The Generic Routing Encapsulation (GRE) Protocol Module for TTCN-3 Toolset with TITAN, Description

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How to Read This Document

This is the Description for the The Generic Routing Encapsulation (GRE) protocol module. The GRE protocol module is developed for the TTCN-3 Toolset with TITAN.

Presumed Knowledge

To use this protocol module the knowledge of the TTCN-3 language [3] is essential.

Functionality

The protocol module implements the message structure of the Generic Routing Encapsulation (GRE) using the standard specification language TTCNv3. This allows defining of test data in the TTCNv3 language [3] and correctly encoding/decoding these messages when executing test suites using the TITAN TTCNv3 test environment.

Protocol Version Implemented

This set of protocol modules implements protocol messages and constants of RFC 1701.

For example of GRE used over IPv4 networks, please read RFC 1702.

Routing Functionality

The payload (a packet that needs to be encapsulated and routed) is first encapsulated in a GRE packet and the GRE packet can be encapsulated in some other protocol and then forwarded.

Modified and Non-Implemented Protocol Elements

Relaxed conditions

There is no constraint between received and sent messages.

Ericsson-Specific Changes

There is no Ericsson specific change in this product.

Backward Incompatibilities

None.

System Requirements

Protocol modules are a set of TTCN-3 source code files that can be used as part of TTCN-3 test suites only. Hence, protocol modules alone do not put specific requirements on the system used. However in order to compile and execute a TTCN-3 test suite using the set of protocol modules the following system requirements must be satisfied:

- TITAN TTCN-3 Test Executor version R7A (1.7.pl0) or higher installed. For installation guide see [4].

| NOTE | This version of the protocol module is not compatible with TITAN releases earlier than R7A. |

Feature List

Encoding/Decoding and Other Related Functions

This product also contains encoding/decoding functions that assure correct encoding of messages when sent from TITAN and correct decoding of messages when received by TITAN. Implemented encoding/decoding functions:

Name	Type of formal parameters	Type of return value
enc_GRE_PDU	(in PDU_GRE pdu)	octetstring
dec_GRE_PDU	(in octetstring stream)	PDU_GRE

Protocol Modules

Overview

Protocol modules implement the message structure 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 [3] and correctly encoding/decoding messages when executing test suites using the Titan TTCN-3 test environment.

Installation

The set of protocol modules can be used for developing TTCN-3 test suites using any text editor. However to make the work more efficient a TTCN-3- enabled text editor is recommended (e.g. `nedit`, `xemacs`). Since the GRE protocol is used as a part of a TTCN-3 test suite, this requires Titan TTCN-3 Test Executor be installed before the module can be compiled and executed together with other parts of the test suite. For more details on the installation of TTCN-3 Test Executor see the relevant section of [4].

Configuration

Module parameters

No module parameters are used in the ICAP protocol module.

Terminology

No specific terminology used.

Abbreviations

ETSI

European Telecommunications Standards Institute

IETF

Internet Engineering Task Force

GRE

Generic Routing Encapsulation

TTCNv3

Testing and Test Control Notation version 3

References

[1] RFC 1701
Generic Routing Encapsulation (GRE)

[2] RFC 1702

Generic Routing Encapsulation over IPv4 networks

[3] ETSI ES 201 873-1 v.3.2.1 (02/2007)
The Testing and Test Control Notation version 3. Part 1: Core Language

[4] User Guide for the TITAN TTCN-3 Test Executor