                RSVP Management Information Base using SMIv2

Status of this Memo

   This document specifies an Internet standards track protocol for the
   Internet community, and requests discussion and suggestions for
   improvements. Please refer to the current edition of the "Internet
   Official Protocol Standards" (STD 1) for the standardization state
   and status of this protocol. Distribution of this memo is unlimited.

Abstract

   This memo defines a portion of the Management Information Base (MIB)
   for use with network management protocols in TCP/IP-based internets.
   In particular, it defines objects for managing the Resource
   Reservation Protocol (RSVP) within the interface attributes defined
   in the Integrated Services Model. Thus, the Integrated Services MIB
   is directly relevant to and cross-referenced by this MIB. Comments
   should be made to the RSVP Working Group, rsvp@isi.edu.

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1.   The SNMPv2 Network Management Framework

   The SNMPv2 Network Management Framework consists of four major
   components.   They are:

   o   RFC 1441 which defines the SMI, the mechanisms used for
         describing and naming objects for the purpose of
         management.

   o   STD 17, RFC 1213 defines MIB-II, the core set of managed
         objects for the Internet suite of protocols.

   o   RFC 1445 which defines the administrative and other
         architectural aspects of the framework.

   o   RFC 1448 which defines the protocol used for network
         access to managed objects.

   The Framework permits new objects to be defined for the purpose of
   experimentation and evaluation.

1.1.   Object Definitions

   Managed objects are accessed via a virtual information store, termed
   the Management Information Base or MIB.   Objects in the MIB are
   defined using the subset of Abstract Syntax Notation One (ASN.1)
   defined in the SMI.   In particular, each object type is named by an
   OBJECT IDENTIFIER, an administratively assigned name.   The object
   type together with an object instance serves to uniquely identify a
   specific instantiation of the object.   For human convenience, we
   often use a textual string, termed the descriptor, to refer to the
   object type.

2. Overview

2.1. Textual Conventions

   Several new data types are introduced as a textual convention in this
   MIB document. These textual conventions enhance the readability of
   the specification and can ease comparison with other specifications
   if appropriate. It should be noted that the introduction of the
   these textual conventions has no effect on either the syntax nor the
   semantics of any managed objects. The use of these is merely an
   artifact of the explanatory method used. Objects defined in terms of
   one of these methods are always encoded by means of the rules that
   define the primitive type. Hence, no changes to the SMI or the SNMP
   are necessary to accommodate these textual conventions which are
   adopted merely for the convenience of readers and writers in pursuit
   of the elusive goal of clear, concise, and unambiguous MIB documents.

2.2. Structure of MIB

   The MIB is composed of the following sections:

        General Objects
        Session Statistics Table
        Session Sender Table
        Reservation Requests Received Table
        Reservation Requests Forwarded Table
        RSVP Interface Attributes Table
        RSVP Neighbor Table

   As a general rule, it is difficult in SNMP to describe arbitrarily
   long of complex messages; this MIB therefore seeks to describe the
   Path State Database and the Reservation State Database as though each
   flow and filter description received in an aggregate message had been
   received in a separate reservation message.

   Thus, if a RESV message is received for session 224.1.2.3+UDP+4455
   with two filter/flow spec groups describing a sender 1.2.3.4 and
   another sender 1.2.7.8, these two will show in the MIB as two
   separate rows: one for 224.1.2.3+UDP+4455 from 1.2.3.4 and the other
   for 224.1.2.3+UDP+4455 from 1.2.7.8.

2.3. Semantics of Writing the Path and Reservation State Databases

   The path and reservation state tables are writeable. Writing into the
   Path and Reservation State databases allows one to perform RSVP
   reservations without authenticating through RSVP mechanisms, but

   rather through SNMP mechanisms. State created in this way by SNMP
   does not time out and cannot be deleted by receiving an RSVP teardown
   message; it can only be deleted by SNMP. Deletion is accomplished by
   writing 'destroy' to the associated Row Status object, and this will
   initiate a teardown message as if the state had timed out.

2.4. Intended use of Flow Notifications

2.4.1. The lostFlow Notification

   The Lost Flow notification is an asychronous event that signifies
   that a flow is no longer being observed.

2.4.2. The newFlow Notification

   The newFlow Notification defined in this MIB can be used to advise a
   network management system of the state of a flow.

3. Definitions

RSVP-MIB DEFINITIONS ::= BEGIN

        IMPORTS
                MODULE-IDENTITY, OBJECT-TYPE, Gauge32,
                NOTIFICATION-TYPE, Integer32, mib-2
                                             FROM SNMPv2-SMI
                TEXTUAL-CONVENTION, TruthValue, RowStatus,
                TimeStamp, TestAndIncr, TimeInterval
                                             FROM SNMPv2-TC
                MODULE-COMPLIANCE, OBJECT-GROUP,
                NOTIFICATION-GROUP   FROM SNMPv2-CONF
                Port, SessionNumber, SessionType,
                Protocol, QosService, intSrvFlowStatus,
                MessageSize, BitRate, BurstSize
                                      FROM INTEGRATED-SERVICES-MIB
                ifIndex, InterfaceIndex   FROM IF-MIB;

   rsvp MODULE-IDENTITY
          LAST-UPDATED "9511030500Z" -- Thu Aug 28 09:03:53 PDT 1997
          ORGANIZATION "IETF RSVP Working Group"
          CONTACT-INFO
         "   Fred Baker
         Postal: Cisco Systems
                 519 Lado Drive
                 Santa Barbara, California 93111
         Tel: +1 805 681 0115
         E-Mail: fred@cisco.com

```
                    John Krawczyk
            Postal: ArrowPoint Communications
                    235 Littleton Road
                    Westford, Massachusetts 01886
            Tel:    +1 508 692 5875
            E-Mail: jjk@tiac.net

                    Arun Sastry
            Postal: Cisco Systems
                    210 W. Tasman Drive
                    San Jose, California 95134
            Tel:    +1 408 526 7685
            E-Mail: arun@cisco.com"
        DESCRIPTION
          "The MIB module to describe the RSVP Protocol"
      ::= { mib-2 51 }

   rsvpObjects              OBJECT IDENTIFIER
                            ::= { rsvp 1 } -- tables
   rsvpGenObjects           OBJECT IDENTIFIER
                            ::= { rsvp 2 } -- global objects
   rsvpNotificationsPrefix  OBJECT IDENTIFIER
                            ::= { rsvp 3 } -- traps
   rsvpConformance          OBJECT IDENTIFIER
                            ::= { rsvp 4 } -- conformance


      RsvpEncapsulation ::= TEXTUAL-CONVENTION
           STATUS   current
           DESCRIPTION
             "This indicates the encapsulation that an  RSVP
             Neighbor is perceived to be using."
          SYNTAX   INTEGER {
                   ip (1),    -- IP Protocol 46
                   udp (2),   -- UDP Encapsulation
                   both (3)   -- neighbor is using both encapsulations
                 }


      RefreshInterval ::= TEXTUAL-CONVENTION
           DISPLAY-HINT "d"
           STATUS   current
           DESCRIPTION
             "The number of milliseconds that  are  expected
             to elapse between refreshes of path or reserva-
             tion state.  Unrefreshed  Path  or  reservation
             state is removed after a small multiple of this
             period."
```

