

Superseded

CableHome™ CDP MIB Specification

CH-SP-MIB-CDP-I05-040129

Issued

Notice

This CableHome specification is a cooperative effort undertaken at the direction of Cable Television Laboratories, Inc. (CableLabs®) for the benefit of the cable industry. Neither CableLabs, nor any other entity participating in the creation of this document, is responsible for any liability of any nature whatsoever resulting from or arising out of use or reliance upon this document by any party. This document is furnished on an AS-IS basis and neither CableLabs, nor other participating entity, provides any representation or warranty, express or implied, regarding its accuracy, completeness, or fitness for a particular purpose.

© Copyright 2001 - 2004 Cable Television Laboratories, Inc.

All rights reserved.

Document Status Sheet

Document Control Number:	CH-SP-MIB-CDP-I05-040129		
Document Title:	CableHome™ CDP MIB Specification		
Revision History:	I05 – January 29, 2004 I04 – August 1, 2003 I03 – April 11, 2003 I02 – September 20, 2002 I01 – April 5, 2002 D04 – April 1, 2002 D03 – March 21, 2002 D02 – January 31, 2002 D01 – January 8, 2002		
Date:	January 29, 2004		
Status:	Work in Progress	Draft	Issued
Distribution Restrictions:	Author Only	CL/Member	CL/CableHomeVendor Public

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.

Trademarks:

DOCSIS®, eDOCSIS™, PacketCable™, CableHome™, OpenCable™ and CableLabs® are trademarks of Cable Television Laboratories, Inc.

Contents

1	SCOPE	1
2	REFERENCES	1
	2.1 Normative References	1
	2.2 Reference Acquisition	1
3	ACRONYMS	1
4	REQUIREMENTS	2
5	ACKNOWLEDGEMENTS	18
	APPENDIX I REVISION HISTORY	19

This page left blank intentionally

1 SCOPE

This specification defines CableHome Addressing Portal (CDP) requirements.

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 abbreviations:

CAP	CableHome Addressing Portal
CDC	CableHome DHCP Client (component of CDP)
CDP	CableHome DHCP Portal
CDS	CableHome DHCP Server (component of CDP)
CMP	CableHome Management Portal
DHCP	Dynamic Host Configuration Protocol
NAPT	Network Address and Port Translation
NAT	Network Address Translation
PS	Portal Services

4 REQUIREMENTS

The CableHome™ CDP MIB MUST be implemented as defined below.

```

CABH-CDP-MIB DEFINITIONS ::= BEGIN
IMPORTS
    MODULE-IDENTITY,
    OBJECT-TYPE,
    Integer32,
    Unsigned32                FROM SNMPv2-SMI
    PhysAddress,
    TruthValue,
    DateAndTime,
    TimeStamp,
    RowStatus                 FROM SNMPv2-TC --RFC2579
    OBJECT-GROUP,
    MODULE-COMPLIANCE        FROM SNMPv2-CONF
    InetAddressType,
    InetAddress              FROM INET-ADDRESS-MIB
    SnmpAdminString          FROM SNMP-FRAMEWORK-MIB
    clabProjCableHome        FROM CLAB-DEF-MIB;

cabhCdpMib MODULE-IDENTITY
    LAST-UPDATED      "200401290000Z" -- January 29, 2004
    ORGANIZATION      "CableLabs Broadband Access Department"
    CONTACT-INFO
        "Kevin Luehrs
        Postal:      Cable Television Laboratories, Inc.
        858 Coal Creek Circle
        Louisville, Colorado 80027
        U.S.A.
        Phone:      +1 303-661-9100
        Fax:        +1 303-661-9199
        E-mail:     k.luehrs@cablelabs.com; mibs@cablelabs.com"
    DESCRIPTION
        "This MIB module supplies the basic management objects
        for the CableHome DHCP Portal (CDP) portion of the PS
        database."
    ::= { clabProjCableHome 4 }

cabhCdpObjects          OBJECT IDENTIFIER ::= { cabhCdpMib 1 }
cabhCdpBase             OBJECT IDENTIFIER ::= { cabhCdpObjects 1 }
cabhCdpAddr            OBJECT IDENTIFIER ::= { cabhCdpObjects 2 }
cabhCdpServer          OBJECT IDENTIFIER ::= { cabhCdpObjects 3 }

--
-- The following group describes the base objects in the CableHome
-- DHCP Portal. The rest of this group deals addresses defined on
-- the LAN side.
--

cabhCdpSetToFactory OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Reading this object always returns false(2). When the
        cabhCdpSetToFactory object is set to true(1), the PS must
        take the following actions:
        1. Clear all cabhCdpLanAddrEntries in the CDP LAN Address

```

Table.

