

Network Working Group  
Internet-Draft  
Intended status: Standards Track  
Expires: December 16, 2011

G. Zorn  
Network Zen  
S. Comerica  
Juniper Networks  
June 14, 2011

Diameter Base Protocol MIB  
draft-ietf-dime-diameter-base-protocol-mib-06.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 in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on December 16, 2011.

## Copyright Notice

Copyright (c) 2011 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to BCP 78 and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must

include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

This document may contain material from IETF Documents or IETF Contributions published or made publicly available before November 10, 2008. The person(s) controlling the copyright in some of this material may not have granted the IETF Trust the right to allow modifications of such material outside the IETF Standards Process. Without obtaining an adequate license from the person(s) controlling the copyright in such materials, this document may not be modified outside the IETF Standards Process, and derivative works of it may not be created outside the IETF Standards Process, except to format it for publication as an RFC or to translate it into languages other than English.

#### Table of Contents

|   |    |
|---|----|
| 1. The Internet-Standard Management Framework . . . . . | 3  |
| 2. Requirements Language . . . . .                      | 3  |
| 3. Overview . . . . .                                   | 3  |
| 4. Diameter Base Protocol MIB Definitions . . . . .     | 3  |
| 5. IANA Considerations . . . . .                        | 48 |
| 6. Security Considerations . . . . .                    | 48 |
| 7. Contributors . . . . .                               | 49 |
| 8. Acknowledgements . . . . .                           | 49 |
| 9. References . . . . .                                 | 49 |
| 9.1. Normative References . . . . .                     | 49 |
| 9.2. Informative References . . . . .                   | 50 |
| Authors' Addresses . . . . .                            | 50 |

## 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 [I-D.ietf-dime-rfc3588bis].

## 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 [I-D.ietf-dime-rfc3588bis]. 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,
    Integer32,
    Counter32,
    Unsigned32,
    Gauge32,
```

```
TimeTicks
    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 "201105040000Z" -- 4 May 2011
    ORGANIZATION "IETF dime Working Group."
    CONTACT-INFO
        "Glen Zorn
        Network Zen
        227/358 Thanon Sanphawut
        Bang Na, Bangkok 10260
        Thailand
        Email: gwz@net-zen.net"
    DESCRIPTION
        "The MIB module for entities implementing the
        Diameter Base Protocol.
```

Copyright (c) 2011 IETF Trust and the persons identified  
as the document authors. All rights reserved.

The 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 "201105040000Z" -- 4 May 2011
DESCRIPTION "Initial version as published in RFC yyyy"
```

-- RFC Ed.: replace yyyy with actual RFC number and remove this note  
::= { mib-2 119 } -- Experimental value assigned by IANA.

-- 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 }
```

#### -- Textual Conventions

ServiceType ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS current

DESCRIPTION

"An enumerated value which provides an indication of the  
type of services supported for each Diameter application:  
accounting, authentication or both.

SYNTAX INTEGER { acct(1),  
auth(2),  
both(3) }

}

#### -- 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.  
The value persists across resets."

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
    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.
        The value persists across resets."
 ::= { 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
        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. The value persists across resets."

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

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.  
The value persists across resets."

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)  
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.
    The value persists across resets."
DEFVAL        { false }
::= { dbpNotifCfgs 5 }
```

dbpPeerConnectionUpNotif NOTIFICATION-TYPE

```
OBJECTS {
    dbpLocalId,
    dbpPeerId
}
STATUS        current
DESCRIPTION
    "An dbpPeerConnectionUp notification is sent
    when both the following conditions are true:
    1) the value of dbpPeerConnectionUpNotifEnabled is
    True(1)
    2) the value of dbpPerPeerStatsState changes to
    either rOpen(6) or iOpen(7)
    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 }
```

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 host name of
        the local peer.
        The value persists across resets."
    DEFVAL      { "" }
    ::= { dbpLocalCfgs 5 }

