                      Diameter Base Protocol MIB
            draft-ietf-dime-diameter-base-protocol-mib-04.txt

Abstract

   Along with providing support for certain basic authentication,
   authorization and accounting functions, the Diameter protocol is
   designed to provide a framework for AAA applications.

   This document defines the Management Information Base (MIB) module
   which describes the minimum set of objects needed to manage an
   implementation of the Diameter protocol.

Status of this Memo

   This Internet-Draft is submitted to IETF in full conformance with the
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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 [RFC3410].

   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
   ([RFC2578], [RFC2579], [RFC2580]).  In particular, it describes
   managed objects used for managing the base Diameter protocol
   [RFC3588].


2.  Requirements Language

   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 [RFC2119].


3.  Overview

   This MIB defines objects supporting the management of the Diameter
   base protocol as defined in RFC 3588 [RFC3588].  Objects related to
   Diameter applications are defined in separate documents.


4.  Diameter Base Protocol MIB Definitions

DIAMETER-BASE-PROTOCOL-MIB DEFINITIONS ::= BEGIN

   IMPORTS
        InetAddressType,
        InetAddress
             FROM INET-ADDRESS-MIB -- [RFC4001]
        MODULE-IDENTITY,
        OBJECT-TYPE,
        NOTIFICATION-TYPE,
        Counter32,
        Unsigned32,
        Gauge32,
        TimeTicks,
        mib-2
             FROM SNMPv2-SMI -- [RFC2578]

```
        SnmpAdminString
             FROM SNMP-FRAMEWORK-MIB -- [RFC3411]
        NOTIFICATION-GROUP,
        MODULE-COMPLIANCE,
        OBJECT-GROUP
             FROM SNMPv2-CONF -- [RFC2580]
        RowStatus,
        TruthValue,
        StorageType
             FROM SNMPv2-TC; -- [RFC2579]


diameterBaseProtocolMIB MODULE-IDENTITY
        LAST-UPDATED "201001150000Z" -- 15 January 2010
        ORGANIZATION "IETF dime Working Group."
        CONTACT-INFO
           "Glen Zorn
            Network Zen
            1463 East Republican Street, #358
            Seattle, WA 98112
            USA
            Email: gwz@net-zen.net"
         DESCRIPTION
            "The MIB module for entities implementing the
            Diameter Base Protocol.

            Copyright (C) The IETF Trust (2010).  This initial
            version of this MIB module was published in RFC yyyy;
            for full legal notices see the RFC itself.  Supplementary
            information may be available on
            http://www.ietf.org/copyrights/ianamib.html."

   -- RFC Ed.: replace yyyy with actual RFC number and remove this note

        REVISION "201001150000Z" -- 15 January 2010
        DESCRIPTION "Initial version as published in RFC yyyy"

   -- RFC Ed.: replace yyyy with actual RFC number and remove this note

        ::= { mib-2 XXX }

   -- RFC Ed.: replace XXX with value assigned by IANA
   --          and remove this note

   -- Top-Level Components of this MIB.

   diameterBaseNotifications  OBJECT IDENTIFIER ::=
                                    { diameterBaseProtocolMIB 0 }
```

```
    diameterBaseObjects        OBJECT IDENTIFIER ::=
                                     { diameterBaseProtocolMIB 1 }
    diameterBaseConform        OBJECT IDENTIFIER ::=
                                     { diameterBaseProtocolMIB 2 }
    dbpLocalCfgs    OBJECT IDENTIFIER ::= { diameterBaseObjects 1 }
    dbpLocalStats   OBJECT IDENTIFIER ::= { diameterBaseObjects 2 }
    dbpPeerCfgs     OBJECT IDENTIFIER ::= { diameterBaseObjects 3 }
    dbpPeerStats    OBJECT IDENTIFIER ::= { diameterBaseObjects 4 }
    dbpRealmCfgs    OBJECT IDENTIFIER ::= { diameterBaseObjects 5 }
    dbpRealmStats   OBJECT IDENTIFIER ::= { diameterBaseObjects 6 }
    dbpNotifCfgs    OBJECT IDENTIFIER ::= { diameterBaseObjects 7 }

    -- Protocol Error Notifications

    dbpProtocolErrorNotifEnabled OBJECT-TYPE
          SYNTAX      TruthValue
          MAX-ACCESS  read-write
          STATUS      current
          DESCRIPTION
               "Setting the value of this object to True(1)
                enables the dbpProtocolErrorNotif notification."
          DEFVAL      {false}
          ::= { dbpNotifCfgs 1 }

    dbpProtocolErrorNotif NOTIFICATION-TYPE
          OBJECTS {
                    dbpPeerId,
                    dbpPerPeerStatsProtocolErrors
                  }
          STATUS      current
          DESCRIPTION
               "An dbpProtocolError Notification is sent when both the
                following conditions are true:
                1) the value of dbpProtocolErrorNotifEnabled is True(1)
                2) the value of dbpPerPeerStatsProtocolErrors changes
                It can be utilized by an NMS to trigger
                logical/physical entity table maintenance polls.
                An agent must not generate more than one
                dbpProtocolError 'notification event' in a five second
                period, where a 'notification event' is the
                transmission of a single Notification PDU to a list of
                Notification destinations.
                If additional protocol errors occur within the
                five second 'throttling' period, then these
                notification events should be suppressed by the agent.
                An  NMS should periodically check the value of
                dbpPerPeerStatsProtocolErrors to detect any missed
                dbpProtocolError notification events, e.g. due to
```

```
                  throttling or transmission loss."
          ::= { diameterBaseNotifications 1 }


   -- Transient Error Notifications

   dbpTransientFailureNotifEnabled OBJECT-TYPE
          SYNTAX       TruthValue
          MAX-ACCESS   read-write
          STATUS       current
          DESCRIPTION
                "Setting the value of this object to True(1)
                 enables the dbpTransientFailure Notification."
          ::= { dbpNotifCfgs 2 }

   dbpTransientFailureNotif NOTIFICATION-TYPE
          OBJECTS  {
                    dbpPeerId,
                    dbpPerPeerStatsTransientFailures
                   }
          STATUS    current
          DESCRIPTION
                "An dbpTransientFailure Notification is sent when both
                 the following conditions are true:
                 1) the value of dbpTransientFailureNotifEnabled
                    is True(1)
                 2) the value of dbpPerPeerStatsTransientFailures
                    changes
                 It can be utilized by an NMS to trigger
                 logical/physical entity table maintenance polls.
                 An agent must not generate more than one
                 dbpTransientFailure 'notification event' in a five
                 second period, where a 'notification event' is the
                 transmission of a single notification PDU to a list
                 of notification destinations.
                 If additional transient failures occur
                 within the five second 'throttling' period, then
                 these notification events should be suppressed
                 by the agent.
                 An NMS should periodically check the value of
                 dbpPerPeerStatsTransientFailures to detect any
                 missed dbpTransientFailure notification events,
                 e.g. due to throttling or transmission loss."
          ::= { diameterBaseNotifications 2 }


   -- Permanent Failure Notifications
```

```
dbpPermanentFailureNotifEnabled OBJECT-TYPE
       SYNTAX      TruthValue
       MAX-ACCESS  read-write
       STATUS      current
       DESCRIPTION
             "Setting the value of this object to True(1)
              enables the dbpPermanentFailure notification."
       DEFVAL      { false }
       ::= { dbpNotifCfgs 3 }

dbpPermanentFailureNotif NOTIFICATION-TYPE
       OBJECTS  {
                   dbpPeerId,
                   dbpPerPeerStatsPermanentFailures
                }
       STATUS      current
       DESCRIPTION
             "An dbpPermanentFailure notification is sent when
              both the following conditions are true:
              1) the value of dbpPermanentFailureNotifEnabled
                 is True(1)
              2) the value of dbpPerPeerStatsPermanentFailures
                 changes
              It can be utilized by an NMS to trigger
              logical/physical entity table maintenance polls.
              An agent must not generate more than one
              dbpPermanentFailure 'notification event' in a five
              second period, where a 'notification event' is the
              transmission of a single notification PDU to a list
              of notification destinations.
              If additional permanent failures occur within the
              five second 'throttling' period, then these
              trap-events should be suppressed by the agent.
              An NMS should periodically check the value of
              dbpPerPeerStatsPermanentFailures to detect
              any missed dbpPermanentFailure trap-events,
              e.g. due to throttling or transmission loss."
       ::= { diameterBaseNotifications 3 }


-- Connection Down Notifs

dbpPeerConnectionDownNotifEnabled OBJECT-TYPE
       SYNTAX      TruthValue
       MAX-ACCESS  read-write
       STATUS      current
       DESCRIPTION
             "Setting the value of this object to True(1)
```

                    enables the dbpPeerConnectionDown notification."
           DEFVAL     { false }
           ::= { dbpNotifCfgs 4 }
    dbpPeerConnectionDownNotif NOTIFICATION-TYPE
           OBJECTS   {
                        dbpLocalId,
                        dbpPeerId
                     }
           STATUS     current
           DESCRIPTION
                  "An dbpPeerConnectionDown notification is sent when
                   both the following conditions are true:
                   1) the value of dbpPeerConnectionDownNotifEnabled is
                      True(1)
                   2) dbpPerPeerStatsState changes to closed(1)
                   It can be utilized by an NMS to trigger
                   logical/physical
                   entity table maintenance polls.  An agent must not
                   generate more than one dbpPeerConnectionDown
                   'notification event' in a five second period, where a
                   'notification event' is the transmission of a single
                   notification PDU to a list of notification
                   destinations.
                   If additional 'transport down' events occur within the
                   five second 'throttling' period, then these trap-events
                   should be suppressed by the agent."
           ::= { diameterBaseNotifications 4 }