2. The CDS must offer the factory default DHCP options at the next lease renewal time.
3. Reset the following objects to their factory default values:

```

cabhCdpLanTransThreshold,
cabhCdpLanTransAction,
cabhCdpWanDataIpAddrCount,
cabhCdpLanPoolStartType,
cabhCdpLanPoolStart,
cabhCdpLanPoolEndType,
cabhCdpLanPoolEnd,
cabhCdpServerNetworkNumberType,
cabhCdpServerNetworkNumber,
cabhCdpServerSubnetMaskType,
cabhCdpServerSubnetMask,
cabhCdpServerTimeOffset,
cabhCdpServerRouterType,
cabhCdpServerRouter,
cabhCdpServerDnsAddressType,
cabhCdpServerDnsAddress,
cabhCdpServerSyslogAddressType,
cabhCdpServerSyslogAddress,
cabhCdpServerDomainName,
cabhCdpServerTTL,
cabhCdpServerInterfaceMTU,
cabhCdpServerVendorSpecific,
cabhCdpServerLeaseTime,
cabhCdpServerDhcpAddressType,
cabhCdpServerDhcpAddress,
cabhCdpServerCommitStatus"

```

```
::= { cabhCdpBase 1 }
```

cabhCdpLanTransCurCount OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The current number of active leases in the cabhCdpLanAddrTable (the number of row entries in the table that have a cabhCdpLanAddrMethod value of reservationActive(2) or dynamicActive (4)). This count does not include expired leases or reservations not associated with a current lease."

```
::= { cabhCdpBase 2 }
```

cabhCdpLanTransThreshold OBJECT-TYPE

SYNTAX INTEGER (0..65533)

MAX-ACCESS read-write

STATUS current

DESCRIPTION

"The threshold number of LAN-Trans IP addresses allocated or assigned above which the PS generates an alarm condition. Whenever an attempt is made to allocate a LAN-Trans IP address when cabhCdpLanTransCurCount is greater than or equal to cabhCdpLanTransThreshold, an event is generated. A value of 0 indicates that the CDP sets the threshold at the highest number of addresses in the LAN address pool."

```
DEFVAL { 0 }
```

```
::= { cabhCdpBase 3 }
```

```

cabhCdpLanTransAction OBJECT-TYPE
    SYNTAX      INTEGER {
                    normal(1),
                    noAssignment(2)
                }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The action taken when the CDS assigns a LAN-Trans
        address and the number of LAN-Trans addresses assigned
        (cabhCdpLanTransCurCount) is greater than the threshold
        (cabhCdpLanTransThreshold) The actions are as follows:
        normal - assign a LAN-Trans IP address as would
        normally occur if the threshold was not exceeded.
        noAssignment - do not assign a LAN-Trans IP address."
    DEFVAL { normal }
    ::= { cabhCdpBase 4 }

```

```

cabhCdpWanDataIpAddrCount OBJECT-TYPE
    SYNTAX      INTEGER ( 0..63 )
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This is the number of WAN-Data IP addresses the
        PS's CDC must attempt to acquire via DHCP. When
        this MIB object is incremented the CDC MUST
        immediately attempt to acquire additional WAN-Data
        IP addresses. When this MIB object is decremented the
        CDC MUST not renew the leases for the appropriate
        number of WAN-Data IP addresses."
    DEFVAL { 0 }
    ::= { cabhCdpBase 5 }

```

```

cabhCdpLastSetToFactory    OBJECT-TYPE
    SYNTAX      TimeStamp
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The value of sysUpTime when cabhCdpSetToFactory was
        last set to true. Zero if never reset."
    ::= { cabhCdpBase 6 }

```

```

--
--      CDP Address Management Tables
--
=====
--
--      cabhCdpLanAddrTable (CDP LAN Address Table)
--
--      The cabhCdpLanAddrTable contains the DHCP parameters
--      for each IP address served to the LAN-Trans realm.
--
--      This table contains a list of entries for the LAN side CDP
--      parameters. These parameters can be set
--      either by the CDP or by the cable operator through the CMP.
--
=====
cabhCdpLanAddrTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF CabhCdpLanAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION

```

"This table is a list of LAN-Trans realm parameters. This table has one row entry for each allocated LAN-Trans IP address. Each row must have at least a valid cabhCdpLanAddrMethod, a cabhCdpLanAddrIpType, a unique cabhCdpLanAddrIp, and a unique cabhCdpLanAddrClientId value.

