A YANG Data Model for ARP Extensions

draft-ietf-intarea-arp-yang-model-01

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Recap - What does this model cover

- This draft covers the **extra bits of ARP** implementations that many vendors support, but not covered by existing IETF YANG models, e.g.
  - Proxy ARP, Gratuitous ARP configuration, etc.
  - ARP statistics
- Related YANG definitions
  - ***ietf-ip****.yang [RFC8344]* defines **basic ARP and IPv6 ND** functionalities, e.g. neighbor table
  - ***ietf-ipv6-nd****.yang [draft-ietf-6man-ipv6-neighbor-discovery-yang]* extends **IPv6 ND** YANG functionalities

Changes since IETF 125

Model changes:

- Renamed the document, module and prefix
  - Document title: A YANG Data Model for ARP Extensions
  - Module name: ietf-arp-extension
  - Prefix: arp-ext
- Removed the global configuration of dynamic ARP learning
  - Top-level container arp
  - Leaf dynamic-learning
- Renamed gratuitous-arp/enable to gratuitous-arp/enabled to be consistent with the other names used in the document
- Changed statistics types from yang:counter32 to yang:counter64 to align with statistics in other IETF modules (e.g. ietf-interfaces)

```
module: ietf-arp-extension

  augment /if:interfaces/if:interface/ip:ipv4:
    +--rw arp
       +--rw expiry-time?        uint32
       +--rw dynamic-learning?   boolean
       +--rw proxy-arp
       |  +--rw mode?   enumeration
       +--rw gratuitous-arp
       |  +--rw enabled?    boolean
       |  +--rw interval?   uint32
       +--ro statistics
          +--ro in-requests-pkts?    yang:counter64
          +--ro in-replies-pkts?     yang:counter64
          +--ro in-gratuitous-pkts?  yang:counter64
          +--ro out-requests-pkts?   yang:counter64
          +--ro out-replies-pkts?    yang:counter64
          +--ro out-gratuitous-pkts? yang:counter64
  augment /if:interfaces/if:interface/ip:ipv4
          /ip:neighbor:
    +--ro remaining-expiry-time?   uint32
```

Changes since IETF 125

Model changes:

- Updated default values
  - Leaf dynamic-learning: default true
  - Leaf gratuitous-arp/enabled and gratuitous-arp/interval: left unspecified, as they vary across different platforms (per the IETF 104 RTGWG discussion)
  - Leaf expiry-time: left unspecified, as it varies in practice

Editorial changes:

- Added descriptions in Section 3 to clarify the relationship between ietf-ip [RFC 8344] and the ARP extension model
- Modified XPath expressions in Section 6 to use full paths
- Updated references

Example changes:

- Completed and validated all examples by adding the previously omitted parameters

```
module: ietf-arp-extension

  augment /if:interfaces/if:interface/ip:ipv4:
    +--rw arp
       +--rw expiry-time?        uint32
       +--rw dynamic-learning?   boolean
       +--rw proxy-arp
       |  +--rw mode?   enumeration
       +--rw gratuitous-arp
       |  +--rw enabled?    boolean
       |  +--rw interval?   uint32
       +--ro statistics
          +--ro in-requests-pkts?    yang:counter64
          +--ro in-replies-pkts?     yang:counter64
          +--ro in-gratuitous-pkts?  yang:counter64
          +--ro out-requests-pkts?   yang:counter64
          +--ro out-replies-pkts?    yang:counter64
          +--ro out-gratuitous-pkts? yang:counter64
  augment /if:interfaces/if:interface/ip:ipv4
          /ip:neighbor:
    +--ro remaining-expiry-time?   uint32
```

Next Steps

- All issues raised have been addressed.
- WG LC

Thanks!