

Superseded

CableHome™ CTP MIB Specification

CH-SP-MIB-CTP-I05-040129

Issued

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Document Status Sheet

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Key to Document Status Codes:

| | |
|-------------------------|--|
| Work in Progress | An incomplete document, designed to guide discussion and generate feedback, that may include several alternative requirements for consideration. |
| Draft | A document in specification format considered largely complete, but lacking review by Members and vendors. Drafts are susceptible to substantial change during the review process. |
| Issued | A stable document, which has undergone rigorous member and vendor review and is suitable for product design and development, cross-vendor interoperability, and for certification testing. |
| Closed | A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs. |

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Superseded

This specification describes the CableHome Test Portal (CTP) MIB requirement.

2 REFERENCES

2.1 Normative References

In order to claim compliance with this specification, it is necessary to conform to the following standards and other works as indicated, in addition to the other requirements of this specification. Notwithstanding, intellectual property rights may be required to use or implement such normative references.

- [1] CableHome 1.0 Specification, CH-SP-CH1.0-I05-030801, August 1, 2003.
- [2] CableHome 1.1 Specification, CH-SP-CH1.1-I03-040129, January 29, 2004.
- [3] CableLabs® Definition MIB Specification, CL-SP-MIB-CLABDEF-I03-040113, January 13, 2004.

2.2 Reference Acquisition

CableLabs Specifications:

- Cable Television Laboratories, Inc., <http://www.cablelabs.com/>

3 ACRONYMS

This specification uses the following acronyms:

| | |
|-------------|-----------------------------------|
| CTP | CableHome Test Portal |
| ICMP | Internet Control Message Protocol |
| TCP | Transmission Control Protocol |

