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Cable Gateway Device Management Information Base for CableHome compliant Residential Gateways

Status of this Memo

Copyright Notice

Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it defines a basic set of managed objects for SNMP based management of CableHome [21] compliant WAN Gateway Devices and home routers.

This memo specifies a MIB module in a manner that is compliant to the SNMP SMIv2 [5][6][7]. The set of objects is consistent with the SNMP framework and existing SNMP standards.

Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC-2119 [2].

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1. The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to section 7 of RFC 3410 [12].

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIv2, which is described in STD 58, RFC 2578 [7], STD 58, RFC 2579 [8] and STD 58, RFC 2580 [9].

2. Glossary

The terms in this document are derived either from normal cable system usage, from normal residential gateway operation, or from the documents associated with the CableHome Specifications [21].

2.1 CableHome Residential Gateway

A CableHome Residential gateway passes data traffic between the cable operator's broadband data network (the Wide Area Network, WAN) and the Local Area Network (LAN) in the cable data service subscriber's residence or business. In addition to passing traffic between the WAN and LAN, the CableHome Residential Gateway provides several services including a DHCP client and a DHCP server (RFC2131) [22], a TFTP server (RFC1350) [23], management services as enabled by SNMPv1/v2c/v3 agent compliant with the RFCs listed in Section 1, and security services including stateful packet inspection firewall functionality and software code image verification using techniques.

2.2 Portal Services

A logical element aggregating the set of CableHome-specified functionality in a CableHome compliant cable gateway device.

2.3 LAN IP Device

A LAN IP Device is representative of a typical IP device expected to reside on home networks, and is assumed to contain a TCP/IP stack as well as a DHCP client.

2.4 WAN Management (WAN-Man) Address

WAN Management Addresses are intended for network management traffic on the cable network between the network management system and the PS element. Typically, these addresses will reside in private IP address space.

2.5 WAN Data (WAN-Data) Address

WAN Data Addresses are intended for subscriber application traffic on the cable network and beyond, such as traffic between LAN IP Devices and Internet hosts. Typically, these addresses will reside in public IP address space.

2.6 LAN Translated (LAN-Trans) Address

LAN Translated Addresses are intended for subscriber application and management traffic on the home network between LAN IP Devices and the PS element. Typically, these addresses will reside in private IP address space, and can typically be reused across subscribers.

2.7 LAN Passthrough (LAN-Pass) Address

LAN Passthrough Addresses are intended for subscriber application traffic, such as traffic between LAN IP Devices and Internet hosts, on the home network, the cable network, and beyond. Typically, these addresses will reside in public IP address space.

2.8 Cable Gateway DHCP Portal (CDP)

A logical element residing within the PS that encapsulates DHCP functionality within a Cable Gateway Device. This includes both DHCP client as well as DHCP server capabilities.

3. Overview

This MIB provides a set of objects required for the management of CableHome compliant residential gateway (RG) devices. The specification is derived from the CableHome Specification [21].

3.1 Structure of the MIB

Two MIBs are included in this Internet-Draft. The first, CABH-DEV-MIB, is a stub under which the following CableHome MIBs are grouped:

draft-jones-cable-gateway-addressing-mib-01
draft-jones-cable-gateway-config-mib-01
draft-jones-cable-gateway-device-mib-01
draft-jones-cable-gateway-security-mib-01
draft-jones-cable-gateway-qos-mib-00
draft-jones-cable-gateway-tools-mib-01

The second MIB, CABH-PS-DEV-MIB, contains the set of objects to manage a CableHome Residential Gateway Device. This MIB is structured into three groups and is described in the remainder of this section:

- The cabhPsDevBase group extends the CableLabs projects-CableHome group with objects needed to implement and configure the CableHome Portal Services set of functions.

- The cabhPsDevProv Group provides objects allowing the manager to configure residential gateway device provisioning parameters.

- The cabhPsNotification group provides SNMP notification objects for the reporting of Portal Services status and exception conditions.

3.2 Management Requirements

3.2.1. Portal Services device-specific parameters

The PsDevBase group consists largely of read-only parameters providing information specific to the device, primarily for identification purposes. By reading these parameters the device manager can gain unique identification information about the cable gateway device in which the Portal Services set of functions resides.

In addition to device-specific identification parameters the PsDevBase group provides device-specific provisioning and operating parameters such as the current date and time and time of day synchronization status indicator.

The PsDevBase group also includes manager-controlled parameters enabling the reset of the Portal Services functionality and enabling the reset of cable gateway device MIB objects to their default values without resetting all Portal Services functionality.

3.2.2 Portal Services provisioning parameters

The second group of OIDs in the Cable Gateway Device MIB, the PsDevProv group, includes parameters required by Portal Services functions that are responsible for provisioning processes, particularly the Portal Services configuration file download processes.

The provisioning process, described in Section 13 of [21], is timed so that it does not get stuck waiting for a failed process to complete. The timeout value for the provisioning process is configurable by the manager but has a default value of 5 minutes.

When the Portal Services is configured to operate in the DHCP Provisioning mode as described in Section 5.5 and Section 7.1.1 of [21], it is required to download via TFTP a file containing zero or more configuration parameters. The name in URL format and location of this configuration file are passed to the Portal Services in a DHCP Option field. The file name and location are stored in PsDevProv objects for retrieval by the manager using the management messaging interface between the manager's console and the Portal Services element. Also stored are the length of the configuration file and the

number of Type-Length-Value (TLV) fields passed in the configuration file, and the number of those TLV fields that were rejected by the configuration file processing function. These parameters allow the manager to verify that configuration parameters he or she passed to the Portal Services element were received and processed correctly.

