Yang Data Model for PPPoE Protocol
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Abstract

This document defines a YANG data model that can be used to configure and manage PPPoE.

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1. Introduction

This document defines a YANG [RFC6020] data model for the management of PPPoE protocol.

This data model includes configuration data and state data (status information and counters for the collection of statistics).

1.1. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119].

The following terms are used within this document:

The following terms are defined in [RFC6241] and are not redefined here:

- client
- configuration data
- server
- state data
The following terms are defined in [RFC6020] and are not redefined here:

- augment
- data model
- data node
- presence container

1.2. Tree Diagrams

A simplified graphical representation of the data model is used in this document. The meaning of the symbols in these diagrams is as follows:

- Brackets "[" and "]" enclose list keys.
- Abbreviations before data node names: "rw" means configuration (read-write), and "ro" means state data (read-only).
- Symbols after data node names: "?" means an optional node, "!" means a presence container, and "*" denotes a list and leaf-list.
- Parentheses enclose choice and case nodes, and case nodes are also marked with a colon (":")
- Ellipsis ("...") stands for contents of subtrees that are not shown.

2. Design of Data Model

The goal of this document is to define a data model that provides a common user interface to the PPPoE protocol. There is very information that is designated as "mandatory", providing freedom for vendors to adapt this data model to their respective product implementations.

2.1. Overview

The PPPoE YANG module defined in this document has all the common building blocks for the PPPoE protocol.

module: ietf-if-ex-pppoe
augment /if:interfaces/if:interface:
  +--rw pppoe!
    +--rw pppoe-mode-type?  enumeration
    +--rw pppoe-server! {pppoe-server}?
| +--rw enabled?      boolean |
| +--rw remote-ip-pool! (remote-ip-pool)? |
|    +--rw (address-pool)  
|   |    +--:(ip-pool) |
|   |       |    +--rw ip-pool?        inet:ip-prefix |
|   |       |    +--:(ip-pool-name) |
|   |       |       |    +--rw ip-pool-name?   string |
| +--rw authentication! (pppoe-authentication)? |
|    +--rw (authentication-mode)  
|    |    +--:(pap)  
|    |       |    +--rw pap?    empty |
|    |       |    +--:(chap)  
|    |       |       |    +--rw chap?   empty |
| +--rw pppoe-client! (pppoe-client)? |
|    +--rw enabled?   boolean |

3. PPPoE YANG Module

<CODE BEGINS> file "intf-if-ext-pppoe@2017-09-19.yang"
module ietf-if-ext-pppoe {  
    namespace "urn:ietf:params:xml:ns:yang:iana-if-type-pppoe";  
    prefix "pppoe";
import ietf-interfaces {  
    prefix if;
}
import ietf-inet-types {  
    prefix "inet";
}
organization  
"IETF NETMOD (NETCONF Data Modeling Language) Working Group";
contact  
"Editor:   Hansance Han  
<mailto:hansance.han@ericsson.com  
Editor:   Kevin Huang M  
<mailto:kevin.m.huang@ericsson.com>";

description  
"This module contains a collection of YANG definitions  
for managing PPPoE network interfaces.";
revision 2017-09-19 {  
description  
"Initial revision.";
reference
"RFC 7223: A YANG Data Model for Interface Management";

feature pppoe {
    description
    "Indicates that the interface supports configuration of pppoe.";
}

feature pppoe-server {
    description
    "Indicates that the PPPoE supports server mode.";
}

feature pppoe-client {
    description
    "Indicates that the PPPoE support client mode.";
}

feature remote-ip-pool {
    description
    "Indicates that the PPPoE server support IPv4 and IPv6 address pool.";
}

feature pppoe-authentication {
    description
    "Indicates that the interface supports configuration of pppoe authentication.";
}

augment "/if:interfaces/if:interface" {
    when "if:type = 'ppp'"
    description
    "PPPoE link protocol is extension under interface."
}

container pppoe {
    presence "";
    description
    "A pppoe interface must specify the PPPoE parameters.";

    leaf pppoe-mode-type {
        type enumeration {
            enum server {
                description
                "To configure device to operate in the PPPoE server mode.";
            }
        }
    }
}
enum client {
    description
    "To configure device to operate in the PPPoE client mode.";
}

default server;

description
    "The desired mode type for this PPPoE connection mode."
}

container pppoe-server {
    if-feature pppoe-server;
    presence "";
    description
    "The PPPoE server configuration subtree."

    leaf enabled {
        type boolean;
        default "false";
        description
        "This leaf contains the configured, desired state of
        the PPPoE."
    }

    container remote-ip-pool {
        if-feature remote-ip-pool;
        presence "";
        description
        "The PPPoE server support IPv4 and IPv6 address pool for
        remote client device";

        choice address-pool {
            mandatory true;
            description
            "The address-pool for IPv4/IPv6 adress and IP pool
            name.";

            case ip-pool {
                leaf ip-pool {
                    type inet:ip-prefix;
                    description
                    "An IPv4/IPv6 prefix used for PPPoE remote IPv4/IPv6
                    pool purposes.";
                }
            }

            case ip-pool-name {
                leaf ip-pool-name {
                    type string
                    "";
                }
            }
        }
    }
}
container authentication {
  if-feature pppoe-authentication;
  presence "";
  description "The authentication configuration subtree.";
  choice authentication-mode {
    mandatory true;
    description "The authentication sub-mode pap and chap.";
    case pap {
      leaf pap {
        type empty;
        description "Authentication pap for PPPoE.";
      }
    }
    case chap {
      leaf chap {
        type empty;
        description "Authentication chap for PPPoE.";
      }
    }
  }
}

container pppoe-client {
  if-feature pppoe-client;
  presence "";
  description "The PPPoE server configuration subtree.";
  leaf enabled {
    type boolean;
    default "false";
    description "This leaf contains the configured, desired state of the PPPoE.";
  }
}
4. Security Considerations

The data model defined does not create any security implications.

5. IANA Considerations

This draft does not request any IANA action.

6. Normative References


7. Appendix A. Change Log
Authors’ Addresses

Hansance Han
Ericsson (China) Communications Company Ltd.
Ericsson Tower, No. 5 Lize East Street,
Chaoyang District Beijing 100102, P.R. China

Email: hansance.han@ericsson.com

Kevin Huang M
Ericsson (China) Communications Company Ltd.
Ericsson Tower, No. 5 Lize East Street,
Chaoyang District Beijing 100102, P.R. China

Email: kevin.m.huang@ericsson.com