Static/Manual address assignment: To create a new DHCP address reservation, the NMS creates a row with: an index comprised of a new cabhCdpLanAddrIp and its cabhCdpLanAddrIpType, a new unique cabhCdpLanAddrClientID, (an empty LeaseCreateTime and empty LeaseExpireTime,) and a cabhCdpLanDataAddrRowStatus of createAndGo(4). If the syntax and values of the new row - indicating a reservation - are valid, the PS must set cabhCdpLanAddrMethod to reservationInactive(1) and cabhCdpLanDataAddrRowStatus to active(1). When the PS grants a lease for a reserved IP, it must set the cabhCdpLanAddrMethod object for that row to reservationActive(2). When a lease for a reserved IP expires, the PS must set the corresponding row's cabhCdpLanAddrMethod object to reservationInactive(1). For row entries that represent lease reservations - rows in which the cabhCdpLanAddrMethod object has a value of either reservationInactive(1) or reservationActive(2) - the cabhCdpLanAddrIpType, cabhCdpLanAddrIp, cabhCdpLanAddrClientID, cabhCdpLanAddrMethod, and cabhCdpLanAddrHostName object values must persist across PS reboots.

Dynamic address assignment: When the PS grants a lease for a non-reserved IP, it must set the cabhCdpLanAddrMethod object for that row to dynamicActive(4). When a lease for a non-reserved IP expires, the PS must set the corresponding row's cabhCdpLanAddrMethod object to dynamicInactive(3). The PS must create new row entries using cabhCdpLanAddrIp values that are unique to this table. If all cabhCdpLanAddrIp values in the range defined by cabhCdpLanPoolStart and cabhCdpLanPoolEnd are in use in this table, the PS may overwrite the cabhCdpLanAddrClientId of a row that has a cabhCdpLanAddrMethod object with a value of dynamicInactive(3) with a new cabhCdpLanAddrClientId value and use that cabhCdpLanAddrIp as part of a new lease. For row entries that represent active leases - rows in which the cabhCdpLanAddrMethod object has a value of dynamicActive(4) - the cabhCdpLanAddrIpType, cabhCdpLanAddrIp, cabhCdpLanAddrClientID, cabhCdpLanAddrMethod, and cabhCdpLanAddrHostName object values must persist across PS reboots."

```
::= { cabhCdpAddr 1 }
```

```
cabhCdpLanAddrEntry OBJECT-TYPE
    SYNTAX      CabhCdpLanAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "List of general parameters pertaining to LAN-Trans IP
        address reservations and leases."
    INDEX { cabhCdpLanAddrIpType, cabhCdpLanAddrIp }
    ::= { cabhCdpLanAddrTable 1 }
```

```

CabhCdpLanAddrEntry ::= SEQUENCE {
    cabhCdpLanAddrIpType      InetAddressType,
    cabhCdpLanAddrIp          InetAddress,
    cabhCdpLanAddrClientID    PhysAddress,
    cabhCdpLanAddrLeaseCreateTime DateAndTime,
    cabhCdpLanAddrLeaseExpireTime DateAndTime,
    cabhCdpLanAddrMethod      INTEGER,
    cabhCdpLanAddrHostName    SnmpAdminString,
    cabhCdpLanAddrRowStatus    RowStatus
}

cabhCdpLanAddrIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The type of IP address assigned to the LAN IP Device
         in the LAN-Trans Realm."
    ::= { cabhCdpLanAddrEntry 1 }

cabhCdpLanAddrIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The address assigned to the LAN IP Device. This parameter
         is entered by the CDP when the CDS grants a lease to a
         LAN IP Device in the LAN-Trans realm and creates a row
         in this table. Alternatively, this parameter can be
         entered by the NMS through the CMP, when the NMS creates
         a new DHCP address reservation. Each cabhCdpLanAddrIp
         in the table must fall within the range of IPs defined
         inclusively by cabhCdpLanPoolStart and
         cabhCdpLanPoolEnd. The PS must return an
         inconsistentValue error if the NMS attempts to
         create a row entry with a cabhCdpLanAddrIP value that falls
         outside of this range or is not unique from all existing
         cabhCdpLanAddrIP entries in this table. The address type of
         this object is specified by cabhCdpLanAddrIpType."
    ::= { cabhCdpLanAddrEntry 2 }

cabhCdpLanAddrClientID OBJECT-TYPE
    SYNTAX      PhysAddress
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The client's (i.e., LAN IP Device's) hardware address as
         indicated in the chaddr field of its DHCP REQUEST message.
         There is a one-to-one relationship between the hardware
         address and the LAN IP Device. This parameter is entered
         by the PS (CDP) when the CDS grants a lease to a LAN IP
         Device in the LAN-Trans realm and creates a row in this
         table. Alternatively this parameter can be created by the
         NMS through the CMP, when the NMS creates a new DHCP
         address reservation by accessing the
         cabhCdpLanDataAddrRowStatus object with an index
         comprised of a unique cabhCdpLanAddrIp and creating
         a row with a unique cabhCdpLanAddrClientID."
    ::= { cabhCdpLanAddrEntry 3 }

cabhCdpLanAddrLeaseCreateTime OBJECT-TYPE
    SYNTAX      DateAndTime