    -- Connection Up Notifications

    dbpPeerConnectionUpNotifEnabled OBJECT-TYPE
           SYNTAX      TruthValue
           MAX-ACCESS  read-write
           STATUS      current
           DESCRIPTION
                  "Setting the value of this object to True(1)
                   enables the dbpPeerConnectionUp notification."
           DEFVAL     { false }
           ::= { dbpNotifCfgs 5 }

    dbpPeerConnectionUpNotif NOTIFICATION-TYPE
           OBJECTS   {
                        dbpLocalId,
                        dbpPeerId
                     }
           STATUS     current
           DESCRIPTION

"An dbpPeerConnectionUp notification is sent
 when both thefollowing conditions are true:
 1) the value of dbpPeerConnectionUpNotifEnabled is


    True(1)
 2) the value of dbpPerPeerStatsState changes to
    either rOpen(6)or iOpen(7)
 It can be utilized by an NMS to trigger
 logical/physical entity table maintenance polls.
 An agent must not generate
 more than one dbpPeerConnectionUp
 'notification event' in a
 five second period, where a 'notification event' is the
 transmission of a single notification PDU to a
 list of notification destinations.
 If additional 'connection up' events
 occur within the five second 'throttling' period,
 then these trap-events should be suppressed by the
 agent."
        ::= { diameterBaseNotifications 5 }


-- Local Configs

dbpLocalId OBJECT-TYPE
        SYNTAX     SnmpAdminString
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
               "The implementation-specific identification
                string for the Diameter software in use on
                the system; for example: 'diameterd'"
        ::= { dbpLocalCfgs 1 }

dbpLocalIpAddrTable OBJECT-TYPE
    SYNTAX          SEQUENCE OF DbpLocalIpAddrEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
            "The table listing the Diameter
            local host's IP Addresses."
    ::= { dbpLocalCfgs 2 }

dbpLocalIpAddrEntry OBJECT-TYPE
    SYNTAX          DbpLocalIpAddrEntry
    MAX-ACCESS      not-accessible

```
        STATUS          current
        DESCRIPTION
                "A row entry representing a Diameter
                local host IP Address."
        INDEX           { dbpLocalIpAddrIndex }
        ::= { dbpLocalIpAddrTable 1 }

   DbpLocalIpAddrEntry ::= SEQUENCE {
            dbpLocalIpAddrIndex Unsigned32,
            dbpLocalIpAddrType  InetAddressType,
            dbpLocalIpAddress   InetAddress
   }

   dbpLocalIpAddrIndex OBJECT-TYPE
        SYNTAX          Unsigned32 (1..4294967295 )
        MAX-ACCESS      not-accessible
        STATUS          current
        DESCRIPTION
                "A number uniquely identifying an IP Address
                supported by this Diameter host."
        ::= { dbpLocalIpAddrEntry 1 }

   dbpLocalIpAddrType OBJECT-TYPE
        SYNTAX          InetAddressType
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "The type of internet address stored
                in dbpLocalIpAddress."
        ::= { dbpLocalIpAddrEntry 2 }

   dbpLocalIpAddress OBJECT-TYPE
        SYNTAX          InetAddress
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION
                "The IP-Address of the host, which is of the type
                specified in dbpLocalIpAddrType."
        ::= { dbpLocalIpAddrEntry 3 }

   dbpLocalTcpListenPort OBJECT-TYPE
            SYNTAX      Unsigned32 (1..65535)
            MAX-ACCESS  read-only
            STATUS      current
            DESCRIPTION
                "Diameter TCP 'listen' port."
            ::= { dbpLocalCfgs 3 }
```

```
    dbpLocalSctpListenPort OBJECT-TYPE
          SYNTAX      Unsigned32 (1..65535)
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                "Diameter SCTP 'listen' port."
          ::= { dbpLocalCfgs 4 }

    dbpLocalOriginHost OBJECT-TYPE
        SYNTAX          SnmpAdminString
        MAX-ACCESS      read-write
        STATUS          current
        DESCRIPTION     "This object represents the Local Origin Host."
        DEFVAL          { "" }
        ::= { dbpLocalCfgs 5 }

    dbpLocalRealm OBJECT-TYPE
        SYNTAX          SnmpAdminString
        MAX-ACCESS      read-only
        STATUS          current
        DESCRIPTION     "This object represents the Local Realm Name."
        DEFVAL          { "" }
        ::= { dbpLocalCfgs 6 }

    dbpLocalStatsTotalMessagesIn OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                "The total number of Diameter Base Protocol
                 messages received."
          ::= { dbpLocalStats 1 }

    dbpLocalStatsTotalMessagesOut OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                "The total number of Diameter Base Protocol
                 messages transmitted."
          ::= { dbpLocalStats 2 }

    dbpLocalStatsTotalUpTime OBJECT-TYPE
          SYNTAX      TimeTicks
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
                "This object represents the total time this Diameter
```

                         server has been up until now."
              ::= { dbpLocalStats 3 }

      dbpLocalResetTime OBJECT-TYPE
              SYNTAX      TimeTicks
              MAX-ACCESS read-only
              STATUS      current
              DESCRIPTION
                     "If the server keeps persistent state (e.g., a process)
                      and supports a 'reset' operation (e.g., can be told to
                      re-read configuration files), this value will be the
                      time elapsed (in hundredths of a second) since the
                      server was 'reset'.  For software that does not
                      have persistence or does not support a 'reset'
                      operation, this value will be zero."
              ::= { dbpLocalStats 4 }

      dbpLocalConfigReset OBJECT-TYPE
              SYNTAX      INTEGER { other(1),
                                    initializing(2),
                                    running(3) }
              MAX-ACCESS read-write
              STATUS      current
              DESCRIPTION
                     "Status/action object to reinitialize any persistent
                      server state.  When set to reset(2), any persistent
                      server state (such as a process) is reinitialized as
                      if the server had just been started.  This value will
                      never be returned by a read operation.  When read,
                      one of the following values will be returned:
                          other(1) - server in some unknown state;
                          initializing(2) - server (re)initializing;
                          running(3) - server currently running."
              DEFVAL      { other }
              ::= { dbpLocalStats 5 }

      dbpLocalApplTable OBJECT-TYPE
              SYNTAX      SEQUENCE OF DbpLocalApplEntry
              MAX-ACCESS not-accessible
              STATUS      current
              DESCRIPTION
                     "The table listing the Diameter applications
                      supported by this server."
              ::= { dbpLocalCfgs 7 }

      dbpLocalApplEntry OBJECT-TYPE
              SYNTAX      DbpLocalApplEntry
              MAX-ACCESS not-accessible

```
        STATUS      current
        DESCRIPTION
               "A row entry representing a Diameter
                application on this server."
        INDEX      { dbpLocalApplIndex }
        ::= { dbpLocalApplTable 1 }

DbpLocalApplEntry ::= SEQUENCE {
        dbpLocalApplIndex  Unsigned32,
        dbpLocalApplStorageType    StorageType,
        dbpLocalApplRowStatus      RowStatus
}

dbpLocalApplIndex OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1..4294967295 )
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
               "A number uniquely identifying a
                supported Diameter application. Upon reload,
                dbpLocalApplIndex values may be changed."
        ::= { dbpLocalApplEntry 1 }

dbpLocalApplStorageType OBJECT-TYPE
    SYNTAX          StorageType
    MAX-ACCESS      read-create
    STATUS          current
    DESCRIPTION
           "The storage type for this conceptual row. None of
            the columnar objects is writable when the conceptual
            row is permanent."
    REFERENCE       "Textual Conventions for SMIv2, Section 2."
    DEFVAL          { nonVolatile }
    ::= { dbpLocalApplEntry 2 }

dbpLocalApplRowStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS read-create
        STATUS      current
        DESCRIPTION
           "The status of this conceptual row.

            To create a row in this table, a manager must
            set this object to either createAndGo(4) or
            createAndWait(5).

            Until instances of all corresponding columns are
            appropriately configured, the value of the
```

                    corresponding instance of the dbpLocalApplRowStatus
                    column is 'notReady'.

                    In particular, a newly created row cannot be made
                    active until the corresponding dbpLocalApplIndex
                    has been set.
                    dbpLocalApplIndex may not be modified while
                    the value of this object is active(1): An attempt
                    to set these objects while the value of
                    dbpLocalApplRowStatus is active(1) will result in
                    an inconsistentValue error.

                    Entries in this table with dbpLocalApplRowStatus equal
                    to active(1) remain in the table until destroyed.

