A YANG Data Model for DHCP Configuration
(draft-liu-dhc-dhcp-yang-model-00)

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Basis

• This model contains three roles of a DHCP system: DHCP server, DHCP relay, and DHCP client
  – a device could be either one of the roles, or a combination of two or three roles
  – when a device is configured multiple roles, the roles are independent with each other
  – this model is only a container for the roles, there is no intrinsic relationship between the roles

• This model is dedicated for DHCPv4 configuration, NOT including DHCPv6
DHCP Relay

- The relay function is configured in a per interface manner.
  - "dhcpRelayIfCfgs" is general relay configurations
- There might be multiple DHCP servers (for high reliable, load balancing etc.)
  - The servers could combined as multiple groups
  - each group is binding to a specific relay configuration ("dhcpRelayIfCfgs")
DHCP Server

```
+--server
    | +--rw common
    |     | +--rw pingPacketNumber uint8
    |     | +--rw pingPacketTimeOut uint16
    | +--rw globalIpPools
    |     | +--rw globalIpPool* [ipPoolName]
    |     |     | +--rw ipPoolName string
    |     |     | +--rw vpnInstance string
    |     |     | +--rw gatewayIp
    |     |     |     | +--rw gatewayIp inet:ipv4-address
    |     |     |     | +--rw gatewayMask inet:ipv4-address
    |     | +--rw sections
    |     |     | +--rw section* [sectionIndex]
    |     |     |     | +--rw sectionIndex uint16
    |     |     |     | +--rw sectionStartIp inet:ipv4-address
    |     |     |     | +--rw sectionEndIp inet:ipv4-address
    |     |     | +--r ipPoolSectionStat
    |     |     | ... 
    | +--rw leaseTime
    |     | +--rw day uint16
    |     | +--rw hour uint8
    |     | +--rw minute uint8
    | +--rw domainNameServer inet:ipv4-address
    | +--rw domainName string
    | +--rw NbnsServer inet:ipv4-address
    | +--rw NbNodeType enum
    | +--rw UserDefOptions
    |     | +--rw UserDefOptions* [optionCode]
    |     |     | +--rw optionCode uint8
    |     |     | +--rw ipAddress inet:ipv4-address
    |     |     | +--rw optionString string
    |     |     | +--rw optionHex string
    |     | +--r ipPoolStat
    |     | ... 
    | +--r packetStatistics
    | ... 
```

• **“common”**
  ➢ Configuration for address pinging

• **“globalIpPools”**
  ➢ IP address pool configuration
  ➢ DNS configuration
  ➢ User defined options
DHCP Client

- DHCP client is also managed in a per interface
- Mostly is statistics
Feedbacks from the YANG Doctor Advice Session

• Consider separating the models
  – if the roles normally are not configured together in one device, it would be better to separate them into different models, to avoid confusion/complexity for configuration
  – WG opinion?

• Add client statics in server module

• Name issue
  – e.g. “globalipPool” -> “global-ip-pool”
Next Steps

• Reviews will be appreciate very much!
• A useful work in DHC WG?

Comment?
Thank you!