MSDP YANG

draft-ietf-pim-msdp-yang-00

PIM WG

IETF98# Chicago

Xufeng Liu
Zheng(Sandy) Zhang
Anish Peter
Mahesh Sivakumar
Feng Guo
Pete McAllister
MSDP YANG

- The WG 00 version is a status update of draft-zhang-pim-msdp-yang-02 that is presented in Seoul meeting.

- According to RFC3618 [Multicast Source Discovery Protocol (MSDP)]

- Scope covers MSDP protocol and commonly used configuration

- Defines a YANG data model for MSDP configuration and operation
  High-level structure
  Configuration attributes
  Operational state attributes
  Statistics attributes
  RPC attributes
MSDP YANG

• This YANG module is based on the consensus in the YANG multicast design team.

• Archive: http://www.ietf.org/mail-archive/web/yang-multicast/current/maillist.html

• Wiki: http://trac.tools.ietf.org/wg/pim/trac/wiki/yang

• This draft is versioned on github: https://github.com/mcallisterjp/pim-yang/
MSDP YANG

Next to do:

• Adjust the reference of key-chain because of some changes in the models we depend on (draft-ietf-rtgwg-yang-key-chain).

• Revise some spelling mistakes.

• Need YANG doctors review.
Thanks!
MSDP configuration

augment /rt:routing/rt:control-plane-protocols:
+--rw msdp!
   +--rw global
       ......  
   +--rw peers
       ......  

Two level:
Global: General configuration for the entire protocol.
Peer: Special configuration for every MSDP peer.

+--rw msdp!
   +--rw global
       | +--rw connect-source? if:interface-ref
       | +--rw default-peer! {global-default-peer}?
       | | +--rw peer-addr -> ../..../peers/peer/address
       | | +--rw prefix-policy? string {global-default-peer-policy}?
       | +--rw originating-rp
       | | +--rw interface? if:interface-ref
       | | +--rw sa-filter
       | | | +--rw in? string
       | | | +--rw out? String
       | | | +--rw sa-limit? uint32 {global-sa-limit}?
       | | +--rw ttl-threshold? uint8

• Connect-source: The interface is to be the source for the TCP connection.

• Default-peer: The default peer accepts all MSDP SA messages. The reverse path forwarding (RPF) check on SA messages can fail, and no SA messages are accepted. We can use a default peer and bypass RPF checks.

• Originating-rp: This parameter can be used to define a unique IP address for the RP of each MSDP peer.

• Sa-filter: Specifies an access control list (ACL) to filter source active (SA) messages.

• Sa-limit: A limit on the number of SA entries accepted.

• Ttl-threshold: Maximum number of hops data packets can traverse before being dropped.
MSDP configuration

• Authentication: Commonly used authentication attributes.

• Enable: Same usage with BGP protocol.

• Mesh-group: The mesh group that the peer belongs.

• Peer-as: Peer's autonomous system number (ASN).

• Timer: The timer definition according to RFC3618.

```plaintext
+-rw peers
  +--rw peer* [address]
  |   +--rw address    inet:ipv4-address
  |   +--rw authentication
  |   |   +--rw (authentication-type)?
  |   |   |   +--:(key-chain) {peer-key-chain}?
  |   |   |   |   +--rw key-chain?  key-chain:key-chain-ref
  |   |   |   |   +--:(password) {peer-key-chain}?
  |   |   |   |   |   +--rw key?     string
  |   +--rw enable?    boolean {peer-admin-enable}?
  +--rw connect-source?  if:interface-ref
  +--rw description?  string {peer-description}?
  +--rw mesh-group?  string
  +--rw peer-as?     string {peer-as}?
  +--rw sa-filter
  |   +--rw in?    string
  |   +--rw out?   String
  +--rw sa-limit?  uint32 {peer-sa-limit}?
  +--rw timer
  |   +--rw connect-retry-interval?  uint16 {peer-timer-connect-retry}?
  |   +--rw holdtime-interval?    uint16 {peer-timer-holdtime}?
  |   +--rw keepalive-interval?    uint16 {peer-timer-keepalive}?
  +--rw ttl-threshold?  uint8
```
# MSDP state

augment /rt:routing-state/rt:control-plane-protocols:

---ro msdp!
  +---ro global
      ......
  +---ro peers
      ......
  +---ro sa-cache
      ......

Three levels:
- **Global**: The same as configuration.
- **Peer**: Include the peer configuration and statistics.
- **Sa-cache**: SA cache state attributes.

| +---ro sa-cache | | Group: The group address of this sa cache. |
|-----------------|------------------|
|       +---ro entry* [group source-addr] | | Source-addr: The source addr of this sa cache. |
|          +---ro group inet:ipv4-address | | Origin-rp: The rp information. |
|          +---ro source-addr union       | | Up-time: The up time of this sa cache. |
|          +---ro origin-rp* [rp-address] | | Expire: The expire time of this sa cache. |
|           | +---ro rp-address inet:ip-address | | Holddown-interval: Holddown timer value for SA forwarding. |
|           | +---ro is-local-rp? boolean       | | Peer-learned-from: The address of peer that we learned this SA from. |
|           | +---ro up-time? uint32            | | |
MSDP state

Peer state:

• Session-state: Per peer state attributes for MSDP.

• Elapsed-time: Elapsed time for being in a state.

• Connect-retry-expire: Connect retry expire time of peer connection.

• Hold-expire: Hold expire time of peer connection.

• Is-default-peer: If this peer is default peer.

• Keepalive-expire: Keepalive expire time of this peer.

• Reset-count: The reset count of this peer.

• Statistics: Include the statistics information of received and sent. And other relative information.
MSDP rpc

rpcs:
  +++-x msdp-clear-peer
  |   +---w input
  |   +---w peer-address? inet:ipv4-address
  +++-x msdp-clear-sa-cache {rpc-clear-sa-cache}?
     +---w input
     |   +---w entry!
     |   +---w group inet:ipv4-address
     |   +---w source-addr? union
     +---w peer-address? inet:ipv4-address
     +---w peer-as? string

RPC includes the operation of clearing peer and sa-cache.