```

```

MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This is the date and time when the LAN IP lease was
    created (if it has not yet been renewed) or last renewed.
    This MIB object contains a zero valued 11 byte string
    when a reservation is created for a LAN IP address
    and it maintains this value until the LAN IP Device
    acquires its lease and cabhCdpLanAddrMethod
    becomes reservationActive(2)."
```

```
 ::= { cabhCdpLanAddrEntry 4 }
```

```

cabhCdpLanAddrLeaseExpireTime OBJECT-TYPE
SYNTAX DateAndTime
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This is the date and time when the LAN IP address lease
    expired or will expire. This MIB object contains a zero
    valued 11 byte string when a reservation is created for
    a LAN IP address and it maintains this value until the
    LAN IP Device acquires its lease and
    cabhCdpLanAddrMethod becomes reservationActive(2)."
```

```
 ::= { cabhCdpLanAddrEntry 5 }
```

```

cabhCdpLanAddrMethod OBJECT-TYPE
SYNTAX INTEGER {
    reservationInactive(1),
    reservationActive(2),
    dynamicInactive(3),
    dynamicActive(4)
}
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The IP allocation method indicated by this row.
    reservationInactive(1) indicates a reserved IP that has
    not yet been leased or that has an expired lease.
    reservationActive(2) indicates a reserved IP that has an
    active lease. dynamicInactive(3) indicates an IP that was
    once dynamically assigned to a LAN-Trans device but
    currently has an expired lease. dynamicActive(4)
    indicates an IP that was dynamically assigned to a
    LAN-Trans device that has a current lease."
```

```
 ::= { cabhCdpLanAddrEntry 6 }
```

```

cabhCdpLanAddrHostName OBJECT-TYPE
SYNTAX SnmpAdminString(SIZE(0..80))
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "This is the Host Name of the LAN IP address, based on DHCP
    option 12."
```

```
 ::= { cabhCdpLanAddrEntry 7 }
```

```

cabhCdpLanAddrRowStatus OBJECT-TYPE
SYNTAX RowStatus
MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "The RowStatus interlock for creation and deletion of row
    entries. The PS must not allow the NMS to set RowStatus
    to notInService(2). The PS must assign a RowStatus of
```

```

        notInService(2) to any new row entry created with a
        non-unique, cabhCdpLanAddrClientID value. The PS must
        assign a RowStatus of notReady(3) to any new row entry
        created without a cabhCdpLanAddrClientID. The PS will
        prevent modification of this table's columns and return an
        inconsistentValue error, if the NMS attempts to make such
        modifications while the RowStatus is active(1)."
 ::= { cabhCdpLanAddrEntry 8 }

-----
--
-- cabhCdpWanDataAddrTable (CDP WAN-Data Address Table)
--
-- The cabhCdpWanDataAddrTable contains the configuration or DHCP
-- parameters for each IP address mapping per WAN-Data IP Address.
--
-----

cabhCdpWanDataAddrTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF CabhCdpWanDataAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "This table contains WAN-Data address realm information."
 ::= { cabhCdpAddr 2 }

cabhCdpWanDataAddrEntry OBJECT-TYPE
    SYNTAX      CabhCdpWanDataAddrEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "List of general parameter for CDP WAN-Data address realm."
    INDEX { cabhCdpWanDataAddrIndex }
 ::= { cabhCdpWanDataAddrTable 1 }

CabhCdpWanDataAddrEntry ::= SEQUENCE {
    cabhCdpWanDataAddrIndex      INTEGER,
    cabhCdpWanDataAddrClientId  OCTET STRING,
    cabhCdpWanDataAddrIpType    InetAddressType,
    cabhCdpWanDataAddrIp        InetAddress,
    cabhCdpWanDataAddrRenewalTime Integer32,
    cabhCdpWanDataAddrRowStatus RowStatus,
    cabhCdpWanDataAddrLeaseCreateTime DateAndTime,
    cabhCdpWanDataAddrLeaseExpireTime DateAndTime
}

cabhCdpWanDataAddrIndex OBJECT-TYPE
    SYNTAX      INTEGER (1..65535)
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Index into table."
 ::= { cabhCdpWanDataAddrEntry 1 }

cabhCdpWanDataAddrClientId OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (1..80))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "A unique WAN-Data ClientID used when attempting
        to acquire a WAN-Data IP Address via DHCP."
 ::= { cabhCdpWanDataAddrEntry 2 }