                    Entries in this table with dbpLocalApplRowStatus equal
                    to values other than active(1) will be destroyed after
                    timeout (5 minutes)."
              ::= { dbpLocalApplEntry 3 }

    dbpPeerTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF DbpPeerEntry
            MAX-ACCESS not-accessible
            STATUS      current
            DESCRIPTION
                  "The table listing information regarding
                   the discovered or configured Diameter
                   peer servers."
              ::= { dbpPeerCfgs 1 }

    dbpPeerEntry OBJECT-TYPE
            SYNTAX      DbpPeerEntry
            MAX-ACCESS not-accessible
            STATUS      current
            DESCRIPTION
                  "A row entry representing a discovered
                   or configured Diameter peer server."
            INDEX       { dbpPeerIndex }
              ::= { dbpPeerTable 1 }

    DbpPeerEntry ::= SEQUENCE {
            dbpPeerIndex                        Unsigned32,
            dbpPeerId                           SnmpAdminString,
            dbpPeerPortConnect                  Unsigned32,
            dbpPeerPortListen                   Unsigned32,
            dbpPeerProtocol                     INTEGER,
            dbpPeerSecurity                     INTEGER,
            dbpPeerFirmwareRevision             Unsigned32,

```
        dbpPeerStorageType                    StorageType,
        dbpPeerRowStatus                      RowStatus }

dbpPeerIndex OBJECT-TYPE
        SYNTAX     Unsigned32 (1..4294967295)
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
               "A number uniquely identifying each Diameter peer
                with which the host server communicates.
                Upon reload, dbpPeerIndex values may be changed."
        ::= { dbpPeerEntry  1 }

dbpPeerId OBJECT-TYPE
        SYNTAX     SnmpAdminString
        MAX-ACCESS read-create
        STATUS     current
        DESCRIPTION
               "The server identifier for the Diameter peer.
                It must be unique and non-empty."
        ::= { dbpPeerEntry  2 }

dbpPeerPortConnect OBJECT-TYPE
        SYNTAX     Unsigned32 (1..65535)
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
               "The connection port this server used
                to connect to the Diameter peer.
                If there is no active connection, this
                value will be zero(0)."
        ::= { dbpPeerEntry  3 }

dbpPeerPortListen OBJECT-TYPE
        SYNTAX     Unsigned32 (1..65535)
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
               "The port the server is listening on."
        ::= { dbpPeerEntry  4 }

dbpPeerProtocol OBJECT-TYPE
        SYNTAX     INTEGER { tcp(1),
                            sctp(2) }
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
               "The transport protocol (tcp/sctp) the
```

                   Diameter peer is using."
           ::= { dbpPeerEntry  5 }

    dbpPeerSecurity OBJECT-TYPE
           SYNTAX     INTEGER { other(1),
                                tls(2),
                                ipsec(3) }
           MAX-ACCESS read-only
           STATUS     current
           DESCRIPTION
                  "The security the Diameter peer is using.

                   other(1) - Unknown Security Protocol
                   tls(2)   - Transport Layer Security Protocol
                   ipsec(3) - Internet Protocol Security"
           DEFVAL         { other }
           ::= { dbpPeerEntry  6 }

    dbpPeerFirmwareRevision OBJECT-TYPE
           SYNTAX     Unsigned32 (1..4294967295)
           MAX-ACCESS read-only
           STATUS     current
           DESCRIPTION
                  "Firmware revision of peer.  If no firmware
                   revision, the revision of the Diameter software
                   module may be reported instead."
           ::= { dbpPeerEntry 7 }

    dbpPeerStorageType  OBJECT-TYPE
        SYNTAX          StorageType
        MAX-ACCESS      read-create
        STATUS          current
        DESCRIPTION
                "The storage type for this conceptual row.
                 Only the dbpPeerPortListen object is writable when
                 the conceptual row is permanent."
        REFERENCE       "Textual Conventions for SMIv2, Section 2."
        DEFVAL          { nonVolatile }
        ::= { dbpPeerEntry 8 }

    dbpPeerRowStatus OBJECT-TYPE
           SYNTAX     RowStatus
           MAX-ACCESS read-create
           STATUS     current
           DESCRIPTION
                  "Status of the peer entry: creating the entry
                   enables the peer, destroying the entry disables
                   the peer."

```
          ::= {dbpPeerEntry 9 }

   dbpPeerIpAddrTable OBJECT-TYPE
          SYNTAX     SEQUENCE OF DbpPeerIpAddrEntry
          MAX-ACCESS not-accessible
          STATUS     current
          DESCRIPTION
                "The table listing the Diameter
                 peer IP addresses."
          ::= { dbpPeerCfgs 2 }

   dbpPeerIpAddrEntry OBJECT-TYPE
          SYNTAX     DbpPeerIpAddrEntry
          MAX-ACCESS not-accessible
          STATUS     current
          DESCRIPTION
                "A row entry representing a
                 peer Diameter server."
          INDEX      {
                       dbpPeerIndex,
                       dbpPeerIpAddressIndex }
          ::= { dbpPeerIpAddrTable 1 }

   DbpPeerIpAddrEntry ::= SEQUENCE {
          dbpPeerIpAddressIndex Unsigned32,
          dbpPeerIpAddressType  InetAddressType,
          dbpPeerIpAddress      InetAddress }

   dbpPeerIpAddressIndex OBJECT-TYPE
          SYNTAX     Unsigned32 (1..4294967295)
          MAX-ACCESS not-accessible
          STATUS     current
          DESCRIPTION
                "A number uniquely identifying an IP Address
                 supported by this Diameter peer."
          ::= { dbpPeerIpAddrEntry  1 }

   dbpPeerIpAddressType OBJECT-TYPE
          SYNTAX      InetAddressType
          MAX-ACCESS  read-only
          STATUS      current
          DESCRIPTION
                "The type of address stored in dbpPeerIpAddress."
          ::= {dbpPeerIpAddrEntry 2}

   dbpPeerIpAddress OBJECT-TYPE
          SYNTAX      InetAddress
          MAX-ACCESS  read-only
```

```
        STATUS      current
        DESCRIPTION
              "The active IP Address(es) used for connections."
        ::= {dbpPeerIpAddrEntry 3}

 dbpAppAdvToPeerTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF DbpAppAdvToPeerEntry
        MAX-ACCESS not-accessible
        STATUS      current
        DESCRIPTION
              "The table listing the applications advertised by
               this host to each peer and the types of service
               supported: accounting, authentication or both."
        ::= { dbpLocalCfgs 8 }

 dbpAppAdvToPeerEntry OBJECT-TYPE
        SYNTAX      DbpAppAdvToPeerEntry
        MAX-ACCESS not-accessible
        STATUS      current
        DESCRIPTION
              "A row entry representing a discovered or
               configured Diameter peer server."
        INDEX      { dbpPeerIndex,
                     dbpAppAdvToPeerVendorId,
                     dbpAppAdvToPeerIndex }
        ::= { dbpAppAdvToPeerTable 1 }

 DbpAppAdvToPeerEntry ::= SEQUENCE {
        dbpAppAdvToPeerVendorId                 Unsigned32,
        dbpAppAdvToPeerIndex                    Unsigned32,
        dbpAppAdvToPeerServices                  INTEGER,
        dbpAppAdvToPeerStorageType          StorageType,
        dbpAppAdvToPeerRowStatus               RowStatus }

 dbpAppAdvToPeerVendorId OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1..4294967295 )
        MAX-ACCESS not-accessible
        STATUS      current
        DESCRIPTION
              "The IANA Enterprise Code value assigned to
               the vendor of the Diameter device."
        ::= { dbpAppAdvToPeerEntry  1 }

 dbpAppAdvToPeerIndex OBJECT-TYPE
        SYNTAX      Unsigned32 ( 1..4294967295 )
        MAX-ACCESS not-accessible
        STATUS      current
        DESCRIPTION
```

                    "A number uniquely identifying a Diameter
                     application advertised as supported by
                     this host to each peer.  Upon reload,
                     dbpAppAdvToPeerIndex values may be
                     changed"
            ::= { dbpAppAdvToPeerEntry  2 }

    dbpAppAdvToPeerServices OBJECT-TYPE
            SYNTAX     INTEGER { acct(1),
                                 auth(2),
                                 both(3) }
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                    "The type of services supported for each application,
                     accounting, authentication or both."
            ::= { dbpAppAdvToPeerEntry  3 }

    dbpAppAdvToPeerStorageType OBJECT-TYPE
        SYNTAX            StorageType
        MAX-ACCESS        read-create
        STATUS            current
        DESCRIPTION
                "The storage type for this conceptual row.
                 None of the objects are writable when the
                 conceptual row is permanent."
        REFERENCE         "Textual Conventions for SMIv2, Section 2."
        DEFVAL            { nonVolatile }
        ::= { dbpAppAdvToPeerEntry 4 }

    dbpAppAdvToPeerRowStatus OBJECT-TYPE
            SYNTAX     RowStatus
            MAX-ACCESS read-create
            STATUS     current
            DESCRIPTION
                    "Status of the entry: creating the entry causes the
                     application to be advertised, destroying the entry
                     ceases advertisement."
            ::= { dbpAppAdvToPeerEntry  5 }

    -- Applications advertised BY peers

    dbpAppAdvFromPeerTable OBJECT-TYPE
        SYNTAX            SEQUENCE OF DbpAppAdvFromPeerEntry
        MAX-ACCESS        not-accessible
        STATUS            current
        DESCRIPTION
                "The table listing the applications advertised by

```
                  each peer to this host and the types of service
                  supported: accounting, authentication or both."
        ::= { dbpPeerCfgs 3 }

    dbpAppAdvFromPeerEntry OBJECT-TYPE
        SYNTAX            DbpAppAdvFromPeerEntry
        MAX-ACCESS        not-accessible
        STATUS            current
        DESCRIPTION
                "A row entry representing a discovered or
                configured Diameter peer server."
        INDEX            {
                          dbpPeerIndex,
                          dbpAppAdvFromPeerVendorId,
                          dbpAppAdvFromPeerIndex
                          }
        ::= { dbpAppAdvFromPeerTable 1 }

    DbpAppAdvFromPeerEntry ::= SEQUENCE {
          dbpAppAdvFromPeerVendorId Unsigned32,
          dbpAppAdvFromPeerIndex    Unsigned32,
          dbpAppAdvFromPeerType     INTEGER
    }

    dbpAppAdvFromPeerVendorId OBJECT-TYPE
        SYNTAX            Unsigned32 (1..4294967295 )
        MAX-ACCESS        not-accessible
        STATUS            current
        DESCRIPTION
                "The IANA Enterprise Code value assigned to
                the vendor of the Diameter application."
        ::= { dbpAppAdvFromPeerEntry 1 }

    dbpAppAdvFromPeerIndex OBJECT-TYPE
        SYNTAX            Unsigned32 (1..4294967295 )
        MAX-ACCESS        not-accessible
        STATUS            current
        DESCRIPTION
                "A number uniquely identifying the applications
                advertised as supported from each Diameter peer."
        ::= { dbpAppAdvFromPeerEntry 2 }

    dbpAppAdvFromPeerType OBJECT-TYPE
        SYNTAX             INTEGER   {
                          acct(1),
                          auth(2),
                          both(3)
                          }
```

```
      MAX-ACCESS       read-only
      STATUS           current
      DESCRIPTION
              "The type of services supported for each application,
             accounting, authentication or both.
                   acct(1)  -  accounting
                   auth(2)  -  authentication
                   both(3)  -  both accounting and authentication."
      ::= { dbpAppAdvFromPeerEntry 3 }

   -- table of vendor-IDs supported by each peer

   dbpPeerVendorTable OBJECT-TYPE
      SYNTAX           SEQUENCE OF DbpPeerVendorEntry
      MAX-ACCESS       not-accessible
      STATUS           current
      DESCRIPTION
              "The table listing the Vendor IDs
             supported by the peer."
      ::= { dbpPeerCfgs 4 }

   dbpPeerVendorEntry OBJECT-TYPE
      SYNTAX           DbpPeerVendorEntry
      MAX-ACCESS       not-accessible
      STATUS           current
      DESCRIPTION
              "A row entry representing a
             Vendor ID supported by the peer."
      INDEX            {
                          dbpPeerIndex,
                          dbpPeerVendorIndex
                       }
      ::= { dbpPeerVendorTable 1 }

   DbpPeerVendorEntry ::= SEQUENCE {
          dbpPeerVendorIndex      Unsigned32,
          dbpPeerVendorId         Unsigned32,
          dbpPeerVendorStorageType StorageType,
          dbpPeerVendorRowStatus   RowStatus
   }

   dbpPeerVendorIndex OBJECT-TYPE
      SYNTAX           Unsigned32 ( 1..4294967295 )
      MAX-ACCESS       not-accessible
      STATUS           current
      DESCRIPTION
              "A number uniquely identifying the Vendor
             ID supported by the peer. Upon reload,
```

                     dbpPeerVendorIndex values may be changed."
         ::= { dbpPeerVendorEntry 1 }

     dbpPeerVendorId OBJECT-TYPE
         SYNTAX          Unsigned32 (1..4294967295 )
         MAX-ACCESS      read-create
         STATUS          current
         DESCRIPTION
                 "The active vendor ID used for peer connections."
         ::= { dbpPeerVendorEntry 2 }


     dbpPeerVendorStorageType OBJECT-TYPE
         SYNTAX          StorageType
         MAX-ACCESS      read-create
         STATUS          current
         DESCRIPTION
                 "The storage type for this conceptual row.
                 None of the objects are writable when the
                 conceptual row is permanent."
         REFERENCE       "Textual Conventions for SMIv2, Section 2."
         DEFVAL          { nonVolatile }
         ::= { dbpPeerVendorEntry 3 }

     dbpPeerVendorRowStatus OBJECT-TYPE
         SYNTAX          RowStatus
         MAX-ACCESS      read-create
         STATUS          current
         DESCRIPTION
                 "The status of this conceptual row.

                 To create a row in this table, a manager must
                 set this object to either createAndGo(4) or
                 createAndWait(5).

                 Until instances of all corresponding columns are
                 appropriately configured, the value of the
                 corresponding instance of the dbpPeerVendorRowStatus
                 column is 'notReady'.

                 In particular, a newly created row cannot be made
                 active until the corresponding dbpPeerVendorId has been
                 set. Also, a newly created row cannot be made active
                 until the corresponding 'dbpPeerIndex' has been set.

                 dbpPeerVendorId may not be modified while the
                 value of this object is active(1):
                 An attempt to set these objects while the value of

                 dbpPeerVendorRowStatus is active(1) will result in
                 an inconsistentValue error.

                 Entries in this table with dbpPeerVendorRowStatus equal
                  to active(1) remain in the table until destroyed.

                 Entries in this table with dbpPeerVendorRowStatus equal
                 to values other than active(1) will be destroyed after
                 timeout (5 minutes)."
          ::= { dbpPeerVendorEntry 4 }


    dbpPerPeerStatsTable OBJECT-TYPE
            SYNTAX      SEQUENCE OF DbpPerPeerStatsEntry
            MAX-ACCESS not-accessible
            STATUS      current
            DESCRIPTION
                "The table listing the Diameter peer statistics."
            ::= { dbpPeerStats 1 }

    dbpPerPeerStatsEntry OBJECT-TYPE
            SYNTAX      DbpPerPeerStatsEntry
            MAX-ACCESS not-accessible
            STATUS      current
            DESCRIPTION
                "A row entry representing a Diameter peer."
            INDEX     { dbpPeerIndex }
            ::= { dbpPerPeerStatsTable 1 }

    DbpPerPeerStatsEntry ::= SEQUENCE {
            dbpPerPeerStatsState                INTEGER,
            dbpPerPeerStatsStateDuration        TimeTicks,
            dbpPerPeerStatsLastDiscCause        INTEGER,
            dbpPerPeerStatsWhoInitDisconnect    INTEGER,
            dbpPerPeerStatsDWCurrentStatus      INTEGER,
            dbpPerPeerStatsTimeoutConnAtmpts    Counter32,
            dbpPerPeerStatsASRsIn               Counter32,
            dbpPerPeerStatsASRsOut              Counter32,
            dbpPerPeerStatsASAsIn               Counter32,
            dbpPerPeerStatsASAsOut              Counter32,
            dbpPerPeerStatsACRsIn               Counter32,
            dbpPerPeerStatsACRsOut              Counter32,
            dbpPerPeerStatsACAsIn               Counter32,
            dbpPerPeerStatsACAsOut              Counter32,
            dbpPerPeerStatsCERsIn               Counter32,
            dbpPerPeerStatsCERsOut              Counter32,
            dbpPerPeerStatsCEAsIn               Counter32,
            dbpPerPeerStatsCEAsOut              Counter32,

```
        dbpPerPeerStatsDWRsIn               Counter32,
        dbpPerPeerStatsDWRsOut              Counter32,
        dbpPerPeerStatsDWAsIn               Counter32,
        dbpPerPeerStatsDWAsOut              Counter32,
        dbpPerPeerStatsDPRsIn               Counter32,
        dbpPerPeerStatsDPRsOut              Counter32,
        dbpPerPeerStatsDPAsIn               Counter32,
        dbpPerPeerStatsDPAsOut              Counter32,
        dbpPerPeerStatsRARsIn               Counter32,
        dbpPerPeerStatsRARsOut              Counter32,
        dbpPerPeerStatsRAAsIn               Counter32,
        dbpPerPeerStatsRAAsOut              Counter32,
        dbpPerPeerStatsSTRsIn               Counter32,
        dbpPerPeerStatsSTRsOut              Counter32,
        dbpPerPeerStatsSTAsIn               Counter32,
        dbpPerPeerStatsSTAsOut              Counter32,
        dbpPerPeerStatsDWReqTimer           TimeTicks,
        dbpPerPeerStatsRedirectEvents       Counter32,
        dbpPerPeerStatsAccDupRequests       Counter32,
        dbpPerPeerStatsMalformedReqsts      Counter32,
        dbpPerPeerStatsAccsNotRecorded      Counter32,
        dbpPerPeerStatsAccRetrans           Counter32,
        dbpPerPeerStatsTotalRetrans         Counter32,
        dbpPerPeerStatsAccPendReqstsOut     Gauge32,
        dbpPerPeerStatsAccReqstsDropped     Counter32,
        dbpPerPeerStatsHByHDropMessages     Counter32,
        dbpPerPeerStatsEToEDupMessages      Counter32,
        dbpPerPeerStatsUnknownTypes         Counter32,
        dbpPerPeerStatsProtocolErrors       Counter32,
        dbpPerPeerStatsTransientFailures    Counter32,
        dbpPerPeerStatsPermanentFailures    Counter32,
        dbpPerPeerStatsTransportDown        Counter32 }

    dbpPerPeerStatsState OBJECT-TYPE
        SYNTAX      INTEGER { closed(1),
                              waitConnAck(2),
                              waitICea(3),
                              elect(4),
                              waitReturns(5),
                              rOpen(6),
                              iOpen(7),
                              closing(8) }
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Connection state in the Peer State Machine of
             the peer with which this Diameter server is
             communicating.
```

```
                  closed      - Connection closed with this peer.
                  waitConnAck - Waiting for an acknowledgment
                                from this peer.
                  waitICea    - Waiting for a Capabilities-Exchange-
                                Answer from this peer.
                  elect       - When the peer and the server are both
                                trying to bring up a connection with
                                each other at the same time.  An
                                election process begins which
                                determines which socket remains open.
                  waitReturns - Waiting for election returns.
                  r-open      - Responder transport connection is
                                used for communication.
                  i-open      - Initiator transport connection is
                                used for communication.
                  closing     - Actively closing and doing cleanup."
           ::= { dbpPerPeerStatsEntry 1 }

    dbpPerPeerStatsStateDuration OBJECT-TYPE
           SYNTAX      TimeTicks
           MAX-ACCESS read-only
           STATUS      current
           DESCRIPTION
                 "Peer state duration."
           ::= { dbpPerPeerStatsEntry 2 }

    dbpPerPeerStatsLastDiscCause OBJECT-TYPE
           SYNTAX      INTEGER { rebooting(1),
                                 busy(2),
                                 doNotWantToTalk(3),
                                 election(4) }
           MAX-ACCESS read-only
           STATUS      current
           DESCRIPTION
                 "The last cause for a peer's disconnection.

                   rebooting       - A scheduled reboot is imminent.
                   busy            - The peer's internal resources are
                                     constrained, and it has determined
                                     that the transport connection needs
                                     to be shutdown.
                   doNotWantToTalk - The peer has determined that
                                     it does not see a need for the
                                     transport connection to exist,
                                     since it does not expect any
                                     messages to be exchanged in
                                     the foreseeable future.
                   electionLost    - The peer has determined that it
```

