-type (rw) - type of route (described above)
- \* bgp-attribute-list (rw) - described above)
- \* bgp-route-create (ro) - source config or I2RS create status (described above)
- \* bgp-route-state (ro) - state of route (described above)

### 3.4.3. Reading/Writing Policy in I2RS IM model for BGP Peer

The I2RS Agent's peer inbound and outbound policies are logically considered to be stored in policy sets that logically are defined in [RFC3460] but have the additions to be appropriate for I2RS basic network policy as described [I-D.hares-i2rs-bnp-info-model]. Policy groups uniquely identified by a Policy name. Policy sets are described either by name so that an on-board policy set is associated with the I2RS control BGP peer, or by full policy sets (-pset). This section describes why the choice to allow both name for pre-loaded policy sets and full policy set description.

Some I2RS clients will have long-term connections to I2RS Agents associated with a BGP routing function, and may choose to transfer the BGP Policy set or a set of the BGP Policy Components to the client's local memory. In this case, the I2RS Client could request the I2RS Agent to simply transfer the BGP Policy Sets name used by for the BGP Peers to minimize travel along with an indication of the last time the policy was updated.

The policy variables Peer\_policy\_in and Peer\_policy\_out allow both read and write of the Policy set names. The read of the Peer\_policy\_in and Peer\_policy\_out will provide simply the policy-set name. The write of the Peer\_policy\_in the I2RS agent will need to valid the the policy set name. After the policy set name is validated, the policy set link is placed in Peer\_policy\_in\_pset and the BGP routing function updated with the policy set lists for the BGP Peer.

Similarly, if a write occurs to I2RS Agent's Peer\_policy\_out, the I2RS agent validates the policy-set name , replaces Peer\_policy\_out\_pset with the link to the policy-set identified by the Policy-set name.

Reading either Peer\_policy\_in\_pset will result in the I2RS Agent passing the policy linked to by the Peer\_policy\_in name (and linked to by Peer\_policy\_in\_pset) to the I2RS Client in policy set form. Similarly, reading the Peer\_policy\_out\_pset will retrieve the policy set pointed to by the Peer\_policy\_out name, and transfer the data in policy set form.

### 3.5. Additional variable used within all RIBS

The following additional variables are defined in the additional routes types.

- o route-distinguisher (R/W) - defined as route-distinguisher-def

- o mpls-label (R/W) - defined as 24 bit mpls labels
- o EVPN\_AD\_ROUTE (R/W) contains the following
  - \* route-type - EVPN route type
  - \* route-distinguisher - EVPN route distinguisher
  - \* esi - string
  - \* eth-tag-id - 32 bit ethernet tag
- o evpn-mac-route contains the following
  - \* route-type (r/w) - evpn-route-type
  - \* route-distinguisher (r/w)
  - \* esi (r/w) - string
  - \* eth-tag-id (r/w) 32 bit ethernet tag
  - \* mac-length (r/w) - length mac address (uint8)
  - \* mac-address (r/w)
  - \* ip-address-length (r/w) (uint8)
  - \* ip-address (r/w)
  - \* label 1 (r/w) (uint32)
  - \* label 2 (r/2) (uint32)
- o evpn-mcast-tree-route contains the following
  - \* route-type (r/w)
  - \* route-distinguisher (r/w)
  - \* eth-tag-id (r/w) ethernet tag id
  - \* ip address-length (r/w) uint32
  - \* origin-router-ip-address (r/w)
- o evpn-eth-segment-route contains the following:

- \* route-type (r/w) - evpn-route-type
- \* route-distinguisher (r/w)
- \* esi (r/w) - string ethernet segment id
- \* ip address length(r/w) uint8
- \* origin-router-ip-address (r/w)
- \* FLOW\_route (R/W) - to be completed
- \* MDT route (R/W) - to be completed

#### 4. BGP Yang top-level description

Below is the full BGP Yang top-level description

```

module: bgp-protocol
  +--rw bgp-protocol
    +--rw router-id?                inet:ip-address
    +--rw as-number?                uint32
    +--ro protocol-status?         enumeration
    +--rw shutdown-protocol?       boolean
    +--ro bgp-role?                 enumeration
    +--rw bgp-ipv4-uni-instance
      +--rw bgp-instance-name?     string
      +--rw bgp-instance-create?  enumeration
      +--rw bgp-instance-type?    enumeration
      +--rw bgp-vendor-type?      enumeration
      +--rw afi?                   afi-def
      +--rw safi?                   safi-def
    +--rw bgp-local-rib
      +--rw bgp-route-list* [ipv4-route ipv4-prefix-length]
        +--rw ipv4-route            inet:ipv4-prefix
        +--rw ipv4-prefix-length    uint8
        +--rw bgp-route-type?      enumeration
        +--rw bgp-attribute-list
          +--rw bgp-origin?        enumeration
          +--rw bgp-aspath
            +--rw usascount?        uint16
            +--rw ulrefcount?      uint16
            +--rw asstring?        string
            +--ro usascountfrcomp?  uint16
            +--rw usastotalcount?  uint16
            +--rw usas4pathlen?    uint16
            +--rw as4pathvalue?    string
          +--rw bgp-nexthop?       inet:ip-address
  
```

```

|--rw bgp-med?                uint32
|--rw bgp-localpref?         uint32
|--rw bgp-atomic-aggregate?  uint32
|--rw bgp-aggregator
|   |--rw ulipaddress?       uint32
|   |--rw ulasnumber?       uint32
|--rw bgp-commattr
|   |--rw uscommsize?        uint16
|   |--rw ulrefcomm?        uint32
|   |--rw commattr-value?   string
|--rw bgp-extcommattr
|   |--rw usextcommsize?    uint16
|   |--rw ulrefcount?       uint32
|   |--rw extcommattr-value? string
|--rw bgp-clusterlist
|   |--rw uscluslen?        uint16
|   |--rw ulrefclus?        uint32
|   |--rw clusterlist-value? string
|--rw bgp-originator-id?     uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-peer-list* [bgp-peer-name]
|   +--rw peer-session-address
|   |   |--rw local-ipv4-address?  inet:ipv4-prefix
|   |   |--rw remote-ipv4-address? inet:ipv4-prefix
|   +--rw bgp-peer-name          string
|   +--ro bgp-peer-type?          enumeration
|   +--ro bgp-peer-create?        enumeration
|   +--rw bgp-policy-in
|   +--rw bgp-policy-out
|   +--ro peer-policy-in-pset
|   +--ro peer-policy-out-pset
|   +--rw peer-state-info
|   |   +--ro peer-current-state?  peer-state
|   |   +--ro peer-last-state?    peer-state
|   |   +--ro peer-down-reason
|   |   |   +--ro error-code?      enumeration
|   |   |   +--ro sub-error-code
|   |   |   |   +--ro (sub-error-code-type)?
|   |   |   |   |   +--:(head-error-sub-code)
|   |   |   |   |   |   +--ro head-error-sub-value?      enumeratio
|   |   |   |   |   |   +--:(open-error-sub-code)
|   |   |   |   |   |   |   +--ro open-error-sub-value?  enumeratio
|   |   |   |   |   |   |   +--:(update-error-sub-code)

```

n

n





```

n | | | | | +--ro update-error-sub-value?          enumeratio
n | | | | | +---:(route-refresh-error-sub-code)
  | | | | | +--ro route-refresh-error-sub-value?    enumeratio
  | | | | |
  | | | | | +--ro peer-received-update-cnt?        uint64
  | | | | | +--ro peer-transmit-update-cnt?        uint64
  | | | | | +--ro peer-received-route-cnt?         uint64
  | | | | | +--ro peer-send-route-cnt?             uint64
  | | | | | +--rw max-prefix-rcv-limit?            uint64
  | | | | | +--rw max-prefix-xmt-limit?            uint64
  | | | | | +--ro peer-prefix-high?                uint64
  | | | | | +--ro peer-prefix-low?                uint64
  | | | | | +--ro peer-perfix-ave?                 uint64
  | | | | | +--ro peer-prefix-time?               uint64
  | | | | | +--ro peer-prefix-max?                 uint64
  | | | | | +--ro publish-version?                 uint64
+--rw bgp-rib-in
+--rw bgp-rib-in-list* [ipv4-route ipv4-prefix-length]
+--rw ipv4-route                                inet:ipv4-prefix
+--rw ipv4-prefix-length                        uint8
+--rw bgp-route-type?                           enumeration
+--rw bgp-attribute-list
+--rw bgp-origin?                               enumeration
+--rw bgp-aspath
+--rw usascount?                                uint16
+--rw ulrefcount?                               uint16
+--rw asstring?                                 string
+--ro usascountfrcomp?                          uint16
+--rw usastotalcount?                           uint16
+--rw usas4pathlen?                             uint16
+--rw as4pathvalue?                             string
+--rw bgp-nexthop?                              inet:ip-address
+--rw bgp-med?                                  uint32
+--rw bgp-localpref?                            uint32
+--rw bgp-atomic-aggregate?                     uint32
+--rw bgp-aggregator
+--rw ulipaddress?                              uint32
+--rw ulasnumber?                               uint32
+--rw bgp-commattr
+--rw uscommsize?                               uint16
+--rw ulrefcomm?                                uint32
+--rw commattr-value?                           string
+--rw bgp-extcommattr
+--rw usextcommsize?                            uint16
+--rw ulrefcount?                               uint32
+--rw extcommattr-value?                        string
+--rw bgp-clusterlist
+--rw uscluslen?                                uint16
+--rw ulrefclus?                                uint32

```



```

| | | +--rw clusterlist-value?  string
| | +--rw bgp-originator-id?    uint32
+--ro bgp-route-create?         enumeration
+--ro bgp-rt-state-info
  +--ro rib-current-state?      rib-state-def
  +--ro rib-last-state?        rib-state-def
  +--ro rib-rejected-reason?    enumeration
  +--ro not-preferred-reason?   enumeration
+--rw bgp-rib-out
  +--rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length]
  +--rw ipv4-route              inet:ipv4-prefix
  +--rw ipv4-prefix-length      uint8
  +--rw bgp-route-type?        enumeration
  +--rw bgp-attribute-list
    +--rw bgp-origin?          enumeration
    +--rw bgp-aspath
      +--rw usascount?         uint16
      +--rw ulrefcount?        uint16
      +--rw asstring?          string
      +--ro usascountfrcomp?   uint16
      +--rw usastotalcount?    uint16
      +--rw usas4pathlen?     uint16
      +--rw as4pathvalue?     string
    +--rw bgp-nexthop?         inet:ip-address
    +--rw bgp-med?             uint32
    +--rw bgp-localpref?       uint32
    +--rw bgp-atomic-aggregate? uint32
    +--rw bgp-aggregator
      +--rw ulipaddress?       uint32
      +--rw ulasnumber?        uint32
    +--rw bgp-commattr
      +--rw uscommsize?         uint16
      +--rw ulrefcomm?         uint32
      +--rw commattr-value?    string
    +--rw bgp-extcommattr
      +--rw usextcommsize?     uint16
      +--rw ulrefcount?        uint32
      +--rw extcommattr-value? string
    +--rw bgp-clusterlist
      +--rw uscluslen?         uint16
      +--rw ulrefclus?         uint32
      +--rw clusterlist-value? string
    +--rw bgp-originator-id?   uint32
+--ro bgp-route-create?         enumeration
+--ro bgp-rt-state-info
  +--ro rib-current-state?      rib-state-def
  +--ro rib-last-state?        rib-state-def
  +--ro rib-rejected-reason?    enumeration

```

```

|          +--ro not-preferred-reason?  enumeration
+--rw bgp-labeled-ipv4-instance
|   +--rw bgp-instance-name?           string
|   +--rw bgp-instance-create?         enumeration
|   +--rw bgp-instance-type?           enumeration
|   +--rw bgp-vendor-type?             enumeration
|   +--rw afi?                          afi-def
|   +--rw safi?                          safi-def
|   +--rw bgp-local-rib
|   |   +--rw bgp-route-list* [ipv4-route ipv4-prefix-length mpls-label]
|   |   |   +--rw ipv4-route                inet:ipv4-prefix
|   |   |   +--rw ipv4-prefix-length        uint8
|   |   |   +--rw mpls-label                mpls-label-def
|   |   |   +--rw bgp-route-type?          enumeration
|   |   |   +--rw bgp-attribute-list
|   |   |   |   +--rw bgp-origin?            enumeration
|   |   |   |   +--rw bgp-aspath
|   |   |   |   |   +--rw usascount?         uint16
|   |   |   |   |   +--rw ulrefcount?       uint16
|   |   |   |   |   +--rw asstring?         string
|   |   |   |   |   +--ro usascountfrcomp?  uint16
|   |   |   |   |   +--rw usastotalcount?   uint16
|   |   |   |   |   +--rw usas4pathlen?    uint16
|   |   |   |   |   +--rw as4pathvalue?    string
|   |   |   |   +--rw bgp-nexthop?         inet:ip-address
|   |   |   |   +--rw bgp-med?              uint32
|   |   |   |   +--rw bgp-localpref?       uint32
|   |   |   |   +--rw bgp-atomic-aggregate? uint32
|   |   |   |   +--rw bgp-aggregator
|   |   |   |   |   +--rw ulipaddress?      uint32
|   |   |   |   |   +--rw ulasnumber?      uint32
|   |   |   |   +--rw bgp-commattr
|   |   |   |   |   +--rw uscommsize?       uint16
|   |   |   |   |   +--rw ulrefcomm?       uint32
|   |   |   |   |   +--rw commattr-value?  string
|   |   |   |   +--rw bgp-extcommattr
|   |   |   |   |   +--rw usextcommsize?   uint16
|   |   |   |   |   +--rw ulrefcount?     uint32
|   |   |   |   |   +--rw extcommattr-value? string
|   |   |   |   +--rw bgp-clusterlist
|   |   |   |   |   +--rw uscluslen?       uint16
|   |   |   |   |   +--rw ulrefclus?      uint32
|   |   |   |   |   +--rw clusterlist-value? string
|   |   |   |   +--rw bgp-originator-id?  uint32
|   |   +--ro bgp-route-create?           enumeration
|   +--ro bgp-rt-state-info
|   |   +--ro rib-current-state?          rib-state-def
|   |   +--ro rib-last-state?            rib-state-def