```

```

cabhCdpWanDataAddrIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The address type assigned on the WAN-Data side."
    DEFVAL { ipv4 }
    ::= { cabhCdpWanDataAddrEntry 3 }

cabhCdpWanDataAddrIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The address assigned on the WAN-Data side."
    ::= { cabhCdpWanDataAddrEntry 4 }

cabhCdpWanDataAddrRenewalTime OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This is the time remaining before the lease expires.
        This is based on DHCP Option 51."
    ::= { cabhCdpWanDataAddrEntry 5 }

cabhCdpWanDataAddrRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The RowStatus interlock for creation and deletion of row
        entries. Any writable object in a row can be modified at
        any time while the row is active(1). The PS must assign a
        RowStatus of notInService(2) to any new row entry created
        with a cabhCdpWanDataAddrClientId that is not unique within
        this table."
    ::= { cabhCdpWanDataAddrEntry 6 }

cabhCdpWanDataAddrLeaseCreateTime OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the date and time when the WAN-Data address lease
        was created (if it has not yet been renewed) or last
        renewed."
    ::= { cabhCdpWanDataAddrEntry 7 }

cabhCdpWanDataAddrLeaseExpireTime OBJECT-TYPE
    SYNTAX      DateAndTime
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This is the date and time when the WAN-Data address
        lease expired or will expire."
    ::= { cabhCdpWanDataAddrEntry 8 }

=====
--
-- cabhCdpWanDnsServerTable (CDP WAN DNS Server Table)
--
-- The cabhCdpWanDnsServerTable is a table of 3 cable network

```

```

-- and Internet DNS Servers.
--
=====
cabhCdpWanDnsServerTable OBJECT-TYPE
    SYNTAX SEQUENCE OF CabhCdpWanDnsServerEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "This table contains the IP addresses of cable network and
        Internet DNS servers, in the order of preference in which
        the PS's CNP will query them, when it cannot resolve a DNS
        query using local information. Entries in this table are
        updated with the information contained in DHCP Option 6,
        received during both the WAN-Man and WAN-Data IP
        acquisition processes."
    ::= { cabhCdpAddr 3 }

cabhCdpWanDnsServerEntry OBJECT-TYPE
    SYNTAX CabhCdpWanDnsServerEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "List of cable network and Internet DNS servers."
    INDEX { cabhCdpWanDnsServerOrder }
    ::= { cabhCdpWanDnsServerTable 1 }

CabhCdpWanDnsServerEntry ::= SEQUENCE {
    cabhCdpWanDnsServerOrder INTEGER,
    cabhCdpWanDnsServerIpType InetAddressType,
    cabhCdpWanDnsServerIp InetAddress
}

cabhCdpWanDnsServerOrder OBJECT-TYPE
    SYNTAX INTEGER {
        primary(1),
        secondary(2),
        tertiary(3)
    }
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The order of preference for cable network and Internet DNS
        servers, as listed in DHCP option 6 (Domain Server). Any
        time the CDC receives valid IP address information within
        DHCP Option 6, as part of lease acquisition or renewal of
        a WAN-Man or WAN-Data IP, it must update this information
        into this table. As entries in DHCP Option 6 are listed in
        order of preference, the highest priority entry in DHCP
        Option 6 must correspond to the row with a
        cabhCdpWanDnsServerOrder with a value of 1. If DHCP
        Option 6 contains 1 valid IP address, the PS MUST update
        the row with a cabhCdpWanDnsServerOrder value of 1 and
        MUST NOT modify rows with
        cabhCdpWanDnsServerOrder values of 2 & 3
        (if they exist). If DHCP Option 6 contains 2 valid
        IP addresses, the PS MUST update the rows with
        cabhCdpWanDnsServerOrder values of 1 and 2
        and MUST NOT modify the row with cabhCdpWanDnsServerOrder
        value of 3 (if it exists). If DHCP Option 6 contains 3
        valid IP addresses, the PS MUST update rows with
        cabhCdpWanDnsServerOrder values of 1, 2, and 3.
        Any DNS server information included in DHCP Option 6
        beyond primary, secondary and tertiary will not be

```

```

        represented in this table."
 ::= { cabhCdpWanDnsServerEntry 1 }

cabhCdpWanDnsServerIpType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This parameter indicates the IP address type of a
        WAN DNS server."
    DEFVAL { ipv4 }
 ::= { cabhCdpWanDnsServerEntry 2 }

cabhCdpWanDnsServerIp OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This parameter indicates the IP address of a WAN DNS
        server. The type of this address is specified by
        cabhCdpWanDnsServerIpType."
 ::= { cabhCdpWanDnsServerEntry 3 }

--
--   DHCP Server Side (CDS) Option Values for the LAN-Trans realm
--

cabhCdpLanPoolStartType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The Address type of the start of range LAN Trans IP
        Addresses."
    DEFVAL { ipv4 }
 ::= { cabhCdpServer 1 }

cabhCdpLanPoolStart OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The start of range LAN Trans IP Addresses. The type of
        this address is specified by cabhCdpLanPoolStartType."
    DEFVAL { 'c0a8000a'h } -- 192.168.0.10
    -- 192.168.0.0 is the network number
    -- 192.168.0.255 is broadcast
    -- address and 192.168.0.1
    -- is reserved for the router
 ::= { cabhCdpServer 2 }

cabhCdpLanPoolEndType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The Address type of the end of range LAN Trans IP
        Addresses."
    DEFVAL { ipv4 }
 ::= { cabhCdpServer 3 }

cabhCdpLanPoolEnd OBJECT-TYPE
    SYNTAX      InetAddress