                                        has lost the election process
                                        and has therefore disconnected
                                        the transport connection."
            ::= { dbpPerPeerStatsEntry 3 }

    dbpPerPeerStatsWhoInitDisconnect OBJECT-TYPE
            SYNTAX     INTEGER { host(1),
                                 peer(2) }
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                   "Did the host or peer initiate the disconnect?

                    host - If this server initiated the disconnect.
                    peer - If the peer with which this server was
                           connected initiated the disconnect."
            ::= { dbpPerPeerStatsEntry 4 }

    dbpPerPeerStatsDWCurrentStatus OBJECT-TYPE
            SYNTAX     INTEGER { okay(1),
                                 suspect(2),
                                 down(3),
                                 reopen(4) }
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                   "okay    - Indicates the connection is presumed working.
                    suspect - Indicates the connection is possibly
                              congested or down.
                    down    - The peer is no longer reachable, causing
                              the transport connection to be shutdown.
                    reopen  - Three watchdog messages are exchanged with
                              accepted round trip times, and the connection
                              to the peer is considered stabilized."
            ::= { dbpPerPeerStatsEntry 5 }

    dbpPerPeerStatsTimeoutConnAtmpts OBJECT-TYPE
            SYNTAX     Counter32
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                   "If there is no transport connection with a peer,
                    this is the number of times the server attempts
                    to connect to that peer.  This is reset on
                    disconnection."
            ::= { dbpPerPeerStatsEntry 6 }

    dbpPerPeerStatsASRsIn OBJECT-TYPE

```
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
             "Number of Abort-Session-Request messages
              received from the peer."
        ::= { dbpPerPeerStatsEntry 7 }

   dbpPerPeerStatsASRsOut OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
             "Number of Abort-Session-Request
              messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 8 }

   dbpPerPeerStatsASAsIn OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
             "Number of Abort-Session-Answer
              messages received from the peer."
        ::= { dbpPerPeerStatsEntry 9 }

   dbpPerPeerStatsASAsOut OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
             "Number of Abort-Session-Answer
              messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 10 }

   dbpPerPeerStatsACRsIn OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
             "Number of Accounting-Request messages
              received from the peer."
        ::= { dbpPerPeerStatsEntry 11 }

   dbpPerPeerStatsACRsOut OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
```

```
         DESCRIPTION
               "Number of Accounting-Request messages
                sent to the peer."
         ::= { dbpPerPeerStatsEntry 12 }

   dbpPerPeerStatsACAsIn OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "Number of Accounting-Answer messages
                received from the peer."
         ::= { dbpPerPeerStatsEntry 13 }

   dbpPerPeerStatsACAsOut OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "Number of Accounting-Answer messages
                sent to the peer."
         ::= { dbpPerPeerStatsEntry 14 }

   dbpPerPeerStatsCERsIn OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "Number of Capabilities-Exchange-Request
                messages received from the peer."
         ::= { dbpPerPeerStatsEntry 15 }

   dbpPerPeerStatsCERsOut OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "Number of Capabilities-Exchange-Request
                messages sent to the peer."
         ::= { dbpPerPeerStatsEntry 16 }

   dbpPerPeerStatsCEAsIn OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "Number of Capabilities-Exchange-Answer
                messages received from the peer."
```

```
        ::= { dbpPerPeerStatsEntry 17 }

dbpPerPeerStatsCEAsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Capabilities-Exchange-Answer
             messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 18 }

dbpPerPeerStatsDWRsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Device-Watchdog-Request
             messages received from the peer."
        ::= { dbpPerPeerStatsEntry 19 }

dbpPerPeerStatsDWRsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Device-Watchdog-Request
             messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 20 }

dbpPerPeerStatsDWAsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Device-Watchdog-Answer
             messages received from the peer."
        ::= { dbpPerPeerStatsEntry 21 }

dbpPerPeerStatsDWAsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Device-Watchdog-Answer
             messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 22 }

dbpPerPeerStatsDPRsIn OBJECT-TYPE
```

```
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
             "Number of Disconnect-Peer-Request messages
              received."
        ::= { dbpPerPeerStatsEntry 23 }

dbpPerPeerStatsDPRsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
             "Number of Disconnect-Peer-Request messages
              sent."
        ::= { dbpPerPeerStatsEntry 24 }

dbpPerPeerStatsDPAsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
             "Number of Disconnect-Peer-Answer messages
              received."
        ::= { dbpPerPeerStatsEntry 25 }

dbpPerPeerStatsDPAsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
             "Number of Disconnect-Peer-Answer messages
              sent."
        ::= { dbpPerPeerStatsEntry 26 }

dbpPerPeerStatsRARsIn  OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
             "Number of Re-Auth-Request messages
              received."
        ::= { dbpPerPeerStatsEntry 27 }

dbpPerPeerStatsRARsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
```

```
        DESCRIPTION
              "Number of Re-Auth-Request messages
               sent."
        ::= { dbpPerPeerStatsEntry 28 }

   dbpPerPeerStatsRAAsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
              "Number of Re-Auth-Answer messages
               received."
        ::= { dbpPerPeerStatsEntry 29 }

   dbpPerPeerStatsRAAsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
              "Number of Re-Auth-Answer messages
               sent."
        ::= { dbpPerPeerStatsEntry 30 }

   dbpPerPeerStatsSTRsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
              "Number of Session-Termination-Request
               messages received from the peer."
        ::= { dbpPerPeerStatsEntry 31 }

   dbpPerPeerStatsSTRsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
              "Number of Session-Termination-Request
               messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 32 }

   dbpPerPeerStatsSTAsIn OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
              "Number of Session-Termination-Answer
               messages received from the peer."
```

```
        ::= { dbpPerPeerStatsEntry 33 }

dbpPerPeerStatsSTAsOut OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Number of Session-Termination-Answer
             messages sent to the peer."
        ::= { dbpPerPeerStatsEntry 34 }

dbpPerPeerStatsDWReqTimer OBJECT-TYPE
        SYNTAX      TimeTicks
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Device-Watchdog Request Timer, which
             is the interval between packets sent to
             peers."
        ::= { dbpPerPeerStatsEntry 35 }

dbpPerPeerStatsRedirectEvents OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "Redirect Event count, which is the number
             of redirects sent from a peer."
        ::= { dbpPerPeerStatsEntry 36 }

dbpPerPeerStatsAccDupRequests OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "The number of duplicate Diameter Accounting-Request
             packets received."
        ::= { dbpPerPeerStatsEntry 37 }

dbpPerPeerStatsMalformedReqsts OBJECT-TYPE
        SYNTAX      Counter32
        MAX-ACCESS read-only
        STATUS      current
        DESCRIPTION
            "The number of malformed Diameter
             packets received."
        ::= { dbpPerPeerStatsEntry 38 }
```

    dbpPerPeerStatsAccsNotRecorded OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
               "The number of Diameter Accounting-Request packets
                which were received and responded to but not
                recorded."
          ::= { dbpPerPeerStatsEntry 39 }

    dbpPerPeerStatsAccRetrans OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
               "The number of Diameter Accounting-Request packets
                retransmitted to this Diameter server."
          ::= { dbpPerPeerStatsEntry 40 }

    dbpPerPeerStatsTotalRetrans OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
               "The number of Diameter packets retransmitted
                to this Diameter server, not to include Diameter
                Accounting-Request packets retransmitted."
          ::= { dbpPerPeerStatsEntry 41 }

    dbpPerPeerStatsAccPendReqstsOut OBJECT-TYPE
          SYNTAX      Gauge32
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
             "The number of Diameter Accounting-Request packets
              sent to this peer that have not yet timed out or
              received a response. This variable is incremented when an
              Accounting-Request is sent to this server and decremented
              due to receipt of an Accounting-Response, a timeout or
              a retransmission."
          ::= { dbpPerPeerStatsEntry 42 }

    dbpPerPeerStatsAccReqstsDropped OBJECT-TYPE
          SYNTAX      Counter32
          MAX-ACCESS read-only
          STATUS      current
          DESCRIPTION
             "The number of Accounting-Requests to this server

```
        that have been dropped."
   ::= { dbpPerPeerStatsEntry 43 }

dbpPerPeerStatsHByHDropMessages OBJECT-TYPE
      SYNTAX     Counter32
      MAX-ACCESS read-only
      STATUS     current
      DESCRIPTION
            "An answer message that is received with an unknown
             Hop-by-Hop Identifier.  Does not include Accounting
             Requests dropped."
      ::= { dbpPerPeerStatsEntry 44 }

dbpPerPeerStatsEToEDupMessages OBJECT-TYPE
      SYNTAX     Counter32
      MAX-ACCESS read-only
      STATUS     current
      DESCRIPTION
            "Duplicate answer messages that are to be locally
             consumed.  Does not include duplicate Accounting
             Requests received."
      ::= { dbpPerPeerStatsEntry 45 }

dbpPerPeerStatsUnknownTypes OBJECT-TYPE
      SYNTAX     Counter32
      MAX-ACCESS read-only
      STATUS     current
      DESCRIPTION
            "The number of Diameter packets of unknown type
             which were received."
      ::= { dbpPerPeerStatsEntry 46 }

dbpPerPeerStatsProtocolErrors OBJECT-TYPE
      SYNTAX     Counter32
      MAX-ACCESS read-only
      STATUS     current
      DESCRIPTION
            "Number of protocol errors returned to peer,
             but not including redirects."
      ::= { dbpPerPeerStatsEntry 47 }

dbpPerPeerStatsTransientFailures OBJECT-TYPE
      SYNTAX     Counter32
      MAX-ACCESS read-only
      STATUS     current
      DESCRIPTION
            "Transient Failure count."
      ::= { dbpPerPeerStatsEntry 48 }
```

```
   dbpPerPeerStatsPermanentFailures OBJECT-TYPE
         SYNTAX      Counter32
         MAX-ACCESS read-only
         STATUS      current
         DESCRIPTION
             "Number of permanent failures returned to peer."
         ::= { dbpPerPeerStatsEntry 49 }

   dbpPerPeerStatsTransportDown OBJECT-TYPE
         SYNTAX      Counter32
         MAX-ACCESS read-only
         STATUS      current
         DESCRIPTION
             "Number of unexpected transport failures."
         ::= { dbpPerPeerStatsEntry 50 }

   dbpRealmMessageRouteTable OBJECT-TYPE
         SYNTAX      SEQUENCE OF DbpRealmMessageRouteEntry
         MAX-ACCESS not-accessible
         STATUS      current
         DESCRIPTION
             "The table listing the Diameter
              Realm-based Message Route information."
         ::= { dbpRealmStats 1 }

   dbpRealmMessageRouteEntry OBJECT-TYPE
         SYNTAX      DbpRealmMessageRouteEntry
         MAX-ACCESS not-accessible
         STATUS      current
         DESCRIPTION
             "A row entry representing a Diameter
              Realm Based Message Route server."
         INDEX      { dbpRealmMessageRouteIndex }
         ::= { dbpRealmMessageRouteTable 1 }

   DbpRealmMessageRouteEntry ::= SEQUENCE {
         dbpRealmMessageRouteIndex            Unsigned32,
         dbpRealmMessageRouteRealm          SnmpAdminString,
         dbpRealmMessageRouteApp              Unsigned32,
         dbpRealmMessageRouteType               INTEGER,
         dbpRealmMessageRouteAction             INTEGER,
         dbpRealmMessageRouteACRsIn            Counter32,
         dbpRealmMessageRouteACRsOut           Counter32,
         dbpRealmMessageRouteACAsIn            Counter32,
         dbpRealmMessageRouteACAsOut           Counter32,
         dbpRealmMessageRouteRARsIn            Counter32,
         dbpRealmMessageRouteRARsOut           Counter32,
         dbpRealmMessageRouteRAAsIn            Counter32,
```

```
        dbpRealmMessageRouteRAAsOut             Counter32,
        dbpRealmMessageRouteSTRsIn              Counter32,
        dbpRealmMessageRouteSTRsOut             Counter32,
        dbpRealmMessageRouteSTAsIn              Counter32,
        dbpRealmMessageRouteSTAsOut             Counter32,
        dbpRealmMessageRouteASRsIn              Counter32,
        dbpRealmMessageRouteASRsOut             Counter32,
        dbpRealmMessageRouteASAsIn              Counter32,
        dbpRealmMessageRouteASAsOut             Counter32,
        dbpRealmMessageRouteAccRetrans          Counter32,
        dbpRealmMessageRouteAccDupReqsts        Counter32,
        dbpRealmMessageRoutePendReqstsOut         Gauge32,
        dbpRealmMessageRouteReqstsDrop          Counter32 }

dbpRealmMessageRouteIndex OBJECT-TYPE
        SYNTAX     Unsigned32 (1..4294967295)
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
              "A number uniquely identifying each Realm."
        ::= { dbpRealmMessageRouteEntry 1 }

dbpRealmMessageRouteRealm OBJECT-TYPE
        SYNTAX     SnmpAdminString
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "Realm name"
        ::= { dbpRealmMessageRouteEntry 2 }

dbpRealmMessageRouteApp OBJECT-TYPE
        SYNTAX     Unsigned32 (1..4294967295)
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "Application id used to route packets
               to this realm."
        ::= { dbpRealmMessageRouteEntry 3 }

dbpRealmMessageRouteType OBJECT-TYPE
        SYNTAX     INTEGER { acct(1),
                             auth(2),
                             both(3) }
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The types of service supported for each
               realm application: accounting,
```

```
                      authentication or both."
               ::= { dbpRealmMessageRouteEntry 4 }

       dbpRealmMessageRouteAction OBJECT-TYPE
               SYNTAX      INTEGER { local(1),
                                     relay(2),
                                     proxy(3),
                                     redirect(4) }
               MAX-ACCESS read-only
               STATUS      current
               DESCRIPTION
                      "The action is used to identify how a
                       message should be treated based on the realm,
                       application and type.
                       local     - Diameter messages that resolve to a
                                   route entry with the Local Action set to
                                   Local can be satisfied locally, and do
                                   not need to be routed to another server.
                       relay     - All Diameter messages that fall within
                                   this category MUST be routed to a
                                   next-hop server, without modifying any
                                   non-routing AVPs.
                       proxy     - All Diameter messages that fall within this
                                   category MUST be routed to a next-hop
                                   server.
                       redirect - Diameter messages that fall within this
                                   category MUST have the identity of the home
                                   Diameter server(s) appended, and returned
                                   to the sender of the message."
               ::= { dbpRealmMessageRouteEntry 5 }

       dbpRealmMessageRouteACRsIn OBJECT-TYPE
               SYNTAX      Counter32
               MAX-ACCESS read-only
               STATUS      current
               DESCRIPTION
                      "Number of Accounting-Request messages
                       received from the realm."
               ::= { dbpRealmMessageRouteEntry 6 }

       dbpRealmMessageRouteACRsOut OBJECT-TYPE
               SYNTAX      Counter32
               MAX-ACCESS read-only
               STATUS      current
               DESCRIPTION
                      "Number of Accounting-Request messages
                       sent to the realm."
               ::= { dbpRealmMessageRouteEntry 7 }
```

```
    dbpRealmMessageRouteACAsIn OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "Number of Accounting-Answer messages
                 received from the realm."
          ::= { dbpRealmMessageRouteEntry 8 }

    dbpRealmMessageRouteACAsOut OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "Number of Accounting-Answer messages
                 sent to the realm."
          ::= { dbpRealmMessageRouteEntry 9 }

    dbpRealmMessageRouteRARsIn OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "Number of Re-Auth-Request messages
                 received from the realm."
          ::= { dbpRealmMessageRouteEntry 10 }

    dbpRealmMessageRouteRARsOut OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "Number of Re-Auth-Request messages
                 sent to the realm."
          ::= { dbpRealmMessageRouteEntry 11 }

    dbpRealmMessageRouteRAAsIn OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "Number of Re-Auth-Answer messages
                 received from the realm."
          ::= { dbpRealmMessageRouteEntry 12 }

    dbpRealmMessageRouteRAAsOut OBJECT-TYPE
          SYNTAX     Counter32
          MAX-ACCESS read-only
```

```
        STATUS       current
        DESCRIPTION
               "Number of Re-Auth-Answer messages
                sent to the realm."
        ::= { dbpRealmMessageRouteEntry 13 }

   dbpRealmMessageRouteSTRsIn OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
               "Number of Session-Termination-Request messages
                received from the realm."
        ::= { dbpRealmMessageRouteEntry 14 }

   dbpRealmMessageRouteSTRsOut OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
               "Number of Session-Termination-Request messages
                sent to the realm."
        ::= { dbpRealmMessageRouteEntry 15 }

   dbpRealmMessageRouteSTAsIn OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
               "Number of Session-Termination-Answer messages
                received from the realm."
        ::= { dbpRealmMessageRouteEntry 16 }

   dbpRealmMessageRouteSTAsOut OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
               "Number of Session-Termination-Answer messages
                sent to the realm."
        ::= { dbpRealmMessageRouteEntry 17 }

   dbpRealmMessageRouteASRsIn OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS read-only
        STATUS       current
        DESCRIPTION
               "Number of Abort-Session-Request messages
```

                   received from the realm."
            ::= { dbpRealmMessageRouteEntry 18 }

    dbpRealmMessageRouteASRsOut OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS read-only
            STATUS      current
            DESCRIPTION
                   "Number of Abort-Session-Request messages
                    sent to the realm."
            ::= { dbpRealmMessageRouteEntry 19 }

    dbpRealmMessageRouteASAsIn OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS read-only
            STATUS      current
            DESCRIPTION
                   "Number of Abort-Session-Answer messages
                    received from the realm."
            ::= { dbpRealmMessageRouteEntry 20 }

    dbpRealmMessageRouteASAsOut OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS read-only
            STATUS      current
            DESCRIPTION
                   "Number of Abort-Session-Answer messages
                    sent to the realm."
            ::= { dbpRealmMessageRouteEntry 21 }

    dbpRealmMessageRouteAccRetrans OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS read-only
            STATUS      current
            DESCRIPTION
                   "The number of Diameter accounting packets
                    retransmitted to this realm."
            ::= { dbpRealmMessageRouteEntry 22 }

    dbpRealmMessageRouteAccDupReqsts OBJECT-TYPE
            SYNTAX      Counter32
            MAX-ACCESS read-only
            STATUS      current
            DESCRIPTION
                   "The number of duplicate Diameter accounting
                    packets sent to this realm."
            ::= { dbpRealmMessageRouteEntry 23 }

```
   dbpRealmMessageRoutePendReqstsOut OBJECT-TYPE
         SYNTAX     Gauge32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
            "The number of Diameter Accounting-Request packets
             sent to this peer that have not yet timed out or
             received a response. This variable is incremented when an
             Accounting-Request is sent to this server and decremented
             due to receipt of an Accounting-Response, a timeout or
             a retransmission."
         ::= { dbpRealmMessageRouteEntry 24 }

   dbpRealmMessageRouteReqstsDrop OBJECT-TYPE
         SYNTAX     Counter32
         MAX-ACCESS read-only
         STATUS     current
         DESCRIPTION
               "The number of requsts dropped by this realm."
         ::= { dbpRealmMessageRouteEntry 25 }

   dbpRealmKnownPeersTable OBJECT-TYPE
         SYNTAX     SEQUENCE OF DbpRealmKnownPeersEntry
         MAX-ACCESS not-accessible
         STATUS     current
         DESCRIPTION
               "The table listing the Diameter
                Realms and known peers."
         ::= { dbpRealmCfgs 1 }

   dbpRealmKnownPeersEntry OBJECT-TYPE
         SYNTAX     DbpRealmKnownPeersEntry
         MAX-ACCESS not-accessible
         STATUS     current
         DESCRIPTION
               "A row entry representing a Diameter
                Realm and known peers."
         INDEX     { dbpRealmMessageRouteIndex,
                       dbpRealmKnownPeersIndex }
         ::= { dbpRealmKnownPeersTable 1 }

   DbpRealmKnownPeersEntry ::= SEQUENCE {
         dbpRealmKnownPeersIndex                Unsigned32,
         dbpRealmKnownPeers                     Unsigned32,
         dbpRealmKnownPeersChosen               INTEGER }

   dbpRealmKnownPeersIndex OBJECT-TYPE
         SYNTAX     Unsigned32 (1..4294967295)
```

```
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
               "A sequential identifier number."
         ::= { dbpRealmKnownPeersEntry 1 }

   dbpRealmKnownPeers OBJECT-TYPE
         SYNTAX      Unsigned32 (1..4294967295)
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
               "The index of the peer this realm knows about.
                This is an ordered list, where the ordering
                signifies the order in which the peers are
                tried.  Same as the dbpPeerIndex"
         ::= { dbpRealmKnownPeersEntry 2 }

   dbpRealmKnownPeersChosen OBJECT-TYPE
         SYNTAX      INTEGER { roundRobin(1),
                               loadBalance(2),
                               firstPreferred(3),
                               mostRecentFirst(4),
                               other(5) }
         MAX-ACCESS  read-only
         STATUS      current
         DESCRIPTION
               "How the realm chooses which peer to send
                packets to.
                roundRobin      - The peer used for each transaction
                                  is selected based on the order in
                                  which peers are configured.
                loadBalance     - The peer used for each transaction
                                  is based on the load metric (maybe
                                  implementation dependent) of all
                                  peers defined for the realm, with
                                  the least loaded server selected
                                  first.
                firstPreferred  - The first defined server is always
                                  used for transactions unless
                                  failover occurs.
                mostRecentFirst - The most recently used server is
                                  used first for each transaction."
         ::= { dbpRealmKnownPeersEntry 3 }

   -- Conformance
   -- dbpMIBCompliances

   diameterBaseProtocolMIBCompliances
```

```
                         OBJECT IDENTIFIER ::= { diameterBaseConform 1 }
   diameterBaseProtocolMIBGroups
                         OBJECT IDENTIFIER ::= { diameterBaseConform 2 }

   -- Compliance Statements

   diameterBaseProtocolCompliance MODULE-COMPLIANCE
          STATUS     current
          DESCRIPTION
              "The compliance statement for Diameter Base
               Protocol entities."
          MODULE -- this module
              MANDATORY-GROUPS { dbpLocalCfgGroup,
                                 dbpPeerCfgGroup,
                                 dbpPeerStatsGroup,
                                 dbpRealmCfgGroup,
                                 dbpRealmStatsGroup,
                                 dbpNotificationsGroup,
                                 dbpNotifCfgGroup }


          ::= { diameterBaseProtocolMIBCompliances 1 }


   -- Units of Conformance

   dbpLocalCfgGroup OBJECT-GROUP
        OBJECTS {
                dbpLocalRealm,
                dbpLocalOriginHost,
                dbpLocalId,
                dbpLocalIpAddrType,
                dbpLocalIpAddress,
                dbpLocalTcpListenPort,
                dbpLocalSctpListenPort,
                dbpLocalStatsTotalMessagesIn,
                dbpLocalStatsTotalMessagesOut,
                dbpLocalStatsTotalUpTime,
                dbpLocalResetTime,
                dbpLocalConfigReset,
                dbpLocalApplStorageType,
                dbpLocalApplRowStatus,
                dbpAppAdvToPeerServices,
                dbpAppAdvToPeerStorageType,
                dbpAppAdvToPeerRowStatus
        }
        STATUS  current
        DESCRIPTION
```

                "A collection of objects providing configuration common
                 to the server."
           ::= { diameterBaseProtocolMIBGroups 1 }

    dbpPeerCfgGroup OBJECT-GROUP
        OBJECTS   {
                  dbpPeerId,
                  dbpPeerPortConnect,
                  dbpPeerPortListen,
                  dbpPeerProtocol,
                  dbpPeerSecurity,
                  dbpPeerFirmwareRevision,
                  dbpPeerStorageType,
                  dbpPeerRowStatus,
                  dbpPeerIpAddressType,
                  dbpPeerIpAddress,
                  dbpPeerVendorId,
                  dbpPeerVendorStorageType,
                  dbpPeerVendorRowStatus,
                  dbpAppAdvFromPeerType
        }
        STATUS          current
        DESCRIPTION
                "A collection of objects providing configuration
                 of the Diameter peers."
           ::= { diameterBaseProtocolMIBGroups 2 }

    dbpPeerStatsGroup OBJECT-GROUP
        OBJECTS   {
                  dbpPerPeerStatsState,
                  dbpPerPeerStatsStateDuration,
                  dbpPerPeerStatsLastDiscCause,
                  dbpPerPeerStatsWhoInitDisconnect,
                  dbpPerPeerStatsDWCurrentStatus,
                  dbpPerPeerStatsTimeoutConnAtmpts,
                  dbpPerPeerStatsASRsIn,
                  dbpPerPeerStatsASRsOut,
                  dbpPerPeerStatsASAsIn,
                  dbpPerPeerStatsASAsOut,
                  dbpPerPeerStatsACRsIn,
                  dbpPerPeerStatsACRsOut,
                  dbpPerPeerStatsACAsIn,
                  dbpPerPeerStatsACAsOut,
                  dbpPerPeerStatsCERsIn,
                  dbpPerPeerStatsCERsOut,
                  dbpPerPeerStatsCEAsIn,
                  dbpPerPeerStatsCEAsOut,
                  dbpPerPeerStatsDWRsIn,

```
                 dbpPerPeerStatsDWRsOut,
                 dbpPerPeerStatsDWAsIn,
                 dbpPerPeerStatsDWAsOut,
                 dbpPerPeerStatsDPRsIn,
                 dbpPerPeerStatsDPRsOut,
                 dbpPerPeerStatsDPAsIn,
                 dbpPerPeerStatsDPAsOut,
                 dbpPerPeerStatsRARsIn,
                 dbpPerPeerStatsRARsOut,
                 dbpPerPeerStatsRAAsIn,
                 dbpPerPeerStatsRAAsOut,
                 dbpPerPeerStatsSTRsIn,
                 dbpPerPeerStatsSTRsOut,
                 dbpPerPeerStatsSTAsIn,
                 dbpPerPeerStatsSTAsOut,
                 dbpPerPeerStatsDWReqTimer,
                 dbpPerPeerStatsRedirectEvents,
                 dbpPerPeerStatsAccDupRequests,
                 dbpPerPeerStatsMalformedReqsts,
                 dbpPerPeerStatsAccsNotRecorded,
                 dbpPerPeerStatsAccRetrans,
                 dbpPerPeerStatsTotalRetrans,
                 dbpPerPeerStatsAccPendReqstsOut,
                 dbpPerPeerStatsAccReqstsDropped,
                 dbpPerPeerStatsHByHDropMessages,
                 dbpPerPeerStatsEToEDupMessages,
                 dbpPerPeerStatsUnknownTypes,
                 dbpPerPeerStatsProtocolErrors,
                 dbpPerPeerStatsTransientFailures,
                 dbpPerPeerStatsPermanentFailures,
                 dbpPerPeerStatsTransportDown,
                 dbpPerPeerStatsDWCurrentStatus,
                 dbpPerPeerStatsDWReqTimer,
                 dbpPerPeerStatsRedirectEvents,
                 dbpPerPeerStatsAccDupRequests,
                 dbpPerPeerStatsEToEDupMessages
         }
     STATUS          current
     DESCRIPTION
             "A collection of objects providing statistics
              of the Diameter peers."
     ::= { diameterBaseProtocolMIBGroups 3 }


  dbpNotificationsGroup NOTIFICATION-GROUP
     NOTIFICATIONS    {
                     dbpProtocolErrorNotif,
                     dbpTransientFailureNotif,
```

```
                        dbpPermanentFailureNotif,
                        dbpPeerConnectionDownNotif,
                        dbpPeerConnectionUpNotif
                        }
        STATUS            current
        DESCRIPTION
                "The set of notifications which an agent is required
                 to implement."
        ::= { diameterBaseProtocolMIBGroups 4 }

    dbpNotifCfgGroup OBJECT-GROUP
        OBJECTS           {
                        dbpProtocolErrorNotifEnabled,
                        dbpTransientFailureNotifEnabled,
                        dbpPermanentFailureNotifEnabled,
                        dbpPeerConnectionDownNotifEnabled,
                        dbpPeerConnectionUpNotifEnabled
                        }
        STATUS            current
        DESCRIPTION
                "A collection of objects providing configuration for
                base protocol notifications."
        ::= { diameterBaseProtocolMIBGroups 5 }

    dbpRealmCfgGroup OBJECT-GROUP
        OBJECTS           {
                        dbpRealmKnownPeers,
                        dbpRealmKnownPeersChosen
                        }
        STATUS            current
        DESCRIPTION
                "A collection of objects providing configuration for
                Realm."
        ::= { diameterBaseProtocolMIBGroups 6 }

    dbpRealmStatsGroup OBJECT-GROUP
        OBJECTS           {
                        dbpRealmMessageRouteRealm,
                        dbpRealmMessageRouteApp,
                        dbpRealmMessageRouteType,
                        dbpRealmMessageRouteAction,
                        dbpRealmMessageRouteACRsIn,
                        dbpRealmMessageRouteACRsOut,
                        dbpRealmMessageRouteACAsIn,
                        dbpRealmMessageRouteACAsOut,
                        dbpRealmMessageRouteRARsIn,
                        dbpRealmMessageRouteRARsOut,
                        dbpRealmMessageRouteRAAsIn,
```

```
                    dbpRealmMessageRouteRAAsOut,
                    dbpRealmMessageRouteSTRsIn,
                    dbpRealmMessageRouteSTRsOut,
                    dbpRealmMessageRouteSTAsIn,
                    dbpRealmMessageRouteSTAsOut,
                    dbpRealmMessageRouteASRsIn,
                    dbpRealmMessageRouteASRsOut,
                    dbpRealmMessageRouteASAsIn,
                    dbpRealmMessageRouteASAsOut,
                    dbpRealmMessageRouteAccRetrans,
                    dbpRealmMessageRouteAccDupReqsts,
                    dbpRealmMessageRoutePendReqstsOut,
                    dbpRealmMessageRouteReqstsDrop
                    }
        STATUS          current
        DESCRIPTION
                "A collection of objects providing statistics
                of realm message routing."
        ::= { diameterBaseProtocolMIBGroups 7 }

     END
```

5.  IANA Considerations

    The MIB module in this document uses the following IANA-assigned
    OBJECT IDENTIFIER values recorded in the SMI Numbers registry:

            Descriptor                    OBJECT IDENTIFIER value
            ----------------------        -----------------------

            diameterBaseProtocolMIB       { mib-2 XXX }

    Editor's Note (to be removed prior to publication)  The IANA is
        requested to assign a value for "XXX" under the 'mib-2' subtree
        and to record the assignment in the SMI Numbers registry.  When
        the assignment has been made, the RFC Editor is asked to replace
        "XXX" (here and in the MIB module) with the assigned value and to
        remove this note.


6.  Security Considerations

    There are managed 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.

There are several of managed objects in this MIB that may contain
sensitive information.  These are:

o  diameterHostAddress

o  diameterPeerServerAddress

o  diameterPeerIpAddress

These can be used to determine the address of the Diameter host,
and/or peers with which the host is communicating.  This information
could be useful in impersonating the host or peer.

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

SNMPv1 by itself is not a secure environment.  Even if the network
itself is secure (for example by using IPSec), there is no control as
to who on the secure network is allowed to access and GET (read) the
objects in this MIB.

It is recommended that the implementers consider the security
features as provided by the SNMPv3 framework.  Specifically, the use
of the User-based Security Model [RFC3414] and the View-based Access
Control Model [RFC3415] is recommended.

It is then a customer/user responsibility to ensure that the SNMP
entity giving access to an instance of this MIB, 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.


7.  Contributors

This document is based upon and derived from work done by Jay
Koehler, Mark Eklund and Hai Li.


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9.  References

9.1.  Normative References

   [RFC2119]   Bradner, S., "Key words for use in RFCs to Indicate
               Requirement Levels", BCP 14, RFC 2119, March 1997.

   [RFC2578]   McCloghrie, K., Ed., Perkins, D., Ed., and J.
               Schoenwaelder, Ed., "Structure of Management Information
               Version 2 (SMIv2)", STD 58, RFC 2578, April 1999.

   [RFC2579]   McCloghrie, K., Ed., Perkins, D., Ed., and J.
               Schoenwaelder, Ed., "Textual Conventions for SMIv2",
               STD 58, RFC 2579, April 1999.

   [RFC2580]   McCloghrie, K., Perkins, D., and J. Schoenwaelder,
               "Conformance Statements for SMIv2", STD 58, RFC 2580,
               April 1999.

   [RFC3411]   Harrington, D., Presuhn, R., and B. Wijnen, "An
               Architecture for Describing Simple Network Management
               Protocol (SNMP) Management Frameworks", STD 62, RFC 3411,
               December 2002.

   [RFC3588]   Calhoun, P., Loughney, J., Guttman, E., Zorn, G., and J.
               Arkko, "Diameter Base Protocol", RFC 3588, September 2003.

   [RFC4001]   Daniele, M., Haberman, B., Routhier, S., and J.
               Schoenwaelder, "Textual Conventions for Internet Network
               Addresses", RFC 4001, February 2005.

9.2.  Informative References

   [RFC3410]   Case, J., Mundy, R., Partain, D., and B. Stewart,
               "Introduction and Applicability Statements for Internet-
               Standard Management Framework", RFC 3410, December 2002.

   [RFC3414]   Blumenthal, U. and B. Wijnen, "User-based Security Model
               (USM) for version 3 of the Simple Network Management
               Protocol (SNMPv3)", STD 62, RFC 3414, December 2002.

   [RFC3415]   Wijnen, B., Presuhn, R., and K. McCloghrie, "View-based
               Access Control Model (VACM) for the Simple Network
               Management Protocol (SNMP)", STD 62, RFC 3415,
               December 2002.

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