4 REQUIREMENTS

The CableHome™ CTP MIB MUST be implemented as defined below:

```

CABH-CTP-MIB DEFINITIONS ::= BEGIN
IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE          FROM SNMPv2-SMI
    TimeStamp,
    TruthValue          FROM SNMPv2-TC
    OBJECT-GROUP,
    MODULE-COMPLIANCE  FROM SNMPv2-CONF
    InetAddressType,
    InetAddress        FROM INET-ADDRESS-MIB
    clabProjCableHome  FROM CLAB-DEF-MIB;

cabhCtpMib MODULE-IDENTITY
    LAST-UPDATED "200401290000Z" -- January 29, 2004
    ORGANIZATION "CableLabs Broadband Access Department"
    CONTACT-INFO
        "Kevin Luehrs
        Postal: Cable Television Laboratories, Inc.
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        Fax:   +1 303-661-9199
        E-mail: k.luehrs@cablelabs.com or mibs@cablelabs.com"
    DESCRIPTION
        "This MIB module defines control and monitoring objects
        for remote diagnostic tools for a CableHome LAN
        supported by the CableHome Test Portal (CTP) as
        defined and described in CableLabs' CableHome
        specifications."
    ::= { clabProjCableHome 5 }

-- Textual conventions

cabhCtpObjects OBJECT IDENTIFIER ::= { cabhCtpMib 1 }
cabhCtpBase OBJECT IDENTIFIER ::= { cabhCtpObjects 1 }
cabhCtpConnSpeed OBJECT IDENTIFIER ::= { cabhCtpObjects 2 }
cabhCtpPing OBJECT IDENTIFIER ::= { cabhCtpObjects 3 }

--
-- The following group describes the base objects in the CableHome
-- Management Portal.
--

cabhCtpSetToFactory OBJECT-TYPE
    SYNTAX TruthValue
    MAX-ACCESS read-write
    STATUS current
    DESCRIPTION
        "Setting this object to true(1) causes all the tables
        in the CTP MIB to be cleared, and all CTP MIB objects
        with default values set back to those default values.
        Reading this object always returns false(2)."
```

```
cabhCtpLastSetToFactory OBJECT-TYPE
    SYNTAX      TimeStamp
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value of sysUpTime when cabhCtpSetToFactory
        was last set to true. Zero if never reset."
    ::= { cabhCtpBase 2 }

--
--      Parameter and results from Connection Speed Command
--

cabhCtpConnSrcIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address type used as the source address for the
        Connection Speed Test."
    DEFVAL { ipv4 }
    ::= { cabhCtpConnSpeed 1 }

cabhCtpConnSrcIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address used as the source address for the
        Connection Speed Test. The default value is the value
        of cabhCdpServerRouter (192.168.0.1). The type of
        this address is specified by cabhCtpConnSrcIpType."
    REFERENCE
        "CableHome Specification, Management Tools - PS
        Logical Element CableHome Test Portal (CTP) section."
    DEFVAL { 'c0a80001'h } -- 192.168.0.1
    ::= { cabhCtpConnSpeed 2 }

cabhCtpConnDestIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address Type for the CTP Connection Speed Tool
        destination address."
    DEFVAL { ipv4 }
    ::= { cabhCtpConnSpeed 3 }

cabhCtpConnDestIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address used as the destination address for the
        Connection Speed Test. The type of this address is
        specified by cabhCtpConnDestIpType. The PS MUST NOT allow
        the value of cabhCtpConnDestIp to be changed if
        cabhCtpConnStatus = running(2). The PS MUST return
        inconsistentValue error to a manager that attempts
        to set the value of cabhCtpConnDestIp when the value of
        cabhCtpConnStatus is running(2)."
    ::= { cabhCtpConnSpeed 4 }
```

```

cabhCtpConnProto OBJECT-TYPE
    SYNTAX      INTEGER {
                    udp(1),
                    tcp(2)
                }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The protocol used in the Connection Speed Test. TCP
        testing is optional."
    DEFVAL { udp }
    ::= { cabhCtpConnSpeed 5 }

cabhCtpConnNumPkts OBJECT-TYPE
    SYNTAX      INTEGER (1..65535)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The number of OSI Layer 3 (IP) packets the CTP is to
        send when triggered to execute the Connection Speed Tool.
        The PS MUST NOT allow the value of cabhCtpConnNumPkts
        to be changed if cabhCtpConnStatus = running(2). The PS
        MUST return inconsistentValue error to a manager that
        attempts to set the value of cabhCtpConnNumPkts when the
        value of cabhCtpConnStatus is running(2)."
    DEFVAL { 100 }
    ::= { cabhCtpConnSpeed 6 }

cabhCtpConnPktSize OBJECT-TYPE
    SYNTAX      INTEGER (64..1518)
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The size of each OSI Layer 2 frame to be
        sent by the PS CableHome Test Portal
        function when configured to execute the
        Connection Speed remote diagnostic tool.
        The PS MUST NOT allow the value of cabhCtpConnPktSize
        to be changed if cabhCtpConnStatus = running(2).
        The PS MUST return inconsistentValue error
        to a manager that attempts to set the value of
        cabhCtpConnPktSize when the value of cabhCtpConnStatus
        is running(2)."
    REFERENCE
        "CableHome Specification, Management Tools - PS
        Logical Element CableHome Test Portal (CTP) section."
    DEFVAL { 1518 }
    ::= { cabhCtpConnSpeed 7 }

cabhCtpConnTimeOut OBJECT-TYPE
    SYNTAX      INTEGER (0..600000)          -- Max 10 minutes
    UNITS       "milliseconds"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The timeout value for the response. A value of zero
        indicates no time out and can be used for TCP only."
    DEFVAL { 30000 } -- 30 seconds
    ::= { cabhCtpConnSpeed 8 }

cabhCtpConnControl OBJECT-TYPE
    SYNTAX      INTEGER {
                    start(1),

```

```

        abort(2)
    }
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The control for the Connection Speed Tool. Setting this
    object to start(1) causes the Connection Speed Tool to
    execute. Setting this object to abort(2) causes the
    Connection Speed Tool to stop running. This parameter
    should only be set via SNMP."
DEFVAL { abort }
::={ cabhCtpConnSpeed 9 }

cabhCtpConnStatus OBJECT-TYPE
    SYNTAX INTEGER {
        notRun(1),
        running(2),
        complete(3),
        aborted(4),
        timedOut(5)
    }
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This object returns the status of the Connection Speed
    Tool. The value notRun(1) indicates that the Connection
    Speed Tool has not been run since the Portal Services
    element of the CableHome residential gateway was
    initialized or reset.

    The value running(2) indicates that the Connection Speed
    Tool was initiated by a manager
    (cabhCtpConnControl = start(1)) and the test has not
    timed out and the PS has not yet completed sending
    all the packets it was configured to send or it has not
    received all responses.

    The value complete(3) indicates that the Connection Speed
    Tool was initiated by a manager, successfully sent all the
    packets it was configured to send, received all responses,
    and is no longer sending packets or waiting for responses.

    The value aborted(4) indicates that the Connection Speed
    Tool was initiated by a manager then was terminated by the
    manager by setting cabhCtpConnControl = abort(2).
    The Connection Speed Tool is no longer sending packets or
    waiting for responses.

    The value timedOut(5) indicates that the Connection Speed
    Tool was initiated by a manager and had not received all
    responses from the client but the amount of time allowed
    for the Connection Speed Tool to execute, defined by the
    value of cabhCtpConnTimeOut, has transpired. The Connection
    Speed Tool is no longer sending packets or waiting
    for responses."
DEFVAL { notRun }
::={ cabhCtpConnSpeed 10 }

cabhCtpConnPktsSent OBJECT-TYPE
    SYNTAX INTEGER (0..65535)
MAX-ACCESS read-only
STATUS current
DESCRIPTION