Integrity of the Portal Services configuration file is verified through the use of a SHA-1 hash value. This process is described in Section 7.3.3.3.1 in [21]. The hash value used to verify the integrity of the configuration file is stored and is accessible to the manager via an object of the PsDevProv group.

The PsDevProv group also includes status parameters such as an indication about the progress of the provisioning process, the configuration file name and location (URL format), hash value for configuration file integrity checking, and the size of the configuration file. The PsDevProv group also includes statistics for tracking the number of Type-Length-Value (TLV) fields passed in the PS configuration file and whether those TLVs were processed or rejected. This group also contains objects for keeping track of whether the file was authenticated, and an object to store the timeout value for the authentication process key exchange.

The location of the Time of Day server, passed from the cable data network DHCP server to the Portal Services element in a DHCP option code, is stored by the Portal Services and accessible to the manager via an object in the PsDevProv group.

3.2.3. Portal Services Notification objects

The Portal Services element is required to report about exception conditions that occur as well as to report on the status of certain parameters. CableHome specifications defines four ways to report these events: SNMP trap as defined in RFC3416 [18] or SNMP notification described in RFC3411 [13] and RFC3412 [14], reporting to a SYSLOG server, writing to a volatile local log, or writing to a nonvolatile local log. Local log information is accessible to the manager via the DOCSIS device MIB, RFC2669 [24]. The CableHome event reporting process is described in Section 6.5 of [21], and defined events are listed in Appendix II Format and Content for Event, SYSLOG and SNMP Trap, in the same reference.

4. MIB Definitions

```
CABH-IETF-PS-DEV-MIB DEFINITIONS ::= BEGIN

IMPORTS
   MODULE-IDENTITY,
   OBJECT-TYPE,
   Integer32,
   NOTIFICATION-TYPE,
   mib-2                FROM SNMPv2-SMI

   TruthValue,
   PhysAddress,
   DateAndTime,
   TimeStamp            FROM SNMPv2-TC

   SnmpAdminString      FROM SNMP-FRAMEWORK-MIB

   OBJECT-GROUP,
   MODULE-COMPLIANCE,
   NOTIFICATION-GROUP   FROM SNMPv2-CONF

   InetAddressType,
   InetAddress          FROM INET-ADDRESS-MIB

   IANAifType           FROM IANAifType-MIB

   docsDevSwCurrentVers,
   docsDevEvLevel,
   docsDevEvId,
   docsDevEvText,
   docsDevSwFilename,
   docsDevSwServer              FROM DOCS-CABLE-DEVICE-MIB -- RFC2669

   cabhCdpServerDhcpAddress,
   cabhCdpWanDataAddrClientId,
   cabhCdpLanTransThreshold,
   cabhCdpLanTransCurCount      FROM CABH-IETF-CDP-MIB

   ZeroBasedCounter32           FROM RMON2-MIB;


cabhPsDevMib MODULE-IDENTITY
    LAST-UPDATED    "200306210000Z" -- Jun 21, 2003
    ORGANIZATION    "IETF IPCDN Working Group"
    CONTACT-INFO
            "Kevin Luehrs
            Postal: Cable Television Laboratories, Inc.
```

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Co-chairs: Richard Woundy,
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Jean-Francois Mule, jf.mule@cablelabs.com"

```
    DESCRIPTION
            "This MIB module supplies the basic management objects
            for the Portal Services logical element of a CableHome
            compliant Residential Gateway device. The PS device
            parameters describe general PS Device attributes and
            behavior characteristics.
            Most of the PS Device MIB is needed for configuration
            download.

            Copyright (C) The Internet Society (2003). This version
            of this MIB module is part of RFC xxxx; see the RFC
            itself for full legal notices."
    REVISION        "200306210000Z" -- Jun 21, 2003
    DESCRIPTION
            "Initial version, published as RFC xxxx."
            -- RFC editor to assign xxxx
    ::= { mib-2 xx }
    -- xx to be assigned by IANA

-- Textual Conventions

cabhPsDevMibObjects  OBJECT IDENTIFIER ::= { cabhPsDevMib 1 }
cabhPsDevBase        OBJECT IDENTIFIER ::= { cabhPsDevMibObjects 1 }
cabhPsDevProv        OBJECT IDENTIFIER ::= { cabhPsDevMibObjects 2 }
cabhPsDevAttrib      OBJECT IDENTIFIER ::= { cabhPsDevMibObjects 3 }
cabhPsDevPsAttrib    OBJECT IDENTIFIER ::= { cabhPsDevAttrib 1 }
cabhPsDevBpAttrib    OBJECT IDENTIFIER ::= { cabhPsDevAttrib 2 }
cabhPsDevPsStats     OBJECT IDENTIFIER ::= { cabhPsDevMibObjects 4 }


--
-- The following group describes the base objects in the PS.
-- These are device based parameters.
--
```

```
   cabhPsDevDateTime     OBJECT-TYPE
```

```
    SYNTAX       DateAndTime
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
            "The date and time, with optional timezone information."
       ::= { cabhPsDevBase 1 }

   cabhPsDevResetNow    OBJECT-TYPE
       SYNTAX     TruthValue
       MAX-ACCESS read-write
       STATUS     current
       DESCRIPTION
               "Setting this object to true(1) causes the stand-alone or
               embedded PS device to reboot. Device code initializes as
               if starting from a power-on reset. The CMP ensures that
               MIB  object values persist as specified in Appendix I of
               the CableHome 1.0 specification. Reading this object
               always returns false(2)."
       ::= { cabhPsDevBase 2 }

   cabhPsDevSerialNumber OBJECT-TYPE
       SYNTAX       SnmpAdminString (SIZE (0..128))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "The manufacturer's serial number for this PS. This
               parameter is manufacturer provided and is stored in
               non-volatile memory."
       ::= { cabhPsDevBase 3 }

   cabhPsDevHardwareVersion OBJECT-TYPE
       SYNTAX       SnmpAdminString (SIZE (0..48))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "The manufacturer's hardware version for this PS. This
               parameter is manufacturer provided and is stored in
               non-volatile memory."
       ::= { cabhPsDevBase 4 }

   cabhPsDevWanManMacAddress  OBJECT-TYPE
       SYNTAX       PhysAddress (SIZE (0..16))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "The PS WAN-Man MAC address. This is the PS hardware
               address to be used by the CDC to uniquely identify the PS
               to the cable data network DHCP server for the acquisition
               of an IP address to be used for management messaging
```