```

```

|         |--ro rib-rejected-reason?      enumeration
|         |--ro not-preferred-reason?     enumeration
+--rw bgp-peer-list* [bgp-peer-name]
  |--rw peer-session-address
  |   |--rw local-ipv4-address?          inet:ipv4-prefix
  |   |--rw remote-ipv4-address?        inet:ipv4-prefix
  |--rw bgp-peer-name                    string
  |--ro bgp-peer-type?                    enumeration
  |--ro bgp-peer-create?                  enumeration
  |--rw bgp-policy-in
  |--rw bgp-policy-out
  |--ro peer-policy-in-pset
  |--ro peer-policy-out-pset
  |--rw peer-state-info
  |   |--ro peer-current-state?           peer-state
  |   |--ro peer-last-state?             peer-state
  |   |--ro peer-down-reason
  |   |   |--ro error-code?              enumeration
  |   |   |--ro sub-error-code
  |   |   |   |--ro (sub-error-code-type)?
  |   |   |   |   |--:(head-error-sub-code)
  |   |   |   |   |   |--ro head-error-sub-value?      enumeratio
n
  |   |   |   |   |   |--:(open-error-sub-code)
  |   |   |   |   |   |   |--ro open-error-sub-value?  enumeratio
n
  |   |   |   |   |   |--:(update-error-sub-code)
  |   |   |   |   |   |   |--ro update-error-sub-value? enumeratio
n
  |   |   |   |   |   |--:(route-refresh-error-sub-code)
  |   |   |   |   |   |   |--ro route-refresh-error-sub-value? enumeratio
n
  |   |--ro peer-received-update-cnt?    uint64
  |   |--ro peer-transmit-update-cnt?    uint64
  |   |--ro peer-received-route-cnt?     uint64
  |   |--ro peer-send-route-cnt?         uint64
  |   |--rw max-prefix-rcv-limit?        uint64
  |   |--rw max-prefix-xmt-limit?        uint64
  |   |--ro peer-prefix-high?            uint64
  |   |--ro peer-prefix-low?             uint64
  |   |--ro peer-perfix-ave?             uint64
  |   |--ro peer-prefix-time?            uint64
  |   |--ro peer-prefix-max?             uint64
  |   |--ro publish-version?             uint64
+--rw bgp-rib-in
  |--rw bgp-rib-in-list* [ipv4-route ipv4-prefix-length mpls-la
bel]
  |   |--rw ipv4-route                    inet:ipv4-prefix
  |   |--rw ipv4-prefix-length            uint8
  |   |--rw mpls-label                    mpls-label-def
  |   |--rw bgp-route-type?              enumeration
  |   |--rw bgp-attribute-list
  |   |   |--rw bgp-origin?              enumeration

```



```

|--rw bgp-aspath
|   |--rw usascount?          uint16
|   |--rw ulrefcount?        uint16
|   |--rw asstring?          string
|   |--ro usascountfrcomp?   uint16
|   |--rw usastotalcount?    uint16
|   |--rw usas4pathlen?      uint16
|   |--rw as4pathvalue?      string
|--rw bgp-nexthop?           inet:ip-address
|--rw bgp-med?                uint32
|--rw bgp-localpref?         uint32
|--rw bgp-atomic-aggregate?  uint32
|--rw bgp-aggregator
|   |--rw ulipaddress?        uint32
|   |--rw ulasnumber?         uint32
|--rw bgp-commattr
|   |--rw uscommsize?          uint16
|   |--rw ulrefcomm?          uint32
|   |--rw commattr-value?     string
|--rw bgp-extcommattr
|   |--rw usextcommsize?       uint16
|   |--rw ulrefcount?         uint32
|   |--rw extcommattr-value?   string
|--rw bgp-clusterlist
|   |--rw uscluslen?          uint16
|   |--rw ulrefclus?          uint32
|   |--rw clusterlist-value?  string
|--rw bgp-originator-id?     uint32
--ro bgp-route-create?        enumeration
--ro bgp-rt-state-info
|   --ro rib-current-state?    rib-state-def
|   --ro rib-last-state?       rib-state-def
|   --ro rib-rejected-reason?  enumeration
|   --ro not-preferred-reason? enumeration
--rw bgp-rib-out
|   |--rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length mpls-label]
|       |--rw ipv4-route          inet:ipv4-prefix
|       |--rw ipv4-prefix-length  uint8
|       |--rw mpls-label           mpls-label-def
|       |--rw bgp-route-type?     enumeration
|       |--rw bgp-attribute-list
|           |--rw bgp-origin?      enumeration
|           |--rw bgp-aspath
|               |--rw usascount?    uint16
|               |--rw ulrefcount?    uint16
|               |--rw asstring?     string
|               |--ro usascountfrcomp? uint16
|               |--rw usastotalcount? uint16

```

```

| | | +--rw usas4pathlen?          uint16
| | | +--rw as4pathvalue?         string
| | | +--rw bgp-nexthop?          inet:ip-address
| | | +--rw bgp-med?              uint32
| | | +--rw bgp-localpref?       uint32
| | | +--rw bgp-atomic-aggregate? uint32
| | | +--rw bgp-aggregator
| | | | +--rw ulipaddress?        uint32
| | | | +--rw ulasnumber?        uint32
| | | +--rw bgp-commattr
| | | | +--rw uscommsize?         uint16
| | | | +--rw ulrefcomm?         uint32
| | | | +--rw commattr-value?    string
| | | +--rw bgp-extcommattr
| | | | +--rw usextcommsize?      uint16
| | | | +--rw ulrefcount?        uint32
| | | | +--rw extcommattr-value? string
| | | +--rw bgp-clusterlist
| | | | +--rw uscluslen?         uint16
| | | | +--rw ulrefclus?        uint32
| | | | +--rw clusterlist-value? string
| | | +--rw bgp-originator-id?   uint32
| | +--ro bgp-route-create?       enumeration
| | +--ro bgp-rt-state-info
| | | +--ro rib-current-state?    rib-state-def
| | | +--ro rib-last-state?      rib-state-def
| | | +--ro rib-rejected-reason?  enumeration
| | | +--ro not-preferred-reason? enumeration
+--rw bgp-ipv4-multi-instance
| +--rw bgp-instance-name?       string
| +--rw bgp-instance-create?     enumeration
| +--rw bgp-instance-type?       enumeration
| +--rw bgp-vendor-type?         enumeration
| +--rw afi?                     afi-def
| +--rw safi?                    safi-def
+--rw bgp-local-rib
| | +--rw bgp-route-list* [ipv4-route ipv4-prefix-length]
| | | +--rw ipv4-route            inet:ipv4-prefix
| | | +--rw ipv4-prefix-length    uint8
| | | +--rw bgp-route-type?       enumeration
| | | +--rw bgp-attribute-list
| | | | +--rw bgp-origin?         enumeration
| | | | +--rw bgp-aspath
| | | | | +--rw usascount?        uint16
| | | | | +--rw ulrefcount?      uint16
| | | | | +--rw asstring?        string
| | | | | +--ro usascountfrcomp?  uint16
| | | | | +--rw usastotalcount?   uint16

```



```

| | | +--rw usas4pathlen?          uint16
| | | +--rw as4pathvalue?        string
+--rw bgp-nexthop?              inet:ip-address
+--rw bgp-med?                  uint32
+--rw bgp-localpref?           uint32
+--rw bgp-atomic-aggregate?    uint32
+--rw bgp-aggregator
| +--rw ulipaddress?           uint32
| +--rw ulasnumber?            uint32
+--rw bgp-commattr
| +--rw uscommsize?            uint16
| +--rw ulrefcomm?             uint32
| +--rw commattr-value?        string
+--rw bgp-extcommattr
| +--rw usextcommsize?         uint16
| +--rw ulrefcount?            uint32
| +--rw extcommattr-value?     string
+--rw bgp-clusterlist
| +--rw uscluslen?             uint16
| +--rw ulrefclus?             uint32
| +--rw clusterlist-value?    string
+--rw bgp-originator-id?       uint32
+--ro bgp-route-create?         enumeration
+--ro bgp-rt-state-info
  +--ro rib-current-state?      rib-state-def
  +--ro rib-last-state?         rib-state-def
  +--ro rib-rejected-reason?    enumeration
  +--ro not-preferred-reason?   enumeration
+--rw bgp-peer-list* [bgp-peer-name]
  +--rw peer-session-address
  | +--rw local-ipv4-address?    inet:ipv4-prefix
  | +--rw remote-ipv4-address?  inet:ipv4-prefix
  +--rw bgp-peer-name           string
  +--ro bgp-peer-type?           enumeration
  +--ro bgp-peer-create?         enumeration
  +--rw bgp-policy-in
  +--rw bgp-policy-out
  +--ro peer-policy-in-pset
  +--ro peer-policy-out-pset
  +--rw peer-state-info
  | +--ro peer-current-state?    peer-state
  | +--ro peer-last-state?       peer-state
  | +--ro peer-down-reason
  | | +--ro error-code?          enumeration
  | | +--ro sub-error-code
  | | | +--ro (sub-error-code-type)?
  | | | | +--:(head-error-sub-code)
  | | | | | +--ro head-error-sub-value?          enumeratio

```

n

```

n       |         |         |         |         |
n       |         |         |         |         |
n       |         |         |         |         |
n       |         |         |         |         |
+---ro  | peer-received-update-cnt?    uint64
+---ro  | peer-transmit-update-cnt?     uint64
+---ro  | peer-received-route-cnt?    uint64
+---ro  | peer-send-route-cnt?        uint64
+---rw  | max-prefix-rcv-limit?       uint64
+---rw  | max-prefix-xmt-limit?      uint64
+---ro  | peer-prefix-high?          uint64
+---ro  | peer-prefix-low?           uint64
+---ro  | peer-perfix-ave?            uint64
+---ro  | peer-prefix-time?          uint64
+---ro  | peer-prefix-max?           uint64
+---ro  | publish-version?           uint64
+---rw  | bgp-rib-in
+---rw  | bgp-rib-in-list* [ipv4-route ipv4-prefix-length]
+---rw  | ipv4-route                  inet:ipv4-prefix
+---rw  | ipv4-prefix-length          uint8
+---rw  | bgp-route-type?             enumeration
+---rw  | bgp-attribute-list
+---rw  |   bgp-origin?               enumeration
+---rw  |   bgp-aspath
+---rw  |     usascount?               uint16
+---rw  |     ulrefcount?             uint16
+---rw  |     asstring?               string
+---ro  |     usascountfrcomp?        uint16
+---rw  |     usastotalcount?         uint16
+---rw  |     usas4pathlen?           uint16
+---rw  |     as4pathvalue?           string
+---rw  |   bgp-nexthop?              inet:ip-address
+---rw  |   bgp-med?                  uint32
+---rw  |   bgp-localpref?            uint32
+---rw  |   bgp-atomic-aggregate?    uint32
+---rw  |   bgp-aggregator
+---rw  |     ulipaddress?            uint32
+---rw  |     ulasnumber?             uint32
+---rw  |   bgp-commattr
+---rw  |     uscommsize?              uint16
+---rw  |     ulrefcomm?              uint32
+---rw  |     commattr-value?         string
+---rw  |   bgp-extcommattr
+---rw  |     usextcommsize?           uint16
+---rw  |     ulrefcount?             uint32
+---rw  |     extcommattr-value?      string

```



```

    |--rw bgp-clusterlist
    |   |--rw uscluslen?          uint16
    |   |--rw ulrefclus?         uint32
    |   |--rw clusterlist-value? string
    |--rw bgp-originator-id?     uint32
+--ro bgp-route-create?         enumeration
+--ro bgp-rt-state-info
    |--ro rib-current-state?     rib-state-def
    |--ro rib-last-state?       rib-state-def
    |--ro rib-rejected-reason?  enumeration
    |--ro not-preferred-reason? enumeration
+--rw bgp-rib-out
    +--rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length]
    |--rw ipv4-route             inet:ipv4-prefix
    |--rw ipv4-prefix-length     uint8
    |--rw bgp-route-type?       enumeration
    +--rw bgp-attribute-list
        |--rw bgp-origin?       enumeration
        |--rw bgp-aspath
            |--rw usascount?     uint16
            |--rw ulrefcount?    uint16
            |--rw asstring?      string
            |--ro usascountfrcomp? uint16
            |--rw usastotalcount? uint16
            |--rw usas4pathlen?  uint16
            |--rw as4pathvalue?  string
        |--rw bgp-nexthop?      inet:ip-address
        |--rw bgp-med?          uint32
        |--rw bgp-localpref?    uint32
        |--rw bgp-atomic-aggregate? uint32
        |--rw bgp-aggregator
            |--rw ulipaddress?   uint32
            |--rw ulasnumber?    uint32
        +--rw bgp-commattr
            |--rw uscommsize?    uint16
            |--rw ulrefcomm?     uint32
            |--rw commattr-value? string
        +--rw bgp-extcommattr
            |--rw usextcommsize?  uint16
            |--rw ulrefcount?     uint32
            |--rw extcommattr-value? string
        +--rw bgp-clusterlist
            |--rw uscluslen?     uint16
            |--rw ulrefclus?     uint32
            |--rw clusterlist-value? string
            |--rw bgp-originator-id? uint32
    +--ro bgp-route-create?     enumeration
    +--ro bgp-rt-state-info

```

```

        +--ro rib-current-state?      rib-state-def
        +--ro rib-last-state?         rib-state-def
        +--ro rib-rejected-reason?    enumeration
        +--ro not-preferred-reason?   enumeration
+--rw bgp-vpnv4-instance
  +--rw bgp-instance-name?           string
  +--rw bgp-instance-create?         enumeration
  +--rw bgp-instance-type?           enumeration
  +--rw bgp-vendor-type?             enumeration
  +--rw afi?                          afi-def
  +--rw safi?                         safi-def
  +--rw bgp-local-rib
    +--rw bgp-route-list* [ipv4-route ipv4-prefix-length route-dist
nguisher]
      +--rw ipv4-route                inet:ipv4-prefix
      +--rw ipv4-prefix-length         uint8
      +--rw mpls-label?               mpls-label-def
      +--rw route-distinguisher       route-distinguisher-def
      +--rw bgp-route-type?           enumeration
      +--rw bgp-attribute-list
        +--rw bgp-origin?             enumeration
        +--rw bgp-aspath
          +--rw usascount?            uint16
          +--rw ulrefcount?          uint16
          +--rw asstring?            string
          +--ro usascountfrcomp?     uint16
          +--rw usastotalcount?      uint16
          +--rw usas4pathlen?       uint16
          +--rw as4pathvalue?       string
        +--rw bgp-nexthop?           inet:ip-address
        +--rw bgp-med?               uint32
        +--rw bgp-localpref?         uint32
        +--rw bgp-atomic-aggregate?  uint32
        +--rw bgp-aggregator
          +--rw ulipaddress?         uint32
          +--rw ulasnumber?         uint32
        +--rw bgp-commattr
          +--rw uscommsize?          uint16
          +--rw ulrefcomm?          uint32
          +--rw commattr-value?     string
        +--rw bgp-extcommattr
          +--rw usextcommsize?       uint16
          +--rw ulrefcount?         uint32
          +--rw extcommattr-value?  string
        +--rw bgp-clusterlist
          +--rw uscluslen?          uint16
          +--rw ulrefclus?         uint32
          +--rw clusterlist-value?  string
        +--rw bgp-originator-id?    uint32

```

```

|         +--ro bgp-route-create?          enumeration
|         +--ro bgp-rt-state-info
|           +--ro rib-current-state?       rib-state-def
|           +--ro rib-last-state?         rib-state-def
|           +--ro rib-rejected-reason?    enumeration
|           +--ro not-preferred-reason?   enumeration
+--rw bgp-peer-list* [bgp-peer-name]
  +--rw peer-session-address
  |   +--rw local-ipv4-address?           inet:ipv4-prefix
  |   +--rw remote-ipv4-address?         inet:ipv4-prefix
  +--rw bgp-peer-name                    string
  +--ro bgp-peer-type?                   enumeration
  +--ro bgp-peer-create?                 enumeration
  +--rw bgp-policy-in
  +--rw bgp-policy-out
  +--ro peer-policy-in-pset
  +--ro peer-policy-out-pset
  +--rw peer-state-info
  |   +--ro peer-current-state?           peer-state
  |   +--ro peer-last-state?             peer-state
  |   +--ro peer-down-reason
  |     +--ro error-code?                 enumeration
  |     +--ro sub-error-code
  |       +--ro (sub-error-code-type)?
  |         +--:(head-error-sub-code)
  |           | +--ro head-error-sub-value?          enumeratio
n
  |           | +--:(open-error-sub-code)
  |             | +--ro open-error-sub-value?       enumeratio
n
  |             | +--:(update-error-sub-code)
  |               | +--ro update-error-sub-value?   enumeratio
n
  |               | +--:(route-refresh-error-sub-code)
  |                 +--ro route-refresh-error-sub-value?  enumeratio
n
  |   +--ro peer-received-update-cnt?     uint64
  |   +--ro peer-transmit-update-cnt?     uint64
  |   +--ro peer-received-route-cnt?     uint64
  |   +--ro peer-send-route-cnt?         uint64
  |   +--rw max-prefix-rcv-limit?        uint64
  |   +--rw max-prefix-xmt-limit?        uint64
  |   +--ro peer-prefix-high?            uint64
  |   +--ro peer-prefix-low?             uint64
  |   +--ro peer-perfix-ave?              uint64
  |   +--ro peer-prefix-time?            uint64
  |   +--ro peer-prefix-max?              uint64
  |   +--ro publish-version?              uint64
+--rw bgp-rib-in
  +--rw bgp-rib-in-list* [ipv4-route ipv4-prefix-length route-d
distinguisher]
  |   +--rw ipv4-route                    inet:ipv4-prefix
  |   +--rw ipv4-prefix-length            uint8