         SYNTAX   INTEGER (0..'7FFFFFFF'h)

--   The RSVP Session Statistics Database displays statistics
--   relating to the number of senders and receivers in each
--   session.

    rsvpSessionTable OBJECT-TYPE
        SYNTAX   SEQUENCE OF RsvpSessionEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "A table of all sessions seen by a given sys-
           tem."
       ::= { rsvpObjects 1 }

    rsvpSessionEntry OBJECT-TYPE
        SYNTAX   RsvpSessionEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "A single session seen by a given system."
        INDEX { rsvpSessionNumber }
        ::= { rsvpSessionTable 1 }

    RsvpSessionEntry ::=
        SEQUENCE {
        rsvpSessionNumber   SessionNumber,
        rsvpSessionType   SessionType,
        rsvpSessionDestAddr   OCTET STRING,
        rsvpSessionDestAddrLength INTEGER,
        rsvpSessionProtocol   Protocol,
        rsvpSessionPort   Port,
        rsvpSessionSenders   Gauge32,
        rsvpSessionReceivers   Gauge32,
        rsvpSessionRequests   Gauge32
        }

    rsvpSessionNumber OBJECT-TYPE
        SYNTAX   SessionNumber
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "The number of this session. This is for SNMP

         Indexing purposes only and has no relation to
         any protocol value."
      ::= { rsvpSessionEntry 1 }

    rsvpSessionType OBJECT-TYPE
        SYNTAX   SessionType
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The type of session (IP4, IP6, IP6 with flow
           information, etc)."
      ::= { rsvpSessionEntry 2 }

    rsvpSessionDestAddr OBJECT-TYPE
        SYNTAX   OCTET STRING (SIZE(4..16))
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The destination address used by all senders in
           this session.   This object may not be changed
           when the value of the RowStatus object is 'ac-
           tive'."
      ::= { rsvpSessionEntry 3 }

    rsvpSessionDestAddrLength OBJECT-TYPE
        SYNTAX   INTEGER(0..128)
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The CIDR prefix length of the session address,
           which is 32 for IP4 host and multicast ad-
           dresses, and 128 for IP6 addresses.   This ob-
           ject may not be changed when the value of the
           RowStatus object is 'active'."
      ::= { rsvpSessionEntry 4 }

    rsvpSessionProtocol OBJECT-TYPE
        SYNTAX   Protocol
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The IP Protocol used by this session.   This
           object may not be changed when the value of the
           RowStatus object is 'active'."

```
        ::= { rsvpSessionEntry 5 }


    rsvpSessionPort OBJECT-TYPE
        SYNTAX      Port
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The UDP or TCP port number used as a  destina-
           tion  port for all senders in this session.  If
           the IP protocol in use, specified  by  rsvpSen-
           derProtocol,  is  50  (ESP)  or  51  (AH), this
           represents a virtual destination  port  number.
           A  value of zero indicates that the IP protocol
           in use does not have ports.   This  object  may
           not  be changed when the value of the RowStatus
           object is 'active'."
        ::= { rsvpSessionEntry 6 }


    rsvpSessionSenders OBJECT-TYPE
        SYNTAX      Gauge32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The number of distinct senders currently known
           to be part of this session."
        ::= { rsvpSessionEntry 7 }


    rsvpSessionReceivers OBJECT-TYPE
        SYNTAX      Gauge32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The number of reservations being requested  of
           this system for this session."
        ::= { rsvpSessionEntry 8 }


    rsvpSessionRequests OBJECT-TYPE
        SYNTAX      Gauge32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The number of reservation requests this system
           is sending upstream for this session."
        ::= { rsvpSessionEntry 9 }
```

     rsvpBadPackets OBJECT-TYPE
         SYNTAX   Gauge32
         MAX-ACCESS   read-only
         STATUS   current
         DESCRIPTION
            "This object keeps a count of the number of bad
            RSVP packets received."
        ::= { rsvpGenObjects 1 }

--   The RSVP Session Sender Database contains the information
--   displayed by senders regarding their potential contribution
--   to session data content. It is in essence a list of the
--   valid PATH messages that the RSVP Router or Host is receiving.

     rsvpSenderNewIndex OBJECT-TYPE
         SYNTAX   TestAndIncr
         MAX-ACCESS   read-write
         STATUS   current
         DESCRIPTION
            "This object is used to assign values to
            rsvpSenderNumber as described in 'Textual Con-
            ventions for SNMPv2'.   The network manager
            reads the object, and then writes the value
            back in the SET that creates a new instance of
            rsvpSenderEntry.   If the SET fails with the
            code 'inconsistentValue', then the process must
            be repeated; If the SET succeeds, then the ob-
            ject is incremented, and the new instance is
            created according to the manager's directions."
        ::= { rsvpGenObjects 2 }

     rsvpSenderTable OBJECT-TYPE
         SYNTAX   SEQUENCE OF RsvpSenderEntry
         MAX-ACCESS   not-accessible
         STATUS   current
         DESCRIPTION
            "Information describing the state information
            displayed by senders in PATH messages."
        ::= { rsvpObjects 2 }

