YANG Model for
Automatic Multicast Tunneling
draft-liu-mboned-amt-yang-00

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Status

• Version 00
  – First version for presentation
  – Effort from operators and vendors
    ◦ China Mobile/H3C/ZTE/Huawei/Juniper
Automatic Multicast Tunneling

RFC 7450:

**Automatic Multicast Tunneling (AMT)** is a protocol that uses UDP-based encapsulation to overcome the aforementioned lack of multicast connectivity.

AMT enables sites, hosts, or applications that do not have native multicast access to a network with multicast connectivity to a source, to request and receive SSM and ASM traffic from a network that does provide multicast connectivity to that source.
DNS Reverse IP AMT Discovery

RFC 8777 extends the AMT relay discovery process described in RFC7450.

A new DNS resource record named AMTRELAY is defined for publishing the IP address or domain name of a set of AMT relays or discovery brokers that can receive, encapsulate, and forward multicast traffic from a particular sender.

The AMT gateway in the remote network can discover the AMT relay that can forward the traffic from the sender by querying the AMTRELAY resource record through the DNS reverse IP.
AMT YANG Model

- Configure the parameters of AMT Relay service

```yang
augment /rt:routing/rt:control-plane-protocols
+--rw amt
   +--rw relay
      +--rw relay-addresses
         | +--rw relay-address* [family]
         |   +--rw family identityref
         |   +--rw anycast-prefix inet:ip-address
         |   +--rw local-address inet:ip-address
         +--rw tunnel-limit? uint32
         +--rw secret-key-timeout? uint32
```
AMT YANG Model

• Manage AMT tunnels established on AMT Relay

  augment /rt:routing/rt:control-plane-protocols
  +--rw amt!
    +--rw relay
      +--ro amt-tunnels
        +--ro amt-tunnel* [gateway-address gateway-port]
          +--ro gateway-address  inet:ip-address
          +--ro gateway-port    inet:port-number
          +--ro local-address   inet:ip-address
          +--ro local-port      inet:port-number
          +--ro state           enumeration
        +--ro multicastflows
          +--ro multicastflow* [source-address  group-address]
            +--ro source-address  ip-multicast-source-address
            +--ro group-address   rt-types:ip-multicast-group-address
AMT YANG Model

- Configure AMT Relay DNS resource records on AMT Relay

```yang
augment /rt:routing/rt:control-plane-protocols
  +--rw amt!
    +--rw relay
      +--rw amtrelay-dns-resource-records
        +--rw amtrelay-dns-resource-record* [source-address]
          +--rw source-address    inet:ip-address
          +--rw precedence?      uint32
          +--rw d-flag?           boolean
          +--rw relay-type?       enumeration
          +--rw discovery-address? inet:ip-address
          +--rw domain-name?      inet:domain-name
```
AMT YANG Model

• Configure and manage the AMT gateway service

augment /rt:routing/rt:control-plane-protocols
  +--rw amt
    +--rw gateway
      +--rw pseudo-interfaces
        +--rw pseudo-interface* [ifIndex]
          +--rw ifIndex if:interface-ref
          +--rw discovery-method enumeration
          +--rw relay-discovery-address? inet:ip-address
          +--rw relay-address? inet:ip-address
          +--rw upstream-interface? if:interface-ref
          +--rw discovery-timeout? uint32
          +--rw discovery-retrans-count? uint32
          +--rw request-timeout? uint32
          +--rw request-retrans-count? uint32
          +--rw dest-unreach-retry-count? uint32
          +--rw relay-port? inet:port-number
          +--ro local-address? inet:ip-address

Configure and manage the AMT gateway service
Next Steps

• Add AMT statistics/accounting items in next version
• Seeking for more feedback from WG
• Questions and comments are welcome