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

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

dbpLocalStatsTotalMessagesOut OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

```
        "The total number of Diameter Base Protocol
        messages transmitted since the last reset."
 ::= { dbpLocalStats 2 }

dbpLocalStatsTotalUpTime OBJECT-TYPE
    SYNTAX      TimeTicks
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "This object represents the total amount of
        time this Diameter peer has been up from the
        beginning of time until now. The value is cumulative
        and persists over resets."
 ::= { dbpLocalStats 3 }

dbpLocalResetTime OBJECT-TYPE
    SYNTAX      TimeTicks
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "If the peer 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
        peer was 'reset'. For software that does not
        have persistence or does not support a 'reset'
        operation, this value is undefined."
 ::= { dbpLocalStats 4 }

dbpLocalConfigReset OBJECT-TYPE
    SYNTAX      INTEGER { other(1),
                          initializing(2),
                          running(3),
                          reset(4) }
    MAX-ACCESS  read-write
    STATUS      current
    DESCRIPTION
        "Status/action object to reinitialize any persistent
        local state. When set to reset(4), any persistent
        local state (such as a process) is reinitialized as
        if the software 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) - peer in some unknown state;
            initializing(2) - peer (re)initializing;
            running(3) - peer 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 peer."
    ::= { dbpLocalCfgs 7 }

dbpLocalApplEntry OBJECT-TYPE
    SYNTAX      DbpLocalApplEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A row entry representing a Diameter
        application on this peer."
    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 peers."

::= { dbpPeerCfgs 1 }

dbpPeerEntry OBJECT-TYPE

SYNTAX        DbpPeerEntry  
MAX-ACCESS   not-accessible  
STATUS        current  
DESCRIPTION

```

        "A row entry representing a discovered
        or configured Diameter peer."
INDEX      { dbpPeerIndex }
 ::= { dbpPeerTable 1 }

DbpPeerEntry ::= SEQUENCE {
    dbpPeerIndex                Unsigned32,
    dbpPeerId                   SnmpAdminString,
    dbpPeerPortConnect          Unsigned32,
    dbpPeerPortListen           Unsigned32,
    dbpPeerTransportProtocol    Integer32,
    dbpPeerSecurity              Integer32,
    dbpPeerFirmwareRevision     SnmpAdminString,
    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 local peer communicates.
        Upon reload, dbpPeerIndex values may be changed."
    ::= { dbpPeerEntry 1 }

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

dbpPeerPortConnect OBJECT-TYPE
    SYNTAX      Unsigned32 (0|1..65535)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The connection port 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-write
STATUS current
DESCRIPTION
    "The port the peer is listening on."
 ::= { dbpPeerEntry 4 }

dbpPeerTransportProtocol 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 SnmpAdminString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "Firmware revision of peer.
         If the Entity MIB is supported by
         the node, then the contents of this object MUST be
         identical to those of the entPhysicalFirmwareRev
         object [RFC4133]. 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
        the IP address of a Diameter peer."
    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."
    INDEX      { dbpPeerIndex,
                  dbpAppAdvToPeerVendorId,
                  dbpAppAdvToPeerIndex }
    ::= { dbpAppAdvToPeerTable 1 }

DbpAppAdvToPeerEntry ::= SEQUENCE {
    dbpAppAdvToPeerVendorId      Unsigned32,
    dbpAppAdvToPeerIndex        Unsigned32,
    dbpAppAdvToPeerServices     ServiceType,

```

```
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      ServiceType
    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."
    INDEX       {
        dbpPeerIndex,
        dbpAppAdvFromPeerVendorId,
        dbpAppAdvFromPeerIndex
    }
    ::= { dbpAppAdvFromPeerTable 1 }

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

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      ServiceType
    MAX-ACCESS   read-only
    STATUS      current
    DESCRIPTION
        "The type of services supported for each application,
        accounting, authentication or both."
    ::= { 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         INTEGER,
    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      INTEGER {
                    diameterVendorIetf (0),
                    diameterVendorCisco (9),
                    diameterVendor3gpp (10415),
                    diameterVendorVodafone (12645)
                }
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The active vendor ID used for peer connections.
        diameterVendorIetf (0)          -- IETF
        diameterVendorCisco (9)         -- Cisco Systems
        diameterVendor3gpp (10415)      -- 3GPP
        diameterVendorVodafone (12645)  --- Vodafone"
    DEFVAL      { diameterVendorIetf }
    ::= { 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 }

dbpPerPeerInfoTable OBJECT-TYPE

SYNTAX SEQUENCE OF DbpPerPeerInfoEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The table listing Diameter per-peer information."

::= { dbpPeerInfo 1 }

dbpPerPeerInfoEntry OBJECT-TYPE

SYNTAX DbpPerPeerInfoEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A row entry representing a Diameter peer."