     rsvpSenderEntry OBJECT-TYPE
         SYNTAX   RsvpSenderEntry
         MAX-ACCESS   not-accessible
         STATUS   current

```
         DESCRIPTION
            "Information describing the  state  information
            displayed by a single sender's PATH message."
         INDEX { rsvpSessionNumber, rsvpSenderNumber }
         ::= { rsvpSenderTable 1 }

RsvpSenderEntry ::=


    SEQUENCE {
        rsvpSenderNumber                    SessionNumber,
        rsvpSenderType                      SessionType,
        rsvpSenderDestAddr                  OCTET STRING,
        rsvpSenderAddr                      OCTET STRING,
        rsvpSenderDestAddrLength            INTEGER,
        rsvpSenderAddrLength                INTEGER,
        rsvpSenderProtocol                  Protocol,
        rsvpSenderDestPort                  Port,
        rsvpSenderPort                      Port,
        rsvpSenderFlowId                    INTEGER,
        rsvpSenderHopAddr                   OCTET STRING,
        rsvpSenderHopLih                    Integer32,
        rsvpSenderInterface                 InterfaceIndex,
        rsvpSenderTSpecRate                 BitRate,
        rsvpSenderTSpecPeakRate             BitRate,
        rsvpSenderTSpecBurst                BurstSize,
        rsvpSenderTSpecMinTU                MessageSize,
        rsvpSenderTSpecMaxTU                MessageSize,
        rsvpSenderInterval                  RefreshInterval,
        rsvpSenderRSVPHop                   TruthValue,
        rsvpSenderLastChange                TimeStamp,
        rsvpSenderPolicy                    OCTET STRING,
        rsvpSenderAdspecBreak               TruthValue,
        rsvpSenderAdspecHopCount            INTEGER,
        rsvpSenderAdspecPathBw              BitRate,
        rsvpSenderAdspecMinLatency          Integer32,
        rsvpSenderAdspecMtu                 INTEGER,
        rsvpSenderAdspecGuaranteedSvc       TruthValue,
        rsvpSenderAdspecGuaranteedBreak     TruthValue,
        rsvpSenderAdspecGuaranteedCtot      Integer32,
        rsvpSenderAdspecGuaranteedDtot      Integer32,
        rsvpSenderAdspecGuaranteedCsum      Integer32,
        rsvpSenderAdspecGuaranteedDsum      Integer32,
        rsvpSenderAdspecGuaranteedHopCount  INTEGER,
        rsvpSenderAdspecGuaranteedPathBw    BitRate,
        rsvpSenderAdspecGuaranteedMinLatency Integer32,
        rsvpSenderAdspecGuaranteedMtu       INTEGER,
        rsvpSenderAdspecCtrlLoadSvc         TruthValue,
```

```
        rsvpSenderAdspecCtrlLoadBreak          TruthValue,
        rsvpSenderAdspecCtrlLoadHopCount       INTEGER,
        rsvpSenderAdspecCtrlLoadPathBw         BitRate,
        rsvpSenderAdspecCtrlLoadMinLatency     Integer32,
        rsvpSenderAdspecCtrlLoadMtu            INTEGER,
        rsvpSenderStatus                       RowStatus,


        rsvpSenderTTL                          INTEGER
    }

    rsvpSenderNumber OBJECT-TYPE
        SYNTAX      SessionNumber
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "The number of this sender.  This is  for  SNMP
           Indexing  purposes  only and has no relation to
           any protocol value."
        ::= { rsvpSenderEntry 1 }


    rsvpSenderType OBJECT-TYPE
        SYNTAX      SessionType
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "The type of session (IP4, IP6, IP6  with  flow
           information, etc)."
        ::= { rsvpSenderEntry 2 }


    rsvpSenderDestAddr OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(4..16))
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "The destination address used by all senders in
           this  session.   This object may not be changed
           when the value of the RowStatus object is  'ac-
           tive'."
        ::= { rsvpSenderEntry 3 }


    rsvpSenderAddr OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(4..16))
        MAX-ACCESS  read-create
        STATUS      current
```

        DESCRIPTION
           "The source address used by this sender in this
           session. This object may not be changed when
           the value of the RowStatus object is 'active'."
        ::= { rsvpSenderEntry 4 }

    rsvpSenderDestAddrLength OBJECT-TYPE
        SYNTAX   INTEGER(0..128)
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "The length of the destination address in bits.
           This is the CIDR Prefix Length, which for IP4
           hosts and multicast addresses is 32 bits. This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpSenderEntry 5 }

    rsvpSenderAddrLength OBJECT-TYPE
        SYNTAX   INTEGER(0..128)
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "The length of the sender's address in bits.
           This is the CIDR Prefix Length, which for IP4
           hosts and multicast addresses is 32 bits. This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpSenderEntry 6 }

    rsvpSenderProtocol OBJECT-TYPE
        SYNTAX   Protocol
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "The IP Protocol used by this session.   This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpSenderEntry 7 }

    rsvpSenderDestPort OBJECT-TYPE
        SYNTAX   Port
        MAX-ACCESS read-create
        STATUS   current

          DESCRIPTION
             "The UDP or TCP port number used as a destina-
             tion port for all senders in this session. If
             the IP protocol in use, specified by rsvpSen-
             derProtocol, is 50 (ESP) or 51 (AH), this
             represents a virtual destination port number.
             A value of zero indicates that the IP protocol
             in use does not have ports.   This object may
             not be changed when the value of the RowStatus
             object is 'active'."
          ::= { rsvpSenderEntry 8 }

       rsvpSenderPort OBJECT-TYPE
          SYNTAX   Port
          MAX-ACCESS   read-create
          STATUS   current
          DESCRIPTION
             "The UDP or TCP port number used as a source
             port for this sender in this session. If the
             IP protocol in use, specified by rsvpSenderPro-
             tocol is 50 (ESP) or 51 (AH), this represents a
             generalized port identifier (GPI). A value of
             zero indicates that the IP protocol in use does
             not have ports. This object may not be changed
             when the value of the RowStatus object is 'ac-
             tive'."
          ::= { rsvpSenderEntry 9 }

       rsvpSenderFlowId OBJECT-TYPE
          SYNTAX   INTEGER (0..16777215)
          MAX-ACCESS   read-only
          STATUS   current
          DESCRIPTION
             "The flow ID that this sender is using, if
             this is an IPv6 session."
          ::= { rsvpSenderEntry 10 }

       rsvpSenderHopAddr OBJECT-TYPE
          SYNTAX   OCTET STRING (SIZE(4..16))
          MAX-ACCESS   read-create
          STATUS   current
          DESCRIPTION
             "The address used by the previous RSVP hop
             (which may be the original sender)."
          ::= { rsvpSenderEntry 11 }

     rsvpSenderHopLih OBJECT-TYPE
         SYNTAX   Integer32
         MAX-ACCESS read-create
         STATUS   current
         DESCRIPTION
            "The Logical Interface Handle used by the pre-
            vious RSVP hop (which may be the original
            sender)."
        ::= { rsvpSenderEntry 12 }

     rsvpSenderInterface OBJECT-TYPE
         SYNTAX   InterfaceIndex
         MAX-ACCESS read-create
         STATUS   current
         DESCRIPTION
            "The ifIndex value of the interface on which
            this PATH message was most recently received."
        ::= { rsvpSenderEntry 13 }

     rsvpSenderTSpecRate OBJECT-TYPE
         SYNTAX   BitRate
         UNITS   "bits per second"
         MAX-ACCESS read-create
         STATUS   current
         DESCRIPTION
            "The Average Bit Rate of the sender's data
            stream.   Within a transmission burst, the ar-
            rival rate may be as fast as rsvpSenderTSpec-
            PeakRate (if supported by the service model);
            however, averaged across two or more burst in-
            tervals, the rate should not exceed rsvpSen-
            derTSpecRate.