between the cable network NMS and the CMP."

```
       ::= { cabhPsDevBase 5 }

   cabhPsDevWanDataMacAddress  OBJECT-TYPE
       SYNTAX       PhysAddress (SIZE (0..16))
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "The PS WAN-Data MAC address. The PS could have multiple
               WAN-Data Interfaces, which share the same hardware
               address. The client identifiers will be unique so that
               each may be assigned a different, unique IP address."
    ::= { cabhPsDevBase 6 }

   cabhPsDevTypeIdentifier    OBJECT-TYPE
       SYNTAX       SnmpAdminString
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "This is a copy of the device type identifier used in
               the DHCP option 60 exchanged between the PS and the DHCP
               server."
       REFERENCE
               "CableHome 1.0 Specification, CH-SP-I04-030411,
               7.2.3.3 CDC Requirements
               CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
               7.3.3.2.3 CDC Function System Description"
       ::= { cabhPsDevBase 7 }

   cabhPsDevSetToFactory    OBJECT-TYPE
       SYNTAX       TruthValue
       MAX-ACCESS   read-write
       STATUS       current
       DESCRIPTION
               "Setting this object to true(1) sets all PsDev MIB
               objects to the factory default values. Reading this
               object always returns false(2)."
       ::= { cabhPsDevBase 8 }

   cabhPsDevTodSyncStatus     OBJECT-TYPE
       SYNTAX       TruthValue
       MAX-ACCESS   read-only
       STATUS       current
       DESCRIPTION
               "This object indicates whether the PS was able to
               successfully synchronize with the Time of Day (ToD)Server
               in the cable network. The PS sets this object to true(1)
               if the PS successfully synchronizes its time with the ToD
               server. The PS sets this object to false(2) if the PS
               does not successfully synchronize with the ToD server"
```

```
      DEFVAL { false }
```

```
       ::= { cabhPsDevBase 10 }

   cabhPsDevProvMode    OBJECT-TYPE
       SYNTAX     INTEGER
       {
          dhcpmode(1),
          snmpmode(2),
          dormantCHmode(3)
       }
       MAX-ACCESS read-only
       STATUS     current
       DESCRIPTION
               "This object indicates the provisioning mode in which the
               PS is operating. If the PS is operating in DHCP
               Provisioning Mode as described in the CableHome 1.1
               specification, the PS sets this object to dhcpmode(1).
               If the PS is operating in SNMP Provisioning Mode, the PS
               sets this object to snmpmode(2).If the PS is not
               configured to operate in either dhcpmode or snmpmode it
               will fall back to Dormant CableHome Mode and set the
               value of cabhPsDevProvMode to dormantCHmode(3)."
       ::={ cabhPsDevBase 11 }

   cabhPsDevLastSetToFactory    OBJECT-TYPE
    SYNTAX       TimeStamp
    MAX-ACCESS   read-only
    STATUS       current
    DESCRIPTION
            "The value of sysUpTime when cabhPsDevSetToFactory was last
            set to true. Zero if never reset."
       ::= { cabhPsDevBase 12 }

   --
   --    The following group defines Provisioning Specific parameters
   --

   cabhPsDevProvisioningTimer OBJECT-TYPE
       SYNTAX       INTEGER (0..16383)
       UNITS     "minutes"
       MAX-ACCESS   read-write
       STATUS       current
       DESCRIPTION
               "This object enables the user to set the duration of the
               provisioning timeout timer. The value is in minutes.
               Setting the timer to 0 disables it. The default value for
               the timer is 5."
       DEFVAL {5}
       ::=  {cabhPsDevProv 1}
```

```
   cabhPsDevProvConfigFile OBJECT-TYPE
```

```
    SYNTAX       SnmpAdminString (SIZE(1..128))
    MAX-ACCESS   read-write
    STATUS       current
    DESCRIPTION
            "The URL of the TFTP host for downloading provisioning and
            configuration parameters to this device. Returns NULL if the
            server address is unknown."
    ::= { cabhPsDevProv 2 }

   cabhPsDevProvConfigHash OBJECT-TYPE
       SYNTAX      OCTET STRING (SIZE(0|20))
       MAX-ACCESS  read-write
       STATUS      current
       DESCRIPTION
               "Hash of the contents of the config file, which is
               calculated and sent by the NMS to the PS. For the SHA-1
               authentication algorithm the hash length is 160 bits.
               This hash value is encoded in the binary format."
    DEFVAL {''h}
       ::= { cabhPsDevProv 3 }

   cabhPsDevProvConfigFileSize OBJECT-TYPE
       SYNTAX      Integer32
       UNITS     "bytes"
       MAX-ACCESS read-only
       STATUS      current
       DESCRIPTION
               "Size of the configuration file."
       ::={ cabhPsDevProv 4 }

   cabhPsDevProvConfigFileStatus OBJECT-TYPE
       SYNTAX     INTEGER
       {
           idle(1),
           busy(2)
       }
       MAX-ACCESS read-only
       STATUS     current
       DESCRIPTION
               "This object indicates the current status of the
               configuration file download process. It is provided to
               indicate to the management entity that the PS will
               reject PS Configuration File triggers (set request to
               cabhPsDevProvConfigFile) when busy."
       ::={ cabhPsDevProv 5 }

   cabhPsDevProvConfigTLVProcessed OBJECT-TYPE
       SYNTAX     INTEGER (0..16383)
       MAX-ACCESS read-only
```

```
        STATUS     current
```

```
        DESCRIPTION
                "Number of TLVs processed in config file."
        ::={ cabhPsDevProv 6 }

    cabhPsDevProvConfigTLVRejected OBJECT-TYPE
        SYNTAX     INTEGER (0..16383)
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "Number of TLVs rejected in config file."
        ::={ cabhPsDevProv 7 }

    cabhPsDevProvSolicitedKeyTimeout OBJECT-TYPE
           SYNTAX       Integer32 (15..600)
           UNITS     "seconds"
           MAX-ACCESS   read-write
           STATUS       current
        DESCRIPTION
                "This timeout applies only when the Provisioning Server
                initiated key management (with a Wake Up message) for
                SNMPv3.  It is the period during which the PS will save
                a number (inside the sequence number field) from the sent
                out AP Request and wait for the matching AP Reply from
                the Provisioning Server."
        DEFVAL { 120 }
        ::= { cabhPsDevProv 8 }

    cabhPsDevProvState    OBJECT-TYPE
        SYNTAX       INTEGER
        {
            pass(1),
            inProgress(2),
            fail(3)
        }
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "This object indicates the completion state of the
                initialization process. Pass or Fail states occur after
                completion of the initialization flow. InProgress occurs
                from PS initialization start to PS initialization end."
        ::= { cabhPsDevProv 9 }

    cabhPsDevProvAuthState    OBJECT-TYPE
        SYNTAX       INTEGER
        {
            accepted(1),
            rejected(2)
        }
```

```
        MAX-ACCESS  read-only
```

```
        STATUS      current
        DESCRIPTION
                "This object indicates the authentication state of the
                configuration file."
        ::= { cabhPsDevProv 10 }


    cabhPsDevTimeServerAddrType OBJECT-TYPE
