SUA Protocol Modules for TTCN-3 Toolset with TITAN, User Guide

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About This Document

How to Read This Document

This is the User Guide for the SUA protocol module. The SUA protocol module is developed for the TTCN-3 Toolset with TITAN. This document should be read together with Function Specification [3].

Presumed Knowledge

To use this protocol module the knowledge of the TTCN-3 language [1] is essential.

SUA is specified in the Request for Comments 3868 [4]. A Function Specification was not available.

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 R7A (1.7.pl0) or higher installed. For installation guide see [2].

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

Protocol Modules

Overview

Protocol modules implement the message structures of the related protocol in a formalized way, using the standard specification language TTCN-3. This allows definition of test data (templates) in TTCN-3 language [1] and correct encoding/decoding of messages when executing test suites using the Titan TTCN-3 test environment.

Protocol modules are using Titan's RAW encoding attributes [2] and hence are usable with the Titan test toolset only.

The table below contains the implemented messages and the corresponding TTCN-3 type records. Using those type records, templates can be defined to send and receive a given message.

Message name	Reference	Corresponding type record in *SUA_Types.ttcn*
Connectionless Data Transfer	[4] 3.2.1	SUA_CLDT
Connectionless Data Response	[4] 3.2.2	SUA_CLDR
Connection Oriented Data Transfer	[4] 3.3.1	SUA_CODT
Connection Oriented Data Acknowledge	[4] 3.3.2	SUA_CODA
Connection Request	[4] 3.3.3	SUA_CORE
Connection Acknowledge	[4] 3.3.4	SUA_COAK
Connection Refused	[4] 3.3.5	SUA_COREF
Release Request	[4] 3.3.6	SUA_RELRE
Release Complete	[4] 3.3.7	SUA_RELCO
Reset Request	[4] 3.3.8	SUA_RESRE
Reset Confirm	[4] 3.3.9	SUA_RESCO
Connection Oriented Error	[4] 3.3.10	SUA_COERR
Connection Oriented Inactivity Test	[4] 3.3.11	SUA_COIT
Destination Unavailable	[4] 3.4.1	SUA_DUNA
Destination Available	[4] 3.4.2	SUA_DAVA
Destination State Audit	[4] 3.4.3	SUA_DAUD
Signalling Congestion	[4] 3.4.4	SUA_SCON
Destination User Part Unavailable	[4] 3.4.5	SUA_DUPU
Destination Restricted	[4] 3.4.6	SUA_DRST
ASP Up	[4] 3.5.1	SUA_ASPUP
ASP Up Ack	[4] 3.5.2	SUA_ASPUP_Ack
ASP Down	[4] 3.5.3	SUA_ASPDN
ASP Down Ack	[4] 3.5.4.	SUA_ASPDN_Ack
Heartbeat	[4] 3.5.5	SUA_BEAT
Heartbeat Ack	[4] 3.5.6	SUA_BEAT_Ack
ASP Active	[4] 3.6.1	SUA_ASPAC
ASP Active Ack	[4] 3.6.2	SUA_ASPAC_Ack
ASP Inactive	[4] 3.6.3	SUA_ASPIA
ASP Inactive Ack	[4] 3.6.4	SUA_ASPIA_Ack
Error	[4] 3.7.1	SUA_ERR
Notify	[4] 3.7.2	SUA_NTFY
Registration Request	[4] 3.8.1	SUA_REGREQ
Registration Response	[4] 3.8.2	SUA_REGRSP

Message name	Reference	Corresponding type record in *SUA_Types.ttcn*
Deregistration Request	[4] 3.8.3	SUA_DEREGREQ
Deregistration Response	[4] 3.8.4	SUA_DEREGRSP

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 SUA protocol is used as a part of a TTCN-3 test suite, this requires 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 [2].

Configuration

None.

Example

There are no examples available for this protocol module.

Terminology

Application Server Process (ASP)

An Application Server Process serves as an active or backup process of an Application Server (e.g., part of a distributed signaling node or database element). Examples of Application Server Processes are MGCs, IP SCPs, or IP-based HLRs.

Abbreviations

ASP

Application Server Process

HLR

Home Location Register

IP

Internet Protocol

MGC

Media Gateway Controller

SUA

Signalling Connection Control Part User Adaptation Layer

SCP

Service Control Point

TTCN-3

Testing and Test Control Notation version 3

References

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

[2] 1/1553-CRL 113 200 Uen
User Documentation for the TITAN TTCN-3 Test Executor

[3] 155 17-CNL 113 478
SUA Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

[4] https://tools.ietf.org/html/rfc3868
Signaling Connection Control Part User Adaptation Layer (SUA)