            Note that this is a prediction, often based on
            the general capability of a type of codec or
            particular encoding; the measured average rate
            may be significantly lower."
        ::= { rsvpSenderEntry 14 }

     rsvpSenderTSpecPeakRate OBJECT-TYPE
         SYNTAX   BitRate
         UNITS   "bits per second"
         MAX-ACCESS read-create
         STATUS   current
         DESCRIPTION

              "The Peak Bit Rate of the sender's data stream.
              Traffic arrival is not expected to exceed this
              rate at any time, apart from the effects of
              jitter in the network. If not specified in the
              TSpec, this returns zero or noSuchValue."
          ::= { rsvpSenderEntry 15 }

       rsvpSenderTSpecBurst OBJECT-TYPE
          SYNTAX   BurstSize
          UNITS   "bytes"
          MAX-ACCESS   read-create
          STATUS   current
          DESCRIPTION
              "The size of the largest burst expected from
              the sender at a time."
          ::= { rsvpSenderEntry 16 }

       rsvpSenderTSpecMinTU OBJECT-TYPE
           SYNTAX   MessageSize
           MAX-ACCESS   read-create
           STATUS   current
           DESCRIPTION
              "The minimum message size for this flow. The
              policing algorithm will treat smaller messages
              as though they are this size."
           ::= { rsvpSenderEntry 17 }

       rsvpSenderTSpecMaxTU OBJECT-TYPE
           SYNTAX   MessageSize
           MAX-ACCESS   read-create
           STATUS   current
           DESCRIPTION
              "The maximum message size for this flow. The
              admission algorithm will reject TSpecs whose
              Maximum Transmission Unit, plus the interface
              headers, exceed the interface MTU."
           ::= { rsvpSenderEntry 18 }

       rsvpSenderInterval OBJECT-TYPE
           SYNTAX   RefreshInterval
           MAX-ACCESS   read-create
           STATUS   current
           DESCRIPTION
              "The interval between refresh messages as ad-

```
               vertised by the Previous Hop."
          ::= { rsvpSenderEntry 19 }


      rsvpSenderRSVPHop OBJECT-TYPE
          SYNTAX       TruthValue
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "If TRUE, the node believes that  the  previous
             IP  hop  is an RSVP hop.  If FALSE, the node be-
             lieves that the previous IP hop may not  be  an
             RSVP hop."
          ::= { rsvpSenderEntry 20 }


      rsvpSenderLastChange OBJECT-TYPE
          SYNTAX       TimeStamp
          MAX-ACCESS   read-only
          STATUS       current
          DESCRIPTION
             "The time of the last change in this PATH  mes-
             sage;  This is either the first time it was re-
             ceived or the time of the most recent change in
             parameters."
          ::= { rsvpSenderEntry 21 }


      rsvpSenderPolicy OBJECT-TYPE
          SYNTAX       OCTET STRING (SIZE(4..65536))
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The contents of the policy  object,  displayed
             as an uninterpreted string of octets, including
             the object header.  In the absence of  such  an
             object, this should be of zero length."
          ::= { rsvpSenderEntry 22 }


      rsvpSenderAdspecBreak OBJECT-TYPE
          SYNTAX       TruthValue
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The global break bit general  characterization
             parameter  from  the ADSPEC. If TRUE, at least
             one non-IS hop was detected in  the  path.   If
```

```
             FALSE, no non-IS hops were detected."
        ::= { rsvpSenderEntry 23 }


     rsvpSenderAdspecHopCount OBJECT-TYPE
         SYNTAX       INTEGER (0..65535)
         MAX-ACCESS   read-create
         STATUS       current
         DESCRIPTION
             "The hop count general characterization parame-
             ter  from  the  ADSPEC.   A  return  of zero or
             noSuchValue indicates one of the following con-
             ditions:

                 the invalid bit was set
                 the parameter was not present"
        ::= { rsvpSenderEntry 24 }


     rsvpSenderAdspecPathBw OBJECT-TYPE
         SYNTAX       BitRate
         UNITS        "bits per second"
         MAX-ACCESS   read-create
         STATUS       current
         DESCRIPTION
             "The path bandwidth estimate general character-
             ization parameter from the ADSPEC.  A return of
             zero or noSuchValue indicates one of  the  fol-
             lowing conditions:

                 the invalid bit was set
                 the parameter was not present"
        ::= { rsvpSenderEntry 25 }


     rsvpSenderAdspecMinLatency OBJECT-TYPE
         SYNTAX       Integer32
         UNITS        "microseconds"
         MAX-ACCESS   read-create
         STATUS       current
         DESCRIPTION
             "The minimum path latency general characteriza-
             tion  parameter  from  the ADSPEC. A return of
             zero or noSuchValue indicates one of  the  fol-
             lowing conditions:

                 the invalid bit was set
                 the parameter was not present"
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        ::= { rsvpSenderEntry 26 }

    rsvpSenderAdspecMtu OBJECT-TYPE
        SYNTAX   INTEGER (0..65535)
        UNITS   "bytes"
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "The composed Maximum Transmission Unit general
           characterization parameter from the ADSPEC. A
           return of zero or noSuchValue indicates one of
           the following conditions:

              the invalid bit was set
              the parameter was not present"
        ::= { rsvpSenderEntry 27 }

    rsvpSenderAdspecGuaranteedSvc OBJECT-TYPE
        SYNTAX   TruthValue
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "If TRUE, the ADSPEC contains a Guaranteed Ser-
           vice fragment.   If FALSE, the ADSPEC does not
           contain a Guaranteed Service fragment."
        ::= { rsvpSenderEntry 28 }

    rsvpSenderAdspecGuaranteedBreak OBJECT-TYPE
        SYNTAX   TruthValue
        MAX-ACCESS read-create
        STATUS   current
        DESCRIPTION
           "If TRUE, the Guaranteed Service fragment has
           its 'break' bit set, indicating that one or
           more nodes along the path do not support the
           guaranteed service.   If FALSE, and rsvpSen-
           derAdspecGuaranteedSvc is TRUE, the 'break' bit
           is not set.

           If rsvpSenderAdspecGuaranteedSvc is FALSE, this
           returns FALSE or noSuchValue."
        ::= { rsvpSenderEntry 29 }

    rsvpSenderAdspecGuaranteedCtot OBJECT-TYPE

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        SYNTAX      Integer32
        UNITS       "bytes"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION

            "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
            is   the  end-to-end  composed  value  for  the
            guaranteed service 'C' parameter.  A return  of
            zero  or  noSuchValue indicates one of the fol-
            lowing conditions:

                the invalid bit was set
                the parameter was not present

            If rsvpSenderAdspecGuaranteedSvc is FALSE, this
            returns zero or noSuchValue."
        ::= { rsvpSenderEntry 30 }


    rsvpSenderAdspecGuaranteedDtot OBJECT-TYPE
        SYNTAX      Integer32
        UNITS       "microseconds"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
            is   the  end-to-end  composed  value  for  the
            guaranteed service 'D' parameter.  A return  of
            zero  or  noSuchValue indicates one of the fol-
            lowing conditions:

                the invalid bit was set
                the parameter was not present

            If rsvpSenderAdspecGuaranteedSvc is FALSE, this
            returns zero or noSuchValue."
        ::= { rsvpSenderEntry 31 }


    rsvpSenderAdspecGuaranteedCsum OBJECT-TYPE
        SYNTAX      Integer32
        UNITS       "bytes"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
            "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
            is   the  composed value for the guaranteed ser-
```

vice 'C' parameter since the last reshaping
point.   A return of zero or noSuchValue indi-
cates one of the following conditions:

        the invalid bit was set
        the parameter was not present

     If rsvpSenderAdspecGuaranteedSvc is FALSE, this
     returns zero or noSuchValue."
 ::= { rsvpSenderEntry 32 }

rsvpSenderAdspecGuaranteedDsum OBJECT-TYPE
    SYNTAX   Integer32
    UNITS   "microseconds"
    MAX-ACCESS read-create
    STATUS   current
    DESCRIPTION
        "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
        is the composed value for the guaranteed ser-
        vice 'D' parameter since the last reshaping
        point.   A return of zero or noSuchValue indi-
        cates one of the following conditions:

            the invalid bit was set
            the parameter was not present

        If rsvpSenderAdspecGuaranteedSvc is FALSE, this
        returns zero or noSuchValue."
     ::= { rsvpSenderEntry 33 }

rsvpSenderAdspecGuaranteedHopCount OBJECT-TYPE
    SYNTAX   INTEGER (0..65535)
    MAX-ACCESS read-create
    STATUS   current
    DESCRIPTION