```

```

        "The number of packets the CTP sent after it was
        triggered to execute the Connection Speed Tool."
 ::= { cabhCtpConnSpeed 11 }

cabhCtpConnPktsRecv OBJECT-TYPE
    SYNTAX      INTEGER (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of packets the CTP received after it
        executed the Connection Speed Tool."
 ::= { cabhCtpConnSpeed 12 }

cabhCtpConnRTT OBJECT-TYPE
    SYNTAX      INTEGER (0..600000)
    UNITS       "millisec"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The resulting round trip time for the set of
        packets sent to and received from the target
        LAN IP Device."
 ::= { cabhCtpConnSpeed 13 }

cabhCtpConnThroughput OBJECT-TYPE
    SYNTAX      INTEGER (0..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The average round-trip throughput measured in
        kilobits per second."
 ::= { cabhCtpConnSpeed 14 }

--
--   Parameters and Results for Ping Command
--

cabhCtpPingSrcIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address Type for CTP Ping Tool source address."
    DEFVAL { ipv4 }
 ::= { cabhCtpPing 1 }

cabhCtpPingSrcIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP Address used as the source address for the Ping
        Test. The default value is the value of
        CabhCdpServerRouter (192.168.0.1). The type of this
        address is specified by cabhCtpPingSrcIpType."
    REFERENCE
        "CableHome Specification, Management Tools - PS
        Logical Element CableHome Test Portal (CTP) section."
    DEFVAL { 'c0a80001'h } --192.168.0.1
 ::= { cabhCtpPing 2 }

cabhCtpPingDestIpType OBJECT-TYPE
    SYNTAX      InetAddressType

```

```
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The IP Address Type for the CTP Ping Tool destination
    address."
DEFVAL { ipv4 }
::={ cabhCtpPing 3 }

cabhCtpPingDestIp OBJECT-TYPE
SYNTAX InetAddress
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The Destination IP Address used as the destination
    address for the Ping Test. The type of this address
    is specified by cabhCtpPingDestIpType. The PS MUST NOT
    allow the value of cabhCtpPingDestIp to be changed if
    cabhCtpPingStatus = running(2). The PS MUST return
    inconsistentValue error to a manager that attempts
    to set the value of cabhCtpPingDestIp when the value of
    cabhCtpPingStatus is running(2)."
```

```
 ::= { cabhCtpPing 4 }

cabhCtpPingNumPkts OBJECT-TYPE
SYNTAX INTEGER (1..4)
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The number of ICMP Echo Request messages to send to
    the destination defined by cabhCtpPingDestIp. The PS
    MUST NOT allow the value of cabhCtpPingNumPkts to be
    changed if cabhCtpPingStatus = running(2). The PS MUST
    return inconsistentValue error to a manager that attempts
    to set the value of cabhCtpPingNumPkts when the value of
    cabhCtpPingStatus is running(2)."
```

```
 DEFVAL { 1 }
 ::= { cabhCtpPing 5 }

cabhCtpPingPktSize OBJECT-TYPE
SYNTAX INTEGER (64..1518)
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The size of the ICMP Echo Request packets to send to
    the destination defined by cabhCtpPingDestIp. The PS
    MUST NOT allow the value of cabhCtpPingPktSize to be
    changed if cabhCtpPingStatus = running(2). The PS MUST
    return inconsistentValue error to a manager that attempts
    to set the value of cabhCtpPingPktSize when the value of
    cabhCtpPingStatus is running(2)."
```

```
 DEFVAL { 64 }
 ::= { cabhCtpPing 6 }

cabhCtpPingTimeBetween OBJECT-TYPE
SYNTAX INTEGER (0..600000)
UNITS "milliseconds"
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The time between sending one ping and the next.
    The PS MUST NOT allow the value of cabhCtpPingTimeBetween
    to be changed if the value of cabhCtpPingStatus is
    running(2). The PS MUST return inconsistentValue error
```

```

        to a manager that attempts to set the value of
        cabhCtpPingTimeBetween when the value of
        cabhCtpPingStatus is running(2)."
```

