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Yang Data Model for DNS Resolver Protocol
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Abstract

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

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[1. Introduction](#)

This document defines a YANG [[RFC6020](#)] data model for the management of DNS 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:

- o client
- o configuration data

- o server
- o state data

The following terms are defined in [[RFC6020](#)] and are not redefined here:

- o augment
- o data model
- o data node
- o 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:

- o Brackets "[" and "]" enclose list keys.
- o Abbreviations before data node names: "rw" means configuration (read-write), and "ro" means state data (read-only).
- o Symbols after data node names: "?" means an optional node, "!" means a presence container, and "*" denotes a list and leaf-list.
- o Parentheses enclose choice and case nodes, and case nodes are also marked with a colon (":").
- o 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 DNS Resolver 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 DNS Resolver YANG module defined in this document is augmented to the DNS resolver, which is defined in [RFC7317](#).

2.2. Resource Record

In general, we expect a resolver to cache all static hostname-to-IPAddress mapping data. Each static mapping data is one resource record, it contains the hostname and the corresponding IP address.

```
module: ietf-system-dns-resolver
augment /sys:system/sys:dns-resolver:
  +--rw resource-record* [name]
    +--rw name            string
    +--rw address         inet:ip-address
```

3. DNS Resolver YANG Module

```
<CODE BEGINS> file "ietf-dns-resolver@2016-09-23.yang"

module ietf-system-dns-resolver {
  yang-version "1";

  namespace "urn:ietf:params:xml:ns:yang:ietf-system:dns-resolver";
  prefix "dnsres";

  import ietf-inet-types {
    prefix inet;
  }

  import ietf-system {
    prefix sys;
  }

  organization
    "IETF NETMOD (NETCONF Data Modeling Language) Working Group";

  contact
    "Qifeng Zhang
    Ericsson (China) Communication Co.,Ltd
    ET2, No.5 Lize East street, Chaoyang District
    100102
    China
    Phone: +86 13911502387
    EMail: qifeng.zhang@ericsson.com";

  description
    "This YANG module defines a data model for the configuration of
    DNS Resolver defined in RFC1035";
```

```
revision 2016-09-23 {
  description
    "Initial revision.";
  reference
    "RFC 1035: DOMAIN NAMES - IMPLEMENTATION AND SPECIFICATION";
}

/* Configuration data */

augment "/sys:system/sys:dns-resolver" {
  description
    "Augment dns-resolver to include resource record.";

  list resource-record {
    key "name";
    description
      "List of Resource Record entry.";

    leaf name {
      type string;
      description
        "An arbitrary name for the host.";
    }

    leaf address {
      type inet:ip-address;
      mandatory true;
      description
        "The address of the host.";
    }
  }
}
}
<CODE ENDS>
```

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

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC1034] P. Mockapetris, "DOMAIN NAMES - CONCEPTS AND FACILITIES", DOI 10.17487/RFC1034, [RFC 1034](#), November 1987, <<http://www.rfc-editor.org/info/rfc1034>>.
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- [RFC6020] Bjorklund, M., Ed., "YANG - A Data Modeling Language for the Network Configuration Protocol (NETCONF)", [RFC 6020](#), DOI 10.17487/RFC6020, October 2010, <<http://www.rfc-editor.org/info/rfc6020>>.
- [RFC6021] Schoenwaelder, J., Ed., "Common YANG Data Types", [RFC 6021](#), DOI 10.17487/RFC6021, October 2010, <<http://www.rfc-editor.org/info/rfc6021>>.

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