        "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
        is the service-specific override of the hop
        count general characterization parameter from
        the ADSPEC.   A return of zero or noSuchValue
        indicates one of the following conditions:

            the invalid bit was set
            the parameter was not present

        If rsvpSenderAdspecGuaranteedSvc is FALSE, this

```
         returns zero or noSuchValue."
      ::= { rsvpSenderEntry 34 }


   rsvpSenderAdspecGuaranteedPathBw OBJECT-TYPE
       SYNTAX      BitRate
       UNITS       "bits per second"
       MAX-ACCESS  read-create
       STATUS      current
       DESCRIPTION
          "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
          is  the  service-specific  override of the path
          bandwidth  estimate  general  characterization
          parameter from the ADSPEC.  A return of zero or
          noSuchValue indicates one of the following con-
          ditions:

             the invalid bit was set
             the parameter was not present

          If rsvpSenderAdspecGuaranteedSvc is FALSE, this
          returns zero or noSuchValue."
      ::= { rsvpSenderEntry 35 }


   rsvpSenderAdspecGuaranteedMinLatency OBJECT-TYPE
       SYNTAX      Integer32
       UNITS       "microseconds"
       MAX-ACCESS  read-create
       STATUS      current
       DESCRIPTION
          "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
          is the service-specific override of the minimum
          path latency general characterization parameter
          from  the  ADSPEC. A return of zero or noSuch-
          Value indicates one  of  the  following  condi-
          tions:

             the invalid bit was set
             the parameter was not present

          If rsvpSenderAdspecGuaranteedSvc is FALSE, this
          returns zero or noSuchValue."
      ::= { rsvpSenderEntry 36 }


   rsvpSenderAdspecGuaranteedMtu OBJECT-TYPE
       SYNTAX      INTEGER (0..65535)
```

```
        UNITS       "bytes"
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "If rsvpSenderAdspecGuaranteedSvc is TRUE, this
           is   the   service-specific   override of the com-
           posed Maximum Transmission Unit general charac-
           terization parameter from the ADSPEC.  A return
           of zero or noSuchValue  indicates  one  of  the
           following conditions:

               the invalid bit was set
               the parameter was not present

           If rsvpSenderAdspecGuaranteedSvc is FALSE, this
           returns zero or noSuchValue."
        ::= { rsvpSenderEntry 37 }


    rsvpSenderAdspecCtrlLoadSvc OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "If TRUE, the ADSPEC contains a Controlled Load
           Service  fragment.   If  FALSE, the ADSPEC does
           not contain a  Controlled  Load  Service  frag-
           ment."
        ::= { rsvpSenderEntry 38 }


    rsvpSenderAdspecCtrlLoadBreak OBJECT-TYPE
        SYNTAX      TruthValue
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "If TRUE, the Controlled Load Service  fragment
           has its 'break' bit set, indicating that one or
           more nodes along the path do  not  support  the
           controlled   load   service.   If  FALSE,  and
           rsvpSenderAdspecCtrlLoadSvc   is   TRUE,    the
           'break' bit is not set.

           If rsvpSenderAdspecCtrlLoadSvc is  FALSE,  this
           returns FALSE or noSuchValue."
        ::= { rsvpSenderEntry 39 }
```

```
     rsvpSenderAdspecCtrlLoadHopCount OBJECT-TYPE
         SYNTAX      INTEGER (0..65535)
         MAX-ACCESS  read-create
         STATUS      current
         DESCRIPTION

            "If rsvpSenderAdspecCtrlLoadSvc is  TRUE,  this
            is  the  service-specific  override  of the hop
            count general characterization  parameter  from
            the  ADSPEC.   A  return of zero or noSuchValue
            indicates one of the following conditions:

               the invalid bit was set
               the parameter was not present

            If rsvpSenderAdspecCtrlLoadSvc is  FALSE,  this
            returns zero or noSuchValue."
        ::= { rsvpSenderEntry 40 }


     rsvpSenderAdspecCtrlLoadPathBw OBJECT-TYPE
         SYNTAX      BitRate
         UNITS       "bits per second"
         MAX-ACCESS  read-create
         STATUS      current
         DESCRIPTION
            "If rsvpSenderAdspecCtrlLoadSvc is  TRUE,  this
            is  the  service-specific  override of the path
            bandwidth  estimate  general   characterization
            parameter from the ADSPEC. A return of zero or
            noSuchValue indicates one of the following con-
            ditions:

               the invalid bit was set
               the parameter was not present

            If rsvpSenderAdspecCtrlLoadSvc is  FALSE,  this
            returns zero or noSuchValue."
        ::= { rsvpSenderEntry 41 }


     rsvpSenderAdspecCtrlLoadMinLatency OBJECT-TYPE
         SYNTAX      Integer32
         UNITS       "microseconds"
         MAX-ACCESS  read-create
         STATUS      current
         DESCRIPTION
            "If rsvpSenderAdspecCtrlLoadSvc is  TRUE,  this
```

          is the service-specific override of the minimum
          path latency general characterization parameter
          from the ADSPEC. A return of zero or noSuch-
          Value indicates one of the following condi-
          tions:

             the invalid bit was set
             the parameter was not present

          If rsvpSenderAdspecCtrlLoadSvc is FALSE, this
          returns zero or noSuchValue."
       ::= { rsvpSenderEntry 42 }

   rsvpSenderAdspecCtrlLoadMtu OBJECT-TYPE
       SYNTAX   INTEGER (0..65535)
       UNITS   "bytes"
       MAX-ACCESS   read-create
       STATUS   current
       DESCRIPTION
          "If rsvpSenderAdspecCtrlLoadSvc is TRUE, this
          is the service-specific override of the com-
          posed Maximum Transmission Unit general charac-
          terization parameter from the ADSPEC. A return
          of zero or noSuchValue indicates one of the
          following conditions:

             the invalid bit was set
             the parameter was not present

          If rsvpSenderAdspecCtrlLoadSvc is FALSE, this
          returns zero or noSuchValue."
       ::= { rsvpSenderEntry 43 }