DEFVAL { 1000 }

::= { cabhCtpPing 7 }

cabhCtpPingTimeOut OBJECT-TYPE

SYNTAX INTEGER (1..600000)

UNITS "milliseconds"

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The time out for ping response (ICMP reply) for a single transmitted ping message (ICMP request)."

DEFVAL { 1000 } -- 1 second

::={ cabhCtpPing 8 }

cabhCtpPingControl OBJECT-TYPE

SYNTAX INTEGER {

start(1),

abort(2)

}

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The control for the Ping Tool. Setting this object to start(1) causes the Ping Tool to execute. Setting this object to abort(2) causes the Ping Tool to stop running. This parameter should only be set via SNMP."

DEFVAL {abort }

::={ cabhCtpPing 9 }

cabhCtpPingStatus OBJECT-TYPE

SYNTAX INTEGER {

notRun(1),

running(2),

complete(3),

aborted(4),

timedOut(5)

}

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This object returns the status of the Ping Tool.

The value notRun(1) indicates that the Ping Tool has not been run since the Portal Services element of the CableHome residential gateway was initialized or reset.

The value running(2) indicates that the Ping Tool was initiated by a manager (cabhCtpPingControl = start(1)) and the test has not timed out and the PS has not yet completed sending all the packets it was configured to send or it has not received all responses.

The value complete(3) indicates that the Ping Tool was initiated by a manager, successfully sent all the packets it was configured to send, received all responses, and is no longer sending packets or waiting for responses.

The value aborted(4) indicates that the Ping Tool was initiated by a manager then was terminated by the manager by setting cabhCtpPingControl = abort(2). The Ping Tool

is no longer sending packets or waiting for responses.

The value `timedOut(5)` indicates that the Ping Tool was initiated by a manager and had not received all responses from the client but the amount of time allowed for the Ping Tool to execute, defined by the value of `cabhCtpPingTimeOut`, has transpired. The Ping Tool is no longer sending packets or waiting for responses."

```
DEFVAL { notRun }
::={ cabhCtpPing 10 }
```

```
cabhCtpPingNumSent OBJECT-TYPE
    SYNTAX      INTEGER (0..4)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of Pings sent."
    ::= { cabhCtpPing 11 }
```

```
cabhCtpPingNumRecv OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of pings received."
    ::= { cabhCtpPing 12 }
```

```
cabhCtpPingAvgRTT OBJECT-TYPE
    SYNTAX      INTEGER (0..600000)
    UNITS       "millisec"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The resulting average of round trip times for
        acknowledged packets."
    ::= { cabhCtpPing 13 }
```

```
cabhCtpPingMaxRTT OBJECT-TYPE
    SYNTAX      INTEGER (0..600000)
    UNITS       "millisec"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The resulting maximum of round trip times for
        acknowledged packets."
    ::= { cabhCtpPing 14 }
```

```
cabhCtpPingMinRTT OBJECT-TYPE
    SYNTAX      INTEGER (0..600000)
    UNITS       "millisec"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The resulting minimum of round trip times for
        acknowledged packets."
    ::= { cabhCtpPing 15 }
```

```
cabhCtpPingNumIcmpError OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of ICMP errors."
```

```

 ::= { cabhCtpPing 16 }

cabhCtpPingIcmpError OBJECT-TYPE
    SYNTAX      INTEGER (0..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The last ICMP error."
 ::= { cabhCtpPing 17 }

-----

--
-- notification group is for future extension.
--

cabhCtpNotification OBJECT IDENTIFIER ::= { cabhCtpMib 2 }
cabhCtpNotifications OBJECT IDENTIFIER ::= { cabhCtpNotification 0 }
cabhCtpConformance OBJECT IDENTIFIER ::= { cabhCtpMib 3 }
cabhCtpCompliances OBJECT IDENTIFIER ::= { cabhCtpConformance 1 }
cabhCtpGroups OBJECT IDENTIFIER ::= { cabhCtpConformance 2 }

--
-- Notification Group
--

-- compliance statements

cabhCtpBasicCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for devices that implement
        Portal Service feature."
    MODULE     --cabhCtpMib

-- unconditionally mandatory groups

MANDATORY-GROUPS {
    cabhCtpGroup
}

 ::= { cabhCtpCompliances 3 }

cabhCtpGroup OBJECT-GROUP
    OBJECTS {
        cabhCtpSetToFactory,
        cabhCtpLastSetToFactory,
        cabhCtpConnSrcIpType,
        cabhCtpConnSrcIp,
        cabhCtpConnDestIpType,
        cabhCtpConnDestIp,
        cabhCtpConnProto,
        cabhCtpConnNumPkts,
        cabhCtpConnPktSize,
        cabhCtpConnTimeOut,
        cabhCtpConnControl,
        cabhCtpConnStatus,
        cabhCtpConnPktsSent,
        cabhCtpConnPktsRecv,
        cabhCtpConnRTT,
    }