        SYNTAX       InetAddressType
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "The IP address type of the Time server (RFC-868).
                IP version 4 is typically used."
     ::= { cabhPsDevProv 12 }

    cabhPsDevTimeServerAddr OBJECT-TYPE
        SYNTAX       InetAddress
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "The IP address of the Time server (RFC-868). Returns
                0.0.0.0 if the time server IP address is unknown."
        ::= { cabhPsDevProv 13 }


    --================================================================
    --
    --   PS Device Profile Group
    --
    --  The cabhPsDevPsProfile contains the Residential Gateway's
    --  device attributes. This set of attributes is analogous to
    --  some attributes of the BP Device profile.
    --
    --================================================================

    cabhPsDevPsDeviceType       OBJECT-TYPE
        SYNTAX    SnmpAdminString (SIZE(1..32))
        MAX-ACCESS       read-only
        STATUS    current
        DESCRIPTION
                "The type of device, as defined in the CableHome
                specifications (Residential Gateway Device or CableHome
                Host Device), that implements this OID."
        DEFVAL { "CableHome Residential Gateway" }
        ::= { cabhPsDevPsAttrib 1 }

    cabhPsDevPsManufacturerUrl  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
```

```
        MAX-ACCESS  read-only
```

```
        STATUS      current
        DESCRIPTION
                "Universal Resource Locator to the Residential Gateway
                device manufacturer's web site."
        REFERENCE
                "CableHome 1.1 Specification, CH1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevPsAttrib 3 }


    cabhPsDevPsModelUrl  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Universal Resource Locator to the web site describing
                this CableHome compliant residential gateway device."
        REFERENCE
                "CableHome 1.1 Specification, CH1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevPsAttrib 7 }


    cabhPsDevPsModelUpc  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Universal Product Code of the CableHome compliant
                residential gateway device."
        REFERENCE
                "CableHome 1.1 Specification, CH1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description.
                See also: Uniform Code Council  www.uc-council.org"
        DEFVAL { "" }
        ::= { cabhPsDevPsAttrib 8 }

    --=================================================================
    --
    --   CableHome Host/BP Device Profile Table
    --
    --  The cabhPsDevBpProfile contains the list of the CableHome Host
    --  device attributes provided to the PS by BPs passing their Device
    --  Profile XML schema via SOAP/HTTP.
    --
    --=================================================================
```

```
   cabhPsDevBpProfileTable OBJECT-TYPE
```

```
        SYNTAX SEQUENCE OF CabhPsDevBpProfileEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
                "This table contains the information for the CableHome
                Host Device Profiles. Attributes of a device make up a
                Device Profile."
        ::= { cabhPsDevBpAttrib 1 }


    cabhPsDevBpProfileEntry  OBJECT-TYPE
        SYNTAX   CabhPsDevBpProfileEntry
        MAX-ACCESS      not-accessible
        STATUS  current
        DESCRIPTION
                "The table that describes the CableHome Host Device
                Profile."
        INDEX { cabhPsDevBpIndex }
        ::= { cabhPsDevBpProfileTable 1 }

    CabhPsDevBpProfileEntry ::= SEQUENCE {
            cabhPsDevBpIndex       INTEGER,
            cabhPsDevBpDeviceType  SnmpAdminString,
            cabhPsDevBpManufacturer           SnmpAdminString,
            cabhPsDevBpManufacturerUrl        SnmpAdminString,
            cabhPsDevBpSerialNumber           SnmpAdminString,
            cabhPsDevBpHardwareVersion        SnmpAdminString,
            cabhPsDevBpHardwareOptions        SnmpAdminString,
            cabhPsDevBpModelName              SnmpAdminString,
            cabhPsDevBpModelNumber            SnmpAdminString,
            cabhPsDevBpModelUrl               SnmpAdminString,
            cabhPsDevBpModelUpc               SnmpAdminString,
            cabhPsDevBpModelSoftwareOs        SnmpAdminString,
            cabhPsDevBpModelSoftwareVersion   SnmpAdminString,
            cabhPsDevBpLanInterfaceType       IANAifType,
            cabhPsDevBpNumberInterfacePriorities INTEGER,
            cabhPsDevBpPhysicalLocation       SnmpAdminString,
            cabhPsDevBpPhysicalAddress        PhysAddress
            }

    cabhPsDevBpIndex     OBJECT-TYPE
        SYNTAX        INTEGER (1..65535)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
                "Integer index into the CableHome Host Device Profile
                Table"
        ::= { cabhPsDevBpProfileEntry 1 }
```

```
   cabhPsDevBpDeviceType      OBJECT-TYPE
```

```
        SYNTAX    SnmpAdminString (SIZE(0..32))
        MAX-ACCESS    read-only
        STATUS current
        DESCRIPTION
                "The type of device, as defined by the CableHome
                specifications (CableHome Residential Gateway or
    CableHome
                Host Device), that passed the Device Profile whose
                information is made available through this table row."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL     { "CableHome Host" }
        ::= { cabhPsDevBpProfileEntry 2 }

    cabhPsDevBpManufacturer    OBJECT-TYPE
        SYNTAX    SnmpAdminString (SIZE(0..32))
        MAX-ACCESS    read-only
        STATUS    current
        DESCRIPTION
                "The name of the CableHome Host Device's manufacturer."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL  { "" }
        ::= { cabhPsDevBpProfileEntry 3 }


    cabhPsDevBpManufacturerUrl  OBJECT-TYPE
        SYNTAX    SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Universal Resource Locator to the CableHome Host device
                manufacturer's web site."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL   { "" }
        ::= { cabhPsDevBpProfileEntry 4 }


    cabhPsDevBpSerialNumber     OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The serial number assigned by the manufacturer for this
                CableHome Host Device."
```

```
        DEFVAL { "" }
```

```
        ::= { cabhPsDevBpProfileEntry 5 }

    cabhPsDevBpHardwareVersion  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The hardware version number assigned by the manufacturer
                for this CableHome Host Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { '00'h }
     ::= { cabhPsDevBpProfileEntry 6 }

    cabhPsDevBpHardwareOptions  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The hardware options implemented on this CableHome Host
                Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                 6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevBpProfileEntry 7 }

    cabhPsDevBpModelName OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The model name assigned by the manufacturer for this
                CableHome Host Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL  { "" }
        ::= { cabhPsDevBpProfileEntry 8 }


    cabhPsDevBpModelNumber      OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The model number assigned by the manufacturer for this
                CableHome Host Device."
```