```



```

|--rw mpls-label?                mpls-label-def
|--rw route-distinguisher        route-distinguisher-def
|--rw bgp-route-type?           enumeration
|--rw bgp-attribute-list
|   |--rw bgp-origin?            enumeration
|   |--rw bgp-aspath
|       |--rw usascount?         uint16
|       |--rw ulrefcount?        uint16
|       |--rw asstring?          string
|       |--ro usascountfrcomp?   uint16
|       |--rw usastotalcount?    uint16
|       |--rw usas4pathlen?      uint16
|       |--rw as4pathvalue?      string
|   |--rw bgp-nexthop?           inet:ip-address
|   |--rw bgp-med?               uint32
|   |--rw bgp-localpref?         uint32
|   |--rw bgp-atomic-aggregate?  uint32
|   |--rw bgp-aggregator
|       |--rw ulipaddress?       uint32
|       |--rw ulasnumber?        uint32
|   |--rw bgp-commattr
|       |--rw uscommsize?         uint16
|       |--rw ulrefcomm?         uint32
|       |--rw commattr-value?    string
|   |--rw bgp-extcommattr
|       |--rw usextcommsize?     uint16
|       |--rw ulrefcount?        uint32
|       |--rw extcommattr-value? string
|   |--rw bgp-clusterlist
|       |--rw uscluslen?         uint16
|       |--rw ulrefclus?         uint32
|       |--rw clusterlist-value? string
|   |--rw bgp-originator-id?    uint32
|--ro bgp-route-create?          enumeration
|--ro bgp-rt-state-info
|   |--ro rib-current-state?     rib-state-def
|   |--ro rib-last-state?        rib-state-def
|   |--ro rib-rejected-reason?   enumeration
|   |--ro not-preferred-reason?  enumeration
|--rw bgp-rib-out
|   |--rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length route-
distinguisher]
|       |--rw ipv4-route          inet:ipv4-prefix
|       |--rw ipv4-prefix-length  uint8
|       |--rw mpls-label?         mpls-label-def
|       |--rw route-distinguisher route-distinguisher-def
|       |--rw bgp-route-type?     enumeration
|       |--rw bgp-attribute-list
|           |--rw bgp-origin?     enumeration

```



```

+--rw bgp-aspath
|   +--rw usascount?          uint16
|   +--rw ulrefcount?        uint16
|   +--rw asstring?          string
|   +--ro usascountfrcomp?    uint16
|   +--rw usastotalcount?    uint16
|   +--rw usas4pathlen?      uint16
|   +--rw as4pathvalue?      string
+--rw bgp-nexthop?           inet:ip-address
+--rw bgp-med?               uint32
+--rw bgp-localpref?         uint32
+--rw bgp-atomic-aggregate?  uint32
+--rw bgp-aggregator
|   +--rw ulipaddress?        uint32
|   +--rw ulasnumber?         uint32
+--rw bgp-commattr
|   +--rw uscommsize?         uint16
|   +--rw ulrefcomm?          uint32
|   +--rw commattr-value?    string
+--rw bgp-extcommattr
|   +--rw usextcommsize?      uint16
|   +--rw ulrefcount?         uint32
|   +--rw extcommattr-value?  string
+--rw bgp-clusterlist
|   +--rw uscluslen?          uint16
|   +--rw ulrefclus?          uint32
|   +--rw clusterlist-value?  string
+--rw bgp-originator-id?     uint32
+--ro bgp-route-create?       enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?   rib-state-def
|   +--ro rib-last-state?      rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-ipv4-l3vpn-instance-list* [bgp-l3vpn-instance-name]
|   +--rw bgp-l3vpn-instance-name  string
|   +--rw bgp-instance-name?        string
|   +--rw bgp-instance-create?       enumeration
|   +--rw bgp-instance-type?         enumeration
|   +--rw bgp-vendor-type?           enumeration
|   +--rw afi?                        afi-def
|   +--rw safi?                       safi-def
+--rw bgp-local-rib
|   +--rw bgp-route-list* [ipv4-route ipv4-prefix-length]
|   |   +--rw ipv4-route          inet:ipv4-prefix
|   |   +--rw ipv4-prefix-length  uint8
|   |   +--rw bgp-route-type?     enumeration
|   +--rw bgp-attribute-list

```

```

+--rw bgp-origin?          enumeration
+--rw bgp-aspath
|   +--rw usascount?       uint16
|   +--rw ulrefcount?     uint16
|   +--rw asstring?       string
|   +--ro usascountfrcomp? uint16
|   +--rw usastotalcount?  uint16
|   +--rw usas4pathlen?   uint16
|   +--rw as4pathvalue?   string
+--rw bgp-nexthop?        inet:ip-address
+--rw bgp-med?            uint32
+--rw bgp-localpref?     uint32
+--rw bgp-atomic-aggregate? uint32
+--rw bgp-aggregator
|   +--rw ulipaddress?    uint32
|   +--rw ulasnumber?    uint32
+--rw bgp-commattr
|   +--rw uscommsize?     uint16
|   +--rw ulrefcomm?     uint32
|   +--rw commattr-value? string
+--rw bgp-extcommattr
|   +--rw usextcommsize?  uint16
|   +--rw ulrefcount?    uint32
|   +--rw extcommattr-value? string
+--rw bgp-clusterlist
|   +--rw uscluslen?     uint16
|   +--rw ulrefclus?    uint32
|   +--rw clusterlist-value? string
+--rw bgp-originator-id? uint32
+--ro bgp-route-create?   enumeration
+--ro bgp-rt-state-info
+--ro rib-current-state?  rib-state-def
+--ro rib-last-state?    rib-state-def
+--ro rib-rejected-reason? enumeration
+--ro not-preferred-reason? enumeration
+--rw bgp-peer-list* [bgp-peer-name]
+--rw peer-session-address
|   +--rw local-ipv4-address? inet:ipv4-prefix
|   +--rw remote-ipv4-address? inet:ipv4-prefix
+--rw bgp-peer-name      string
+--ro bgp-peer-type?     enumeration
+--ro bgp-peer-create?   enumeration
+--rw bgp-policy-in
+--rw bgp-policy-out
+--ro peer-policy-in-pset
+--ro peer-policy-out-pset
+--rw peer-state-info
|   +--ro peer-current-state? peer-state

```

```

|
|
|   +--ro peer-last-state?          peer-state
|   +--ro peer-down-reason
|   |   +--ro error-code?          enumeration
|   |   +--ro sub-error-code
|   |   |   +--ro (sub-error-code-type)?
|   |   |   |   +--:(head-error-sub-code)
|   |   |   |   |   +--ro head-error-sub-value?          enumeratio
n
|   |   |   |   +--:(open-error-sub-code)
|   |   |   |   |   +--ro open-error-sub-value?          enumeratio
n
|   |   |   |   +--:(update-error-sub-code)
|   |   |   |   |   +--ro update-error-sub-value?          enumeratio
n
|   |   |   |   +--:(route-refresh-error-sub-code)
|   |   |   |   |   +--ro route-refresh-error-sub-value?  enumeratio
n
|
|   +--ro peer-received-update-cnt?  uint64
|   +--ro peer-transmit-update-cnt?  uint64
|   +--ro peer-received-route-cnt?   uint64
|   +--ro peer-send-route-cnt?       uint64
|   +--rw max-prefix-rcv-limit?      uint64
|   +--rw max-prefix-xmt-limit?      uint64
|   +--ro peer-prefix-high?          uint64
|   +--ro peer-prefix-low?           uint64
|   +--ro peer-perfix-ave?            uint64
|   +--ro peer-prefix-time?          uint64
|   +--ro peer-prefix-max?            uint64
|   +--ro publish-version?           uint64
+--rw bgp-rib-in
|   +--rw bgp-rib-in-list* [ipv4-route ipv4-prefix-length]
|   |   +--rw ipv4-route              inet:ipv4-prefix
|   |   +--rw ipv4-prefix-length      uint8
|   |   +--rw bgp-route-type?         enumeration
|   |   +--rw bgp-attribute-list
|   |   |   +--rw bgp-origin?          enumeration
|   |   |   +--rw bgp-aspath
|   |   |   |   +--rw usascout?        uint16
|   |   |   |   +--rw ulrefcount?     uint16
|   |   |   |   +--rw asstring?       string
|   |   |   |   +--ro usascoutfrcomp?  uint16
|   |   |   |   +--rw usastotalcount?  uint16
|   |   |   |   +--rw usas4pathlen?   uint16
|   |   |   |   +--rw as4pathvalue?   string
|   |   |   +--rw bgp-nexthop?        inet:ip-address
|   |   |   +--rw bgp-med?             uint32
|   |   |   +--rw bgp-localpref?      uint32
|   |   |   +--rw bgp-atomic-aggregate?  uint32
|   |   |   +--rw bgp-aggregator
|   |   |   |   +--rw ulipaddress?     uint32
|   |   |   |   +--rw ulasnumber?     uint32
|   |   +--rw bgp-commattr

```



```
|
|
|   +---rw uscommsize?          uint16
|   +---rw ulrefcomm?          uint32
|   +---rw commattr-value?     string
+---rw bgp-extcommattr
|   +---rw usextcommsize?      uint16
|   +---rw ulrefcount?         uint32
|   +---rw extcommattr-value?  string
+---rw bgp-clusterlist
|   +---rw uscluslen?          uint16
|   +---rw ulrefclus?          uint32
|   +---rw clusterlist-value?  string
+---rw bgp-originator-id?      uint32
+---ro bgp-route-create?        enumeration
+---ro bgp-rt-state-info
|   +---ro rib-current-state?   rib-state-def
|   +---ro rib-last-state?      rib-state-def
|   +---ro rib-rejected-reason? enumeration
|   +---ro not-preferred-reason? enumeration
+---rw bgp-rib-out
|   +---rw bgp-rib-out-list* [ipv4-route ipv4-prefix-length]
|   +---rw ipv4-route           inet:ipv4-prefix
|   +---rw ipv4-prefix-length   uint8
|   +---rw bgp-route-type?      enumeration
+---rw bgp-attribute-list
|   +---rw bgp-origin?          enumeration
+---rw bgp-aspath
|   +---rw usascount?           uint16
|   +---rw ulrefcount?          uint16
|   +---rw asstring?            string
|   +---ro usascountfrcomp?     uint16
|   +---rw usastotalcount?      uint16
|   +---rw usas4pathlen?        uint16
|   +---rw as4pathvalue?        string
+---rw bgp-nexthop?             inet:ip-address
+---rw bgp-med?                  uint32
+---rw bgp-localpref?            uint32
+---rw bgp-atomic-aggregate?     uint32
+---rw bgp-aggregator
|   +---rw ulipaddress?         uint32
|   +---rw ulasnumber?          uint32
+---rw bgp-commattr
|   +---rw uscommsize?          uint16
|   +---rw ulrefcomm?          uint32
|   +---rw commattr-value?     string
+---rw bgp-extcommattr
|   +---rw usextcommsize?      uint16
|   +---rw ulrefcount?         uint32
|   +---rw extcommattr-value?  string
```

```

|         |         | +--rw bgp-clusterlist
|         |         | |   +--rw uscluslen?          uint16
|         |         | |   +--rw ulrefclus?          uint32
|         |         | |   +--rw clusterlist-value?   string
|         |         | +--rw bgp-originator-id?      uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?     rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-ipv6-uni-instance
|   +--rw bgp-instance-name?   string
|   +--rw bgp-instance-create? enumeration
|   +--rw bgp-instance-type?   enumeration
|   +--rw bgp-vendor-type?     enumeration
|   +--rw afi?                 afi-def
|   +--rw safi?                safi-def
+--rw bgp-local-rib
|   +--rw bgp-route-list* [ipv6-route ipv6-prefix-length]
|   |   +--rw ipv6-route          inet:ipv6-prefix
|   |   +--rw ipv6-prefix-length  uint8
|   |   +--rw bgp-route-type?     enumeration
|   |   +--rw bgp-attribute-list
|   |   |   +--rw bgp-origin?          enumeration
|   |   |   +--rw bgp-aspath
|   |   |   |   +--rw usascount?      uint16
|   |   |   |   +--rw ulrefcount?    uint16
|   |   |   |   +--rw asstring?      string
|   |   |   |   +--ro usascountfrcomp? uint16
|   |   |   |   +--rw usastotalcount? uint16
|   |   |   |   +--rw usas4pathlen?  uint16
|   |   |   |   +--rw as4pathvalue?  string
|   |   |   +--rw bgp-nexthop?      inet:ip-address
|   |   |   +--rw bgp-med?           uint32
|   |   |   +--rw bgp-localpref?    uint32
|   |   |   +--rw bgp-atomic-aggregate? uint32
|   |   |   +--rw bgp-aggregator
|   |   |   |   +--rw ulipaddress?    uint32
|   |   |   |   +--rw ulasnumber?    uint32
|   |   |   +--rw bgp-commattr
|   |   |   |   +--rw uscommsize?     uint16
|   |   |   |   +--rw ulrefcomm?     uint32
|   |   |   |   +--rw commattr-value? string
|   |   |   +--rw bgp-extcommattr
|   |   |   |   +--rw usextcommsize?  uint16
|   |   |   |   +--rw ulrefcount?    uint32
|   |   |   |   +--rw extcommattr-value? string