```

```
    cabhCtpConnThroughput,

    cabhCtpPingSrcIpType,
    cabhCtpPingSrcIp,
    cabhCtpPingDestIpType,
    cabhCtpPingDestIp,
    cabhCtpPingNumPkts,
    cabhCtpPingPktSize,
    cabhCtpPingTimeBetween,
    cabhCtpPingTimeOut,
    cabhCtpPingControl,
    cabhCtpPingStatus,
    cabhCtpPingNumSent,
    cabhCtpPingNumRecv,
    cabhCtpPingAvgRTT,
    cabhCtpPingMinRTT,
    cabhCtpPingMaxRTT,
    cabhCtpPingNumIcmpError,
    cabhCtpPingIcmpError
  }
STATUS      current
DESCRIPTION
    "Group of objects for CableHome CTP MIB."
 ::= { cabhCtpGroups 1 }

END
```

5 ACKNOWLEDGEMENTS

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Chris Zacker of Broadcom

Appendix I Revision History

The following Engineering Change Notices were incorporated into CH-SP-MIB-CTP-I02-020920:

| ECN Number | ECN Date | Summary |
|-------------|----------|--|
| CH1-N-02001 | 6/20/02 | MIB CabhCtpConnThroughput is defined as R/W in MIB code, should be read only, as per the specification. |
| CH1-N-02006 | 6/20/02 | <p>Correct single dash in the LAST-UPDATED line of the MODULE-IDENTITY.</p> <p>Change the options for the cabhCtpConnControl object.</p> <p>Change the options for the cabhCtpConnStatus object.</p> <p>Correct the range for the cabhCtpPingTimeOut object.</p> <p>Specify a default value (DEFVAL) of IPv4 for all IP address Type objects.</p> <p>Rename the cabhCtpReset object to cabhCtpSetToFactory and change the description.</p> <p>Modify the ranges (SYNTAX) for cabhCtpPingNumSent to be consistent with cabhCtpPingNumPkts.</p> <p>Change the options for the cabhCtpPingControl object.</p> <p>Change the options for the cabhCtpPingStatus object.</p> |

The following Engineering Change Notices were incorporated into CH-SP-MIB-CTP-I03-030411:

| ECN Number | ECN Date | Summary |
|-------------|----------|---|
| CH1-N-02067 | 1/23/03 | Change cabhCtpPingTimeOut DEFVAL to 1 second. |

The following Engineering Change Notices were incorporated into CH-SP-MIB-CTP-I04-030801:

| ECN Number | ECN Date | Summary |
|----------------|----------|---|
| CH-MIB-N-03055 | 7/3/03 | Update CTP MIB to incorporate changes needed to align the CableLabs version with the version submitted to the IETF. |

The following Engineering Change Notices were incorporated into CH-SP-MIB-CTP-I05-040129:

| ECN Number | ECN Date | Summary |
|---------------------|----------|--|
| CH-MIB-N-03081 | 11/13/03 | Remove unneeded IMPORTS and clarify object descriptions. |
| MIB-CTP-N-03.0101-2 | 12/04/03 | Remove references to the CableHome 1.0 specification. |