   rsvpSenderStatus OBJECT-TYPE
       SYNTAX   RowStatus
       MAX-ACCESS   read-create
       STATUS   current
       DESCRIPTION
          "'active' for all active PATH messages.   This
          object may be used to install static PATH in-
          formation or delete PATH information."
       ::= { rsvpSenderEntry 44 }

   rsvpSenderTTL OBJECT-TYPE
       SYNTAX   INTEGER (0..255)

```
       MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
           "The TTL value in the RSVP header that was last
           received."
       ::= { rsvpSenderEntry 45 }


    rsvpSenderOutInterfaceTable OBJECT-TYPE
        SYNTAX       SEQUENCE OF RsvpSenderOutInterfaceEntry
        MAX-ACCESS  not-accessible
        STATUS       current
        DESCRIPTION
           "List of outgoing interfaces that PATH messages
           use.  The  ifIndex  is the ifIndex value of the
           egress interface."
       ::= { rsvpObjects 3 }


    rsvpSenderOutInterfaceEntry OBJECT-TYPE
        SYNTAX       RsvpSenderOutInterfaceEntry
        MAX-ACCESS  not-accessible
        STATUS       current
        DESCRIPTION
           "List of outgoing interfaces that a  particular
           PATH message has."
        INDEX { rsvpSessionNumber, rsvpSenderNumber, ifIndex }
        ::= { rsvpSenderOutInterfaceTable 1 }

RsvpSenderOutInterfaceEntry ::=
    SEQUENCE {
        rsvpSenderOutInterfaceStatus          RowStatus
    }

    rsvpSenderOutInterfaceStatus OBJECT-TYPE
        SYNTAX       RowStatus
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
           "'active' for all active PATH messages."
       ::= { rsvpSenderOutInterfaceEntry 1 }


--      The RSVP Reservation Requests Received Table contains the
--      information displayed by receivers regarding their needs with
--      respect to sessions and senders. It is in essence a list of the
--      valid RESV messages that the RSVP Router or Host is receiving.
```

    rsvpResvNewIndex OBJECT-TYPE
        SYNTAX   TestAndIncr
        MAX-ACCESS   read-write
        STATUS   current
        DESCRIPTION
           "This object is used to assign values to
           rsvpResvNumber as described in 'Textual Conven-
           tions for SNMPv2'. The network manager reads
           the object, and then writes the value back in
           the SET that creates a new   instance   of
           rsvpResvEntry.   If the SET fails with the code
           'inconsistentValue', then the process must be
           repeated; If the SET succeeds, then the object
           is incremented, and the new instance is created
           according to the manager's directions."
        ::= { rsvpGenObjects 3 }

    rsvpResvTable OBJECT-TYPE
        SYNTAX   SEQUENCE OF RsvpResvEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "Information describing the state information
           displayed by receivers in RESV messages."
        ::= { rsvpObjects 4 }

    rsvpResvEntry OBJECT-TYPE
        SYNTAX   RsvpResvEntry
        MAX-ACCESS   not-accessible
        STATUS   current
        DESCRIPTION
           "Information describing the state information
           displayed by a single receiver's RESV message
           concerning a single sender."
        INDEX { rsvpSessionNumber, rsvpResvNumber }
        ::= { rsvpResvTable 1 }

    RsvpResvEntry ::=
        SEQUENCE {
            rsvpResvNumber   SessionNumber,
            rsvpResvType   SessionType,
            rsvpResvDestAddr   OCTET STRING,
            rsvpResvSenderAddr   OCTET STRING,
            rsvpResvDestAddrLength   INTEGER,

```
        rsvpResvSenderAddrLength        INTEGER,
        rsvpResvProtocol                Protocol,
        rsvpResvDestPort                Port,
        rsvpResvPort                    Port,
        rsvpResvHopAddr                 OCTET STRING,
        rsvpResvHopLih                  Integer32,
        rsvpResvInterface               InterfaceIndex,
        rsvpResvService                 QosService,
        rsvpResvTSpecRate               BitRate,
        rsvpResvTSpecPeakRate           BitRate,
        rsvpResvTSpecBurst              BurstSize,
        rsvpResvTSpecMinTU              MessageSize,
        rsvpResvTSpecMaxTU              MessageSize,
        rsvpResvRSpecRate               BitRate,
        rsvpResvRSpecSlack              Integer32,
        rsvpResvInterval                RefreshInterval,
        rsvpResvScope                   OCTET STRING,
        rsvpResvShared                  TruthValue,
        rsvpResvExplicit                TruthValue,
        rsvpResvRSVPHop                 TruthValue,
        rsvpResvLastChange              TimeStamp,
        rsvpResvPolicy                  OCTET STRING,
        rsvpResvStatus                  RowStatus,
        rsvpResvTTL                     INTEGER,
        rsvpResvFlowId                  INTEGER
    }


rsvpResvNumber OBJECT-TYPE
    SYNTAX       SessionNumber
    MAX-ACCESS   not-accessible
    STATUS       current
    DESCRIPTION
       "The number of this reservation request.   This
       is  for  SNMP Indexing purposes only and has no
       relation to any protocol value."
    ::= { rsvpResvEntry 1 }


rsvpResvType OBJECT-TYPE
    SYNTAX       SessionType
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
       "The type of session (IP4, IP6, IP6  with  flow
       information, etc)."
    ::= { rsvpResvEntry 2 }
```

```
      rsvpResvDestAddr OBJECT-TYPE
          SYNTAX       OCTET STRING (SIZE(4..16))
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The destination address used by all senders in
             this  session.   This object may not be changed
             when the value of the RowStatus object is  'ac-
             tive'."
         ::= { rsvpResvEntry 3 }


      rsvpResvSenderAddr OBJECT-TYPE
          SYNTAX       OCTET STRING (SIZE(4..16))
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The source address of the sender  selected  by
             this  reservation.  The value of all zeroes in-
             dicates 'all senders'.  This object may not  be
             changed  when the value of the RowStatus object
             is 'active'."
         ::= { rsvpResvEntry 4 }


      rsvpResvDestAddrLength OBJECT-TYPE
          SYNTAX       INTEGER(0..128)
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The length of the destination address in bits.
             This  is  the CIDR Prefix Length, which for IP4
             hosts and multicast addresses is 32 bits.  This
             object may not be changed when the value of the
             RowStatus object is 'active'."
         ::= { rsvpResvEntry 5 }


      rsvpResvSenderAddrLength OBJECT-TYPE
          SYNTAX       INTEGER(0..128)
          MAX-ACCESS   read-create
          STATUS       current
          DESCRIPTION
             "The length of the sender's  address  in  bits.
             This  is  the CIDR Prefix Length, which for IP4
             hosts and multicast addresses is 32 bits.  This
             object may not be changed when the value of the
             RowStatus object is 'active'."
```

```
         ::= { rsvpResvEntry 6 }


    rsvpResvProtocol OBJECT-TYPE
        SYNTAX        Protocol
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
           "The IP Protocol used by  this  session.   This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpResvEntry 7 }


    rsvpResvDestPort OBJECT-TYPE
        SYNTAX        Port
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
           "The UDP or TCP port number used as a  destina-
           tion  port for all senders in this session.  If
           the  IP   protocol   in   use,   specified   by
           rsvpResvProtocol,  is 50 (ESP) or 51 (AH), this
           represents a virtual destination  port  number.
           A  value of zero indicates that the IP protocol
           in use does not have ports.   This  object  may
           not  be changed when the value of the RowStatus
           object is 'active'."
        ::= { rsvpResvEntry 8 }


    rsvpResvPort OBJECT-TYPE
        SYNTAX        Port
        MAX-ACCESS    read-create
        STATUS        current
        DESCRIPTION
           "The UDP or TCP port number used  as  a  source
           port  for  this sender in this session.  If the
           IP protocol in use, specified by rsvpResvProto-
           col  is  50 (ESP) or 51 (AH), this represents a
           generalized port identifier (GPI).  A value  of
           zero indicates that the IP protocol in use does
           not have ports.  This object may not be changed
           when  the value of the RowStatus object is 'ac-
           tive'."
        ::= { rsvpResvEntry 9 }
```

```
    rsvpResvHopAddr OBJECT-TYPE
        SYNTAX       OCTET STRING (SIZE(4..16))
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The address used by the next RSVP  hop  (which
           may be the ultimate receiver)."
        ::= { rsvpResvEntry 10 }


    rsvpResvHopLih OBJECT-TYPE
        SYNTAX       Integer32
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The Logical Interface Handle received from the
           previous  RSVP  hop  (which may be the ultimate
           receiver)."
        ::= { rsvpResvEntry 11 }


    rsvpResvInterface OBJECT-TYPE
        SYNTAX       InterfaceIndex
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The ifIndex value of the  interface  on  which
           this RESV message was most recently received."
        ::= { rsvpResvEntry 12 }


    rsvpResvService OBJECT-TYPE
        SYNTAX       QosService
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The QoS Service  classification  requested  by
           the receiver."
        ::= { rsvpResvEntry 13 }


    rsvpResvTSpecRate OBJECT-TYPE
        SYNTAX       BitRate
        UNITS        "bits per second"
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The Average Bit  Rate  of  the  sender's  data
```

