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HMS VoIP Test
Management Information Base (MIB) Definition
SCTE-HMS-VOIP-MIB

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140 Philips Road
Exton, PA 19341

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1. Scope

This document provides MIB definitions for VoIP testing between two endpoints. It allows an HMS/DOCSIS transponder or any other device that implements it to be used as a test point to validate VoIP service in the network and to report a common basic set of measurements.

2. Copyright

The MIB definition found in this document may be incorporated directly in products without further permission from the copyright owner, SCTE.

3. Normative References

3.1. SCTE Standards

- ANSI/SCTE 37 2002 SCTE-HMS-ROOTS

3.2. Standards from other Organizations

- IETF RFC 3550 RTP: A Transport Protocol for Real-Time Applications
- ITU-T P.800
- ITU-T G.107 “The E-model,” a computational model for use in transmission planning (12/03)

4. Informative References

The following documents may provide valuable information to the reader but are not required when complying with this standard:

ITU-T G.711 Pulse code modulation (PCM) of voice frequencies

- IETF RFC 2578 SNMPv2-SMI
- IETF RFC 2579 SNMPv2-TC
- IETF RFC 2580 SNMPv2-CONF
- IETF RFC 4133 ENTITY-MIB
- IETF RFC 4001 INET-ADDRESS-MIB
- IETF RFC 3411 SNMP-FRAMEWORK-MIB

5. Terms and Definition

This document defines the following terms:

Management Information Base (MIB) - the specification of information in a manner that allows standard access through a network management protocol.

6. Requirements

This section defines the mandatory syntax of the SCTE-HMS-VOIP-MIB. It follows the IETF Simple Network Management Protocol (SNMP) for defining the managed objects.

The syntax is given below.

SCTE-HMS-VOIP-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY,
OBJECT-TYPE, enterprises,
Counter32, Unsigned32
FROM SNMPv2-SMI
OBJECT-GROUP, MODULE-COMPLIANCE
FROM SNMPv2-CONF
DateAndTime, TEXTUAL-CONVENTION
FROM SNMPv2-TC
SnmpAdminString
FROM SNMP-FRAMEWORK-MIB
InetAddress, InetAddressType, InetPortNumber
FROM INET-ADDRESS-MIB
voipIdent
FROM SCTE-HMS-ROOTS;

voipModuleMib MODULE-IDENTITY

LAST-UPDATED "200701291300Z"
ORGANIZATION "SCTE HMS Subcommittee"
CONTACT-INFO "SCTE HMS Subcommittee, Chairman
mail to: standards@scte.org "

DESCRIPTION

"This MIB module, contains the interface for the hms VoIP testing specification. It allows an HMS/DOCSIS transponder or any other device that implements it to be used as a test point to validate VoIP service in the network and to report a common basic set of measurements.

Theory Of operation:

The device controlled by this MIB is called an endpoint. Each endpoint sends or receives a test stream to/from another test

endpoint. A measurement application is responsible for controlling both endpoints to setup compatible test streams and to gather results.

An endpoint can implement a number simultaneous test streams (reported in voipMaxTestInstance). Each test stream is controlled by a separate entry in the voipTestControlTable. This table contains a series of controls that enable the server to set VoIP tests

The purpose of such a test is to simulate an RTP VoIP connection and estimate the equivalent call quality between two known points in the network. From the endpoint's perspective's, each test stream has three possible directions: transmission, reception or loopback. The direction is inferred from the voipTestControlSenderAddress & voipTestControlReceiverAddress MIBs. The endpoint will detect its address in one of the two MIB and set itself up accordingly. When none of the two MIB contains the endpoint's address, a mirror (loopback) mode is used."

```
::= { enterprises scteRoot(5591) scteHmsTree (1) voipIdent (12) voipTestGroup (1) 1}
```

```
--
```

```
-- TEXTUAL CONVENTIONS used by this MIB
```

```
--
```

```
Rfactor ::= TEXTUAL-CONVENTION
```

```
DISPLAY-HINT "d"
```

```
STATUS current
```

```
DESCRIPTION
```

```
"Call or transmission quality expressed as an  
R factor in the range 0 to 120. A value of  
127 shall be interpreted as NULL or unsupported."
```

```
REFERENCE "ITU-T G.107"
```

```
SYNTAX Unsigned32 (0..120|127)
```

ScaledMOSscore ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"Call or transmission quality expressed as a MOS score scaled by 10. MOS is typically represented as a 1.0 to 5.0 score with a single decimal place and hence in this representation as 10 to 50. A value of 127 shall be interpreted as NULL or unsupported."

REFERENCE

"ITU-T P.800"

SYNTAX Unsigned32 (10..50|127)

--

-- voipIdent Mib Branch root

--

voipMibObjects OBJECT IDENTIFIER ::= { voipModuleMib 1 }

voipVersion OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE (0..255))

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Displays the version of the specification running on this endpoint"

::= { voipMibObjects 1 }

voipMaxTestInstance OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of concurrent tests supported by this endpoint."

::= { voipMibObjects 2 }

--

-- Test Mibs

--

voipTest OBJECT IDENTIFIER ::= { voipMibObjects 3 }

--

-- Test Control table

--

voipTestControlTable OBJECT-TYPE

SYNTAX SEQUENCE OF VoipTestControlEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Table of Test Controls

Each entry is used to control a test instance.

Tests parameters shall be inputed to the endpoint first, then
the voipTestControl MIB must be set the setupTest value and
Ready status verified before starting a test."

::= { voipTest 1 }

voipTestControlEntry OBJECT-TYPE

SYNTAX VoipTestControlEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION