

Superseded

PacketCable™ MTA MIB Specification

PKT-SP-MIB-MTA-I04-021018

ISSUED

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- 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.
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- Closed** A static document, reviewed, tested, validated, and closed to further engineering change requests to the specification through CableLabs.

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1 SCOPE

This Specification describes the PacketCable MTA MIB requirement.

2 REFERENCES

2.1 NORMATIVE REFERENCES

The following standards and other references contain provisions which through reference in this text, constitute the whole or parts of a document to which it is necessary to conform in order to claim compliance to this specification. At the time of publication, the editions indicated were valid. All references are subject to revisions; users of this specification are therefore encouraged to investigate the possibility of applying the most recent edition of the standards and other references listed below.

- [1] *PacketCable MIB Framework*, PKT-SP-MIBS-I04-021018, October 18, 2002, Cable Television Laboratories, Inc., <http://www.PacketCable.com/>
- [2] *PacketCable Network-Based Call Signaling Protocol Specification*, PKT-SP-EC-MGCP-I05-021018, October 18, 2002, Cable Television Laboratories, Inc., <http://www.PacketCable.com/>
- [3] *PacketCable MTA Device Provisioning Specification*, PKT-SP-PROV-I04-021018, October 18, 2002, Cable Television Laboratories, Inc., <http://www.PacketCable.com/>
- [4] IETF RFC 2573, SNMPv3 Applications [1999]
- [5] IETF RFC 2571, An Architecture for Describing SNMP Management Framework
- [6] IETF RFC 2572, Message Processing and Dispatching for SNMP
- [7] IETF RFC 2573, SNMPv3 Applications
- [8] IETF RFC 2574, User Based Security Model for SNMPv3
- [9] IETF RFC 2575, View-Based Access Control Model (VACM) for SNMP

2.2 INFORMATIVE REFERENCES

- [10] PKT-TR-ARCH-V01-99-1201, PacketCable 1.0 Architecture Framework Technical Report, December 1, 1999

3 ABBREVIATIONS

There are no abbreviations used in this document.

4 REQUIREMENTS

The PacketCable™ MTA MIB MUST be implemented as defined below.

```

PKTC-MTA-MIB DEFINITIONS ::= BEGIN
IMPORTS
  "sysDescr FROM SNMPv2-MIB"
  MODULE-IDENTITY,
  OBJECT-TYPE,
  Integer32, Counter 32,
  IPAddress,
  NOTIFICATION-TYPE
  TruthValue, DisplayString, RowStatus,
  TEXTUAL-CONVENTION
  OBJECT-GROUP,
  MODULE-COMPLIANCE,
  NOTIFICATION-GROUP
  FROM SNMPv2-SMI
  FROM SNMPv2-TC
  FROM SNMPv2-CONF
  clabProjPacketCable
  FROM CLAB-DEF-MIB
  ifIndex
  FROM IF-MIB
  docsDevSwCurrentVers
  FROM DOCS-CABLE-DEVICE-MIB;    -- version 8

pktcMtaMib MODULE-IDENTITY
  LAST-UPDATED      "0210170000Z" - October 17, 2002
  ORGANIZATION      "Packet Cable OSS Group"
  CONTACT-INFO
    "Matt Osman
     Postal: Cable Television Laboratories, Inc.
           400 Centennial Parkway
           Louisville, Colorado 80027-1266
     U.S.A.
     Phone:  +1 303-661-9100
     Fax:    +1 303-661-9199
     E-mail: m.osman@cablelabs.com"
  DESCRIPTION
    "This MIB module supplies the basic management objects
     for the MTA Device

     Acknowledgements:
     Angela Lyda      - Arris Interactive
     Chris Melle      - AT&T Broadband Labs
     Sasha Medvinsky  - Motorola
     Roy Spitzer       - Telogy Networks, Inc.
     Rick Vetter       - Motorola
     Eugene Nechamkin - BroadCom Corp."
 ::= { clabProjPacketCable 1 }

```

```

-- Textual conventions
  X509Certificate ::= TEXTUAL-CONVENTION
    STATUS current
    DESCRIPTION
      "An X509 digital certificate encoded as an ASN.1 DER object."
    SYNTAX OCTET STRING (SIZE (0..4096))

--

-- PacketCable 1.0 supports embedded MTA only
-- PacketCable 1.0 assumes SNMPv3
-- PacketCable 1.0 SW load management is per DOCSIS 1.1 only
--
=====
--
-- The MTA MIB only supports a single provisioning server.
--
=====

pktcMtaMibObjects      OBJECT IDENTIFIER ::= { pktcMtaMib 1 }
pktcMtaDevBase         OBJECT IDENTIFIER ::= { pktcMtaMibObjects 1 }
pktcMtaDevServer      OBJECT IDENTIFIER ::= { pktcMtaMibObjects 2 }
pktcMtaDevSecurity    OBJECT IDENTIFIER ::= { pktcMtaMibObjects 3 }

--

-- The following group describes the base objects in the MTA
--
pktcMtaDevResetNow OBJECT-TYPE
  SYNTAX      TruthValue
  MAX-ACCESS  read-write
  STATUS      current
  DESCRIPTION
    "Setting this object to true(1) causes the device to reset.
    Reading this object always returns false(2). When
    pktcMtaDevResetNow is set to true, the following actions
    occur:
      1. All connections (if present) are flushed locally
      2. All current actions such as ringing immediately
         terminate
      3. Requests for notifications such as notification based
         on digit map recognition are flushed.
      4. All endpoints are disabled.
      5. The provisioning flow is started at step MTA - 1."
  ::= { pktcMtaDevBase 1 }

pktcMtaDevSerialNumber OBJECT-TYPE
  SYNTAX      DisplayString (SIZE (0..128))
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION
    "The manufacturer's serial number for this MTA."
  ::= { pktcMtaDevBase 2 }

pktcMtaDevHardwareVersion OBJECT-TYPE
  SYNTAX      DisplayString (SIZE (0..48))
  MAX-ACCESS  read-only
  STATUS      obsolete
  DESCRIPTION
    "The manufacturer's hardware version for this MTA."
  ::= { pktcMtaDevBase 3 }

```

```

pktcMtaDevMacAddress      OBJECT-TYPE
    SYNTAX      OCTET STRING
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The telephony MAC address for this device."
    ::= { pktcMtaDevBase 4 }

pktcMtaDevFQDN           OBJECT-TYPE
    SYNTAX      DisplayString
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The Fully Qualified Domain Name for this MTA."
    ::= { pktcMtaDevBase 5 }

pktcMtaDevEndPntCount    OBJECT-TYPE
    SYNTAX      INTEGER (1..255)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The physical end points for this MTA."
    ::= { pktcMtaDevBase 6 }

pktcMtaDevEnabled        OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The MTA Admin Status of this device, where True(1) means
         the voice feature is enabled and false(2) indicates that
         it is disabled."
    ::= { pktcMtaDevBase 7 }

pktcMtaDevTypeIdentifier OBJECT-TYPE
    SYNTAX      DisplayString
    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 MTA and the DHCP server."
    ::= { pktcMtaDevBase 8 }

pktcMtaDevProvisioningState 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 MTA initialization start to MTA initialization end;
         detail of inProgress status is observed from
         pktcMtaDevProvState. Fail state requires manual
         intervention."
    ::= { pktcMtaDevBase 9 }

```

```

pktcMtaDevHttpAccess      OBJECT-TYPE
    SYNTAX      TruthValue
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This indicates whether HTTP file access is supported for
        MTA configuration file transfer."
    ::= { pktcMtaDevBase 10 }

pktcMtaDevProvisioningTimer OBJECT-TYPE
    SYNTAX      INTEGER (0..30)
    UNITS       "minutes"
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "This object enables setting the duration of the provisioning
        timeout timer. The timer covers the provisioning sequence from
        step MTA-1 to step MTA-23. The value is in minutes and
        setting the timer to 0 disables this timer. The default value
        for the timer is 10."

    DEFVAL {10}
    ::= {pktcMtaDevBase 11}

pktcMtaDevProvisioningCounter OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "This object is the count of the number of times the provisioning
        cycle has looped through step MTA-1 since the last reboot."
    ::= {pktcMtaDevBase 12}
--

-- The following group describes server access and parameters used for
-- initial provisioning and bootstrapping.
--
--*****
--*****This object is obsolete*****
--*****

pktcMtaDevServerBootState OBJECT-TYPE
    SYNTAX INTEGER {
        operational          (1),
        disabled             (2),
        waitingForDhcpOffer  (3),
        waitingForDhcpResponse (4),
        waitingForConfig     (5),
        refusedByCmts        (6),
        other                 (7),
        unknown              (8)
    }
    MAX-ACCESS read-only
    STATUS      obsolete
    DESCRIPTION
        "If operational(1), the device has completed loading and
        processing of configuration parameters and the CMTS has
        completed the Registration exchange.
        If disabled(2) then the device was administratively
        disabled, possibly by being refused network access in the
        configuration file."

```

```

        If waitingForDhcpOffer(3) then a DHCP Discover has been
        transmitted and no offer has yet been received.
        If waitingForDhcpResponse(4) then a DHCP Request has been
        transmitted and no response has yet been received.
        If waitingForConfig(5) then a request to the config parameter
        server has been made and no response received.
        If refusedByCmts(6) then the Registration Request/Response
        exchange with the CMTS failed. "
    REFERENCE
        "DOCSIS Radio Frequency Interface Specification, Figure
        7-1, CM Initialization Overview."
    ::= { pktcMtaDevServer 1 }

--*****
--*****This object is obsolete*****
--*****

pktcMtaDevServerDhcp OBJECT-TYPE
    SYNTAX      IpAddress
    MAX-ACCESS  read-only
    STATUS      obsolete
    DESCRIPTION
        "The IP address of the DHCP server that assigned an IP
        address to this device. Returns 0.0.0.0 if DHCP was not
        used for IP address assignment."
    ::= { pktcMtaDevServer 2 }
--
pktcMtaDevServerDns1 OBJECT-TYPE
    SYNTAX      IpAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP address of the primary DNS server to be used by the MTA to
        resolve the FQDNs and IP addresses."
    ::= { pktcMtaDevServer 3 }

pktcMtaDevServerDns2 OBJECT-TYPE
    SYNTAX      IpAddress
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The IP address of the Secondary DNS server to be used by the MTA
        to resolve the FQDNs and IP addresses. Contains 0.0.0.0 if there
        is no Secondary DNS server specified for the MTA under
        consideration."
    ::= { pktcMtaDevServer 4 }

pktcMtaDevConfigFile OBJECT-TYPE
    SYNTAX      DisplayString
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "The URL of the TFTP/HTTP file for downloading provisioning
        and configuration parameters to this device. Returns NULL if the
        server address is unknown. Supports both TFTP and HTTP."
    ::= { pktcMtaDevServer 5 }

```

```

pktcMtaDevSnmpEntity OBJECT-TYPE
    SYNTAX      DisplayString
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

        "The FQDN of the SNMP V3 entity of the Provisioning Server to which
        the MTA has to communicate in order to receive the access method,
        location and the name of the Configuration file during MTA
        provisioning. This would also be the entity which caters to the
        End-point provisioning needs of the MTA and is the destination for
        all provisioning informs. It may be also used for post-provisioning
        SNMP operations"
    ::= { pktcMtaDevServer 6 }

pktcMtaDevProvConfigHash OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(16|20))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

        "Hash of the contents of the config file, calculated and sent to
        the MTA prior to sending the config file. If the authentication
        algorithm is MD5, the length is 128 bits, If the authentication
        algorithm is SHA-1, the length is 160 bits."
    ::= { pktcMtaDevServer 7 }

pktcMtaDevProvConfigKey OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(0|8))
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION

        "Key used to encrypt/decrypt the config file, sent to the
        MTA prior to sending the config file. If the privacy
        algorithm is null, the length is 0. If the privacy
        algorithm is DES, the length is 64 bits."
    ::= { pktcMtaDevServer 8 }

pktcMtaDevProvSolicitedKeyTimeout 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 MTA will save a nonce (inside the
        sequence number field) from the sent out AP Request and wait for
        the matching AP Reply from the Provisioning Server."
    DEFVAL { 120 }
    ::= { pktcMtaDevServer 9 }

```

```

-----
--
-- Unsolicited Key Updates are based on an exponential backoff mechanism with
-- two timers for AS replies. The fast timers has a maximum timer
-- (pktcMtaDevProvUnsolicitedKeyMaxTimeout seconds) and a nominal timer
-- (pktcMtaDevProvUnsolicitedKeyNomTimeout seconds) from which the backoff
-- timer determinations are made.
--
-----
-----
--

```

```
-- Timeouts for unsolicited key management updates are only pertinent before
-- the first SNMP message is sent between the MTA and the CMS and before the
-- configuration file is loaded. No SNMP communications can exist under
-- PacketCable without the security association existing. The following
-- object is provided only for diagnostic purposes and are only useful
-- if the MTA can be brought up without any security.
--
-----
```

pktcMtaDevProvUnsolicitedKeyMaxTimeout OBJECT-TYPE

```
SYNTAX      Integer32 (15..600)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "This timeout applies to MTA initiated AP-REQ/REP key
            management exchange with Provisioning Server. The maximum
            timeout is the value which may not be exceeded in the
            exponential backoff algorithm."
REFERENCE   "PacketCable Security Specification PKT-SP-SEC-I05-020116"
DEFVAL     {600}
 ::= { pktcMtaDevServer 10 }
```

pktcMtaDevProvUnsolicitedKeyNomTimeout OBJECT-TYPE

```
SYNTAX      Integer32 (15..600)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "This timeout applies to MTA initiated AP-REQ/REP key
            management exchange with Provisioning Server. Typically
            this is the average roundtrip time between the MTA and the
            Provisioning server."
REFERENCE   "PacketCable Security Specification PKT-SP-SEC-I05-020116"
DEFVAL     {30}
 ::= { pktcMtaDevServer 11 }
```

pktcMtaDevProvUnsolicitedKeyMeanDev OBJECT-TYPE

```
SYNTAX      Integer32 (15..600)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION "This is the mean deviation for the round trip delay timings."
REFERENCE   "PacketCable Security Specification PKT-SP-SEC-I05-020116"
 ::= { pktcMtaDevServer 12 }
```

pktcMtaDevProvUnsolicitedKeyMaxRetries OBJECT-TYPE

```
SYNTAX      Integer32 (1..32)
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION "This retries number applies to MTA initiated AP-REQ/REP
            key management exchange with Provisioning Server. This is
            the maximum number of retries before the MTA gives up
            attempting to establish an SNMPv3 security association with
            Provisioning Server."
REFERENCE   "PacketCable Security Specification PKT-SP-SEC-I05-020116"
DEFVAL     {8}
 ::= { pktcMtaDevServer 13 }
```

```

pktcMtaDevProvKerbRealmName OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(1..255))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The name of the associated Provisioning Kerberos Realm acquired
        during MTA4 ( DHCP Ack ). This is used as an index into the
        pktcMtaDevRealmTable. When used as an index, the upper case ASCII
        representation of the associated Kerberos Realm name MUST be used by
        both the Manager(SNMPv3 Entity) and the MTA."
 ::= { pktcMtaDevServer 14 }

```

```

pktcMtaDevProvState OBJECT-TYPE
    SYNTAX INTEGER {
        operational          (1),
        disabled             (2),
        other                 (3),
        unknown              (4),
        waitingToStart       (10),
        waitingForDhcpOffer  (12),
        waitingForDhcpAckResponse (14),
        waitingForProvRealmKdcNameResponse (16),
        waitingForProvRealmKdcAddrResponse (18),
        waitingForAsReply    (20),
        waitingForTgsReply   (22),
        waitingForApReply    (24),
        waitingForSnmpGetRequest (26),
        waitingForSnmpSetInfo (28),
        waitingForTftpAddrResponse (30),
        waitingForConfigFile (32),
        waitingForTelRealmKdcNameResponse (34),
        waitingForTelRealmKdcAddrResponse (36),
        waitingForPkinitAsReply (38),
        waitingForCmsKerbTickTgsReply (40),
        waitingForCmsKerbTickApReply (42)
    }
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "If operational(1), the device has completed loading and
        processing of initialization parameters.
        If disabled(2) then the device was administratively
        disabled, possibly by being refused network access in the
        configuration file.
        If waitingToStart(10) then the MTA is has not received
        a signal to start initialization.
        If waitingForDhcpOffer(12) then a DHCP Discover has been
        transmitted and no offer has yet been received.
        If waitingForDhcpAckResponse(14) then a DHCP Request has been
        transmitted and no response has yet been received.
        If waitingProvRealmKdcNameResponse(16) then a DNS
        Srv request has been transmitted and no reply
        has yet been received.
        If waitingForProvRealmKdcAddrResponse(18) then a DNS
        request has been transmitted and no reply has yet
        been received.
        If waitingForAsReply(20) then an AS request has been
        and no MSO KDC AS Kerberos ticket reply has yet
        been received.
        If waitingForTgsReply(22) then a TGS request has been
        transmitted and no TGS ticket reply has yet

```

been received.

If waitingForApReply(24) then an AP request has been transmitted and no SNMPv3 key info reply has yet been received.

If waitingForSnmpGetRequest(26) then an INFORM message has been transmitted and the device is waiting on optional/iterative GET requests.

If waitingForSnmpSetInfo(28) then the device is waiting on config file download access information.

If waitingForTftpAddrResponse(30) then a DNS request has been transmitted and no reply has yet been received.

If waitingForConfigFile(32) then a TFTP request has been transmitted and no reply has yet been received or a download is in progress.

If waitingForTelRealmKdcNameResponse(34) then a DNS Srv request has been transmitted and no name reply has yet been received.

If waitingForTelRealmKdcAddrResponse(36) then a DNS request has been transmitted and no address reply has yet been received.

If waitingForPkinitAsReply(38) then an AS request has been transmitted and no ticket reply has yet been received.

If waitingForCmsKerbTickTgsReply(40) then a TGS request has been transmitted and no ticket reply has yet been received.

If waitingForCmsKerbTickApReply(42) then a AP request has been transmitted and no Ipsec parameters reply has yet been received. "

REFERENCE

"PacketCable Provisioning Specification
 PacketCable Security Specification"

::= { pktcMtaDevServer 15 }

pktcMtaDevServerDhcp1 OBJECT-TYPE

SYNTAX IpAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The IP address of the primary DHCP server which would cater to the MTA during its provisioning. Contains 255.255.255.255 if there was no preference given with respect to the DHCP servers for MTA provisioning."

::= { pktcMtaDevServer 16 }

pktcMtaDevServerDhcp2 OBJECT-TYPE

SYNTAX IpAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The IP address of the Secondary DHCP server which could cater to the MTA during its provisioning. Contains 0.0.0.0 if there is no specific secondary DHCP server to be considered during MTA provisioning."

::= { pktcMtaDevServer 17 }

pktcMtaDevTimeServer OBJECT-TYPE

SYNTAX IpAddress

MAX-ACCESS read-write

STATUS current

```

DESCRIPTION
    "IP address of the Time Server from which to obtain the
    time. Contains 0.0.0.0 if the Time Protocol is not used for
    time synchronization."
 ::= { pktcMtaDevServer 18}

--
-- The following group describes the security objects in the MTA
--

pktcMtaDevManufacturerCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "ASN.1 DER encoding of the MTA Manufacturer's X.509
        public-key certificate, called MTA Manufacturer
        Certificate. It is issued to each MTA manufacturer
        and is installed into each MTA either in the factory
        or with a code download. The provisioning server cannot
        update this certificate."
 ::= {pktcMtaDevSecurity 1}

pktcMtaDevCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "ASN.1 DER encoding of the MTA's X.509 public-key
        certificate issued by the manufacturer and installed
        into the embedded-MTA in the factory. This certificate,
        called MTA Device Certificate, contains the MTA's MAC
        address. It cannot be updated by the provisioning server."
 ::= { pktcMtaDevSecurity 2 }

--*****
--***** THIS OBJECT IS OBSOLETE *****
--*****

pktcMtaDevSignature OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (0..256))
    MAX-ACCESS  read-only
    STATUS      obsolete
    DESCRIPTION
        "A unique signature created by the MTA for each SNMP Inform
        or SNMP Trap or SNMP GetResponse message exchanged prior to
        enabling SNMPv3 security ASN.1 encoded Digital signature in
        the Cryptographic message syntax (includes nonce). "
 ::= { pktcMtaDevSecurity 3 }

pktcMtaDevCorrelationId OBJECT-TYPE
    SYNTAX      Integer32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Random value generated by the MTA for use in registration
        authorization. It is for use only in the MTA initialization
        messages and for MTA configuration file download "
 ::= { pktcMtaDevSecurity 4 }

-----
--
--      pktcMtaDevSecurityTable
--

```

--The pktcMtaDevSecurityTable shows security association information relating
 -- to a particular MTA endpoint. The MTA endpoint is indexed with ifIndex.
 --

```

-----
_*****
_***** THIS TABLE IS OBSOLETE *****
_*****
  
```

```

pktcMtaDevSecurityTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcMtaDevSecurityEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        "Contains per endpoint security information."
    ::= { pktcMtaDevSecurity 5 }
  
```

```

pktcMtaDevSecurityEntry OBJECT-TYPE
    SYNTAX      PktcMtaDevSecurityEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        "List of security attributes for a single packet cable
        endpoint interface."
    INDEX { ifIndex }
    ::= { pktcMtaDevSecurityTable 1 }
  
```

```

PktcMtaDevSecurityEntry ::= SEQUENCE {
    pktcMtaDevServProviderCertificate      X509Certificate,
    pktcMtaDevTelephonyCertificate        X509Certificate,
    pktcMtaDevKerberosRealm               OCTET STRING,
    pktcMtaDevKerbPrincipalName           DisplayString,
    pktcMtaDevServGracePeriod             Integer32,
    pktcMtaDevLocalSystemCertificate      X509Certificate,
    pktcMtaDevKeyMgmtTimeout1             Integer32,
    pktcMtaDevKeyMgmtTimeout2            Integer32
}
  
```

```

pktcMtaDevServProviderCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-write
    STATUS      obsolete
    DESCRIPTION
        "ASN.1 DER encoding of the Telephony Service
        Provider's X.509 public-key certificate, called
        Telephony Service Provider Certificate. It serves
        as the root of the intra-domain trust hierarchy.
        Each MTA is configured with this certificate so
        that it can authenticate TGSS owned by the same
        service provider. The provisioning server needs
        the ability to update this certificate in the MTAs
        via both SNMP and configuration files"
    ::= { pktcMtaDevSecurityEntry 1 }
  
```

```
pktcMtaDevTelephonyCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-write
    STATUS      obsolete
    DESCRIPTION
        "ASN.1 DER encoding of the MTA's X.509 public-key
        certificate issued by the Service Provider with either
        the Service Provider CA or a Local System CA. This
        certificate, called MTA Telephony Certificate, contains
        the same public key as the MTA Device Certificate issued
        by the manufacturer. It is used to authenticate the
        identity of the MTA to the TGS (during PKINIT exchanges).
        The provisioning server needs the ability to update this
        certificate in the MTAs via both SNMP and configuration files"
    ::= { pktcMtaDevSecurityEntry 2 }

pktcMtaDevKerberosRealm OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE (0..1280))
    MAX-ACCESS  read-write
    STATUS      obsolete          -- moved to realm table
    DESCRIPTION
        " Specifies a Kerberos realm (i.e. administrative domain), required
        for Packet Cable key management]."
    ::= { pktcMtaDevSecurityEntry 3 }

pktcMtaDevKerbPrincipalName OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(0..40))
    MAX-ACCESS  read-write
    STATUS      obsolete
    DESCRIPTION
        "Kerberos principal name for the Call Agent. This information
        is required in order for the MTA to obtain Call Agent Kerberos
        tickets. This principal name does not include the realm, which
        is specified as a separate field in this configuration file. A
        Single Kerberos principal name MAY be shared among several
        Call Agents."
    ::= { pktcMtaDevSecurityEntry 4 }

pktcMtaDevServGracePeriod OBJECT-TYPE
    SYNTAX      Integer32 (15..600)
    UNITS       "minutes"
    MAX-ACCESS  read-write
    STATUS      obsolete          -- moved to realm table
    DESCRIPTION
        " The MTA MUST obtain a new Kerberos ticket (with a PKINIT
        exchange) this many minutes before the old ticket expires. The
        minimum allowable value is 15 mins. The default is 30 mins."
    DEFVAL { 30 }
    ::= { pktcMtaDevSecurityEntry 5 }

pktcMtaDevLocalSystemCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-write
    STATUS      obsolete
    DESCRIPTION
        "Telephony Service Provider CA may delegate the issuance of
        certificates to a regional Certification Authority called Local
        System CA (with the corresponding Local System Certificate).
        This parameter is the ASN.1 DER encoding of the Local System
        Certificate. It MUST have a non-empty value when the MTA
        Telephony certificate is signed by a Local System CA.
        Otherwise, the value MUST be of length 0."
    ::= { pktcMtaDevSecurityEntry 6 }
```

```

pktcMtaDevKeyMgmtTimeout1 OBJECT-TYPE
SYNTAX      Integer32 (15..600)
UNITS       "seconds"
MAX-ACCESS  read-write
STATUS      obsolete          -- moved to cms table
DESCRIPTION
    "This timeout applies only when the MTA initiated key management.
    It is the period during which the MTA will save a nonce (inside
    the sequence number field) from the sent out AP Request and wait
    for the matching AP Reply from the CMS."
REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116
 ::= { pktcMtaDevSecurityEntry 7 }

pktcMtaDevKeyMgmtTimeout2 OBJECT-TYPE
SYNTAX      Integer32 (15..600)
UNITS       "seconds"
MAX-ACCESS  read-write
STATUS      obsolete -- changed to adaptive backoff and moved to
                -- cms table
DESCRIPTION
    "This timeout applies only when the CMS initiated key management
    (with a Wake Up or Rekey message). It is the period during
    which the MTA will save a nonce (inside the sequence number
    field) from the sent out AP Request and wait for the matching AP
    Reply from the CMS."
REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
 ::= { pktcMtaDevSecurityEntry 8 }

--
--          Ticket Granting Server information
--
--*****
--***** THIS TABLE IS OBSOLETE *****
--*****

pktcMtaDevTgsTable OBJECT-TYPE
SYNTAX      SEQUENCE OF PktcMtaDevTgsEntry
MAX-ACCESS  not-accessible
STATUS      obsolete          -- Secure Provisioning ECR
DESCRIPTION
    "Contains per endpoint Ticket Granting Server information."
 ::= { pktcMtaDevSecurity 8 }

pktcMtaDevTgsEntry OBJECT-TYPE
SYNTAX      PktcMtaDevTgsEntry
MAX-ACCESS  not-accessible
STATUS      obsolete          -- Secure Provisioning ECR
DESCRIPTION
    "List of Tgs attributes for a single packet cable
    endpoint interface."
INDEX { ifIndex, pktcMtaDevTgsIndex }
 ::= { pktcMtaDevTgsTable 1 }

PktcMtaDevTgsEntry ::= SEQUENCE {
    pktcMtaDevTgsIndex      Integer32,
    pktcMtaDevTgsLocation  DisplayString,
    pktcMtaDevTgsStatus    RowStatus
}

```

```

pktcMtaDevTgsIndex OBJECT-TYPE
    SYNTAX      Integer32 (1..2147483647)
    MAX-ACCESS  not-accessible
    STATUS      obsolete          -- Secure Provisioning ECR
    DESCRIPTION
        "Index into the TGS table for TGS locations.
         IfType specifies the endpoint, TgsIndex specifies a TGS."
    ::= { pktcMtaDevTgsEntry 1 }

pktcMtaDevTgsLocation OBJECT-TYPE
    SYNTAX      DisplayString (SIZE (0..255))
    MAX-ACCESS  read-create
    STATUS      obsolete          -- Secure Provisioning ECR
    DESCRIPTION
        "Name of the TGS Ticket Granting Server, which is the Kerberos
         Server. This parameter is a FQDN or Ipv4 address. There may be
         multiple entries of this type. The order in which these entries
         are listed is the priority order in which the MTA will attempt to
         contact them for this endpoint."
    ::= { pktcMtaDevTgsEntry 2 }

pktcMtaDevTgsStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      obsolete          -- Secure Provisioning ECR
    DESCRIPTION
        "This object contains the Row Status associated with
         the pktcMtaDevTgsTable."
    ::= { pktcMtaDevTgsEntry 3 }

pktcMtaDevTelephonyRootCertificate OBJECT-TYPE
    SYNTAX      X509Certificate
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "ASN.1 DER encoding of the IP Telephony Root X.509
         public-key certificate stored in the MTA non-volatile
         memory and updateable with a code download. This
         certificate is used to validate the initial AS Reply
         from the KDC received during the MTA initialization."
    ::= { pktcMtaDevSecurity 9 }

-----
--
-- Procedures for setting up security associations:
--
-- A security association may be setup either via configuration or via
-- NCS signaling.
--
-- I. Security association setup via configuration.
--
-- The realm must be configured first. Associated with the realm
-- is a KDC. The realm table (pktcMtaDevRealmTable) indicates
-- information about realm (e.g., name, organization name) and
-- parameters associated with KDC communications (e.g., grace
-- periods, AS request/AS reply adaptive backoff parameters).
--
-- Once the realm is established, one or more servers may be
-- defined in the realm. For PacketCable 1.0, these are Call
-- Management Servers (CMSs). Associated with each CMS
-- entry in the pktcMtaDevCmsTable is an explicit reference
-- to a Realm via the realm index ( pktcMtaDevCmsKerbRealmName),

```

```

--      the FQDN of the CMS, and parameters associated with IPsec
--      key management with the CMS (e.g., clock skew, AP request/
--      AP reply adaptive backoff parameters).
--
--
--
--
--      II.      Security association setup via NCS signaling
--
--      Note:   The following process is done automatically by the
--      MTA.   The NCS is not involved in creating signaled entries.
--
--      The current CMS signaling association being used by an
--      endpoint is marked as active in CMS MAP table.  If NCS
--      signaling requests a change of signaling association to
--      a different FQDN, the MTA checks the current CMS MAP
--      table entries for the affected endpoint.  If the entry
--      exists in the CMS MAP table, the current CMS MAP table
--      entry is marked inactive and the newly chosen CMS MAP
--      table entry is marked active.
--
--      If the entry does not exist in the CMS MAP table, the
--      CMS table is checked to determine whether or not it
--      contains the CMS specified by CMS signaling (possibly
--      a redirection).  If the desired CMS entry is defined,
--      then a corresponding entry is created and an entry in
--      the CMS MAP table is created.  If the MTA does not
--      have current associations with that CMS, it will now
--      perform key management to establish required security
--      associations.  Once the desired CMS entry is established,
--      the current CMS MAP table entry is marked inactive and
--      the newly created CMS MAP table entry is marked active.
--      Otherwise the current CMS MAP table entry remains
--      active and the newly created CMS MAP table entry is marked
--      in active.
--
--      If the entry does not exist in the CMS MAP table and the
--      CMS entry does not exist in the CMS table, a new CMS table
--      entry should be created.  This CMS entry should use the
--      same realm as used by this endpoint.  The default values
--      for the clock skew and AP request/AP reply adaptive
--      backoff parameters should be used.  The MTA will now
--      perform key management to establish required security
--      associations.  Once the desired CMS entry is established,
--      the current CMS MAP table entry is marked inactive and
--      the newly created CMS MAP table entry is marked active.
--      Otherwise the current CMS MAP table entry remains
--      active and the newly created CMS MAP table entry is marked
--      inactive.
--
--      III.    When the MTA receives wake-up or rekey messages from a CMS,
--      it performs key management based on the corresponding entry
--      in the CMS table.  If the matching CMS entry does not exist,
--      it must ignore the wake-up or rekey messages.
--
=====
--
=====

```

```

--
--      pktcMtaDevRealmTable
--
--      The pktcMtaDevRealmTable shows the KDC realms.  The table is indexed
--      withpktcMtaDevRealmName.  The Realm Table is used in conjunction with
--      any server which needs a security association with an MTA.  The server
--      table (today the CMS) has a security association.  Each server-MTA security
--      association is associated with a single Realm.  This allows for multiple
--      realms, each with its own security association.
--
-----
pktcMtaDevRealmTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PkctlMtaDevRealmEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Contains per Kerberos realm security parameters."
    ::= { pktcMtaDevSecurity 16 }

pkctlMtaDevRealmEntry OBJECT-TYPE
    SYNTAX      PkctlMtaDevRealmEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "List of security parameters for a single Kerberos realm."
    INDEX { IMPLIED pkctlMtaDevRealmName }
    ::= { pkctlMtaDevRealmTable 1 }

PkctlMtaDevRealmEntry ::= SEQUENCE {
    pkctlMtaDevRealmName          DisplayString,
    pkctlMtaDevRealmPkinitGracePeriod  Integer32,
    pkctlMtaDevRealmTgsGracePeriod    Integer32,
    pkctlMtaDevRealmOrgName          OCTET STRING,
    pkctlMtaDevRealmUnsolicitedKeyMaxTimeout Integer32,
    pkctlMtaDevRealmUnsolicitedKeyNomTimeout Integer32,
    pkctlMtaDevRealmUnsolicitedKeyMeanDev Integer32,
    pkctlMtaDevRealmUnsolicitedKeyMaxRetries Integer32,
    pkctlMtaDevRealmStatus          RowStatus
}

pkctlMtaDevRealmName OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(0..255))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The corresponding Kerberos Realm name.  This is used as an index
        into pkctlMtaDevRealmTable.  When used as an index, the
        upper case ASCII representation of Realm Name MUST be
        used by both the Manager(SNMPv3 Entity) and the MTA."
    ::= { pkctlMtaDevRealmEntry 1 }

pkctlMtaDevRealmPkinitGracePeriod OBJECT-TYPE
    SYNTAX      Integer32 (15..600)
    UNITS       "minutes"
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "For the purposes of the key management with an Application
        Server (CMS or Provisioning Server), the MTA MUST obtain a new Kerberos
        ticket (with a PKINIT exchange) this many minutes before the old ticket

```

expires. The minimum allowable value is 15 mins. The default is 30 mins. This parameter MAY also be used with other Kerberized applications."

```
DEFVAL { 30 }
 ::= { pktcMtaDevRealmEntry 2 }
```

```
pktcMtaDevRealmTgsGracePeriod OBJECT-TYPE
SYNTAX      Integer32 (1..600)
UNITS       "minutes"
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "When the MTA implementation uses TGS Request/TGS Reply
    Kerberos messages for the purpose of the key management with an
    Application Server (CMS or Provisioning Server), the MTA MUST obtain a
    new service ticket for the Application Server (with a TGS Request) this
    many minutes before the old ticket expires. The minimum allowable value
    is 1 min. The default is 10 mins. This parameter MAY also be used with
    other Kerberized applications."
```

```
DEFVAL { 10 }
 ::= { pktcMtaDevRealmEntry 3 }
```

```
pktcMtaDevRealmOrgName OBJECT-TYPE
SYNTAX      OCTET STRING (SIZE (1..64))
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "The value of the X.500 organization name attribute in the
    subject name of the Service provider certificate"
 ::= { pktcMtaDevRealmEntry 4 }
```

```
-----
--
-- Unsolicited Key Updates are based on an exponential backoff mechanism with
-- two timers for AS replies. The backoff timers has a maximum value of
-- pktcMtaDevRealmUnsolicitedKeyMaxTimeout seconds and a nominal timer has a
-- pktcMtaDevRealmUnsolicitedKeyNomTimeout seconds from which the backoff
-- timer determinations are made. After pktcMatDevRealmUnsolicitedMaxRetries
-- have occurred no more attempts are made.
--
-----
```

```
pktcMtaDevRealmUnsolicitedKeyMaxTimeout OBJECT-TYPE
}
SYNTAX Integer32 (1..600)
UNITS "seconds"
MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "This timeout applies only when the MTA initiated key management.
    The maximum timeout is the value which may not be exceeded in the
    exponential backoff algorithm."
REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
DEFVAL { 30 }
 ::= { pktcMtaDevRealmEntry 5 }
```

```
pktcMtaDevRealmUnsolicitedKeyNomTimeout OBJECT-TYPE
pktcMtaDevRealmUnsolicitedKeyNomTimeout OBJECT-TYPE
  SYNTAX      Integer32 (100..600000)
  UNITS       "milliseconds"
  MAX-ACCESS  read-create
  STATUS      current
  DESCRIPTION
    "This timeout applies only when the MTA initiated key management.
    This value should account for the average roundtrip time between
    the MTA and the KDC as well as for the processing delay on the KDC."
  REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
  DEFVAL { 10000 }
 ::= { pktcMtaDevRealmEntry 6 }
```

```
pktcMtaDevRealmUnsolicitedKeyMeanDev OBJECT-TYPE
  SYNTAX      Integer32 (1..600)
  UNITS       "seconds"
  MAX-ACCESS  read-only
  STATUS      obsolete
  DESCRIPTION
    "This is measurement of the mean deviation for the round trip
    delay timings."
  REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
  DEFVAL { 2 }
 ::= { pktcMtaDevRealmEntry 7 }
```

```
pktcMtaDevRealmUnsolicitedKeyMaxRetries OBJECT-TYPE
pktcMtaDevRealmUnsolicitedKeyMaxRetries OBJECT-TYPE
  SYNTAX      Integer32 (0..1024)
  MAX-ACCESS  read-create
  STATUS      current
  DESCRIPTION
    "This is the maximum number of retries before the MTA gives up
    attempting to establish a security association."
  REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
  DEFVAL { 5 }
 ::= { pktcMtaDevRealmEntry 8 }
```

```
pktcMtaDevRealmStatus OBJECT-TYPE
  SYNTAX      RowStatus
  MAX-ACCESS  read-create
  STATUS      current
  DESCRIPTION
    "This object contains the Row Status associated with
    the pktcMtaDevRealmTable."
 ::= { pktcMtaDevRealmEntry 9 }
```

```
-----
--
-- pktcMtaDevCmsTable
--
-- The pktcMtaDevCmsTable shows the IPSec key management policy
-- relating to a particular CMS. The table is indexed with
-- pktcMtaDevCmsFQDN.
--
-----
```

```

pktcMtaDevCmsTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcMtaDevCmsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Contains per CMS key management policy."
    ::= { pktcMtaDevSecurity 17 }

pktcMtaDevCmsEntry OBJECT-TYPE
    SYNTAX      PktcMtaDevCmsEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "List of key management parameters for a single MTA-CMS
        interface."
    INDEX { IMPLIED pktcMtaDevCmsFqdn }
    ::= { pktcMtaDevCmsTable 1 }

PktcMtaDevCmsEntry ::= SEQUENCE {
    pktcMtaDevCmsFqdn          DisplayString,
    pktcMtaDevCmsKerbRealmName DisplayString,
    pktcMtaDevCmsSolicitedKeyTimeout Integer32,
    pktcMtaDevCmsMaxClockSkew   Integer32,
    pktcMtaDevCmsUnsolicitedKeyMaxTimeout Integer32,
    pktcMtaDevCmsUnsolicitedKeyNomTimeout Integer32,
    pktcMtaDevCmsUnsolicitedKeyMeanDev Integer32,
    pktcMtaDevCmsUnsolicitedKeyMaxRetries Integer32,
    pktcMtaDevCmsStatus         RowStatus,
    pktcMtaDevCmsIpsecCtrl      TruthValue
}

pktcMtaDevCmsFqdn OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(1..255))
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "The fully qualified domain name of the CMS.
        This is the index into the pktcMtaDevCmsTable.
        When used as an index, the upper case ASCII
        representation of the associated CMS FQDN
        MUST be used by both the Manager(SNMPv3 Entity)
        and the MTA."
    ::= { pktcMtaDevCmsEntry 1 }

pktcMtaDevCmsKerbRealmName OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(1..255))
    MAX-ACCESS  read-create
    STATUS      current
    DESCRIPTION
        "The Kerberos Realm Name of the associated CMS. This is
        the index into the pktcMtaDevRealmTable.
        When used as an index, the upper case ASCII
        representation of the associated CMS FQDN
        must be used by both the Manager(SNMPv3 Entity)
        and the MTA "
    ::= { pktcMtaDevCmsEntry 2 }

pktcMtaDevCmsMaxClockSkew OBJECT-TYPE
    SYNTAX      Integer32 (1..1800)

```

```

        UNITS          "seconds"
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
            "This is the maximum allowable clock skew between the MTA and CMS"
        DEFVAL { 300 }
        ::= { pktcMtaDevCmsEntry 3 }

pktcMtaDevCmsSolicitedKeyTimeout OBJECT-TYPE
    SYNTAX Integer32 (100..30000)
    UNITS "milliseconds"
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "This timeout applies only when the CMS initiated key management
        (with a Wake Up or Rekey message). It is the period during
        which the MTA will save a nonce (inside the sequence number
        field) from the sent out AP Request and wait for the matching
        AP Reply from the CMS."
    REFERENCE
        "PacketCable Security Specification PKT-SP-SEC-I05-020116"
    DEFVAL { 1000 }
    ::= { pktcMtaDevCmsEntry 4 }
-----
--
-- Unsolicited Key Updates are based on an exponential backoff mechanism with
-- two timers for AP replies. The backoff timers has a maximum value of
-- pktcMtaDevCmsUnsolicitedKeyMaxTimeout seconds and a nominal timer has a
-- pktcMtaDevCmsUnsolicitedKeyNomTimeout seconds from which the backoff timer
-- determinations are made. After pktcMatDevCmsUnsolicitedMaxRetries have
-- occurred no more attempts are made.
--
-----

pktcMtaDevCmsUnsolicitedKeyMaxTimeout OBJECT-TYPE

    SYNTAX Integer32 (1..600)
    UNITS "seconds"
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "This timeout applies only when the MTA initiated key management.
        The maximum timeout is the value which may not be exceeded in
        the exponential backoff algorithm."
    REFERENCE
        "PacketCable Security Specification PKT-SP-SEC-I05-020116"
    DEFVAL { 8 }
    ::= { pktcMtaDevCmsEntry 5 }

pktcMtaDevCmsUnsolicitedKeyNomTimeout OBJECT-TYPE
    SYNTAX Integer32 (100..30000)
    UNITS "milliseconds"
    MAX-ACCESS read-create
    STATUS current
    DESCRIPTION
        "This timeout applies only when the MTA initiated key management.
        This value should account for the average roundtrip time between
        the MTA and the CMS as well as for the processing delay on the CMS."
    REFERENCE
        "PacketCable Security Specification PKT-SP-SEC-I05-020116"
    DEFVAL { 500 }
    ::= { pktcMtaDevCmsEntry 6 }

pktcMtaDevCmsUnsolicitedKeyMeanDev OBJECT-TYPE

```

```

SYNTAX      Integer32 (1..600)
UNITS       "seconds"
MAX-ACCESS  read-only
STATUS      obsolete
DESCRIPTION
    "This is the measurement of the mean deviation for the round
    trip delay timings."
REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
 ::= { pktcMtaDevCmsEntry 7 }

```

pktcMtaDevCmsUnsolicitedKeyMaxRetries OBJECT-TYPE

```

SYNTAX Integer32 (0..1024)
MAX-ACCESS read-create
STATUS current
DESCRIPTION
    "This is the maximum number of retries before the MTA gives up
    attempting to establish a security association."
REFERENCE
    "PacketCable Security Specification PKT-SP-SEC-I05-020116"
DEFVAL { 5 }
 ::= { pktcMtaDevCmsEntry 8 }

```

pktcMtaDevCmsStatus OBJECT-TYPE

pktcMtaDevCmsStatus OBJECT-TYPE

```

SYNTAX      RowStatus
MAX-ACCESS  read-create
STATUS      current
DESCRIPTION
    "This object contains the Row Status associated with the
    pktcMtaDevCmsTable."
 ::= { pktcMtaDevCmsEntry 9 }

```

pktcMtaDevCmsIpsecCtrl OBJECT-TYPE

```

SYNTAX      TruthValue
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "The value of 'true(1)' indicates that IPSEC and IPSEC Key
    Management MUST be used to communicate with the CMS. The
    value of 'false(2)' indicates that IPSEC Signaling Security
    is disabled for both the IPSEC Key Management and IPSEC
    protocol (for the specific CMS)."
DEFVAL { true }
 ::= { pktcMtaDevCmsEntry 10 }

```

```

=====
--
--      pktcMtaCmsMapTable
--      *** this table is obsolete ***
--
--
--      The pktcMtaCmsMapTable contains the signaling associations
--      between MTA endpoints and CMSs. It maps the endpoint to
--      zero or more entries in pktcMtaDevCmsTable.
--
--      The table contains the following indexes and rows:

```

```

--
--   ifIndex -the index of the physical port
--
--   pktcMtaCmsMapCmsIndex - the index of the CMS entry in the
--   pktcMtaDevCmsTable.  Valid indices are equal to current
--   pktcMtaDevCmsIndex values.
--
--   pktcMtaCmsMapOperStatus - this value indicates which signaling
--   association the endpoint is actively using
--
--   pktcMtaCmsMapAdminStatus - this flag indicates whether or not
--   an endpoint should use a particular CMS and its security
--   association.  By setting this flag to inhibit, this associated
--   CMS cannot provide signaling to the referenced endpoint.
--
--   pktcMtaCmsMapRowStatus - allows for the creation and deletion of
--   endpoint mappings via the NMS
--
--
-----
pktcMtaCmsMapTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF PktcMtaCmsMapEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        "Contains per endpoint CMS signaling associations."
    ::= { pktcMtaDevSecurity 18 }

pktcMtaCmsMapEntry OBJECT-TYPE
    SYNTAX      PktcMtaCmsMapEntry
    MAX-ACCESS  not-accessible
    STATUS      obsolete
    DESCRIPTION
        "List of signaling associations."
    INDEX { ifIndex, pktcMtaCmsMapCmsFqdn }
    ::= { pktcMtaCmsMapTable 1 }

PktcMtaCmsMapEntry ::= SEQUENCE {
    pktcMtaCmsMapCmsFqdn          DisplayString,
    pktcMtaCmsMapOperStatus      INTEGER,
    pktcMtaCmsMapAdminStatus     INTEGER,
    pktcMtaCmsMapRowStatus       RowStatus
}

pktcMtaCmsMapCmsFqdn          OBJECT-TYPE
    SYNTAX      DisplayString (SIZE(1..255))
    MAX-ACCESS  not-accessible
    STATUS      Obsolete
    DESCRIPTION
        "The index for the associated CMS.  Valid indices are
        equal to current pktcMtaDevCmsFqdn values."
    ::= { pktcMtaCmsMapEntry 1 }

pktcMtaCmsMapOperStatus OBJECT-TYPE
    SYNTAX      INTEGER {
        inactive      (1),
        active        (2)
    }
    MAX-ACCESS  read-only
    STATUS      Obsolete
    DESCRIPTION
        "The operational status of signaling association.  The

```

```

                meaning of the status is as follows:
                    inactive - signaling is not currently active
                    active - signaling is active."
 ::= { pktcMtaCmsMapEntry 2 }

pktcMtaCmsMapAdminStatus OBJECT-TYPE
    SYNTAX      INTEGER {
        inhibit          (1),
        allow            (2)
    }
    MAX-ACCESS  read-create
    STATUS      Obsolete
    DESCRIPTION
        "The administrative status for signaling over the indicated
        security association. The meaning of the status is as follows:
            inhibit - signaling is not currently allowed
            allow - signaling is allowed."
 ::= { pktcMtaCmsMapEntry 3 }

pktcMtaCmsMapRowStatus OBJECT-TYPE
    SYNTAX      RowStatus
    MAX-ACCESS  read-create
    STATUS      Obsolete
    DESCRIPTION
        "This object is used for creating and deleting an entry
        in this table via an element manager."
 ::= { pktcMtaCmsMapEntry 4 }

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

pktcMtaNotification OBJECT IDENTIFIER ::= { pktcMtaMib 2 0 }
pktcMtaConformance OBJECT IDENTIFIER ::= { pktcMtaMib 3 }
pktcMtaCompliances OBJECT IDENTIFIER ::= { pktcMtaConformance 1 }
pktcMtaGroups OBJECT IDENTIFIER ::= { pktcMtaConformance 2 }

--
-- Notification Group
--

pktcMtaDevProvisioningEnrollment NOTIFICATION-TYPE
    OBJECTS {
        sysDescr,
        docsDevSwCurrentVers,
        pktcMtaDevTypeIdentifier,
        pktcMtaDevMacAddress,
        pktcMtaDevCorrelationId }
    STATUS      current

    DESCRIPTION
        "This inform is issued to initiate the PacketCable process
        provisioning ."
    REFERENCE      "Inform as defined in RFC 1902"
 ::= { pktcMtaNotification 1 }

pktcMtaProvisioningStatus NOTIFICATION-TYPE
    OBJECTS {
        pktcMtaDevMacAddress,
        pktcMtaDevCorrelationId
        pktcMtaDevProvisioningState,

```

```

}
  STATUS      current
  DESCRIPTION
    "This inform is issued to confirm completion of the PacketCable
    provisioning process, and indicate the completion state."
  REFERENCE
    "Inform as defined in RFC 1902"
  ::= { pktcMtaNotification 2 }

-- compliance statements

pktcMtaBasicCompliance MODULE-COMPLIANCE
  STATUS      current
  DESCRIPTION
    "The compliance statement for devices that implement
    MTA feature."
  MODULE     --pktcMtaMib

-- unconditionally mandatory groups

  MANDATORY-GROUPS {
    pktcMtaGroup
  }

::= { pktcMtaCompliances 3 }

pktcMtaGroup OBJECT-GROUP
  OBJECTS {
    pktcMtaDevResetNow,
    pktcMtaDevSerialNumber,
    ,
    pktcMtaDevMacAddress,
    pktcMtaDevFQDN,
    pktcMtaDevEndPntCount,
    pktcMtaDevEnabled,
    pktcMtaDevTypeIdentifier,
    pktcMtaDevProvisioningState,
    pktcMtaDevHttpAccess,
    pktcMtaDevCertificate,
    pktcMtaDevCorrelationId,
    pktcMtaDevManufacturerCertificate,
    pktcMtaDevServerDhcp1,
    pktcMtaDevServerDhcp2,
    pktcMtaDevServerDns1,
    pktcMtaDevServerDns2,
    pktcMtaDevTimeServer,
    pktcMtaDevConfigFile,
    pktcMtaDevSnmpEntity,
    pktcMtaDevRealmPkinitGracePeriod,
    pktcMtaDevRealmTgsGracePeriod,   pktcMtaDevRealmOrgName,
    pktcMtaDevRealmUnsolicitedKeyMaxTimeout,
    pktcMtaDevRealmUnsolicitedKeyNomTimeout,

    pktcMtaDevRealmUnsolicitedKeyMaxRetries,
    pktcMtaDevRealmStatus,
    pktcMtaDevCmsKerbRealmName,
    pktcMtaDevCmsUnsolicitedKeyMaxTimeout,
    pktcMtaDevCmsUnsolicitedKeyNomTimeout,

    pktcMtaDevCmsUnsolicitedKeyMaxRetries,

```

```

pktcMtaDevCmsSolicitedKeyTimeout,
    pktcMtaDevCmsMaxClockSkew,
    pktcMtaDevCmsStatus,

    pktcMtaDevProvUnsolicitedKeyMaxTimeout,
    pktcMtaDevProvUnsolicitedKeyNomTimeout,
    pktcMtaDevProvUnsolicitedKeyMaxRetries,
    pktcMtaDevProvKerbRealmName,
    pktcMtaDevProvSolicitedKeyTimeout,
    pktcMtaDevProvConfigHash,
    pktcMtaDevProvConfigKey,
    pktcMtaDevProvState,
    pktcMtaDevProvisioningTimer,
    pktcMtaDevTelephonyRootCertificate
}
STATUS    current
DESCRIPTION
    "Group of objects for PacketCable MTA MIB."
 ::= { pktcMtaGroups 1 }
pktcMtaNotificationGroup          NOTIFICATION-GROUP
    NOTIFICATIONS { pktcMtaProvisioningStatus,
pktcMtaDevProvisioningEnrollment }
    STATUS current
    DESCRIPTION
        "These notifications deal with change in status of
        MTA Device."
 ::= { pktcMtaGroups 2 }

pktcMtaObsoleteGroup            OBJECT-GROUP
    OBJECTS {
        pktcMtaDevHardwareVersion,
        pktcMtaDevSignature,
        pktcMtaDevServProviderCertificate
        pktcMtaDevTelephonyCertificate,

        pktcMtaDevKerberosRealm,
        pktcMtaDevKerbZPrincipalName,
        pktcMtaDevServGracePeriod,
        pktcMtaDevLocalSystemCertificate,
        pktcMtaDevKeyMgmtTimeout1,
        pktcMtaDevKeyMgmtTimeout2,
        pktcMtaDevTgsIndex
        pktcMtaDevTgsLocation,

        pktcMtaDevTgsStatus,

        pktcMtaDevServerBootState,
        pktcMtaDevServDhcp,
        pktcMtaCmsMspCmsFqdn,
        pktcMtaCmsMapOperStatus,
        pktcMtaCmsMapAdminStatus,
        pktcMtaCmsMapRowStatus,
        pktcMtaDevRealmUnsolicitedKeyMeanDev,
        pktcMtaDevCmsUnsolicitedKeyMeanDev,
        pktcMtaDevProvUnsolicitedKeyMeanDev    }
    STATUS    obsolete
    DESCRIPTION
        "Group of obsolete objects for PacketCable MTA MIB."
 ::= { pktcMtaGroups 3}

END

```

Appendix A. Revision History (Informative)

The following Engineering Change Notices were incorporated into PKT-SP-MIB-MTA-I03-020116:

ECN Number	ECN Date	Summary
mib*-n-01077	7/16/01	Clarify usage of pktcMtaDev Provisioning Timer, clean up some security related objects
mib-n-01170	11/5/01	Clarifies changes in mib-n-01077.
mta-n-01075	7/16/01	Currently MTA MIB defines the “pktcMtaDevFQDN” MIB Object as having “read-write” attribute.
prov*-n-01076	7/16/01	Clarification regarding the presence of the “Telephony Service Provider SNMP Entity” attribute in the Device Level Configuration Data.
prov*-n-01118	9/10/01	The description of the requirements for tables (and their corresponding MIB entries) is unclear.
prov*-n-01119	9/10/01	Augment sec-n-01029 and clear up several ambiguities in pkt-sp-prov-i02-010323.
prov-n-01122	9/10/01	Modify pktcMtaDevRealmOrgName from DisplayString to Octet String syntax +
mib-n-01168	12/10/01	Clarification of ECN
mib-n-01187	12/10/01	Correct MIB error in sec-n-1029, and complete deletion of the mean deviation objects.
prov-n-01033	5/7/2001	Add MIB items, obsolete an object.

The following Engineering Change Notices were incorporated into PKT-SP-MIB-MTA-I04-021018:

ECN Number	ECN Date	Summary
mib-n-01226	2/25/02	A new MIB object is needed to support the S-MTA ToD server requirements
mibmta-n-02031	6/24/02	Place the MTA's sysDescr object in the MTA15 INFORM, thus reducing the need for MTA16/17 device interrogation.
migsig-n-02043	6/24/02	Correcting references to Security Spec; R0,R6 and R7 Cadence parameters are made mandatory
mibmta-n-02084	6/24/02	Clarification of the Description Attribute of the columnar MIB Objects in "pkcMtaDevRealmTable".
mibmta-n-02083	6/24/02	This ECR makes I03 MIB specification and I05 security specification consistent.
mibmta-n-02091	6/24/02	This ECR enhances the way of representation of indices in the security related tables of the MTA-MIB.
sec-n-02137	7/22/02	The security spec currently requires the same transmission strategy for key management as what is defined in the NCS spec, which is inconsistent with the MTA MIB definition and is more complex than what is necessary.
mib-n-02019	6/24/02	MTA MIB does not define the default values of the timeouts for the AP-REQ/REP exchange backoff and retry mechanism in SNMPv3 Kerberized Key Negotiation.
mibmta-n-02085	6/24/02	Index Columnar MIB Objects of type "DisplayString" in the "pkcMtaDevRealmTable" Conceptual Tables and "pkcMtaDevCmsTable" should have IMPLIED modifier.
mibmta-n-02154	8/26/02	The ECR defines the MIB Object, which allows the Service Providers to control the enabling/disabling of the signaling security (IPSEC) and Key Management flows associated with it.