

# YANG Data Model for ARP

*RTGWG IETF 100*

draft-ding-netmod-arp-yang-model-00

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# Problems and Possible Solutions

- Problem

- Different vendor has its own private YANG module to implement ARP function
- Service provide need many ARP YANG modules to manipulate massive devices

- Solution: extract some common properties that need to be configured

- unique identifier for an ARP configuration function. E.g. aging (timeout, expire-time), interval (detect-interval, arp-interval)
- common properties. E.g. Static ARP Entry, dynamic ARP entries, proxy ARP

# Configuration features

- Static ARP Entry
- Dynamic learning of ARP Entries
- Proxy ARP
- Gratuitous ARP

# ARP configuration

- arp-static-tables
- expire-time
- arp-learn
- arp-proxy
- arp-prob-grouping
- arp-gratuitous-grouping
- arp-if-limits

```
module: ietf-arp
  +--rw arp
    +--rw arp-static-tables
      | +--rw arp-static-table* [vrf-name ip-address]
      |   +--rw vrf-name          arp:routing-instance-ref
      |   +--rw ip-address       inet:ipv4-address-no-zone
      |   +--rw mac-address      yang:mac-address
      |   +--rw if-name?        leafref
    +--rw arp-interfaces
      | +--rw arp-interface* [if-name]
      |   +--rw if-name          leafref
      |   +--rw expire-time?     uint32
      |   +--rw arp-learn-disable? boolean
      |   +--rw proxy-enable?   boolean
      |   +--rw probe-interval? uint8
      |   +--rw probe-times?    uint8
      |   +--rw probe-unicast?  boolean
      |   +--rw arp-gratuitous?  boolean
      |   +--rw arp-gratuitous-interval? uint32
      |   +--rw arp-gratuitous-drop? boolean
      |   +--rw arp-if-limits
      |     +--rw arp-if-limit* [vlan-id]
      |       +--rw vlan-id      uint16
      |       +--rw limit-number  uint32
      |       +--rw threshold-value? uint32
```

# Statistic features

- arp table
- arp statistics
  - global statistics
  - local statistics

```
module: ietf-arp
+--rw arp
+--XX
+--ro arp-tables
| +--ro arp-table* [vrf-name ip-address]
|   +--ro vrf-name      arp:routing-instance-ref
|   +--ro ip-address    inet:ipv4-address-no-zone
|   +--ro mac-address?  yang:mac-address
|   +--ro expire-time?  uint32
|   +--ro if-name?     leafref
+--ro arp-statistics
+--ro global-statistics*
| +--ro requests-received?  uint32
| +--ro replies-received?   uint32
| +--ro gratuitous-received? uint32
| +--ro requests-sent?      uint32
| +--ro replies-sent?       uint32
| +--ro gratuitous-sent?    uint32
| +--ro drops-received?     uint32
| +--ro total-received?     uint32
| +--ro total-sent?         uint32
| +--ro arp-dynamic-count?  uint32
| +--ro arp-static-count?   uint32
+--ro arp-if-statistics* [if-name]
+--ro if-name                leafref
+--ro requests-received?     uint32
+--ro replies-received?      uint32
+--ro gratuitous-received?   uint32
+--ro requests-sent?         uint32
+--ro replies-sent?          uint32
+--ro gratuitous-sent?       uint32
```

# Next Steps

- Align with other models
- Solicit comments
- WG consensus