```

```

MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The end of range for LAN-Trans IP Addresses. The type of
    this address is specified by cabhCdpLanPoolEndType."
DEFVAL { 'c0a800fe'h } -- 192.168.0.254
 ::= { cabhCdpServer 4 }

cabhCdpServerNetworkNumberType OBJECT-TYPE
SYNTAX InetAddressType
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The IP address type of the LAN-Trans network number."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 5 }

cabhCdpServerNetworkNumber OBJECT-TYPE
SYNTAX InetAddress
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The LAN-Trans network number. The type of this address is
    specified by cabhCdpServerNetworkNumberType."
DEFVAL { 'c0a80000'h } --192.168.0.0
 ::= { cabhCdpServer 6 }

cabhCdpServerSubnetMaskType OBJECT-TYPE
SYNTAX InetAddressType
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "Type of LAN-Trans Subnet Mask."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 7 }

cabhCdpServerSubnetMask OBJECT-TYPE
SYNTAX InetAddress
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The PS MUST provide the value of this MIB
    object in the Option 1 (Subnet Mask) of
    DHCP OFFER and ACK messages sent to a LAN IP Device."
DEFVAL { 'ffffff00'h } -- 255.255.255.0
 ::= { cabhCdpServer 8 }

cabhCdpServerTimeOffset OBJECT-TYPE
SYNTAX Integer32 (-86400..86400) -- 0 to 24 hours (in seconds)
UNITS "seconds"
MAX-ACCESS read-write
STATUS current
DESCRIPTION
    "The PS MUST provide the value of this MIB object in
    the Option 2 (Time Offset from Coordinated
    Universal Time-UTC) in the DHCP OFFER and ACK
    messages sent to the LAN IP Device."
DEFVAL { 0 } -- UTC
 ::= { cabhCdpServer 9 }

cabhCdpServerRouterType OBJECT-TYPE
SYNTAX InetAddressType
MAX-ACCESS read-write

```

```
STATUS      current
DESCRIPTION
    "Type of Address, Router for the LAN-Trans
    address realm."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 10 }

cabhCdpServerRouter OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The type of this address is specified by
    cabhCdpServerRouterType. The PS MUST
    provide the value of this MIB object in the
    Option 3 (Router IP address) of the DHCP
    OFFER and ACK messages sent to the LAN IP Device."
DEFVAL { 'c0a80001'h } -- 192.168.0.1
 ::= { cabhCdpServer 11 }

cabhCdpServerDnsAddressType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The Type of IP Addresses of the LAN-Trans address realm
    DNS servers."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 12 }

cabhCdpServerDnsAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The default value of this MIB object is the
    same as the value of the cabhCdpServerRouter
    object. The NMS may set the value of this
    object to a value different than the value
    of cabhCdpServerRouter (e.g. DNS server in the
    cable data network) so that a LAN IP Device can direct its
    DNS queries to a server other than the PS DNS
    server. The type of this address is specified
    by cabhCdpServerDnsAddressType. The PS MUST
    provide the value of this MIB object in the Option 6
    (Domain Name Server) of DHCP OFFER and ACK
    messages sent to a LAN IP Device."
 ::= { cabhCdpServer 13 }

cabhCdpServerSyslogAddressType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The Type of IP Address of the LAN-Trans SYSLOG servers."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 14 }

cabhCdpServerSyslogAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
```

```

        "The IP Addresses of the LAN-Trans SYSLOG servers.
        As a default there are no SYSLOG Servers.
        The factory defaults contains the indication of
        no Syslog Server value equals (0.0.0.0)."
DEFVAL { '00000000'h }    -- 0.0.0.0
 ::= { cabhCdpServer 15 }

cabhCdpServerDomainName OBJECT-TYPE
SYNTAX      SnmpAdminString(SIZE(0..128))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The PS MUST provide the value of this MIB object
    in the Option 15 (Domain Name Option) of the DHCP
    OFFER and ACK messages sent to the LAN IP Device."
DEFVAL { "" }
 ::= { cabhCdpServer 16 }

cabhCdpServerTTL OBJECT-TYPE
SYNTAX      INTEGER (1..255)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The PS MUST provide the value of this MIB
    object in the Option 23 (Default IP TTL) of
    DHCP OFFER and ACK messages sent to a LAN IP Device."
DEFVAL { 64 }
 ::= { cabhCdpServer 17 }

cabhCdpServerInterfaceMTU OBJECT-TYPE
SYNTAX      Integer32 (0 | 68..4096)
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The PS MUST provide the value of this MIB object in the
    Option 26 (Interface MTU Option) of the DHCP OFFER
    and ACK messages sent to the LAN IP Device. If the value
    of this object is 0, the PS must not include this option
    in its DHCP OFFER or DHCP ACK messages to LAN IP Devices."
DEFVAL { 0 }
 ::= { cabhCdpServer 18 }

cabhCdpServerVendorSpecific OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE(0..255))
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The PS MUST provide the value of this MIB object in the
    Option 43 (Vendor Specific Information) of the DHCP OFFER
    and ACK messages sent to the LAN IP Device. If the value of
    this object is ' 'h then the PS MUST NOT include this
    option in its DHCP OFFER or DHCP ACK messages to LAN IP
    Devices."
DEFVAL { ' 'h }
 ::= { cabhCdpServer 19 }

cabhCdpServerLeaseTime OBJECT-TYPE
SYNTAX      Unsigned32
UNITS       "seconds"
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The PS MUST provide the value of this MIB object in the