```

```

    |--rw bgp-clusterlist
    |   |--rw uscluslen?          uint16
    |   |--rw ulrefclus?         uint32
    |   |--rw clusterlist-value? string
    |--rw bgp-originator-id?    uint32
  |--ro bgp-route-create?      enumeration
  |--ro bgp-rt-state-info
    |--ro rib-current-state?    rib-state-def
    |--ro rib-last-state?      rib-state-def
    |--ro rib-rejected-reason?  enumeration
    |--ro not-preferred-reason? enumeration
  |--rw bgp-peer-list* [bgp-peer-name]
    |--rw peer-session-address
    |   |--rw local-ipv6-address? inet:ipv6-prefix
    |   |--rw remote-ipv6-address? inet:ipv6-prefix
    |--rw bgp-peer-name        string
    |--ro bgp-peer-type?       enumeration
    |--ro bgp-peer-create?     enumeration
    |--rw bgp-policy-in
    |--rw bgp-policy-out
    |--ro peer-policy-in-pset
    |--ro peer-policy-out-pset
    |--rw peer-state-info
    |   |--ro peer-current-state? peer-state
    |   |--ro peer-last-state?   peer-state
    |   |--ro peer-down-reason
    |   |   |--ro error-code?     enumeration
    |   |   |--ro sub-error-code
    |   |   |   |--ro (sub-error-code-type)?
    |   |   |   |   |--:(head-error-sub-code)
    |   |   |   |   |   |--ro head-error-sub-value?      enumeratio
n
    |   |   |   |   |   |--:(open-error-sub-code)
    |   |   |   |   |   |   |--ro open-error-sub-value?  enumeratio
n
    |   |   |   |   |   |   |--:(update-error-sub-code)
    |   |   |   |   |   |   |   |--ro update-error-sub-value?  enumeratio
n
    |   |   |   |   |   |   |   |--:(route-refresh-error-sub-code)
    |   |   |   |   |   |   |   |   |--ro route-refresh-error-sub-value?  enumeratio
n
    |--ro peer-received-update-cnt?  uint64
    |--ro peer-transmit-update-cnt?   uint64
    |--ro peer-received-route-cnt?   uint64
    |--ro peer-send-route-cnt?       uint64
    |--rw max-prefix-rcv-limit?      uint64
    |--rw max-prefix-xmt-limit?      uint64
    |--ro peer-prefix-high?          uint64
    |--ro peer-prefix-low?           uint64
    |--ro peer-perfix-ave?            uint64
    |--ro peer-prefix-time?           uint64
    |--ro peer-prefix-max?            uint64

```





```

|   +--ro publish-version?                uint64
+--rw bgp-rib-in
|   +--rw bgp-rib-in-list* [ipv6-route ipv6-prefix-length]
|       +--rw ipv6-route                  inet:ipv6-prefix
|       +--rw ipv6-prefix-length          uint8
|       +--rw bgp-route-type?             enumeration
|       +--rw bgp-attribute-list
|           +--rw bgp-origin?              enumeration
|           +--rw bgp-aspath
|               +--rw usascount?           uint16
|               +--rw ulrefcount?          uint16
|               +--rw asstring?            string
|               +--ro usascountfrcomp?     uint16
|               +--rw usastotalcount?      uint16
|               +--rw usas4pathlen?        uint16
|               +--rw as4pathvalue?        string
|           +--rw bgp-nexthop?             inet:ip-address
|           +--rw bgp-med?                  uint32
|           +--rw bgp-localpref?           uint32
|           +--rw bgp-atomic-aggregate?    uint32
|           +--rw bgp-aggregator
|               +--rw ulipaddress?         uint32
|               +--rw ulasnumber?         uint32
|           +--rw bgp-commattr
|               +--rw uscommsize?          uint16
|               +--rw ulrefcomm?          uint32
|               +--rw commattr-value?      string
|           +--rw bgp-extcommattr
|               +--rw usextcommsize?       uint16
|               +--rw ulrefcount?          uint32
|               +--rw extcommattr-value?   string
|           +--rw bgp-clusterlist
|               +--rw uscluslen?           uint16
|               +--rw ulrefclus?           uint32
|               +--rw clusterlist-value?   string
|           +--rw bgp-originator-id?       uint32
|       +--ro bgp-route-create?            enumeration
|       +--ro bgp-rt-state-info
|           +--ro rib-current-state?        rib-state-def
|           +--ro rib-last-state?          rib-state-def
|           +--ro rib-rejected-reason?     enumeration
|           +--ro not-preferred-reason?    enumeration
+--rw bgp-rib-out
|   +--rw bgp-rib-out-list* [ipv6-route ipv6-prefix-length]
|       +--rw ipv6-route                  inet:ipv6-prefix
|       +--rw ipv6-prefix-length          uint8
|       +--rw bgp-route-type?             enumeration
|       +--rw bgp-attribute-list

```

```

|--rw bgp-origin?          enumeration
|--rw bgp-aspath
|   |--rw usascount?       uint16
|   |--rw ulrefcount?     uint16
|   |--rw asstring?       string
|   |--ro usascountfrcomp? uint16
|   |--rw usastotalcount? uint16
|   |--rw usas4pathlen?   uint16
|   |--rw as4pathvalue?   string
|--rw bgp-nexthop?        inet:ip-address
|--rw bgp-med?            uint32
|--rw bgp-localpref?     uint32
|--rw bgp-atomic-aggregate? uint32
|--rw bgp-aggregator
|   |--rw ulipaddress?    uint32
|   |--rw ulasnumber?    uint32
|--rw bgp-commattr
|   |--rw uscommsize?     uint16
|   |--rw ulrefcomm?     uint32
|   |--rw commattr-value? string
|--rw bgp-extcommattr
|   |--rw usextcommsize?  uint16
|   |--rw ulrefcount?    uint32
|   |--rw extcommattr-value? string
|--rw bgp-clusterlist
|   |--rw uscluslen?     uint16
|   |--rw ulrefclus?    uint32
|   |--rw clusterlist-value? string
|--rw bgp-originator-id? uint32
+--ro bgp-route-create?   enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-labeled-ipv6-instance
|   |--rw bgp-instance-name?  string
|   |--rw bgp-instance-create? enumeration
|   |--rw bgp-instance-type?  enumeration
|   |--rw bgp-vendor-type?    enumeration
|   |--rw afi?                afi-def
|   |--rw safi?               safi-def
|   |--rw bgp-local-rib
|   |   |--rw bgp-route-list* [ipv6-route ipv6-prefix-length mpls-label]
|   |   |--rw ipv6-route      inet:ipv6-prefix
|   |   |--rw ipv6-prefix-length uint8
|   |   |--rw mpls-label      mpls-label-def
|   |   |--rw bgp-route-type? enumeration

```

```

+--rw bgp-attribute-list
  +--rw bgp-origin?          enumeration
  +--rw bgp-aspath
    +--rw usascount?         uint16
    +--rw ulrefcount?       uint16
    +--rw asstring?         string
    +--ro usascountfrcomp?   uint16
    +--rw usastotalcount?   uint16
    +--rw usas4pathlen?     uint16
    +--rw as4pathvalue?     string
  +--rw bgp-nexthop?        inet:ip-address
  +--rw bgp-med?            uint32
  +--rw bgp-localpref?     uint32
  +--rw bgp-atomic-aggregate? uint32
  +--rw bgp-aggregator
    +--rw ulipaddress?      uint32
    +--rw ulasnumber?      uint32
  +--rw bgp-commattr
    +--rw uscommsize?       uint16
    +--rw ulrefcomm?       uint32
    +--rw commattr-value?   string
  +--rw bgp-extcommattr
    +--rw usextcommsize?    uint16
    +--rw ulrefcount?      uint32
    +--rw extcommattr-value? string
  +--rw bgp-clusterlist
    +--rw uscluslen?       uint16
    +--rw ulrefclus?      uint32
    +--rw clusterlist-value? string
  +--rw bgp-originator-id? uint32
+--ro bgp-route-create?     enumeration
+--ro bgp-rt-state-info
  +--ro rib-current-state?  rib-state-def
  +--ro rib-last-state?    rib-state-def
  +--ro rib-rejected-reason? enumeration
  +--ro not-preferred-reason? enumeration
+--rw bgp-peer-list* [bgp-peer-name]
  +--rw peer-session-address
    +--rw local-ipv6-address? inet:ipv6-prefix
    +--rw remote-ipv6-address? inet:ipv6-prefix
  +--rw bgp-peer-name       string
  +--ro bgp-peer-type?     enumeration
  +--ro bgp-peer-create?   enumeration
  +--rw bgp-policy-in
  +--rw bgp-policy-out
  +--ro peer-policy-in-pset
  +--ro peer-policy-out-pset
  +--rw peer-state-info

```

		+	ro	peer-current-state?	peer-state		
		+	ro	peer-last-state?	peer-state		
		+	ro	peer-down-reason			
			+	ro	error-code?	enumeration	
			+	ro	sub-error-code		
			+	ro	(sub-error-code-type)?		
			+	ro	(head-error-sub-code)		
n				+	ro	head-error-sub-value?	enumeratio
			+	ro	(open-error-sub-code)		
n				+	ro	open-error-sub-value?	enumeratio
			+	ro	(update-error-sub-code)		
n				+	ro	update-error-sub-value?	enumeratio
			+	ro	(route-refresh-error-sub-code)		
n				+	ro	route-refresh-error-sub-value?	enumeratio
		+	ro	peer-received-update-cnt?	uint64		
		+	ro	peer-transmit-update-cnt?	uint64		
		+	ro	peer-received-route-cnt?	uint64		
		+	ro	peer-send-route-cnt?	uint64		
		+	rw	max-prefix-rcv-limit?	uint64		
		+	rw	max-prefix-xmt-limit?	uint64		
		+	ro	peer-prefix-high?	uint64		
		+	ro	peer-prefix-low?	uint64		
		+	ro	peer-perfix-ave?	uint64		
		+	ro	peer-prefix-time?	uint64		
		+	ro	peer-prefix-max?	uint64		
		+	ro	publish-version?	uint64		
		+	rw	bgp-rib-in			
bel]		+	rw	bgp-rib-in-list*	[ipv6-route ipv6-prefix-length mpls-la		
		+	rw	ipv6-route	inet:ipv6-prefix		
		+	rw	ipv6-prefix-length	uint8		
		+	rw	mpls-label	mpls-label-def		
		+	rw	bgp-route-type?	enumeration		
		+	rw	bgp-attribute-list			
			+	rw	bgp-origin?	enumeration	
			+	rw	bgp-aspath		
			+	rw	usascount?	uint16	
			+	rw	ulrefcount?	uint16	
			+	rw	asstring?	string	
			ro	usascountfrcomp?	uint16		
			rw	usastotalcount?	uint16		
			rw	usas4pathlen?	uint16		
			rw	as4pathvalue?	string		
		+	rw	bgp-nexthop?	inet:ip-address		
		+	rw	bgp-med?	uint32		
		+	rw	bgp-localpref?	uint32		
		+	rw	bgp-atomic-aggregate?	uint32		
		+	rw	bgp-aggregator			
			+	rw	ulipaddress?	uint32	



```

| | | | +--rw ulasnumber?      uint32
| | | | +--rw bgp-commattr
| | | | | +--rw uscommsize?      uint16
| | | | | +--rw ulrefcomm?      uint32
| | | | | +--rw commattr-value?  string
| | | | +--rw bgp-extcommattr
| | | | | +--rw usextcommsize?    uint16
| | | | | +--rw ulrefcount?      uint32
| | | | | +--rw extcommattr-value? string
| | | | +--rw bgp-clusterlist
| | | | | +--rw uscluslen?      uint16
| | | | | +--rw ulrefclus?      uint32
| | | | | +--rw clusterlist-value? string
| | | | +--rw bgp-originator-id? uint32
| | | | +--ro bgp-route-create?   enumeration
| | | | +--ro bgp-rt-state-info
| | | | | +--ro rib-current-state?  rib-state-def
| | | | | +--ro rib-last-state?    rib-state-def
| | | | | +--ro rib-rejected-reason? enumeration
| | | | | +--ro not-preferred-reason? enumeration
| | | | +--rw bgp-rib-out
| | | | | +--rw bgp-rib-out-list* [ipv6-route ipv6-prefix-length mpls-l
abel]
| | | | | +--rw ipv6-route          inet:ipv6-prefix
| | | | | +--rw ipv6-prefix-length  uint8
| | | | | +--rw mpls-label          mpls-label-def
| | | | | +--rw bgp-route-type?    enumeration
| | | | | +--rw bgp-attribute-list
| | | | | | +--rw bgp-origin?      enumeration
| | | | | | +--rw bgp-aspath
| | | | | | | +--rw usascount?      uint16
| | | | | | | +--rw ulrefcount?    uint16
| | | | | | | +--rw asstring?      string
| | | | | | | +--ro usascountfrcomp? uint16
| | | | | | | +--rw usastotalcount?  uint16
| | | | | | | +--rw usas4pathlen?   uint16
| | | | | | | +--rw as4pathvalue?   string
| | | | | | +--rw bgp-nexthop?     inet:ip-address
| | | | | | +--rw bgp-med?          uint32
| | | | | | +--rw bgp-localpref?   uint32
| | | | | | +--rw bgp-atomic-aggregate? uint32
| | | | | | +--rw bgp-aggregator
| | | | | | | +--rw ulipaddress?    uint32
| | | | | | | +--rw ulasnumber?    uint32
| | | | | +--rw bgp-commattr
| | | | | | +--rw uscommsize?      uint16
| | | | | | +--rw ulrefcomm?      uint32
| | | | | | +--rw commattr-value?  string
| | | | | +--rw bgp-extcommattr

```

```

|         |         | +--rw usextcommsize?      uint16
|         |         | +--rw ulrefcount?        uint32
|         |         | +--rw extcommattr-value? string
|         | +--rw bgp-clusterlist
|         |         | +--rw uscluslen?      uint16
|         |         | +--rw ulrefclus?    uint32
|         |         | +--rw clusterlist-value? string
|         | +--rw bgp-originator-id?  uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-ipv6-multi-instance
|   +--rw bgp-instance-name?   string
|   +--rw bgp-instance-create? enumeration
|   +--rw bgp-instance-type?   enumeration
|   +--rw bgp-vendor-type?     enumeration
|   +--rw afi?                 afi-def
|   +--rw safi?                safi-def
+--rw bgp-local-rib
|   +--rw bgp-route-list* [ipv6-route ipv6-prefix-length]
|   |   +--rw ipv6-route      inet:ipv6-prefix
|   |   +--rw ipv6-prefix-length uint8
|   |   +--rw bgp-route-type? enumeration
|   |   +--rw bgp-attribute-list
|   |   |   +--rw bgp-origin?      enumeration
|   |   |   +--rw bgp-aspath
|   |   |   |   +--rw usascount?    uint16
|   |   |   |   +--rw ulrefcount?   uint16
|   |   |   |   +--rw asstring?    string
|   |   |   |   +--ro usascountfrcomp? uint16
|   |   |   |   +--rw usastotalcount? uint16
|   |   |   |   +--rw usas4pathlen? uint16
|   |   |   |   +--rw as4pathvalue? string
|   |   |   +--rw bgp-nexthop?    inet:ip-address
|   |   |   +--rw bgp-med?        uint32
|   |   |   +--rw bgp-localpref?  uint32
|   |   |   +--rw bgp-atomic-aggregate? uint32
|   |   |   +--rw bgp-aggregator
|   |   |   |   +--rw ulipaddress?  uint32
|   |   |   |   +--rw ulasnumber?  uint32
|   |   |   +--rw bgp-commattr
|   |   |   |   +--rw uscommsize?   uint16
|   |   |   |   +--rw ulrefcomm?   uint32
|   |   |   |   +--rw commattr-value? string
|   |   +--rw bgp-extcommattr