REFERENCE

```
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL  { "" }
        ::= { cabhPsDevBpProfileEntry 9 }

    cabhPsDevBpModelUrl  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "The Universal Resource Locator to the web site
                describing this CableHome Host Device model."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
     DEFVAL { "" }
     ::= { cabhPsDevBpProfileEntry 10 }

    cabhPsDevBpModelUpc  OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Universal Product Code of the CableHome Host Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL  { "" }
        ::= { cabhPsDevBpProfileEntry 11 }

    cabhPsDevBpModelSoftwareOs       OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Software operating system implemented on the CableHome
                Host Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevBpProfileEntry 12 }

    cabhPsDevBpModelSoftwareVersion   OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Version of the operating system implemented on the
```

CableHome Host Device."

```
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevBpProfileEntry 13 }

    cabhPsDevBpLanInterfaceType     OBJECT-TYPE
        SYNTAX     IANAifType
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "The ifType for the LAN Interface implemented on the
                CableHome Host Device."
        REFERENCE
                "http://www.iana.org/assignments/ianaiftype-mib
                See also: CableHome 1.1 Specification,
                CH1.1-SP-I01-030418, 6.5.3.1.3 Device Profile
                Description."
        DEFVAL { other }
        ::= { cabhPsDevBpProfileEntry 14 }

    cabhPsDevBpNumberInterfacePriorities  OBJECT-TYPE
        SYNTAX      INTEGER (1..8)
        MAX-ACCESS    read-only
        STATUS     current
        DESCRIPTION
                "Number of QoS priorities supported by the LAN
                technology (Data Link Layer) implemented in the
                CableHome Host Device."
        DEFVAL { 1 }
        ::= { cabhPsDevBpProfileEntry 15 }

    cabhPsDevBpPhysicalLocation       OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..32))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
                "Physical location of the CableHome Host Device."
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { "" }
        ::= { cabhPsDevBpProfileEntry 16 }

    cabhPsDevBpPhysicalAddress  OBJECT-TYPE
        SYNTAX      PhysAddress (SIZE (0..16))
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
```