              stream.   Within   a transmission burst, the ar-
              rival rate may be as fast as rsvpResvTSpec-
              PeakRate (if supported by the service model);
              however, averaged across two or more burst in-
              tervals,   the   rate   should   not exceed
              rsvpResvTSpecRate.

              Note that this is a prediction, often based on
              the general capability of a type of codec or
              particular encoding; the measured average rate
              may be significantly lower."
          ::= { rsvpResvEntry 14 }

     rsvpResvTSpecPeakRate OBJECT-TYPE
         SYNTAX   BitRate
         UNITS   "bits per second"
         MAX-ACCESS   read-create
         STATUS   current
         DESCRIPTION
             "The Peak Bit Rate of the sender's data stream.
             Traffic arrival is not expected to exceed this
             rate at any time, apart from the effects of
             jitter in the network. If not specified in the
             TSpec, this returns zero or noSuchValue."
         ::= { rsvpResvEntry 15 }

     rsvpResvTSpecBurst OBJECT-TYPE
         SYNTAX   BurstSize
         UNITS   "bytes"
         MAX-ACCESS   read-create
         STATUS   current
         DESCRIPTION
             "The size of the largest burst expected from
             the sender at a time.

             If this is less than the sender's advertised
             burst size, the receiver is asking the network
             to provide flow pacing beyond what would be
             provided under normal circumstances. Such pac-
             ing is at the network's option."
         ::= { rsvpResvEntry 16 }

     rsvpResvTSpecMinTU OBJECT-TYPE
         SYNTAX   MessageSize
         MAX-ACCESS   read-create

```
        STATUS       current
        DESCRIPTION
           "The minimum message size for  this  flow.  The
           policing  algorithm will treat smaller messages
           as though they are this size."
      ::= { rsvpResvEntry 17 }


   rsvpResvTSpecMaxTU OBJECT-TYPE
        SYNTAX       MessageSize
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "The maximum message size for  this  flow.  The
           admission  algorithm  will  reject TSpecs whose
           Maximum Transmission Unit, plus  the  interface
           headers, exceed the interface MTU."
      ::= { rsvpResvEntry 18 }


   rsvpResvRSpecRate OBJECT-TYPE
        SYNTAX       BitRate
        UNITS        "bits per second"
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "If the requested  service  is  Guaranteed,  as
           specified  by  rsvpResvService,  this  is  the
           clearing rate that is being requested.   Other-
           wise,  it  is  zero,  or  the  agent may return
           noSuchValue."
      ::= { rsvpResvEntry 19 }


   rsvpResvRSpecSlack OBJECT-TYPE
        SYNTAX       Integer32
        UNITS        "microseconds"
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
           "If the requested  service  is  Guaranteed,  as
           specified by rsvpResvService, this is the delay
           slack.  Otherwise, it is zero, or the agent may
           return noSuchValue."
      ::= { rsvpResvEntry 20 }


   rsvpResvInterval OBJECT-TYPE
```

```
    SYNTAX       RefreshInterval
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "The interval between refresh messages  as  ad-
        vertised by the Next Hop."
    ::= { rsvpResvEntry 21 }


rsvpResvScope OBJECT-TYPE
    SYNTAX       OCTET STRING (SIZE(0..65536))
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION

        "The contents of the scope object, displayed as
        an  uninterpreted  string  of octets, including
        the object header.  In the absence of  such  an
        object, this should be of zero length.

        If the length  is  non-zero,  this  contains  a
        series of IP4 or IP6 addresses."
    ::= { rsvpResvEntry 22 }


rsvpResvShared OBJECT-TYPE
    SYNTAX       TruthValue
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "If TRUE, a reservation shared among senders is
        requested.  If FALSE, a reservation specific to
        this sender is requested."
    ::= { rsvpResvEntry 23 }


rsvpResvExplicit OBJECT-TYPE
    SYNTAX       TruthValue
    MAX-ACCESS   read-create
    STATUS       current
    DESCRIPTION
        "If TRUE, individual senders are  listed  using
        Filter  Specifications.   If FALSE, all senders
        are implicitly selected.  The Scope Object will
        contain  a list of senders that need to receive
        this reservation request  for  the  purpose  of
        routing the RESV message."
    ::= { rsvpResvEntry 24 }
```

        rsvpResvRSVPHop OBJECT-TYPE
            SYNTAX   TruthValue
            MAX-ACCESS read-create
            STATUS   current
            DESCRIPTION
               "If TRUE, the node believes that the previous
               IP hop is an RSVP hop. If FALSE, the node be-
               lieves that the previous IP hop may not be an
               RSVP hop."
           ::= { rsvpResvEntry 25 }

        rsvpResvLastChange OBJECT-TYPE
            SYNTAX   TimeStamp
            MAX-ACCESS read-only
            STATUS   current
            DESCRIPTION
               "The time of the last change in this reserva-
               tion request; This is either the first time it
               was received or the time of the most recent
               change in parameters."
           ::= { rsvpResvEntry 26 }