INDEX { dbpPeerIndex }

::= { dbpPerPeerInfoTable 1 }

DbpPerPeeInfoEntry ::= SEQUENCE {

dbpPerPeerInfoState Integer32,

dbpPerPeeInfoStateDuration TimeTicks,

|                                  |             |
|----------------------------------|-------------|
| dbpPerPeerInfoLastDiscCause      | Integer32,  |
| dbpPerPeerInfoWhoInitDisconnect  | Integer32,  |
| dbpPerPeerStatsDWCurrentStatus   | Integer32,  |
| 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,  |
| dbpPerPeerInfoDWReqTimer         | 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 } |

## dbpPerPeerInfoState 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 peer 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 remote and local peers 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."

::= { dbpPerPeerInfoEntry 1 }

## dbpPerPeerInfoStateDuration OBJECT-TYPE

```
SYNTAX      TimeTicks
```

MAX-ACCESS read-only

STATUS current

## DESCRIPTION

"The elapsed time (in hundredths of a second) since the last state change."

::= { dbpPerPeerInfoEntry 2 }

## dbpPerPeerInfoLastDiscCause 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."
 ::= { dbpPerPeerInfoEntry 3 }

```

```

dbpPerPeerInfoWhoInitDisconnect 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 peer initiated the disconnect.
        peer - If the peer with which this peer was
              connected initiated the disconnect."
 ::= { dbpPerPeerInfoEntry 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."
 ::= { dbpPerPeerInfoEntry 5 }

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

dbpPerPeerStatsASRsIn OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of Abort-Session-Request messages
         received from the peer."
 ::= { dbpPerPeerInfoEntry 7 }

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

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

dbpPerPeerStatsASAsOut OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
```

```
        "Number of Abort-Session-Answer
        messages sent to the peer."
 ::= { dbpPerPeerInfoEntry 10 }

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

dbpPerPeerStatsACRsOut OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of Accounting-Request messages
        sent to the peer."
 ::= { dbpPerPeerInfoEntry 12 }

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

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

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

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

```
dbpPerPeerStatsCEAsIn OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of Capabilities-Exchange-Answer
        messages received from the peer."
    ::= { dbpPerPeerInfoEntry 17 }
```

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

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

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

```
dbpPerPeerStatsDWAsIn OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
```

```
STATUS      current
DESCRIPTION
    "Number of Device-Watchdog-Answer
    messages received from the peer."
 ::= { dbpPerPeerInfoEntry 21 }

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

dbpPerPeerStatsDPRsIn OBJECT-TYPE
SYNTAX      Counter32 UNITS "messages"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Number of Disconnect-Peer-Request messages
    received."
 ::= { dbpPerPeerInfoEntry 23 }

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

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

dbpPerPeerStatsDPAsOut OBJECT-TYPE
SYNTAX      Counter32 UNITS "messages"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Number of Disconnect-Peer-Answer messages
```

```
        sent."
 ::= { dbpPerPeerInfoEntry 26 }

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

dbpPerPeerStatsRARsOut OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of Re-Auth-Request messages
         sent."
 ::= { dbpPerPeerInfoEntry 28 }

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

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

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

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

dbpPerPeerStatsSTAsIn OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "Number of Session-Termination-Answer
         messages received from the peer."
    ::= { dbpPerPeerInfoEntry 33 }

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

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

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

dbpPerPeerStatsAccDupRequests OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
```

```
MAX-ACCESS read-only
STATUS      current
DESCRIPTION
    "The number of duplicate Diameter Accounting-Request
    messages received."
 ::= { dbpPerPeerInfoEntry 37 }

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

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

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

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

dbpPerPeerStatsAccPendReqstsOut OBJECT-TYPE
SYNTAX      Gauge32
MAX-ACCESS read-only
```



```
STATUS      current
DESCRIPTION
    "The number of Diameter Accounting-Request messages
    sent to this peer that have not yet timed out or
    received a response. This variable is incremented when an
    Accounting-Request is received by this server and decremented
    due to the transmission of an Accounting-Response, a timeout
    or a retransmission."
 ::= { dbpPerPeerInfoEntry 42 }

dbpPerPeerStatsAccReqstsDropped OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of Accounting-Requests to this server
        that have been dropped."
    ::= { dbpPerPeerInfoEntry 43 }

dbpPerPeerStatsHByHDropMessages OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    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."
    ::= { dbpPerPeerInfoEntry 44 }

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

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

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

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

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

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

-- Realm-based Routing Table

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."
INDEX       { dbpRealmMessageRouteIndex }
 ::= { dbpRealmMessageRouteTable 1 }

DbpRealmMessageRouteEntry ::= SEQUENCE {
    dbpRealmMessageRouteIndex      Unsigned32,
    dbpRealmMessageRouteRealm      SnmpAdminString,
    dbpRealmMessageRouteApp        Unsigned32,
    dbpRealmMessageRouteType       ServiceType,
    dbpRealmMessageRouteAction     Integer32,
    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 messages
         to this realm."
    ::= { dbpRealmMessageRouteEntry 3 }

dbpRealmMessageRouteType OBJECT-TYPE
    SYNTAX      ServiceType
    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 peer.
         relay      - All Diameter messages that fall within
                     this category MUST be routed to a
                     next-hop peer, without modifying any
                     non-routing AVPs.
         proxy      - All Diameter messages that fall within this
                     category MUST be routed to a next-hop
                     peer.
         redirect   - Diameter messages that fall within this
                     category MUST have the identity of the home
                     Diameter peer(s) appended, and returned
                     to the sender of the message."
    ::= { dbpRealmMessageRouteEntry 5 }
```

-- Per-realm message statistics

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

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

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

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

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

dbpRealmMessageRouteRARsOut OBJECT-TYPE

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

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

dbpRealmMessageRouteRAAsOut OBJECT-TYPE
SYNTAX      Counter32 UNITS "messages"
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
    "Number of Re-Auth-Answer messages
     sent to the realm."
 ::= { dbpRealmMessageRouteEntry 13 }

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

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

dbpRealmMessageRouteSTAsIn OBJECT-TYPE
SYNTAX      Counter32 UNITS "messages"
MAX-ACCESS  read-only
STATUS      current
```

DESCRIPTION  
    "Number of Session-Termination-Answer messages  
      received from the realm."  
 ::= { dbpRealmMessageRouteEntry 16 }

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

dbpRealmMessageRouteASRsIn OBJECT-TYPE  
    SYNTAX Counter32 UNITS "messages"  
    MAX-ACCESS read-only  
    STATUS current  
    DESCRIPTION  
        "Number of Abort-Session-Request messages  
          received from the realm."  
 ::= { dbpRealmMessageRouteEntry 18 }

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

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

dbpRealmMessageRouteASAsOut OBJECT-TYPE  
    SYNTAX Counter32 UNITS "messages"  
    MAX-ACCESS read-only  
    STATUS current  
    DESCRIPTION  
        "Number of Abort-Session-Answer messages  
          sent to the realm."

```
 ::= { dbpRealmMessageRouteEntry 21 }

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

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

dbpRealmMessageRoutePendReqstsOut OBJECT-TYPE
    SYNTAX      Gauge32
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of Diameter Accounting-Request messages
         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 peer and decremented
         due to receipt of an Accounting-Response, a timeout or
         a retransmission."
    ::= { dbpRealmMessageRouteEntry 24 }

dbpRealmMessageRouteReqstsDrop OBJECT-TYPE
    SYNTAX      Counter32 UNITS "messages"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The number of reqsts 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."
```



This is an ordered list, where the ordering signifies the order in which the peers are tried."

::= { 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 Integer32 }

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.  
Same as the dbpPeerIndex"

::= { dbpRealmKnownPeersEntry 2 }

dbpRealmKnownPeersChosen OBJECT-TYPE

SYNTAX INTEGER { other(1),  
roundRobin(2),  
loadBalance(3),  
firstPreferred(4),  
mostRecentFirst(5) }

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"How the realm chooses which peer to send

```

        messages 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 (
                          implementation dependent) of all
                          peers defined for the realm, with
                          the least loaded peer selected
                          first.
        firstPreferred  - The first defined peer is always
                          used for transactions unless
                          failover occurs.
        mostRecentFirst - The most recently used peer is
                          used first for each transaction."
 ::= { dbpRealmKnownPeersEntry 3 }

-- Conformance

diameterBaseProtocolMIBCompliances
    OBJECT IDENTIFIER ::= { diameterBaseConform 1 }

diameterBaseProtocolMIBGroups
    OBJECT IDENTIFIER ::= { diameterBaseConform 2 }

-- Compliance Statements

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

        GROUP          dbpLocalCfgSkippedGroup
        DESCRIPTION
            "This group is only mandatory for a system that
            implements all the local config objects."

        GROUP          dbpLocalStatsSkippedGroup
        DESCRIPTION
            "This group is only mandatory for a system that

```

implements all the local statistics objects."

GROUP dbpPeerCfgSkippedGroup

DESCRIPTION

"This group is only mandatory for a system that implements all the peer config objects."

GROUP dbpPeerStatsSkippedGroup

DESCRIPTION

"This group is only mandatory for a system that implements all the peer statistic objects."

GROUP dbpRealmCfgSkippedGroup

DESCRIPTION

"This group is only mandatory for a system that implements all the realm config objects."

GROUP dbpRealmStatsSkippedGroup

DESCRIPTION

"This group is only mandatory for a system that implements all the realm statistic objects."

::= { diameterBaseProtocolMIBCompliances 1 }

-- Units of Conformance

dbpLocalCfgGroup OBJECT-GROUP

OBJECTS {  
    dbpLocalRealm,  
    dbpLocalOriginHost,  
    dbpLocalVendorId,  
    dbpLocalVendorStorageType,  
    dbpLocalVendorRowStatus  
}

STATUS current

DESCRIPTION

"A collection of objects providing configuration common to the peer."

::= { diameterBaseProtocolMIBGroups 1 }

dbpPeerCfgGroup OBJECT-GROUP

OBJECTS {  
    dbpPeerId,  
    dbpPeerPortConnect,  
    dbpPeerPortListen,  
    dbpPeerProtocol,  
    dbpPeerSecurity,  
    dbpPeerFirmwareRevision,  
}

```
        dbpPeerStorageType,
        dbpPeerRowStatus,
        dbpPeerIpAddressType,
        dbpPeerIpAddress,
        dbpPeerVendorId,
        dbpPeerVendorStorageType,
        dbpPeerVendorRowStatus
    }
    STATUS          current
    DESCRIPTION
        "A collection of objects providing configuration
        of the Diameter peers."
    ::= { diameterBaseProtocolMIBGroups 2 }

dbpPeerStatsGroup OBJECT-GROUP
    OBJECTS {
        dbpPeerStatsState,
        dbpPeerStatsStateDuration,
        dbpPeerStatsLastDiscCause,
        dbpPeerStatsWhoInitDisconnect,
        dbpPeerStatsDWCurrentStatus,
        dbpPeerStatsTimeoutConnAtmpts,
        dbpPeerStatsASRsIn,
        dbpPeerStatsASRsOut,
        dbpPeerStatsASAsIn,
        dbpPeerStatsASAsOut,
        dbpPeerStatsACRsIn,
        dbpPeerStatsACRsOut,
        dbpPeerStatsACAsIn,
        dbpPeerStatsACAsOut,
        dbpPeerStatsCERsIn,
        dbpPeerStatsCERsOut,
        dbpPeerStatsCEAsIn,
        dbpPeerStatsCEAsOut,
        dbpPeerStatsDWRsIn,
        dbpPeerStatsDWRsOut,
        dbpPeerStatsDWAsIn,
        dbpPeerStatsDWAsOut,
        dbpPeerStatsDPRsIn,
        dbpPeerStatsDPRsOut,
        dbpPeerStatsDPAsIn,
        dbpPeerStatsDPAsOut,
        dbpPeerStatsRARsIn,
        dbpPeerStatsRARsOut,
        dbpPeerStatsRAAsIn,
        dbpPeerStatsRAAsOut,
        dbpPeerStatsSTRsIn,
        dbpPeerStatsSTRsOut,
```

```
        dbpPeerStatsSTAsIn,
        dbpPeerStatsSTAsOut,
        dbpPeerStatsDWReqTimer,
        dbpPeerStatsRedirectEvents,
        dbpPeerStatsAccDupRequests,
        dbpPeerStatsMalformedReqsts,
        dbpPeerStatsAccsNotRecorded,
        dbpPeerStatsAccRetrans,
        dbpPeerStatsTotalRetrans,
        dbpPeerStatsAccPendReqstsOut,
        dbpPeerStatsAccReqstsDropped,
        dbpPeerStatsHByHDropMessages,
        dbpPeerStatsEToEDupMessages,
        dbpPeerStatsUnknownTypes,
        dbpPeerStatsProtocolErrors,
        dbpPeerStatsTransientFailures,
        dbpPeerStatsPermanentFailures,
        dbpPeerStatsTransportDown
    }
    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 }

dbpLocalCfgSkippedGroup OBJECT-GROUP
    OBJECTS
        {
            dbpLocalId,
            dbpLocalTcpListenPort,
            dbpLocalSctpListenPort,
            dbpLocalStatsTotalPacketsIn,
            dbpLocalStatsTotalPacketsOut,
            dbpLocalStatsTotalUpTime,
            dbpLocalResetTime,
            dbpLocalConfigReset,
            dbpLocalApplStorageType,
            dbpLocalApplRowStatus,
            dbpAppAdvToPeerServices,
            dbpAppAdvToPeerStorageType,
            dbpAppAdvToPeerRowStatus
        }
    STATUS
        current
    DESCRIPTION
        "A collection of objects providing configuration common
        to the peer."
 ::= { diameterBaseProtocolMIBGroups 6 }

dbpLocalStatsSkippedGroup OBJECT-GROUP
    OBJECTS
        {
            dbpLocalStatsTotalPacketsIn,
            dbpLocalStatsTotalPacketsOut,
            dbpLocalStatsTotalUpTime,
            dbpLocalResetTime,
            dbpLocalConfigReset
        }
    STATUS
        current
    DESCRIPTION
        "A collection of objects providing statistics common
        to the peer."
 ::= { diameterBaseProtocolMIBGroups 7 }

dbpPeerCfgSkippedGroup OBJECT-GROUP
    OBJECTS
        { cdbpAppAdvFromPeerType }
    STATUS
        current
    DESCRIPTION
        "A collection of objects providing configuration for
        Diameter peers."
 ::= { diameterBaseProtocolMIBGroups 8 }
```

```
dbpPeerStatsSkippedGroup OBJECT-GROUP
  OBJECTS
    {
      dbpPeerStatsDWCurentStatus,
      dbpPeerStatsDWReqTimer,
      dbpPeerStatsRedirectEvents,
      dbpPeerStatsAccDupRequests,
      dbpPeerStatsEToEDupMessages
    }
  STATUS      current
  DESCRIPTION
    "A collection of objects providing statistics
    of Diameter peers."
    ::= { diameterBaseProtocolMIBGroups 9 }

dbpRealmCfgSkippedGroup OBJECT-GROUP
  OBJECTS
    {
      dbpRealmKnownPeers,
      dbpRealmKnownPeersChosen
    }
  STATUS      current
  DESCRIPTION
    "A collection of objects providing configuration for
    realm message routing."
    ::= { diameterBaseProtocolMIBGroups 10 }

dbpRealmStatsSkippedGroup 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 11 }

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<br>-----     | OBJECT IDENTIFIER value<br>----- |
|-------------------------|----------------------------------|
| 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, Hai Li and Subash Comerica.

## 8. Acknowledgements

Thanks to David Battle for his participation and suggestions in designing the table structures; Dan Romascanu, Kevin Lingle, Sumanth Mithra, Tolga Asveren, Tina Tsou, Mark Jones, John Loughney and Biswaranjan Panda for reviewing the MIB and making invaluable suggestions; and Greg Weber for his help in representing the MIB at IETF meetings.

## 9. References

### 9.1. Normative References

[I-D.ietf-dime-rfc3588bis]  
Fajardo, V., Arkko, J., Loughney, J., and G. Zorn,

"Diameter Base Protocol", draft-ietf-dime-rfc3588bis-26  
(work in progress), January 2011.

- [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.
- [RFC4001] Daniele, M., Haberman, B., Routhier, S., and J. Schoenwaelder, "Textual Conventions for Internet Network Addresses", RFC 4001, February 2005.
- [RFC4133] Bierman, A. and K. McCloghrie, "Entity MIB (Version 3)", RFC 4133, August 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.

Authors' Addresses

Glen Zorn  
Network Zen  
227/358 Thanon Sanphawut  
Bang Na, Bangkok 10260  
Thailand

Phone: +66 (0) 87 040-4617  
Email: gwz@net-zen.net

Subash T. Comerica  
Juniper Networks  
1194 North Mathilda Avenue  
Sunnyvale, California 94089  
USA

Phone: +1 (408) 936-0830  
Email: scomerica@juniper.net