```

```

| | | | | +--rw usextcommsize?      uint16
| | | | | +--rw ulrefcount?       uint32
| | | | | +--rw extcommattr-value? string
| | | | | +--rw bgp-clusterlist
| | | | | | +--rw uscluslen?       uint16
| | | | | | +--rw ulrefclus?     uint32
| | | | | | +--rw clusterlist-value? string
| | | | | +--rw bgp-originator-id?  uint32
| | | | | +--ro bgp-route-create?   enumeration
| | | | | +--ro bgp-rt-state-info
| | | | | | +--ro rib-current-state? rib-state-def
| | | | | | +--ro rib-last-state?  rib-state-def
| | | | | | +--ro rib-rejected-reason? enumeration
| | | | | | +--ro not-preferred-reason? enumeration
| | | | | +--rw bgp-peer-list* [bgp-peer-name]
| | | | | | +--rw peer-session-address
| | | | | | | +--rw local-ipv6-address?  inet:ipv6-prefix
| | | | | | | +--rw remote-ipv6-address? inet:ipv6-prefix
| | | | | | +--rw bgp-peer-name          string
| | | | | | +--ro bgp-peer-type?         enumeration
| | | | | | +--ro bgp-peer-create?      enumeration
| | | | | | +--rw bgp-policy-in
| | | | | | +--rw bgp-policy-out
| | | | | | +--ro peer-policy-in-pset
| | | | | | +--ro peer-policy-out-pset
| | | | | | +--rw peer-state-info
| | | | | | | +--ro peer-current-state?  peer-state
| | | | | | | +--ro peer-last-state?    peer-state
| | | | | | | +--ro peer-down-reason
| | | | | | | | +--ro error-code?      enumeration
| | | | | | | | +--ro sub-error-code
| | | | | | | | | +--ro (sub-error-code-type)?
| | | | | | | | | | +--:(head-error-sub-code)
| | | | | | | | | | | +--ro head-error-sub-value?  enumeratio
n
| | | | | | | | | | | +--:(open-error-sub-code)
| | | | | | | | | | | | +--ro open-error-sub-value?  enumeratio
n
| | | | | | | | | | | +--:(update-error-sub-code)
| | | | | | | | | | | | +--ro update-error-sub-value?  enumeratio
n
| | | | | | | | | | | +--:(route-refresh-error-sub-code)
| | | | | | | | | | | | +--ro route-refresh-error-sub-value?  enumeratio
n
| | | | | | +--ro peer-received-update-cnt?  uint64
| | | | | | +--ro peer-transmit-update-cnt?  uint64
| | | | | | +--ro peer-received-route-cnt?   uint64
| | | | | | +--ro peer-send-route-cnt?      uint64
| | | | | | +--rw max-prefix-rcv-limit?     uint64
| | | | | | +--rw max-prefix-xmt-limit?     uint64
| | | | | | +--ro peer-prefix-high?        uint64
| | | | | | +--ro peer-prefix-low?         uint64

```





```

+--ro peer-perfix-ave?          uint64
+--ro peer-prefix-time?        uint64
+--ro peer-prefix-max?         uint64
+--ro publish-version?         uint64
+--rw bgp-rib-in
+--rw bgp-rib-in-list* [ipv6-route ipv6-prefix-length]
+--rw ipv6-route                inet:ipv6-prefix
+--rw ipv6-prefix-length        uint8
+--rw bgp-route-type?           enumeration
+--rw bgp-attribute-list
+--rw bgp-origin?               enumeration
+--rw bgp-aspath
+--rw usascount?                uint16
+--rw ulrefcount?              uint16
+--rw asstring?                 string
+--ro usascountfrcomp?         uint16
+--rw usastotalcount?          uint16
+--rw usas4pathlen?            uint16
+--rw as4pathvalue?            string
+--rw bgp-nexthop?              inet:ip-address
+--rw bgp-med?                  uint32
+--rw bgp-localpref?            uint32
+--rw bgp-atomic-aggregate?     uint32
+--rw bgp-aggregator
+--rw ulipaddress?              uint32
+--rw ulasnumber?              uint32
+--rw bgp-commattr
+--rw uscommsize?               uint16
+--rw ulrefcomm?                uint32
+--rw commattr-value?          string
+--rw bgp-extcommattr
+--rw usextcommsize?            uint16
+--rw ulrefcount?              uint32
+--rw extcommattr-value?       string
+--rw bgp-clusterlist
+--rw uscluslen?                uint16
+--rw ulrefclus?                uint32
+--rw clusterlist-value?       string
+--rw bgp-originator-id?       uint32
+--ro bgp-route-create?         enumeration
+--ro bgp-rt-state-info
+--ro rib-current-state?        rib-state-def
+--ro rib-last-state?           rib-state-def
+--ro rib-rejected-reason?      enumeration
+--ro not-preferred-reason?     enumeration
+--rw bgp-rib-out
+--rw bgp-rib-out-list* [ipv6-route ipv6-prefix-length]
+--rw ipv6-route                inet:ipv6-prefix

```

```

|--rw ipv6-prefix-length      uint8
|--rw bgp-route-type?        enumeration
|--rw bgp-attribute-list
|   |--rw bgp-origin?        enumeration
|   |--rw bgp-aspath
|       |--rw usascount?     uint16
|       |--rw ulrefcount?    uint16
|       |--rw asstring?      string
|       |--ro usascountfrcomp? uint16
|       |--rw usastotalcount? uint16
|       |--rw usas4pathlen?  uint16
|       |--rw as4pathvalue?  string
|   |--rw bgp-nexthop?       inet:ip-address
|   |--rw bgp-med?           uint32
|   |--rw bgp-localpref?     uint32
|   |--rw bgp-atomic-aggregate? uint32
|   |--rw bgp-aggregator
|       |--rw ulipaddress?    uint32
|       |--rw ulasnumber?     uint32
|   |--rw bgp-commattr
|       |--rw uscommsize?     uint16
|       |--rw ulrefcomm?     uint32
|       |--rw commattr-value? string
|   |--rw bgp-extcommattr
|       |--rw usextcommsize?  uint16
|       |--rw ulrefcount?    uint32
|       |--rw extcommattr-value? string
|   |--rw bgp-clusterlist
|       |--rw uscluslen?     uint16
|       |--rw ulrefclus?    uint32
|       |--rw clusterlist-value? string
|   |--rw bgp-originator-id? uint32
|--ro bgp-route-create?      enumeration
|--ro bgp-rt-state-info
|   |--ro rib-current-state?  rib-state-def
|   |--ro rib-last-state?    rib-state-def
|   |--ro rib-rejected-reason? enumeration
|   |--ro not-preferred-reason? enumeration
|--rw bgp-vpnv6-instance
|   |--rw bgp-instance-name?  string
|   |--rw bgp-instance-create? enumeration
|   |--rw bgp-instance-type?  enumeration
|   |--rw bgp-vendor-type?    enumeration
|   |--rw afi?                afi-def
|   |--rw safi?                safi-def
|   |--rw bgp-local-rib
|       |--rw bgp-route-list* [ipv6-route ipv6-prefix-length route-dist
nguisher]
|           |--rw ipv6-route      inet:ipv6-prefix

```

```

+--rw ipv6-prefix-length      uint8
+--rw mpls-label?            mpls-label-def
+--rw route-distinguisher    route-distinguisher-def
+--rw bgp-route-type?        enumeration
+--rw bgp-attribute-list
  +--rw bgp-origin?          enumeration
  +--rw bgp-aspath
    +--rw usascount?         uint16
    +--rw ulrefcount?       uint16
    +--rw asstring?         string
    +--ro usascountfrcomp?   uint16
    +--rw usastotalcount?   uint16
    +--rw usas4pathlen?     uint16
    +--rw as4pathvalue?     string
  +--rw bgp-nexthop?        inet:ip-address
  +--rw bgp-med?            uint32
  +--rw bgp-localpref?      uint32
  +--rw bgp-atomic-aggregate? uint32
  +--rw bgp-aggregator
    +--rw ulipaddress?      uint32
    +--rw ulasnumber?       uint32
  +--rw bgp-commattr
    +--rw uscommsize?       uint16
    +--rw ulrefcomm?       uint32
    +--rw commattr-value?   string
  +--rw bgp-extcommattr
    +--rw usextcommsize?    uint16
    +--rw ulrefcount?       uint32
    +--rw extcommattr-value? string
  +--rw bgp-clusterlist
    +--rw uscluslen?        uint16
    +--rw ulrefclus?        uint32
    +--rw clusterlist-value? string
  +--rw bgp-originator-id?  uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
  +--ro rib-current-state?   rib-state-def
  +--ro rib-last-state?     rib-state-def
  +--ro rib-rejected-reason? enumeration
  +--ro not-preferred-reason? enumeration
+--rw bgp-peer-list* [bgp-peer-name]
  +--rw peer-session-address
    +--rw local-ipv6-address? inet:ipv6-prefix
    +--rw remote-ipv6-address? inet:ipv6-prefix
  +--rw bgp-peer-name        string
  +--ro bgp-peer-type?       enumeration
  +--ro bgp-peer-create?     enumeration
+--rw bgp-policy-in

```

```

|      +--rw bgp-policy-out
|      +--ro peer-policy-in-pset
|      +--ro peer-policy-out-pset
|      +--rw peer-state-info
|      |      +--ro peer-current-state?          peer-state
|      |      +--ro peer-last-state?           peer-state
|      |      +--ro peer-down-reason
|      |      |      +--ro error-code?          enumeration
|      |      |      +--ro sub-error-code
|      |      |      |      +--ro (sub-error-code-type)?
|      |      |      |      |      +--:(head-error-sub-code)
|      |      |      |      |      |      +--ro head-error-sub-value?          enumeratio
n
|      |      |      |      |      |      +--:(open-error-sub-code)
|      |      |      |      |      |      |      +--ro open-error-sub-value?          enumeratio
n
|      |      |      |      |      |      +--:(update-error-sub-code)
|      |      |      |      |      |      |      +--ro update-error-sub-value?          enumeratio
n
|      |      |      |      |      |      +--:(route-refresh-error-sub-code)
|      |      |      |      |      |      |      +--ro route-refresh-error-sub-value?          enumeratio
n
|      |      +--ro peer-received-update-cnt?    uint64
|      |      +--ro peer-transmit-update-cnt?    uint64
|      |      +--ro peer-received-route-cnt?     uint64
|      |      +--ro peer-send-route-cnt?         uint64
|      |      +--rw max-prefix-rcv-limit?        uint64
|      |      +--rw max-prefix-xmt-limit?        uint64
|      |      +--ro peer-prefix-high?           uint64
|      |      +--ro peer-prefix-low?            uint64
|      |      +--ro peer-perfix-ave?             uint64
|      |      +--ro peer-prefix-time?           uint64
|      |      +--ro peer-prefix-max?            uint64
|      |      +--ro publish-version?            uint64
|      +--rw bgp-rib-in
|      |      +--rw bgp-rib-in-list* [ipv6-route ipv6-prefix-length route-d
istinguisher]
|      |      |      +--rw ipv6-route             inet:ipv6-prefix
|      |      |      +--rw ipv6-prefix-length     uint8
|      |      |      +--rw mpls-label?           mpls-label-def
|      |      |      +--rw route-distinguisher   route-distinguisher-def
|      |      |      +--rw bgp-route-type?       enumeration
|      |      |      +--rw bgp-attribute-list
|      |      |      |      +--rw bgp-origin?          enumeration
|      |      |      |      +--rw bgp-aspath
|      |      |      |      |      +--rw usascount?      uint16
|      |      |      |      |      +--rw ulrefcount?    uint16
|      |      |      |      |      +--rw asstring?      string
|      |      |      |      |      +--ro usascountfrcomp? uint16
|      |      |      |      |      +--rw usastotalcount? uint16
|      |      |      |      |      +--rw usas4pathlen?  uint16
|      |      |      |      |      +--rw as4pathvalue?  string
|      |      |      |      +--rw bgp-nexthop?      inet:ip-address

```



```

|--rw bgp-med?                uint32
|--rw bgp-localpref?         uint32
|--rw bgp-atomic-aggregate?  uint32
|--rw bgp-aggregator
|   |--rw ulipaddress?       uint32
|   |--rw ulasnumber?       uint32
|--rw bgp-commattr
|   |--rw uscommsize?        uint16
|   |--rw ulrefcomm?        uint32
|   |--rw commattr-value?   string
|--rw bgp-extcommattr
|   |--rw usextcommsize?    uint16
|   |--rw ulrefcount?       uint32
|   |--rw extcommattr-value? string
|--rw bgp-clusterlist
|   |--rw uscluslen?        uint16
|   |--rw ulrefclus?        uint32
|   |--rw clusterlist-value? string
|--rw bgp-originator-id?     uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw bgp-rib-out
|   +--rw bgp-rib-out-list* [ipv6-route ipv6-prefix-length route-
distinguisher]
|       |--rw ipv6-route                inet:ipv6-prefix
|       |--rw ipv6-prefix-length        uint8
|       |--rw mpls-label?               mpls-label-def
|       |--rw route-distinguisher       route-distinguisher-def
|       |--rw bgp-route-type?           enumeration
|       +--rw bgp-attribute-list
|           |--rw bgp-origin?           enumeration
|           |--rw bgp-aspath
|               |--rw usascount?        uint16
|               |--rw ulrefcount?       uint16
|               |--rw asstring?         string
|               +--ro usascountfrcomp?  uint16
|               |--rw usastotalcount?   uint16
|               |--rw usas4pathlen?    uint16
|               |--rw as4pathvalue?     string
|           +--rw bgp-nexthop?          inet:ip-address
|           +--rw bgp-med?              uint32
|           +--rw bgp-localpref?        uint32
|           +--rw bgp-atomic-aggregate? uint32
|           +--rw bgp-aggregator
|               |--rw ulipaddress?     uint32

```

```

|         | |   +--rw ulasnumber?      uint32
|         | |   +--rw bgp-commattr
|         | |     +--rw uscommsize?      uint16
|         | |     +--rw ulrefcomm?      uint32
|         | |     +--rw commattr-value?  string
|         | |   +--rw bgp-extcommattr
|         | |     +--rw usextcommsize?   uint16
|         | |     +--rw ulrefcount?     uint32
|         | |     +--rw extcommattr-value? string
|         | |   +--rw bgp-clusterlist
|         | |     +--rw uscluslen?      uint16
|         | |     +--rw ulrefclus?     uint32
|         | |     +--rw clusterlist-value? string
|         | |   +--rw bgp-originator-id? uint32
|         | +--ro bgp-route-create?     enumeration
|         | +--ro bgp-rt-state-info
|         |   +--ro rib-current-state?   rib-state-def
|         |   +--ro rib-last-state?     rib-state-def
|         |   +--ro rib-rejected-reason? enumeration
|         |   +--ro not-preferred-reason? enumeration
+--rw bgp-ipv6-l3vpn-instance-list* [bgp-l3vpn-instance-name]
|   +--rw bgp-l3vpn-instance-name      string
|   +--rw bgp-instance-name?           string
|   +--rw bgp-instance-create?         enumeration
|   +--rw bgp-instance-type?           enumeration
|   +--rw bgp-vendor-type?             enumeration
|   +--rw afi?                         afi-def
|   +--rw safi?                        safi-def
+--rw bgp-local-rib
|   +--rw bgp-route-list* [ipv6-route ipv6-prefix-length]
|     +--rw ipv6-route                  inet:ipv6-prefix
|     +--rw ipv6-prefix-length          uint8
|     +--rw bgp-route-type?             enumeration
|     +--rw bgp-attribute-list
|       +--rw bgp-origin?               enumeration
|       +--rw bgp-aspath
|         +--rw usascount?              uint16
|         +--rw ulrefcount?            uint16
|         +--rw asstring?              string
|         +--ro usascountfrcomp?       uint16
|         +--rw usastotalcount?        uint16
|         +--rw usas4pathlen?          uint16
|         +--rw as4pathvalue?          string
|     +--rw bgp-nexthop?                inet:ip-address
|     +--rw bgp-med?                    uint32
|     +--rw bgp-localpref?              uint32
|     +--rw bgp-atomic-aggregate?      uint32
+--rw bgp-aggregator