```

```

        Option 51 (IP Address lease time) of the DHCP OFFER and
        ACK messages sent to the LAN IP Device."
DEFVAL { 3600 }
 ::= { cabhCdpServer 20 }

cabhCdpServerDhcpAddressType OBJECT-TYPE
SYNTAX      InetAddressType
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Type of LAN DHCP server IP address. The
    IP address of LAN DHCP server is provided by
    the PS in option 54 of DHCP OFFER or ACK."
DEFVAL { ipv4 }
 ::= { cabhCdpServer 21 }

cabhCdpServerDhcpAddress OBJECT-TYPE
SYNTAX      InetAddress
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The value of this MIB object is always the
    same as the value of the cabhCdpServerRouter
    object. The type of this address is specified
    by cabhCdpServerDhcpAddressType.
    The PS MUST provide the value of this MIB
    object in the Option 54 (DHCP server identifier)
    field of DHCP OFFER and ACK messages
    sent to a LAN IP device."
 ::= { cabhCdpServer 22 }

cabhCdpServerControl OBJECT-TYPE
SYNTAX      INTEGER {
                restoreConfig(1),
                commitConfig(2)
            }
MAX-ACCESS  read-write
STATUS      current
DESCRIPTION
    "The control for the CDS (DHCP Server) configuration.
    All changes to the cabhCdpServer mib objects are reflected
    when reading the value of the mib objects; however, those
    changes are NOT applied to the running configuration of
    the CDS until they are successfully committed via use
    of the cabhCdpServerControl object.

    If changes are made to the cabhCdpServer mib objects which
    are not yet successfully committed to the CDS, the
    cabhCdpServerControl object can be used to rollback all
    changes to the last valid CDS configuration and discard
    all intermediate changes.

    restoreConfig - Setting cabhCdpServerControl to this value
    will cause any changes to the cabhCdpServer objects not yet
    committed be reset to the values from the current running
    configuration of the CDS.

    commitConfig - Setting cabhCdpServerControl to this value
    will cause the CDS to validate and apply the valid
    cabhCdpServer mib settings to its running configuration.
    The cabhCdpServerCommitStatus object will detail the
    status of this operation."

```

```

DEFVAL { restoreConfig }
 ::= { cabhCdpServer 23 }

cabhCdpServerCommitStatus OBJECT-TYPE
    SYNTAX      INTEGER {
        commitSucceeded(1),
        commitNeeded(2),
        commitFailed(3)
    }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Indicates the status of committing the current
        cabhCdpServer mib object values to the running
        configuration of the CDS (DHCP Server).

        commitSucceeded - indicates the current cabhCdpServer
        mib object values are valid and have been successfully
        committed to the running configuration of the CDS.

        commitNeeded - indicates that the value of one or more
        objects in cabhCdpServer mib group have been changed
        but not yet committed to the running configuration
        of the CDS.

        commitFailed - indicates the PS was unable to commit the
        cabhCdpServer mib object values to the running
        configuration of the CDS due to conflicts in those
        values."
    DEFVAL { commitSucceeded }
 ::= { cabhCdpServer 24 }

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

cabhCdpNotification OBJECT IDENTIFIER ::= { cabhCdpMib 2 }
cabhCdpNotifications OBJECT IDENTIFIER ::= { cabhCdpNotification 0 }
cabhCdpConformance OBJECT IDENTIFIER ::= { cabhCdpMib 3 }
cabhCdpCompliances OBJECT IDENTIFIER ::= { cabhCdpConformance 1 }
cabhCdpGroups OBJECT IDENTIFIER ::= { cabhCdpConformance 2 }

--
-- Notification Group
--

-- compliance statements

cabhCdpBasicCompliance MODULE-COMPLIANCE
    STATUS      current
    DESCRIPTION
        "The compliance statement for devices that implement
        the CableHome Portal Services functionality."
    MODULE     --cabhCdpMib

-- unconditionally mandatory groups

MANDATORY-GROUPS {
    cabhCdpGroup
}

