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DHCPv6 Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

Contents

1 Introduction

1.1 Revision History

Date	Rev	Characteristics	Prepared
2012-12-04	PA1	First draft version	EZOLMED

1.2 How to Read this Document

This is the Function Specification for the set of DHCPv6 protocol modules. DHCPv6 protocol modules are developed for the TTCN-3 Toolset with TITAN. This document should be read together with the Product Revision Information [3].

1.3 Scope

The purpose of this document is to specify the content of the DHCPv6 protocol modules.

1.4 References

[1] 2/198 17-CRL 113 200 Uen
Programmer's Technical Reference for the TITAN TTCN-3 Test Executor

[2] ETSI ES 201 873-1 v.3.1.1 (06/2005)
The Testing and Test Control Notation version 3. Part 1: Core Language

[3] 109 21-CNL 113 763-1 Uen
DHCPv6 Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information

[4] IETF RFC 3646
DNS Configuration options for Dynamic Host Configuration Protocol for IPv6 (DHCPv6)

[5] IETF RFC 3736
Stateless Dynamic Host Configuration Protocol (DHCP) Service for IPv6

[6] IETF RFC 3315
Dynamic Host Configuration Protocol for IPv6 (DHCPv6)

[7] IETF RFC 3319
Dynamic Host Configuration Protocol (DHCPv6) Options for Session Initiation Protocol (SIP) Servers

[8] IETF RFC 1035
Domain names – implementation and specification

[9] IETF RFC 3633
IPv6 Prefix Options for Dynamic Host Configuration Protocol (DHCP) version 6

1.5 Abbreviations

IETF	Internet Engineering Task Force
DHCPv6	Dynamic Host Configuration Protocol for IPv6
IPv6	Internet Protocol Version 6
RFC	Request for Comments
TTCN-3	Testing and Test Control Notation version 3

1.6 Terminology

TITAN	TTCN-3 Test Executor.

2 General

Protocol modules implement the message structures of the related protocol in a formalized way, using the standard specification language TTCN-3. This allows defining of test data (templates) in the TTCN-3 language and correctly encoding/decoding messages when executing test suites using the TITAN TTCN-3 test environment.

Protocol modules are using TITAN's RAW encoding attributes [1] and hence are usable with the TITAN test toolset only.

3 Functional Specification

3.1 Protocol Version Implemented

This protocol module contains the protocol messages and elements of the DHCPv6 protocol (see [4], [5], [6], [7], [8]),

3.2 Modifications/deviations Related to the Protocol Specification

3.2.1 Implemented messages

All message types listed in protocol descriptions are implemented.

3.2.2 Protocol Modifications/Deviations

None

3.3 Encoding/Decoding and Other Related Functions

This product also contains encoding/decoding functions that provide for the correct encoding of messages when sent from TITAN and correct decoding of messages when received by TITAN. The encoder updates the checksum field with the correct value. Implemented encoding/decoding functions:

Name	Type of formal parameters	Type of return value
ef_enc_PDU_DHCPv6	**PDU_DHCPv6**	**octetstring**
ef_dec_PDU_DHCPv6	**octetstring**	**PDU_DHCPv6**
ef_dec_PDU_DHCPv6_backtrack	**octetstring, PDU_DHCPv6**	**integer**