```



```

| | | | |  +--rw ulipaddress?    uint32
| | | | |  +--rw ulasnumber?   uint32
| | | | |  +--rw bgp-commattr
| | | | |  |  +--rw uscommsize?    uint16
| | | | |  |  +--rw ulrefcomm?    uint32
| | | | |  |  +--rw commattr-value? string
| | | | |  +--rw bgp-extcommattr
| | | | |  |  +--rw usextcommsize?  uint16
| | | | |  |  +--rw ulrefcount?    uint32
| | | | |  |  +--rw extcommattr-value? string
| | | | |  +--rw bgp-clusterlist
| | | | |  |  +--rw uscluslen?      uint16
| | | | |  |  +--rw ulrefclus?    uint32
| | | | |  |  +--rw clusterlist-value? string
| | | | |  +--rw bgp-originator-id? uint32
| | | | |  +--ro bgp-route-create?  enumeration
| | | | |  +--ro bgp-rt-state-info
| | | | |  |  +--ro rib-current-state? rib-state-def
| | | | |  |  +--ro rib-last-state?  rib-state-def
| | | | |  |  +--ro rib-rejected-reason? enumeration
| | | | |  |  +--ro not-preferred-reason? enumeration
+--rw bgp-peer-list* [bgp-peer-name]
+--rw peer-session-address
| | | | |  +--rw local-ipv6-address?  inet:ipv6-prefix
| | | | |  +--rw remote-ipv6-address? inet:ipv6-prefix
+--rw bgp-peer-name      string
+--ro bgp-peer-type?     enumeration
+--ro bgp-peer-create?   enumeration
+--rw bgp-policy-in
+--rw bgp-policy-out
+--ro peer-policy-in-pset
+--ro peer-policy-out-pset
+--rw peer-state-info
| | | | |  +--ro peer-current-state?    peer-state
| | | | |  +--ro peer-last-state?    peer-state
| | | | |  +--ro peer-down-reason
| | | | |  |  +--ro error-code?        enumeration
| | | | |  |  +--ro sub-error-code
| | | | |  |  |  +--ro (sub-error-code-type)?
| | | | |  |  |  |  +--:(head-error-sub-code)
| | | | |  |  |  |  |  +--ro head-error-sub-value?      enumeratio
n
| | | | |  |  |  |  |  +--:(open-error-sub-code)
| | | | |  |  |  |  |  |  +--ro open-error-sub-value?    enumeratio
n
| | | | |  |  |  |  |  +--:(update-error-sub-code)
| | | | |  |  |  |  |  |  +--ro update-error-sub-value?  enumeratio
n
| | | | |  |  |  |  |  +--:(route-refresh-error-sub-code)
| | | | |  |  |  |  |  |  +--ro route-refresh-error-sub-value? enumeratio
n
| | | | |  +--ro peer-received-update-cnt?  uint64

```



```

+--ro peer-transmit-update-cnt?    uint64
+--ro peer-received-route-cnt?    uint64
+--ro peer-send-route-cnt?        uint64
+--rw max-prefix-rcv-limit?        uint64
+--rw max-prefix-xmt-limit?        uint64
+--ro peer-prefix-high?            uint64
+--ro peer-prefix-low?             uint64
+--ro peer-perfix-ave?              uint64
+--ro peer-prefix-time?            uint64
+--ro peer-prefix-max?             uint64
+--ro publish-version?             uint64
+--rw bgp-rib-in
  +--rw bgp-rib-in-list* [ipv6-route ipv6-prefix-length]
    +--rw ipv6-route                 inet:ipv6-prefix
    +--rw ipv6-prefix-length         uint8
    +--rw bgp-route-type?            enumeration
    +--rw bgp-attribute-list
      +--rw bgp-origin?              enumeration
      +--rw bgp-aspath
        +--rw usascount?             uint16
        +--rw ulrefcount?            uint16
        +--rw asstring?              string
        +--ro usascountfrcomp?       uint16
        +--rw usastotalcount?        uint16
        +--rw usas4pathlen?          uint16
        +--rw as4pathvalue?          string
      +--rw bgp-nexthop?             inet:ip-address
      +--rw bgp-med?                 uint32
      +--rw bgp-localpref?           uint32
      +--rw bgp-atomic-aggregate?    uint32
      +--rw bgp-aggregator
        +--rw ulipaddress?           uint32
        +--rw ulasnumber?            uint32
      +--rw bgp-commattr
        +--rw uscommsize?            uint16
        +--rw ulrefcomm?             uint32
        +--rw commattr-value?        string
      +--rw bgp-extcommattr
        +--rw usextcommsize?         uint16
        +--rw ulrefcount?            uint32
        +--rw extcommattr-value?     string
      +--rw bgp-clusterlist
        +--rw uscluslen?             uint16
        +--rw ulrefclus?             uint32
        +--rw clusterlist-value?     string
      +--rw bgp-originator-id?       uint32
    +--ro bgp-route-create?          enumeration
    +--ro bgp-rt-state-info

```

```

|         |--ro rib-current-state?         rib-state-def
|         |--ro rib-last-state?           rib-state-def
|         |--ro rib-rejected-reason?      enumeration
|         |--ro not-preferred-reason?     enumeration
+--rw bgp-rib-out
  +--rw bgp-rib-out-list* [ipv6-route ipv6-prefix-length]
    +--rw ipv6-route                       inet:ipv6-prefix
    +--rw ipv6-prefix-length               uint8
    +--rw bgp-route-type?                  enumeration
    +--rw bgp-attribute-list
      |--rw bgp-origin?                     enumeration
      |--rw bgp-aspath
        +--rw usascount?                    uint16
        +--rw ulrefcount?                   uint16
        +--rw asstring?                     string
        +--ro usascountfrcomp?              uint16
        +--rw usastotalcount?               uint16
        +--rw usas4pathlen?                 uint16
        +--rw as4pathvalue?                 string
      |--rw bgp-nexthop?                    inet:ip-address
      |--rw bgp-med?                         uint32
      |--rw bgp-localpref?                   uint32
      |--rw bgp-atomic-aggregate?           uint32
      |--rw bgp-aggregator
        +--rw ulipaddress?                   uint32
        +--rw ulasnumber?                     uint32
      |--rw bgp-commattr
        +--rw uscommsize?                     uint16
        +--rw ulrefcomm?                       uint32
        +--rw commattr-value?                 string
      |--rw bgp-extcommattr
        +--rw usextcommsize?                   uint16
        +--rw ulrefcount?                       uint32
        +--rw extcommattr-value?               string
      |--rw bgp-clusterlist
        +--rw uscluslen?                       uint16
        +--rw ulrefclus?                       uint32
        +--rw clusterlist-value?               string
      |--rw bgp-originator-id?               uint32
    +--ro bgp-route-create?                   enumeration
    +--ro bgp-rt-state-info
      |--ro rib-current-state?                 rib-state-def
      |--ro rib-last-state?                   rib-state-def
      |--ro rib-rejected-reason?              enumeration
      |--ro not-preferred-reason?              enumeration
+--rw bgp-ipv4-mvpn-instance
  |--rw bgp-instance-name?                   string
  |--rw bgp-instance-create?                 enumeration

```

```

+--rw bgp-instance-type?      enumeration
+--rw bgp-vendor-type?       enumeration
+--rw afi?                    afi-def
+--rw safi?                    safi-def
+--rw bgp-local-rib
|
|   +--rw bgp-route-type?      enumeration
+--rw bgp-attribute-list
|
|   +--rw bgp-origin?          enumeration
+--rw bgp-aspath
|
|   +--rw usascount?           uint16
|   +--rw ulrefcount?         uint16
|   +--rw asstring?           string
|   +--ro usascountfrcomp?    uint16
|   +--rw usastotalcount?     uint16
|   +--rw usas4pathlen?       uint16
|   +--rw as4pathvalue?       string
+--rw bgp-nexthop?            inet:ip-address
+--rw bgp-med?                 uint32
+--rw bgp-localpref?          uint32
+--rw bgp-atomic-aggregate?   uint32
+--rw bgp-aggregator
|
|   +--rw ulipaddress?         uint32
|   +--rw ulasnumber?         uint32
+--rw bgp-commattr
|
|   +--rw uscommsize?          uint16
|   +--rw ulrefcomm?          uint32
|   +--rw commattr-value?     string
+--rw bgp-extcommattr
|
|   +--rw usextcommsize?       uint16
|   +--rw ulrefcount?         uint32
|   +--rw extcommattr-value?  string
+--rw bgp-clusterlist
|
|   +--rw uscluslen?           uint16
|   +--rw ulrefclus?          uint32
|   +--rw clusterlist-value?  string
|   +--rw bgp-originator-id?  uint32
+--ro bgp-route-create?        enumeration
+--ro bgp-rt-state-info
|
|   +--ro rib-current-state?   rib-state-def
|   +--ro rib-last-state?      rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw (bgp-mvpn-route-type)?
|
|   +--:( INTRA_AS_I_PMSI_AD)
|   |
|   |   +--rw intra-as-i-pmsi-ad-route* [route-type route-distingu
|   |   isher origin-router-ip-addr]
|   |
|   |   +--rw route-type          mvpn-route-type
|   |   +--rw route-distinguisher route-distinguisher-def
|   |   +--rw origin-router-ip-addr inet:ip-prefix

```





```

|--rw peer-state-info
|  |--ro peer-current-state?          peer-state
|  |--ro peer-last-state?            peer-state
|  |--ro peer-down-reason
|  |  |--ro error-code?              enumeration
|  |  |--ro sub-error-code
|  |  |  |--ro (sub-error-code-type)?
|  |  |  |  |--:(head-error-sub-code)
|  |  |  |  |  |--ro head-error-sub-value?          enumeratio
n
|  |  |  |  |  |--:(open-error-sub-code)
|  |  |  |  |  |  |--ro open-error-sub-value?      enumeratio
n
|  |  |  |  |  |--:(update-error-sub-code)
|  |  |  |  |  |  |--ro update-error-sub-value?   enumeratio
n
|  |  |  |  |  |--:(route-refresh-error-sub-code)
|  |  |  |  |  |  |--ro route-refresh-error-sub-value? enumeratio
n
|  |--ro peer-received-update-cnt?   uint64
|  |--ro peer-transmit-update-cnt?   uint64
|  |--ro peer-received-route-cnt?    uint64
|  |--ro peer-send-route-cnt?        uint64
|  |--rw max-prefix-rcv-limit?       uint64
|  |--rw max-prefix-xmt-limit?       uint64
|  |--ro peer-prefix-high?           uint64
|  |--ro peer-prefix-low?            uint64
|  |--ro peer-perfix-ave?             uint64
|  |--ro peer-prefix-time?           uint64
|  |--ro peer-prefix-max?            uint64
|  |--ro publish-version?            uint64
|--rw bgp-rib-in
|  |--rw bgp-route-type?              enumeration
|  |--rw bgp-attribute-list
|  |  |--rw bgp-origin?               enumeration
|  |  |--rw bgp-aspath
|  |  |  |--rw usascount?              uint16
|  |  |  |--rw ulrefcount?            uint16
|  |  |  |--rw asstring?              string
|  |  |  |--ro usascountfrcomp?       uint16
|  |  |  |--rw usastotalcount?        uint16
|  |  |  |--rw usas4pathlen?         uint16
|  |  |  |--rw as4pathvalue?         string
|  |--rw bgp-nexthop?                 inet:ip-address
|  |--rw bgp-med?                     uint32
|  |--rw bgp-localpref?               uint32
|  |--rw bgp-atomic-aggregate?        uint32
|  |--rw bgp-aggregator
|  |  |--rw ulipaddress?              uint32
|  |  |--rw ulasnumber?               uint32
|  |--rw bgp-commattr
|  |  |--rw uscommsize?               uint16

```







```
|      |      |  +--rw shared-tree-join-route* [route-type route-disting  
uisher source-as multicast-source multicast-group]
```

Hares, et al.

Expires April 18, 2015

[Page 61]

```

    +---rw route-type          mvpn-route-type
    +---rw route-distinguisher route-distinguisher-def
    +---rw source-as           inet:as-number
    +---rw multicast-source    inet:ip-prefix
    +---rw multicast-group     inet:ip-prefix
  +---:(SOURCE_TREE_JOIN)
    +---rw source-tree-join-route* [route-type route-disting
uisher source-as multicast-source multicast-group]
    +---rw route-type          mvpn-route-type
    +---rw route-distinguisher route-distinguisher-def
    +---rw source-as           inet:as-number
    +---rw multicast-source    inet:ip-prefix
    +---rw multicast-group     inet:ip-prefix
+---rw bgp-rib-out
  +---rw bgp-route-type?      enumeration
  +---rw bgp-attribute-list
    +---rw bgp-origin?        enumeration
    +---rw bgp-aspath
      +---rw usascount?       uint16
      +---rw ulrefcount?     uint16
      +---rw asstring?        string
      +---ro usascountfrcomp? uint16
      +---rw usastotalcount?  uint16
      +---rw usas4pathlen?    uint16
      +---rw as4pathvalue?    string
    +---rw bgp-nexthop?       inet:ip-address
    +---rw bgp-med?           uint32
    +---rw bgp-localpref?     uint32
    +---rw bgp-atomic-aggregate? uint32
    +---rw bgp-aggregator
      +---rw ulipaddress?     uint32
      +---rw ulasnumber?      uint32
    +---rw bgp-commattr
      +---rw uscommsize?      uint16
      +---rw ulrefcomm?       uint32
      +---rw commattr-value?  string
    +---rw bgp-extcommattr
      +---rw usextcommsize?   uint16
      +---rw ulrefcount?     uint32
      +---rw extcommattr-value? string
    +---rw bgp-clusterlist
      +---rw uscluslen?       uint16
      +---rw ulrefclus?       uint32
      +---rw clusterlist-value? string
    +---rw bgp-originator-id? uint32
  +---ro bgp-route-create?    enumeration
  +---ro bgp-rt-state-info
    +---ro rib-current-state?  rib-state-def
    +---ro rib-last-state?    rib-state-def

```

```

|         |   |--ro rib-rejected-reason?      enumeration
|         |   |--ro not-preferred-reason?   enumeration
|         |--rw (bgp-mvpn-route-type)?
|         |--:(INTRA_AS_I_PMSI_AD)
|         |   |--rw intra-as-i-pmsi-ad-route* [route-type route-dist
nguishe
r origin-router-ip-addr]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-d
ef
|         |   |--rw origin-router-ip-addr     inet:ip-prefix
|         |--:(INTER_AS_I_PMSI_AD)
|         |   |--rw inter_as_i_pmsi_as_route* [route-type route-dist
nguishe
r source-as]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-def
|         |   |--rw source-as                 inet:as-number
|         |--:(S_PMSI_AD)
|         |   |--rw s-pmsi-ad-route* [route-type route-distinguisher
multicast-source
multicast-group origin-router-ip-addr]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-d
ef
|         |   |--rw multicast-source           inet:ip-prefix
|         |   |--rw multicast-group           inet:ip-prefix
|         |   |--rw origin-router-ip-addr     inet:ip-prefix
|         |--:(LEAF_AD)
|         |   |--rw leaf-ad-route* [route-type route-key origin-route
r-ip-addr]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-key                 binary
|         |   |--rw origin-router-ip-addr     inet:ip-prefix
|         |--:(SOURCE_ACTIVE_AD)
|         |   |--rw source-active-ad-route* [route-type route-disting
uishe
r multicast-source multicast-group]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-def
|         |   |--rw multicast-source           inet:ip-prefix
|         |   |--rw multicast-group           inet:ip-prefix
|         |--:(SHARED_TREE_JOIN)
|         |   |--rw shared-tree-join-route* [route-type route-disting
uishe
r source-as multicast-source multicast-group]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-def
|         |   |--rw source-as                 inet:as-number
|         |   |--rw multicast-source           inet:ip-prefix
|         |   |--rw multicast-group           inet:ip-prefix
|         |--:(SOURCE_TREE_JOIN)
|         |   |--rw source-tree-join-route* [route-type route-disting
uishe
r source-as multicast-source multicast-group]
|         |   |--rw route-type                mvpn-route-type
|         |   |--rw route-distinguisher       route-distinguisher-def
|         |   |--rw source-as                 inet:as-number
|         |   |--rw multicast-source           inet:ip-prefix
|         |   |--rw multicast-group           inet:ip-prefix