"The CableHome Host Device's hardware address."

```
        REFERENCE
                "CableHome 1.1 Specification, CH 1.1-SP-I01-030418,
                6.5.3.1.3 Device Profile Description"
        DEFVAL { ''h }
        ::= { cabhPsDevBpProfileEntry 17 }



    --================================================================
    --
    --   LAN IP Traffic Statistics Table
    --
    --  The cabhPsDevLanIpTrafficTable contains the Traffic Statistics
    --  for all LAN IP Devices connected to the PS. When the PS learns
    --  a new LAN IP address an entry is added to this table.
    --
    --================================================================

    cabhPsDevLanIpTrafficCountersReset    OBJECT-TYPE
        SYNTAX       INTEGER
        {
            clearCounters(1),
            clearTable(2)
        }
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
                "Setting this object to clearCounters(1) resets all the
                traffic statistic counter entries to zero in the
                cabhPsDevLanIpTrafficTable. Setting this object to
                clearTable(2) removes all entries in the
                cabhPsDevLanIpTrafficTable. Reading this object always
                returns clearCounters(1)."
        DEFVAL   { clearCounters }
        ::= { cabhPsDevPsStats 1 }

    cabhPsDevLanIpTrafficCountersLastReset    OBJECT-TYPE
        SYNTAX   TimeStamp
        MAX-ACCESS      read-only
        STATUS   current
        DESCRIPTION
                "The value of sysUpTime when
                cabhPsDevLanIpTrafficCountersReset was last written to.
                Zero if never written to."
     ::= { cabhPsDevPsStats 2 }

    cabhPsDevLanIpTrafficEnabled OBJECT-TYPE
        SYNTAX       TruthValue
        MAX-ACCESS   read-write
```

```
        STATUS       current
```

```
        DESCRIPTION
                "Setting this object to true(1) turns on the IP traffic
                counters. Setting this object false(2) turns off the IP
                traffic counters."
        DEFVAL   { false }  -- IP traffic counters are off by default
        ::= { cabhPsDevPsStats 3 }

    cabhPsDevLanIpTrafficTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF CabhPsDevLanIpTrafficEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
                "This table contains IP-layer Traffic Statistics for all
                LAN IP Devices connected to the PS."
        ::= { cabhPsDevPsStats 4 }

    cabhPsDevLanIpTrafficEntry  OBJECT-TYPE
        SYNTAX       CabhPsDevLanIpTrafficEntry
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
                "List of Traffic Statistics for LAN IP Devices."
        INDEX { cabhPsDevLanIpTrafficIndex }
        ::= { cabhPsDevLanIpTrafficTable 1 }

    CabhPsDevLanIpTrafficEntry ::= SEQUENCE {
        cabhPsDevLanIpTrafficIndex      INTEGER,
        cabhPsDevLanIpTrafficInetAddressType   InetAddressType,
        cabhPsDevLanIpTrafficInetAddress       InetAddress,
        cabhPsDevLanIpTrafficInOctets   ZeroBasedCounter32,
        cabhPsDevLanIpTrafficOutOctets  ZeroBasedCounter32
        }

    cabhPsDevLanIpTrafficIndex    OBJECT-TYPE
        SYNTAX       INTEGER   (1..65535)
        MAX-ACCESS   not-accessible
        STATUS       current
        DESCRIPTION
                "The Index into the LAN IP Traffic Statistics Table."
        ::= { cabhPsDevLanIpTrafficEntry 1 }


    cabhPsDevLanIpTrafficInetAddressType OBJECT-TYPE
        SYNTAX       InetAddressType
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
                "The type of IP address assigned to the LAN IP device
                to which the statistics in this table row apply.  IP
```

version 4 is typically used."

```
        DEFVAL { ipv4 }
        ::= { cabhPsDevLanIpTrafficEntry 2 }

    cabhPsDevLanIpTrafficInetAddress OBJECT-TYPE
        SYNTAX       InetAddress
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
                "The IP address of the LAN IP device to which the
                statistics in this table row apply.  An IPv4 IP address
                is typically used."
     ::= { cabhPsDevLanIpTrafficEntry 3 }

    cabhPsDevLanIpTrafficInOctets    OBJECT-TYPE
        SYNTAX     ZeroBasedCounter32
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "The total number of octets received from the LAN IP
                address."
     ::= { cabhPsDevLanIpTrafficEntry 4 }

    cabhPsDevLanIpTrafficOutOctets    OBJECT-TYPE
        SYNTAX     ZeroBasedCounter32
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
                "The total number of octets transmitted to the LAN IP
                address."
        ::= { cabhPsDevLanIpTrafficEntry 5 }


    --

    cabhPsNotification     OBJECT IDENTIFIER ::= { cabhPsDevMib 2 }
    cabhPsDevNotifications OBJECT IDENTIFIER ::= { cabhPsNotification 2 }
    cabhPsConformance      OBJECT IDENTIFIER ::= { cabhPsDevMib 3 }
    cabhPsCompliances      OBJECT IDENTIFIER ::= { cabhPsConformance 1 }
    cabhPsGroups    OBJECT IDENTIFIER ::= { cabhPsConformance 2 }

    --
    --    Notification Group
    --

    cabhPsDevInitTLVUnknownTrap     NOTIFICATION-TYPE
        OBJECTS   {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
```

