

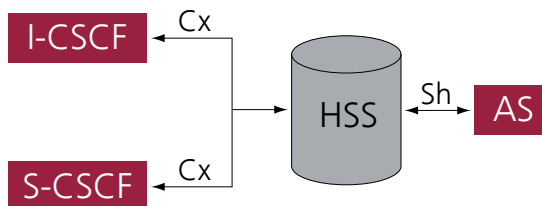
TTsuite-HSS

The Conformance and Interoperability Test Framework for Home Subscriber Server Implementation

The Home Subscriber Server (HSS) is the user database in an IMS network that contains the subscription related information (user profiles) used for call handling. It performs authentication and authorization of the user and can provide information about the user's physical location. TTsuite-HSS focuses on protocol conformance of the interaction of HSS with other IMS signalling components in compliance with the relevant requirements for the Cx and Sh interface specified in overleaf standards.

Features

- Support of 3GPP release 6 and 3GPP release 7
- 88 tests for following procedures
 - Location management, user data handling, authentication, subscription and notification
- Tests for valid and invalid DIAMETER protocol behavior and syntax variations in DIAMETER messages
- Exhaustive set of context parameters for flexible adaptation of TTCN-3 tests to the HSS implementation under test
- Fully automated test execution
- Platform-independent test execution
- Test tracing at different levels of detail
- Summary of test results
- Test definition and documentation using the standardized test notation TTCN-3



Benefits

- Standards-based testing according to DIAMETER specifications especially for the IMS Cx and Sh interface
- Fast and simple test execution and analysis
- Repeatability of tests and full support of test automation
- Platform independence and rapid integration to existing test environments
- Flexibility through usage of a constantly evolving standardized test notation

Standards

- ISO/IEC 9646-1: „Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts“.
- RFC 3588: “Diameter Base Protocol“.
- 3GPP TS 29.228: „3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; IP Multimedia (IM) Subsystem Cx and Dx interfaces; Signalling flows and message contents“.
- 3GPP TS 29.229: “3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Cx and Dx interfaces based on the Diameter protocol; Protocol details“.
- 3GPP TS 29.328: “3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; IP Multimedia (IM) Subsystem Sh Interface; Signalling flows and message contents“.
- 3GPP TS 29.329: “3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Sh Interface based on the Diameter protocol; Protocol details“.
- ETSI ES 201 873-1: „Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language“.

Reference Platforms

- Java 6
- Windows 7 (32bit or 64bit) / Vista / XP / 2000
- Linux Red Hat - v7.1 (x86/GTK)
- Linux SuSE - v9.1 (x86/GTK)

The screenshot displays the TTsuite-HSS interface, which is used for test management, execution, and analysis. The main window is titled "TTCN-3 Execution Management - TTworkbench Professional". It features a menu bar (File, Edit, Navigate, Search, Project, Run, Window, Help) and a toolbar with various icons for file operations and execution control.

The interface is divided into several panes:

- Left Pane:** Shows a tree view of test cases under the identifier "1204800039515". The tree includes sub-items like "TC_Cx_IM_SQ_I_01" through "TC_Cx_IM_SQ_I_10", each with a status indicator (I, C).
- Top Center Pane:** Displays the "Expected TTCN-3 Template" and "Data" tables. The "Expected" table lists user types (signature, UINT32, UINIT32, charstring) and their values (Disconnect, omit, omit, omit). The "Data" table shows the actual values received during execution, such as "signature" (Disconnect) and "verdicttype" (verdict).
- Bottom Pane:** Shows "TTCN-3 Graphical Logging" and "TTCN-3 Textual Logging". The graphical logging pane displays a sequence of events over time, including "Operation Successfully executed", "Entering portable...", "call Disconnect", "receive Disconnect", "send DiameterPacket", "receive", "Disconnect-Peer-Answer", "reply Disconnect", "Disconnect", " Leaving portable...", and "pass". The textual logging pane provides a detailed log of these events, including timestamps and specific messages like "tcpd.intern.testingtech.de: Connection terminated".
- Bottom Left Pane:** Shows the "Properties" and "Parameter" views, with a table for parameters:

Parameter	Value	Default
Timer		
SUT		
ETS		
UserInformation		
NormalSubscriber		
PX_NORMAL_1 { ... }	{ ... }	{ ... }
PX_ADDITION { ... }	{ ... }	{ ... }
AdditionalPubl		
CharstringSubscriber		

Test Management, Execution and Analysis for HSS