H.248 V2 Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

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How to Read This Document

This is the Function Specification for the set of H.248 V2 protocol modules. H.248 V2 protocol modules are developed for the TTCN-3 Toolset with TITAN.

Scope

The purpose of this document is to specify the content of the H.248 V2 protocol modules.

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

Protocol module is using Titan's TEXT encoding attributes [4] for SDP encoder and hence is usable with the Titan test toolset only.

Functional Specification

Protocol Version Implemented

This set of protocol modules implements protocol messages of the H.248 V2 [1] with its corrigendum 1 [2] and V3 draft protocol [6].

The protocol module uses Flex/Bison parser to decode messages for better performance. The encoder is configurable to put long, short or random length tokens into the encoded message.

The Local and Remote descriptor described in the H.248 protocol can be further decoded and encoded as SDP messages. This is not done automatically. A H.248 specific SDP protocol module is shipped with this module, which is based on the SDP protocol specification (see [5]), but it includes deviations described in [1], section 7.1.8 and in current document section Protocol Modifications/Deviations

Modifications/Deviations Related to the Protocol Specification

Unimplemented Messages, Information Elements and Constants

None.

Protocol Modifications/Deviations

TermIDList

The `TermIDList` is introduced in H248.1 v3. In this implementation `TermID` used instead of `TermIDList`.

SDP specific deviations described in [1], section 7.1.8:

- the "s=", "t=" and "o=" lines are optional

- the use of `CHOOSE` value ('$' character) is allowed in place of a single parameter value

- a single session description MUST NOT include more than one media description ("m=" line)

Implementation Specific Deviations:

- Every SDP attribute value is defined as 'charstring' type, even if it would contain integer number, in order to allow to contain the value `'$'` (`CHOOSE`)

- The `H248_SDP_contact` type is not encoded/decoded as it is implemented in the standard SDP protocol module. The email address/phone number field is **NOT** split from the displayable name. Please do not use the `disp_name` field of the type.

- The SDP parsing functionality is implemented in separate module `H248_SDP_Types`.

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
`f_H248_Enc`	(in PDU_H248 pl_pdu)	charstring
`f_H248_Dec`	(in charstring pl_stream)	PDU_H248;
`f_H248_SDP_Enc`	(in H248_SDP_Message_list pl_msg)	charstring;
`f_H248_SDP_Dec`	(in charstring pl_stream)	H248_SDP_Message_list;
`f_H248_SDP_Dec_backtrack`	(in charstring pl_stream, out H248_SDP_Message_list pl_message)	integer;

Terminology

No specific terminology is used.

Abbreviations

TTCN-3

Testing and Test Control Notation version 3

References

[1] H.248.1 (05/2002)
Gateway control protocol: Version 2

[2] H.248.1 v2 Corrigendum 1 (03/2004)
Gateway control protocol: Version 2 Corrigendum 1

[3] ETSI ES 201 873-1 v.2.2.1 (02/2003)
The Testing and Test Control Notation version 3. Part 1: Core Language

[4] 1/198 17-CRL 113 200/4
User Documentation for the TITAN TTCN-3 Test Executor

[5] RFC 2327
SDP: Session Description Protocol

[6] H.248.1 (08/2005)
Gateway control protocol: Version 3 Draft