cabhPsDevWanManMacAddress

```
        }
        STATUS  current
        DESCRIPTION
                "Event due to detection of unknown TLV during the TLV
                parsing process. The values of docsDevEvLevel, docsDevId,
                and docsDevEvText are from the entry which logs this
                event in the docsDevEventTable.  The value of
                cabhPsDevWanManMacAddress indicates the WAN-Man MAC
                address of the PS. This part of the information is
                uniform across all PS Traps."
        ::= { cabhPsDevNotifications 1 }


    cabhPsDevInitTrap  NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            cabhPsDevProvConfigFile,
            cabhPsDevProvConfigTLVProcessed,
            cabhPsDevProvConfigTLVRejected
        }
        STATUS      current
        DESCRIPTION
                "This inform is issued to confirm the successful
                completion of the CableHome provisioning process."
        ::= { cabhPsDevNotifications 2 }

    cabhPsDevInitRetryTrap  NOTIFICATION-TYPE
        OBJECTS  {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress
        }
        STATUS      current
        DESCRIPTION
                "An event to report a failure happened during the
                initialization process and was detected in the PS."
        ::= { cabhPsDevNotifications 3 }

    cabhPsDevDHCPFailTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            cabhCdpServerDhcpAddress
```

```
        }
```

```
        STATUS  current
        DESCRIPTION
                "An event to report the failure of a DHCP server. The
                value of cabhCdpServerDhcpAddressis the IP address of
                the DHCP server."
        ::= { cabhPsDevNotifications 4 }


    cabhPsDevSwUpgradeInitTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            docsDevSwFilename,
            docsDevSwServer
        }
        STATUS  current
        DESCRIPTION
                "An event to report a software upgrade initiated event.
                The values of docsDevSwFilename, and docsDevSwServer
                indicate the software image name and the IP address of
                the server from which the image was downloaded."
        ::= { cabhPsDevNotifications 5 }


    cabhPsDevSwUpgradeFailTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            docsDevSwFilename,
            docsDevSwServer
        }
        STATUS  current
        DESCRIPTION
                "An event to report the failure of a software upgrade
                attempt. The values of docsDevSwFilename, and
                docsDevSwServer indicate the software image name and the
                IP address of the server from which the image was
                downloaded."
           ::= { cabhPsDevNotifications 6 }


    cabhPsDevSwUpgradeSuccessTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
```

```
            docsDevEvText,
```

```
            cabhPsDevWanManMacAddress,
            docsDevSwFilename,
            docsDevSwServer
        }
        STATUS  current
        DESCRIPTION
                "An event to report the Software upgrade success event.
                The values of docsDevSwFilename, and docsDevSwServer
                indicate the software image name and the IP address of
                the server from which the image was downloaded."
        ::= { cabhPsDevNotifications 7 }


    cabhPsDevSwUpgradeCVCFailTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress
        }
        STATUS  current
        DESCRIPTION
                "An event to report the failure of the verification of
                code file happened during a secure software upgrade
                attempt."
        ::= { cabhPsDevNotifications 8 }


    cabhPsDevTODFailTrap NOTIFICATION-TYPE
        OBJECTS {
           docsDevEvLevel,
           docsDevEvId,
           docsDevEvText,
           cabhPsDevTimeServerAddr,
           cabhPsDevWanManMacAddress
        }
        STATUS  current
        DESCRIPTION
                "An event to report the failure of a time of day server.
                The value of cabhPsDevTimeServerAddr indicates the server
                 IP address."
        ::= { cabhPsDevNotifications 9 }

    cabhPsDevCdpWanDataIpTrap  NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhCdpWanDataAddrClientId,
```