```

```
+--rw bgp-ipv6-mvpn-instance
|   +--rw bgp-instance-name?   string
|   +--rw bgp-instance-create? enumeration
```

```

+--rw bgp-instance-type?      enumeration
+--rw bgp-vendor-type?       enumeration
+--rw afi?                    afi-def
+--rw safi?                   safi-def
+--rw bgp-local-rib
|
|   +--rw bgp-route-type?      enumeration
+--rw bgp-attribute-list
|
|   +--rw bgp-origin?          enumeration
+--rw bgp-aspath
|
|   +--rw usascount?           uint16
|   +--rw ulrefcount?         uint16
|   +--rw asstring?           string
|   +--ro usascountfrcomp?    uint16
|   +--rw usastotalcount?     uint16
|   +--rw usas4pathlen?      uint16
|   +--rw as4pathvalue?      string
+--rw bgp-nexthop?           inet:ip-address
+--rw bgp-med?               uint32
+--rw bgp-localpref?        uint32
+--rw bgp-atomic-aggregate?  uint32
+--rw bgp-aggregator
|
|   +--rw ulipaddress?        uint32
|   +--rw ulasnumber?        uint32
+--rw bgp-commattr
|
|   +--rw uscommsize?         uint16
|   +--rw ulrefcomm?         uint32
|   +--rw commattr-value?    string
+--rw bgp-extcommattr
|
|   +--rw usextcommsize?     uint16
|   +--rw ulrefcount?       uint32
|   +--rw extcommattr-value? string
+--rw bgp-clusterlist
|
|   +--rw uscluslen?         uint16
|   +--rw ulrefclus?        uint32
|   +--rw clusterlist-value? string
|   +--rw bgp-originator-id? uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw (bgp-mvpn-route-type)?
|   +--:( INTRA_AS_I_PMSI_AD)
|   |   +--rw intra-as-i-pmsi-ad-route* [route-type route-distingu
isher origin-router-ip-addr]
|   |   +--rw route-type      mvpn-route-type
|   |   +--rw route-distinguisher route-distinguisher-def
|   |   +--rw origin-router-ip-addr inet:ip-prefix

```

```

| | | +--:(INTER_AS_I_PMSI_AD)
| | | | +--rw inter_as_i_pmsi_as_route* [route-type route-distinguisher
| | | | | source-as]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-distinguisher route-distinguisher-def
| | | | | +--rw source-as inet:as-number
| | | +--:(S_PMSI_AD)
| | | | +--rw s-pmsi-ad-route* [route-type route-distinguisher mul
| | | | | ticast-source multicast-group origin-router-ip-addr]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-distinguisher route-distinguisher-def
| | | | | +--rw multicast-source inet:ip-prefix
| | | | | +--rw multicast-group inet:ip-prefix
| | | | | +--rw origin-router-ip-addr inet:ip-prefix
| | | +--:(LEAF_AD)
| | | | +--rw leaf-ad-route* [route-type route-key origin-router-i
| | | | | p-addr]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-key binary
| | | | | +--rw origin-router-ip-addr inet:ip-prefix
| | | +--:(SOURCE_ACTIVE_AD)
| | | | +--rw source-active-ad-route* [route-type route-distinguish
| | | | | her multicast-source multicast-group]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-distinguisher route-distinguisher-def
| | | | | +--rw multicast-source inet:ip-prefix
| | | | | +--rw multicast-group inet:ip-prefix
| | | +--:(SHARED_TREE_JOIN)
| | | | +--rw shared-tree-join-route* [route-type route-distinguish
| | | | | her source-as multicast-source multicast-group]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-distinguisher route-distinguisher-def
| | | | | +--rw source-as inet:as-number
| | | | | +--rw multicast-source inet:ip-prefix
| | | | | +--rw multicast-group inet:ip-prefix
| | | +--:(SOURCE_TREE_JOIN)
| | | | +--rw source-tree-join-route* [route-type route-distinguish
| | | | | her source-as multicast-source multicast-group]
| | | | | +--rw route-type mvpn-route-type
| | | | | +--rw route-distinguisher route-distinguisher-def
| | | | | +--rw source-as inet:as-number
| | | | | +--rw multicast-source inet:ip-prefix
| | | | | +--rw multicast-group inet:ip-prefix
+--rw bgp-peer-list* [bgp-peer-name]
+--rw peer-session-address
| +--rw local-ipv6-address? inet:ipv6-prefix
| +--rw remote-ipv6-address? inet:ipv6-prefix
+--rw bgp-peer-name string
+--ro bgp-peer-type? enumeration
+--ro bgp-peer-create? enumeration
+--rw bgp-policy-in
+--rw bgp-policy-out
+--ro peer-policy-in-pset
+--ro peer-policy-out-pset

```





```

|--rw peer-state-info
|   |--ro peer-current-state?          peer-state
|   |--ro peer-last-state?            peer-state
|   |--ro peer-down-reason
|   |   |--ro error-code?             enumeration
|   |   |--ro sub-error-code
|   |   |   |--ro (sub-error-code-type)?
|   |   |   |   |--:(head-error-sub-code)
|   |   |   |   |   |--ro head-error-sub-value?          enumeratio
n
|   |   |   |   |   |--:(open-error-sub-code)
|   |   |   |   |   |   |--ro open-error-sub-value?      enumeratio
n
|   |   |   |   |   |--:(update-error-sub-code)
|   |   |   |   |   |   |--ro update-error-sub-value?    enumeratio
n
|   |   |   |   |   |--:(route-refresh-error-sub-code)
|   |   |   |   |   |   |--ro route-refresh-error-sub-value?  enumeratio
n
|   |--ro peer-received-update-cnt?    uint64
|   |--ro peer-transmit-update-cnt?     uint64
|   |--ro peer-received-route-cnt?     uint64
|   |--ro peer-send-route-cnt?         uint64
|   |--rw max-prefix-rcv-limit?        uint64
|   |--rw max-prefix-xmt-limit?        uint64
|   |--ro peer-prefix-high?            uint64
|   |--ro peer-prefix-low?             uint64
|   |--ro peer-perfix-ave?              uint64
|   |--ro peer-prefix-time?            uint64
|   |--ro peer-prefix-max?             uint64
|   |--ro publish-version?             uint64
|--rw bgp-rib-in
|   |--rw bgp-route-type?               enumeration
|   |--rw bgp-attribute-list
|   |   |--rw bgp-origin?               enumeration
|   |   |--rw bgp-aspath
|   |   |   |--rw usascount?            uint16
|   |   |   |--rw ulrefcount?          uint16
|   |   |   |--rw asstring?            string
|   |   |   |--ro usascountfrcomp?     uint16
|   |   |   |--rw usastotalcount?      uint16
|   |   |   |--rw usas4pathlen?       uint16
|   |   |   |--rw as4pathvalue?       string
|   |--rw bgp-nexthop?                 inet:ip-address
|   |--rw bgp-med?                     uint32
|   |--rw bgp-localpref?               uint32
|   |--rw bgp-atomic-aggregate?       uint32
|   |--rw bgp-aggregator
|   |   |--rw ulipaddress?             uint32
|   |   |--rw ulasnumber?             uint32
|   |--rw bgp-commattr
|   |   |--rw uscommsize?              uint16

```





```
|      |      |  +--rw shared-tree-join-route* [route-type route-disting  
uisher source-as multicast-source multicast-group]
```

Hares, et al.

Expires April 18, 2015

[Page 67]



```

|         |         |   +--ro rib-rejected-reason?      enumeration
|         |         |   +--ro not-preferred-reason?  enumeration
|         |         | +--rw (bgp-mvpn-route-type)?
|         |         |   +--:(INTRA_AS_I_PMSI_AD)
|         |         |   |   +--rw intra-as-i-pmsi-ad-route* [route-type route-dist
nguishe
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-d
ef
|         |         |   |   +--rw origin-router-ip-addr          inet:ip-prefix
|         |         |   +--:(INTER_AS_I_PMSI_AD)
|         |         |   |   +--rw inter_as_i_pmsi_as_route* [route-type route-dist
nguishe
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-def
|         |         |   |   +--rw source-as                       inet:as-number
|         |         |   +--:(S_PMSI_AD)
|         |         |   |   +--rw s-pmsi-ad-route* [route-type route-distinguisher
multicast-source
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-d
ef
|         |         |   |   +--rw multicast-source                inet:ip-prefix
|         |         |   |   +--rw multicast-group                 inet:ip-prefix
|         |         |   |   +--rw origin-router-ip-addr           inet:ip-prefix
|         |         |   +--:(LEAF_AD)
|         |         |   |   +--rw leaf-ad-route* [route-type route-key origin-route
r-ip-addr]
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-key                       binary
|         |         |   |   +--rw origin-router-ip-addr           inet:ip-prefix
|         |         |   +--:(SOURCE_ACTIVE_AD)
|         |         |   |   +--rw source-active-ad-route* [route-type route-disting
uishe
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-def
|         |         |   |   +--rw multicast-source                inet:ip-prefix
|         |         |   |   +--rw multicast-group                 inet:ip-prefix
|         |         |   +--:(SHARED_TREE_JOIN)
|         |         |   |   +--rw shared-tree-join-route* [route-type route-disting
uishe
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-def
|         |         |   |   +--rw source-as                       inet:as-number
|         |         |   |   +--rw multicast-source                inet:ip-prefix
|         |         |   |   +--rw multicast-group                 inet:ip-prefix
|         |         |   +--:(SOURCE_TREE_JOIN)
|         |         |   |   +--rw source-tree-join-route* [route-type route-disting
uishe
|         |         |   |   +--rw route-type                      mvpn-route-type
|         |         |   |   +--rw route-distinguisher             route-distinguisher-def
|         |         |   |   +--rw source-as                       inet:as-number
|         |         |   |   +--rw multicast-source                inet:ip-prefix
|         |         |   |   +--rw multicast-group                 inet:ip-prefix

```

```
+--rw bgp-mcast-vpls-instance
|   +--rw bgp-instance-name?   string
|   +--rw bgp-instance-create? enumeration
```



```

+--rw bgp-instance-type?      enumeration
+--rw bgp-vendor-type?       enumeration
+--rw afi?                    afi-def
+--rw safi?                   safi-def
+--rw bgp-local-rib
|
|   +--rw bgp-route-type?      enumeration
+--rw bgp-attribute-list
|
|   +--rw bgp-origin?         enumeration
+--rw bgp-aspath
|
|   +--rw usascount?          uint16
|   +--rw ulrefcount?        uint16
|   +--rw asstring?          string
|   +--ro usascountfrcomp?    uint16
|   +--rw usastotalcount?    uint16
|   +--rw usas4pathlen?      uint16
|   +--rw as4pathvalue?      string
+--rw bgp-nexthop?           inet:ip-address
+--rw bgp-med?               uint32
+--rw bgp-localpref?        uint32
+--rw bgp-atomic-aggregate? uint32
+--rw bgp-aggregator
|
|   +--rw ulipaddress?        uint32
|   +--rw ulasnumber?        uint32
+--rw bgp-commattr
|
|   +--rw uscommsize?         uint16
|   +--rw ulrefcomm?         uint32
|   +--rw commattr-value?    string
+--rw bgp-extcommattr
|
|   +--rw usextcommsize?      uint16
|   +--rw ulrefcount?        uint32
|   +--rw extcommattr-value? string
+--rw bgp-clusterlist
|
|   +--rw uscluslen?         uint16
|   +--rw ulrefclus?         uint32
|   +--rw clusterlist-value? string
+--rw bgp-originator-id?    uint32
+--ro bgp-route-create?      enumeration
+--ro bgp-rt-state-info
|
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw (bgp-mcast-vpls-route-type)?
+--:(SELECTIVE_TREE_AD_ROUTE)
|
|   +--rw selective-tree-ad-route* [route-type route-distinguish
sher multicast-source multicast-group origin-router-ip-addr]
|
|   +--rw route-type          mcast-vpls-route-type
|   +--rw route-distinguisher route-distinguisher-def
|   +--rw multicast-source     inet:ip-prefix

```





```

|--rw bgp-origin?          enumeration
|--rw bgp-aspath
|   |--rw usascount?       uint16
|   |--rw ulrefcount?     uint16
|   |--rw asstring?       string
|   |--ro usascountfrcomp? uint16
|   |--rw usastotalcount? uint16
|   |--rw usas4pathlen?   uint16
|   |--rw as4pathvalue?   string
|--rw bgp-nexthop?        inet:ip-address
|--rw bgp-med?            uint32
|--rw bgp-localpref?     uint32
|--rw bgp-atomic-aggregate? uint32
|--rw bgp-aggregator
|   |--rw ulipaddress?    uint32
|   |--rw ulasnumber?    uint32
|--rw bgp-commattr
|   |--rw uscommsize?     uint16
|   |--rw ulrefcomm?     uint32
|   |--rw commattr-value? string
|--rw bgp-extcommattr
|   |--rw usextcommsize?  uint16
|   |--rw ulrefcount?    uint32
|   |--rw extcommattr-value? string
|--rw bgp-clusterlist
|   |--rw uscluslen?     uint16
|   |--rw ulrefclus?    uint32
|   |--rw clusterlist-value? string
|--rw bgp-originator-id? uint32
+--ro bgp-route-create?   enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?  rib-state-def
|   +--ro rib-last-state?    rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw (bgp-mcast-vpls-route-type)?
+--:(SELECTIVE_TREE_AD_ROUTE)
|   |--rw selective-tree-ad-route* [route-type route-distinguisher
|   |   |--rw route-type          mcast-vpls-route-type
|   |   |--rw route-distinguisher route-distinguisher-d
|   |
|   |   |--rw multicast-source     inet:ip-prefix
|   |   |--rw multicast-group      inet:ip-prefix
|   |   |--rw origin-router-ip-addr inet:ip-prefix
+--:(LEAF_AD)
|   |--rw leaf-ad-route* [route-type route-key origin-route
|   |   |--rw route-type          mcast-vpls-route-type
|   |   |--rw route-key          binary
|   |   |--rw origin-router-ip-addr inet:ip-prefix