```

```
 ::= { cabhCdpCompliances 3 }

cabhCdpGroup OBJECT-GROUP
  OBJECTS {
    cabhCdpSetToFactory,
    cabhCdpLanTransCurCount,
    cabhCdpLanTransThreshold,
    cabhCdpLanTransAction,
    cabhCdpWanDataIpAddrCount,
    cabhCdpLastSetToFactory,

    cabhCdpLanAddrClientID,
    cabhCdpLanAddrLeaseCreateTime,
    cabhCdpLanAddrLeaseExpireTime,
    cabhCdpLanAddrMethod,
    cabhCdpLanAddrHostName,
    cabhCdpLanAddrRowStatus,

    cabhCdpWanDataAddrClientId,
    cabhCdpWanDataAddrIpType,
    cabhCdpWanDataAddrIp,
    -- cabhCdpWanDataAddrRenewalTime,
    cabhCdpWanDataAddrRowStatus,
    cabhCdpWanDataAddrLeaseCreateTime,
    cabhCdpWanDataAddrLeaseExpireTime,

    cabhCdpWanDnsServerIpType,
    cabhCdpWanDnsServerIp,

    cabhCdpLanPoolStartType,
    cabhCdpLanPoolStart,
    cabhCdpLanPoolEndType,
    cabhCdpLanPoolEnd,
    cabhCdpServerNetworkNumberType,
    cabhCdpServerNetworkNumber,
    cabhCdpServerSubnetMaskType,
    cabhCdpServerSubnetMask,
    cabhCdpServerTimeOffset,
    cabhCdpServerRouterType,
    cabhCdpServerRouter,
    cabhCdpServerDnsAddressType,
    cabhCdpServerDnsAddress,
    cabhCdpServerSyslogAddressType,
    cabhCdpServerSyslogAddress,
    cabhCdpServerDomainName,
    cabhCdpServerTTL,
    cabhCdpServerInterfaceMTU,
    cabhCdpServerVendorSpecific,
    cabhCdpServerLeaseTime,
    cabhCdpServerDhcpAddressType,
    cabhCdpServerDhcpAddress,
    cabhCdpServerControl,
    cabhCdpServerCommitStatus
  }
  STATUS      current
  DESCRIPTION
    "Group of objects for CableHome CDP MIB."
 ::= { cabhCdpGroups 1 }

END
```

5 ACKNOWLEDGEMENTS

Roy Spitzer, Consultant to CableLabs
Mike Mannette, Consultant to CableLabs
Randy Dunton of Intel
Dmitrii Loukianov of Intel
Itay Sherman of Texas Instruments
Chris Zacker of Broadcom
Rick Vetter, Consultant to CableLabs
John Bevilacqua of YAS

Appendix I Revision History

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

ECN Number	ECN Date	Summary
CH1-N-02005	8/15/02	No events defined for the exhaustion of the CDS IP address pool. Other clarifications and typo corrections.
CH1-N-02009	6/20/02	Specify default value of IPv4 for all IP address types. Move the description for CDP LAN Address Type to CDP LAN Address. Correct the reference to cabhCdpWanDataAddrRowStatus in the description for cabhCdpLanAddrClientID. Change the default value of the CDP Server (CDS) lease time from 60 seconds to 3600 seconds. Correct the specified range for the WAN Data IP Address Count. Change the default value for LAN Trans Threshold to be consistent with the default LAN address pool start and end values. Add Network Number as another CDP Server object. Replace each instance of DisplayString with SnmpAdminString. Correct MIB description: remove reference to CAP. Correct description for object cabhCdpSetToFactory.
CH1-N-02013	8/15/02	Change CDC parameters from read-create to read-only.

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

ECN Number	ECN Date	Summary
CH1-N-02038	1/23/03	Include text clarifying that upon setting CDP mib cabhCdpSetToFactory object to (1) true that all entries in the CDP LAN Address Table MUST also be set to factory defaults.
CH1-N-02060	1/23/03	Create a CDP MIB mechanism to reload the CDS server after making changes to cabhCdpServer mib settings.
CH1-N-02055	2/27/03	Provide more descriptive text in the CDP MIB for various tables and for Row Status of various tables. Clean up Imports statement, group membership, overhaul the cabhCdpWanDataAddrServerTable, update lease create and expire time formats, and enhance the cabhCdpLanAddrMethod object to indicate which leases are active.

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

ECN Number	ECN Date	Summary
CH-MIB-N-03053	7/3/03	Update CDP 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-CDP-I05-040129:

ECN Number	ECN Date	Summary
MIB-CDP-N-03.0076-5	12/4/2003	Various changes to the CDP MIB to clarify description of some of the MIB objects.