cabhPsDevWanManMacAddress

```
        }
        STATUS      current
        DESCRIPTION
                "An event to report the failure of PS to obtain all
                needed WAN-Data Ip Addresses.
                cabhCdpWanDataAddrClientId indicates the ClientId for
                which the failure occured."
        ::= { cabhPsDevNotifications 10 }


    cabhPsDevCdpThresholdTrap  NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            cabhCdpLanTransThreshold
        }
        STATUS      current
        DESCRIPTION
                "An event to report that the LAN-Trans address assignment
                threshold has been exceeded."
        ::= { cabhPsDevNotifications 11 }

    cabhPsDevCspTrap  NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress
        }
        STATUS      current
        DESCRIPTION
                "To report an event with the CableHome Security Portal."
        ::= { cabhPsDevNotifications 12 }

    cabhPsDevCapTrap  NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress
        }
        STATUS      current
        DESCRIPTION
                "To report an event with the CableHome Address Portal."
        ::= { cabhPsDevNotifications 13 }

    cabhPsDevCtpTrap  NOTIFICATION-TYPE
```

```
        OBJECTS {
```

```
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress
        }
        STATUS      current
        DESCRIPTION
                "To report an event with the CableHome Test Portal."
        ::= { cabhPsDevNotifications 14 }

    cabhPsDevProvEnrollTrap  NOTIFICATION-TYPE
        OBJECTS {
            cabhPsDevHardwareVersion,
            docsDevSwCurrentVers,
            cabhPsDevTypeIdentifier,
            cabhPsDevWanManMacAddress
        }
        STATUS    current
        DESCRIPTION
                "This inform is issued to initiate the CableHome
                provisioning process for SNMP Provisioning Mode."
        ::= { cabhPsDevNotifications 15 }


    cabhPsDevCdpLanIpPoolTrap NOTIFICATION-TYPE
        OBJECTS {
            docsDevEvLevel,
            docsDevEvId,
            docsDevEvText,
            cabhPsDevWanManMacAddress,
            cabhCdpLanTransCurCount
        }
        STATUS current
        DESCRIPTION
                "An event to report that the pool of IP addresses for LAN
                clients, as defined by cabh CdpLanPoolStart and
                cabhCdpLanPoolEnd, is exhausted."
        ::= { cabhPsDevNotifications 16}

    -- compliance statements

    cabhPsBasicCompliance MODULE-COMPLIANCE
        STATUS     current
        DESCRIPTION
                "The compliance statement for devices that implement the
                CableHome Portal Services logical element."
        MODULE   -- cabhPsMib
```

```
   -- unconditionally mandatory groups
```

```
   MANDATORY-GROUPS {
           cabhPsDevBaseGroup,
           cabhPsDevProvGroup,
           cabhPsNotificationGroup
       }

   -- conditionally mandatory group
   GROUP cabhPsDevAttribGroup
       DESCRIPTION
               "This group is implemented only in CableHome 1.1 PS
               elements, not CableHome 1.0 PS elements."

   -- conditionally mandatory group
   GROUP cabhPsDevPsStatsGroup
       DESCRIPTION
               "This group is implemented only in CableHome 1.1 PS
               elements, not CableHome 1.0 PS elements."

   OBJECT cabhPsDevTimeServerAddrType
          SYNTAX InetAddressType { ipv4(1) }
          DESCRIPTION
              "An implementation is only required to support IPv4
               addresses."

   OBJECT cabhPsDevTimeServerAddr
          SYNTAX  InetAddress (SIZE(4))
          DESCRIPTION
              "An implementation is only required to support IPv4
               addresses."

   OBJECT cabhPsDevLanIpTrafficInetAddressType
          SYNTAX InetAddressType { ipv4(1) }
          DESCRIPTION
              "An implementation is only required to support IPv4
               addresses."

   OBJECT cabhPsDevLanIpTrafficInetAddress
          SYNTAX  InetAddress (SIZE(4))
          DESCRIPTION
              "An implementation is only required to support IPv4
               addresses."

   ::= { cabhPsCompliances 1}


   cabhPsDevBaseGroup OBJECT-GROUP
       OBJECTS {
           cabhPsDevDateTime,
           cabhPsDevResetNow,
```

```
            cabhPsDevSerialNumber,
            cabhPsDevHardwareVersion,
            cabhPsDevWanManMacAddress,
            cabhPsDevWanDataMacAddress,
            cabhPsDevTypeIdentifier,
            cabhPsDevSetToFactory,
            cabhPsDevTodSyncStatus,
            cabhPsDevProvMode,  -- added dormant mode
            cabhPsDevLastSetToFactory
        }
        STATUS     current
        DESCRIPTION
                "A collection of objects for providing device status and
                control."
        ::= { cabhPsGroups 1 }

    cabhPsDevProvGroup OBJECT-GROUP
        OBJECTS {
            cabhPsDevProvisioningTimer,
            cabhPsDevProvConfigFile,
            cabhPsDevProvConfigHash,
            cabhPsDevProvConfigFileSize,
            cabhPsDevProvConfigFileStatus,
            cabhPsDevProvConfigTLVProcessed,
            cabhPsDevProvConfigTLVRejected,
            cabhPsDevProvSolicitedKeyTimeout,
            cabhPsDevProvState,
            cabhPsDevProvAuthState,
            cabhPsDevTimeServerAddrType,
            cabhPsDevTimeServerAddr
        }
        STATUS     current
        DESCRIPTION
                "A collection of objects for controlling and providing
                status on provisioning."
        ::= { cabhPsGroups 2 }


    cabhPsDevAttribGroup OBJECT-GROUP
        OBJECTS {
            cabhPsDevPsDeviceType,
            cabhPsDevPsManufacturerUrl,
            cabhPsDevPsModelUrl,
            cabhPsDevPsModelUpc,
            cabhPsDevBpDeviceType,
            cabhPsDevBpManufacturer,
            cabhPsDevBpManufacturerUrl,
            cabhPsDevBpSerialNumber,
            cabhPsDevBpHardwareVersion,
```

```
            cabhPsDevBpHardwareOptions,
```

```
            cabhPsDevBpModelName,
            cabhPsDevBpModelNumber,
            cabhPsDevBpModelUrl,
            cabhPsDevBpModelUpc,
            cabhPsDevBpModelSoftwareOs,
            cabhPsDevBpModelSoftwareVersion,
            cabhPsDevBpLanInterfaceType,
            cabhPsDevBpNumberInterfacePriorities,
            cabhPsDevBpPhysicalLocation,
            cabhPsDevBpPhysicalAddress
        }
        STATUS     current
        DESCRIPTION
                "A collection of objects for providing information on
                LAN IP devices known to the PS."
        ::= { cabhPsGroups 3 }


    cabhPsDevPsStatsGroup OBJECT-GROUP
        OBJECTS {
            cabhPsDevLanIpTrafficCountersReset,
            cabhPsDevLanIpTrafficCountersLastReset,
            cabhPsDevLanIpTrafficEnabled,
            cabhPsDevLanIpTrafficInetAddressType,
            cabhPsDevLanIpTrafficInetAddress,
            cabhPsDevLanIpTrafficInOctets,
            cabhPsDevLanIpTrafficOutOctets
        }
        STATUS     current
        DESCRIPTION
                "A collection of objects for providing information on LAN
    IP
                traffic."
        ::= { cabhPsGroups 4 }

    cabhPsNotificationGroup NOTIFICATION-GROUP
        NOTIFICATIONS {
            cabhPsDevInitTLVUnknownTrap,
            cabhPsDevInitTrap,
            cabhPsDevInitRetryTrap,
            cabhPsDevDHCPFailTrap,
            cabhPsDevSwUpgradeInitTrap,
            cabhPsDevSwUpgradeFailTrap,
            cabhPsDevSwUpgradeSuccessTrap,
            cabhPsDevSwUpgradeCVCFailTrap,
            cabhPsDevTODFailTrap,
            cabhPsDevCdpWanDataIpTrap,
            cabhPsDevCdpThresholdTrap,
            cabhPsDevCspTrap,
```

```
            cabhPsDevCapTrap,
```

```
            cabhPsDevCtpTrap,
            cabhPsDevProvEnrollTrap,
            cabhPsDevCdpLanIpPoolTrap
        }
        STATUS    current
        DESCRIPTION
                "These notifications indicate change in status of the
                Portal Services set of functions in a device complying
                with CableLabs CableHome(tm) specifications."
        ::= { cabhPsGroups 6 }

    END
```

5. Acknowledgements

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6. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in RFC-2234 [3].

7. Security Considerations

There are a number of management objects defined in this MIB that have a MAX-ACCESS clause of read-write and/or read-create. Such objects may be considered sensitive or vulnerable in some network environments. The support for SET operations in a non-secure environment without proper protection can have a negative effect on network operations.

It is thus important to control even GET access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPSec), even then, there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB module.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [RFC3410], section 8), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module, is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

8. Normative References

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10. Intellectual Property

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