```



```

+--rw bgp-rib-out
  +--rw bgp-route-type?          enumeration
  +--rw bgp-attribute-list
    +--rw bgp-origin?           enumeration
    +--rw bgp-aspath
      +--rw usascount?          uint16
      +--rw ulrefcount?         uint16
      +--rw asstring?           string
      +--ro usascountfrcomp?    uint16
      +--rw usastotalcount?     uint16
      +--rw usas4pathlen?       uint16
      +--rw as4pathvalue?       string
    +--rw bgp-nexthop?          inet:ip-address
    +--rw bgp-med?              uint32
    +--rw bgp-localpref?        uint32
    +--rw bgp-atomic-aggregate? uint32
    +--rw bgp-aggregator
      +--rw ulipaddress?        uint32
      +--rw ulasnumber?         uint32
    +--rw bgp-commattr
      +--rw uscommsize?         uint16
      +--rw ulrefcomm?         uint32
      +--rw commattr-value?     string
    +--rw bgp-extcommattr
      +--rw usextcommsize?      uint16
      +--rw ulrefcount?         uint32
      +--rw extcommattr-value?  string
    +--rw bgp-clusterlist
      +--rw uscluslen?          uint16
      +--rw ulrefclus?          uint32
      +--rw clusterlist-value?  string
    +--rw bgp-originator-id?    uint32
  +--ro bgp-route-create?        enumeration
  +--ro bgp-rt-state-info
    +--ro rib-current-state?     rib-state-def
    +--ro rib-last-state?        rib-state-def
    +--ro rib-rejected-reason?   enumeration
    +--ro not-preferred-reason?  enumeration
  +--rw (bgp-mcast-vpls-route-type)?
    +--:(SELECTIVE_TREE_AD_ROUTE)
      +--rw selective-tree-ad-route* [route-type route-distin
guisher multicast-source multicast-group origin-router-ip-addr]
      +--rw route-type           mcast-vpls-route-type
      +--rw route-distinguisher  route-distinguisher-d
ef
      +--rw multicast-source      inet:ip-prefix
      +--rw multicast-group       inet:ip-prefix
      +--rw origin-router-ip-addr inet:ip-prefix
    +--:(LEAF_AD)
      +--rw leaf-ad-route* [route-type route-key origin-route
r-ip-addr]

```



```

|          +---rw route-type          mcast-vpls-route-type
|          +---rw route-key          binary
|          +---rw origin-router-ip-addr inet:ip-prefix
+---rw bgp-evpn-instance
  +---rw bgp-instance-name?         string
  +---rw bgp-instance-create?       enumeration
  +---rw bgp-instance-type?         enumeration
  +---rw bgp-vendor-type?           enumeration
  +---rw afi?                       afi-def
  +---rw safi?                      safi-def
  +---rw bgp-local-rib
    +---rw bgp-route-type?          enumeration
    +---rw bgp-attribute-list
      +---rw bgp-origin?            enumeration
      +---rw bgp-aspath
        +---rw usascount?           uint16
        +---rw ulrefcount?         uint16
        +---rw asstring?           string
        +---ro usascountfrcomp?    uint16
        +---rw usastotalcount?     uint16
        +---rw usas4pathlen?       uint16
        +---rw as4pathvalue?       string
      +---rw bgp-nexthop?           inet:ip-address
      +---rw bgp-med?               uint32
      +---rw bgp-localpref?        uint32
      +---rw bgp-atomic-aggregate? uint32
      +---rw bgp-aggregator
        +---rw ulipaddress?        uint32
        +---rw ulasnumber?         uint32
      +---rw bgp-commattr
        +---rw uscommsize?         uint16
        +---rw ulrefcomm?         uint32
        +---rw commattr-value?    string
      +---rw bgp-extcommattr
        +---rw usextcommsize?     uint16
        +---rw ulrefcount?        uint32
        +---rw extcommattr-value? string
      +---rw bgp-clusterlist
        +---rw uscluslen?         uint16
        +---rw ulrefclus?        uint32
        +---rw clusterlist-value? string
      +---rw bgp-originator-id?    uint32
    +---ro bgp-route-create?        enumeration
  +---ro bgp-rt-state-info
    +---ro rib-current-state?       rib-state-def
    +---ro rib-last-state?          rib-state-def
    +---ro rib-rejected-reason?     enumeration
    +---ro not-preferred-reason?    enumeration

```



```

|   +--rw (bgp-evpn-route-type)?
|   |   +--:(EVPN_AD_ROUTE)
|   |   |   +--rw evpn-ad-route* [route-type route-distinguisher esi e
th-tag-id]
|   |   |   |   +--rw route-type                evpn-route-type
|   |   |   |   +--rw route-distinguisher       route-distinguisher-def
|   |   |   |   +--rw esi                        string
|   |   |   |   +--rw eth-tag-id                 uint32
|   |   |   +--:(EVPN_MAC_ROUTE)
|   |   |   |   +--rw evpn-mac-route* [route-type route-distinguisher esi
eth-tag-id mac-length mac-address ip-address-length ip-address]
|   |   |   |   +--rw route-type                evpn-route-type
|   |   |   |   +--rw route-distinguisher       route-distinguisher-def
|   |   |   |   +--rw esi                        string
|   |   |   |   +--rw eth-tag-id                 uint32
|   |   |   |   +--rw mac-length                 uint8
|   |   |   |   +--rw mac-address               yang:mac-address
|   |   |   |   +--rw ip-address-length         uint8
|   |   |   |   +--rw ip-address                inet:ip-address
|   |   |   |   +--rw label1?                   uint32
|   |   |   |   +--rw label2?                   uint32
|   |   |   +--:(EVPN_INC_MCAST_TREE)
|   |   |   |   +--rw evpn-inc-mcast-tree-route* [route-type route-disting
uisher eth-tag-id ip-address-length origin-router-ip-addr]
|   |   |   |   +--rw route-type                evpn-route-type
|   |   |   |   +--rw route-distinguisher       route-distinguisher-def
|   |   |   |   +--rw eth-tag-id                 uint32
|   |   |   |   +--rw ip-address-length         uint8
|   |   |   |   +--rw origin-router-ip-addr     inet:ip-prefix
|   |   |   +--:(EVPN_ETH_SEGMENT_ROUTE)
|   |   |   |   +--rw evpn-eth-segment-route* [route-type route-distinguis
her esi ip-address-length origin-router-ip-addr]
|   |   |   |   +--rw route-type                evpn-route-type
|   |   |   |   +--rw route-distinguisher       route-distinguisher-def
|   |   |   |   +--rw esi                        string
|   |   |   |   +--rw ip-address-length         uint8
|   |   |   |   +--rw origin-router-ip-addr     inet:ip-prefix
|   +--rw bgp-peer-list* [bgp-peer-name]
|   |   +--rw peer-session-address
|   |   |   +--rw local-ipv4-address?            inet:ipv4-prefix
|   |   |   +--rw remote-ipv4-address?          inet:ipv4-prefix
|   |   +--rw bgp-peer-name                    string
|   |   +--ro bgp-peer-type?                    enumeration
|   |   +--ro bgp-peer-create?                  enumeration
|   |   +--rw bgp-policy-in
|   |   +--rw bgp-policy-out
|   |   +--ro peer-policy-in-pset
|   |   +--ro peer-policy-out-pset
|   |   +--rw peer-state-info
|   |   |   +--ro peer-current-state?            peer-state
|   |   |   +--ro peer-last-state?              peer-state
|   |   |   +--ro peer-down-reason

```



			+-ro error-code?	enumeration	
			+-ro sub-error-code		
			+-ro (sub-error-code-type)?		
			+--:(head-error-sub-code)		
n			+-ro head-error-sub-value?		enumeratio
			+--:(open-error-sub-code)		
n			+-ro open-error-sub-value?		enumeratio
			+--:(update-error-sub-code)		
n			+-ro update-error-sub-value?		enumeratio
			+--:(route-refresh-error-sub-code)		
n			+-ro route-refresh-error-sub-value?		enumeratio
			+-ro peer-received-update-cnt?	uint64	
			+-ro peer-transmit-update-cnt?	uint64	
			+-ro peer-received-route-cnt?	uint64	
			+-ro peer-send-route-cnt?	uint64	
			+-rw max-prefix-rcv-limit?	uint64	
			+-rw max-prefix-xmt-limit?	uint64	
			+-ro peer-prefix-high?	uint64	
			+-ro peer-prefix-low?	uint64	
			+-ro peer-perfix-ave?	uint64	
			+-ro peer-prefix-time?	uint64	
			+-ro peer-prefix-max?	uint64	
			+-ro publish-version?	uint64	
			+-rw bgp-rib-in		
			+-rw bgp-route-type?	enumeration	
			+-rw bgp-attribute-list		
			+-rw bgp-origin?	enumeration	
			+-rw bgp-aspath		
			+-rw usascount?	uint16	
			+-rw ulrefcount?	uint16	
			+-rw asstring?	string	
			+-ro usascountfrcomp?	uint16	
			+-rw usastotalcount?	uint16	
			+-rw usas4pathlen?	uint16	
			+-rw as4pathvalue?	string	
			+-rw bgp-nexthop?	inet:ip-address	
			+-rw bgp-med?	uint32	
			+-rw bgp-localpref?	uint32	
			+-rw bgp-atomic-aggregate?	uint32	
			+-rw bgp-aggregator		
			+-rw ulipaddress?	uint32	
			+-rw ulasnumber?	uint32	
			+-rw bgp-commattr		
			+-rw uscommsize?	uint16	
			+-rw ulrefcomm?	uint32	
			+-rw commattr-value?	string	
			+-rw bgp-extcommattr		
			+-rw usextcommsize?	uint16	



```

| | | +--rw ulrefcount?          uint32
| | | +--rw extcommattr-value?  string
| | +--rw bgp-clusterlist
| | | +--rw uscluslen?          uint16
| | | +--rw ulrefclus?         uint32
| | | +--rw clusterlist-value?  string
| | +--rw bgp-originator-id?   uint32
+--ro bgp-route-create?        enumeration
+--ro bgp-rt-state-info
| | +--ro rib-current-state?    rib-state-def
| | +--ro rib-last-state?      rib-state-def
| | +--ro rib-rejected-reason?  enumeration
| | +--ro not-preferred-reason? enumeration
+--rw (bgp-evpn-route-type)?
+--:(EVPN_AD_ROUTE)
| | +--rw evpn-ad-route* [route-type route-distinguisher esi
i eth-tag-id]
| | | +--rw route-type          evpn-route-type
| | | +--rw route-distinguisher route-distinguisher-def
| | | +--rw esi                string
| | | +--rw eth-tag-id         uint32
+--:(EVPN_MAC_ROUTE)
| | +--rw evpn-mac-route* [route-type route-distinguisher esi
si eth-tag-id mac-length mac-address ip-address-length ip-address]
| | | +--rw route-type          evpn-route-type
| | | +--rw route-distinguisher route-distinguisher-def
| | | +--rw esi                string
| | | +--rw eth-tag-id         uint32
| | | +--rw mac-length         uint8
| | | +--rw mac-address        yang:mac-address
| | | +--rw ip-address-length   uint8
| | | +--rw ip-address         inet:ip-address
| | | +--rw label1?           uint32
| | | +--rw label2?           uint32
+--:(EVPN_INC_MCAST_TREE)
| | +--rw evpn-inc-mcast-tree-route* [route-type route-dist
inguishter eth-tag-id ip-address-length origin-router-ip-addr]
| | | +--rw route-type          evpn-route-type
| | | +--rw route-distinguisher route-distinguisher-d
ef
| | | +--rw eth-tag-id         uint32
| | | +--rw ip-address-length   uint8
| | | +--rw origin-router-ip-addr inet:ip-prefix
+--:(EVPN_ETH_SEGMENT_ROUTE)
| | +--rw evpn-eth-segment-route* [route-type route-disting
uishter esi ip-address-length origin-router-ip-addr]
| | | +--rw route-type          evpn-route-type
| | | +--rw route-distinguisher route-distinguisher-d
ef
| | | +--rw esi                string
| | | +--rw ip-address-length   uint8
| | | +--rw origin-router-ip-addr inet:ip-prefix
+--rw bgp-rib-out
+--rw bgp-route-type?         enumeration

```



```

+--rw bgp-attribute-list
|   +--rw bgp-origin?          enumeration
|   +--rw bgp-aspath
|   |   +--rw usascount?       uint16
|   |   +--rw ulrefcount?     uint16
|   |   +--rw asstring?       string
|   |   +--ro usascountfrcomp? uint16
|   |   +--rw usastotalcount?  uint16
|   |   +--rw usas4pathlen?   uint16
|   |   +--rw as4pathvalue?   string
|   +--rw bgp-nexthop?        inet:ip-address
|   +--rw bgp-med?            uint32
|   +--rw bgp-localpref?      uint32
|   +--rw bgp-atomic-aggregate? uint32
|   +--rw bgp-aggregator
|   |   +--rw ulipaddress?     uint32
|   |   +--rw ulasnumber?     uint32
|   +--rw bgp-commattr
|   |   +--rw uscommsize?      uint16
|   |   +--rw ulrefcomm?      uint32
|   |   +--rw commattr-value? string
|   +--rw bgp-extcommattr
|   |   +--rw usextcommsize?   uint16
|   |   +--rw ulrefcount?     uint32
|   |   +--rw extcommattr-value? string
|   +--rw bgp-clusterlist
|   |   +--rw uscluslen?      uint16
|   |   +--rw ulrefclus?     uint32
|   |   +--rw clusterlist-value? string
|   +--rw bgp-originator-id?  uint32
+--ro bgp-route-create?        enumeration
+--ro bgp-rt-state-info
|   +--ro rib-current-state?   rib-state-def
|   +--ro rib-last-state?     rib-state-def
|   +--ro rib-rejected-reason? enumeration
|   +--ro not-preferred-reason? enumeration
+--rw (bgp-evpn-route-type)?
+--:(EVPN_AD_ROUTE)
|   +--rw evpn-ad-route* [route-type route-distinguisher esi
i eth-tag-id]
|   |   +--rw route-type          evpn-route-type
|   |   +--rw route-distinguisher route-distinguisher-def
|   |   +--rw esi                 string
|   |   +--rw eth-tag-id          uint32
+--:(EVPN_MAC_ROUTE)
|   +--rw evpn-mac-route* [route-type route-distinguisher esi
si eth-tag-id mac-length mac-address ip-address-length ip-address]
|   |   +--rw route-type          evpn-route-type
|   |   +--rw route-distinguisher route-distinguisher-def
|   |   +--rw esi                 string

```





```

|      +---rw eth-tag-id          uint32
|      +---rw mac-length          uint8
|      +---rw mac-address         yang:mac-address
|      +---rw ip-address-length   uint8
|      +---rw ip-address          inet:ip-address
|      +---rw label1?             uint32
|      +---rw label2?             uint32
+---:(EVPN_INC_MCAST_TREE)
|      +---rw evpn-inc-mcast-tree-route* [route-type route-dist
inguisher eth-tag-id ip-address-length origin-router-ip-addr]
|      +---rw route-type          evpn-route-type
|      +---rw route-distinguisher route-distinguisher-d
ef
|      +---rw eth-tag-id          uint32
|      +---rw ip-address-length   uint8
|      +---rw origin-router-ip-addr inet:ip-prefix
+---:(EVPN_ETH_SEGMENT_ROUTE)
|      +---rw evpn-eth-segment-route* [route-type route-disting
uisher esi ip-address-length origin-router-ip-addr]
|      +---rw route-type          evpn-route-type
|      +---rw route-distinguisher route-distinguisher-d
ef
|      +---rw esi                  string
|      +---rw ip-address-length   uint8
|      +---rw origin-router-ip-addr inet:ip-prefix

```

## 5. IANA Considerations

This draft includes no request to IANA.

## 6. Security Considerations

TBD.

## 7. Informative References

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