        rsvpResvPolicy OBJECT-TYPE
            SYNTAX   OCTET STRING (SIZE(0..65536))
            MAX-ACCESS read-create
            STATUS   current
            DESCRIPTION
               "The contents of the policy object, displayed
               as an uninterpreted string of octets, including
               the object header. In the absence of such an
               object, this should be of zero length."
           ::= { rsvpResvEntry 27 }

        rsvpResvStatus OBJECT-TYPE
            SYNTAX   RowStatus
            MAX-ACCESS read-create
            STATUS   current
            DESCRIPTION
               "'active' for all active RESV messages.   This
               object may be used to install static RESV in-
               formation or delete RESV information."
           ::= { rsvpResvEntry 28 }

        rsvpResvTTL OBJECT-TYPE

```
        SYNTAX     INTEGER (0..255)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The TTL value in the RSVP header that was last
           received."
        ::= { rsvpResvEntry 29 }


    rsvpResvFlowId OBJECT-TYPE
        SYNTAX     INTEGER (0..16777215)
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The flow ID that this receiver  is  using,  if
           this  is  an IPv6 session."
        ::= { rsvpResvEntry 30 }



--      The RSVP Reservation Requests Forwarded Table contains the
--      information displayed by receivers regarding their needs with
--      respect to sessions and senders. It is in essence a list of the
--      valid RESV messages that the RSVP Router or Host is sending
--      to its upstream neighbors.


    rsvpResvFwdNewIndex OBJECT-TYPE
        SYNTAX     TestAndIncr
        MAX-ACCESS  read-write
        STATUS      current
        DESCRIPTION
           "This  object  is  used  to  assign  values  to
           rsvpResvFwdNumber as described in 'Textual Con-
           ventions  for  SNMPv2'.   The  network  manager
           reads  the  object,  and  then writes the value
           back in the SET that creates a new instance  of
           rsvpResvFwdEntry.   If  the  SET fails with the
           code 'inconsistentValue', then the process must
           be  repeated; If the SET succeeds, then the ob-
           ject is incremented, and the  new  instance  is
           created according to the manager's directions."
        ::= { rsvpGenObjects 4 }


    rsvpResvFwdTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF RsvpResvFwdEntry
        MAX-ACCESS  not-accessible
        STATUS      current
```

           DESCRIPTION
              "Information describing the state information
              displayed upstream in RESV messages."
           ::= { rsvpObjects 5 }

    rsvpResvFwdEntry OBJECT-TYPE
        SYNTAX   RsvpResvFwdEntry
        MAX-ACCESS not-accessible
        STATUS   current
        DESCRIPTION
           "Information describing the state information
           displayed upstream in an RESV message concern-
           ing a single sender."
        INDEX { rsvpSessionNumber, rsvpResvFwdNumber }
        ::= { rsvpResvFwdTable 1 }

    RsvpResvFwdEntry ::=
        SEQUENCE {
            rsvpResvFwdNumber   SessionNumber,
            rsvpResvFwdType   SessionType,
            rsvpResvFwdDestAddr   OCTET STRING,
            rsvpResvFwdSenderAddr   OCTET STRING,
            rsvpResvFwdDestAddrLength   INTEGER,
            rsvpResvFwdSenderAddrLength INTEGER,
            rsvpResvFwdProtocol   Protocol,
            rsvpResvFwdDestPort   Port,
            rsvpResvFwdPort   Port,
            rsvpResvFwdHopAddr   OCTET STRING,
            rsvpResvFwdHopLih   Integer32,
            rsvpResvFwdInterface   InterfaceIndex,
            rsvpResvFwdService   QosService,
            rsvpResvFwdTSpecRate   BitRate,
            rsvpResvFwdTSpecPeakRate   BitRate,
            rsvpResvFwdTSpecBurst   BurstSize,
            rsvpResvFwdTSpecMinTU   MessageSize,
            rsvpResvFwdTSpecMaxTU   MessageSize,
            rsvpResvFwdRSpecRate   BitRate,
            rsvpResvFwdRSpecSlack   Integer32,
            rsvpResvFwdInterval   RefreshInterval,
            rsvpResvFwdScope   OCTET STRING,
            rsvpResvFwdShared   TruthValue,
            rsvpResvFwdExplicit   TruthValue,
            rsvpResvFwdRSVPHop   TruthValue,
            rsvpResvFwdLastChange   TimeStamp,
            rsvpResvFwdPolicy   OCTET STRING,
            rsvpResvFwdStatus   RowStatus,

```
        rsvpResvFwdTTL                     INTEGER,
        rsvpResvFwdFlowId                  INTEGER
     }
```

```
rsvpResvFwdNumber OBJECT-TYPE
    SYNTAX      SessionNumber
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
       "The number of this reservation request.   This
       is  for  SNMP Indexing purposes only and has no
       relation to any protocol value."
    ::= { rsvpResvFwdEntry 1 }
```

```
rsvpResvFwdType OBJECT-TYPE
    SYNTAX      SessionType
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The type of session (IP4, IP6, IP6  with  flow
       information, etc)."
    ::= { rsvpResvFwdEntry 2 }
```

```
rsvpResvFwdDestAddr OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(4..16))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The destination address used by all senders in
       this  session.   This object may not be changed
       when the value of the RowStatus object is  'ac-
       tive'."
    ::= { rsvpResvFwdEntry 3 }
```

```
rsvpResvFwdSenderAddr OBJECT-TYPE
    SYNTAX      OCTET STRING (SIZE(4..16))
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The source address of the sender  selected  by
       this  reservation.  The value of all zeroes in-
       dicates 'all senders'.  This object may not  be
       changed  when the value of the RowStatus object
       is 'active'."
```

```
        ::= { rsvpResvFwdEntry 4 }


    rsvpResvFwdDestAddrLength OBJECT-TYPE
        SYNTAX       INTEGER(0..128)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The length of the destination address in bits.
           This  is  the CIDR Prefix Length, which for IP4
           hosts and multicast addresses is 32 bits.  This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpResvFwdEntry 5 }


    rsvpResvFwdSenderAddrLength OBJECT-TYPE
        SYNTAX       INTEGER(0..128)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The length of the sender's  address  in  bits.
           This  is  the CIDR Prefix Length, which for IP4
           hosts and multicast addresses is 32 bits.  This
           object may not be changed when the value of the
           RowStatus object is 'active'."
        ::= { rsvpResvFwdEntry 6 }


    rsvpResvFwdProtocol OBJECT-TYPE
        SYNTAX       Protocol
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The IP Protocol used by a session. for  secure
           sessions, this indicates IP Security.  This ob-
           ject may not be changed when the value  of  the
           RowStatus object is 'active'."
        ::= { rsvpResvFwdEntry 7 }


    rsvpResvFwdDestPort OBJECT-TYPE
        SYNTAX       Port
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The UDP or TCP port number used as a  destina-
           tion  port for all senders in this session.  If
```

              the IP   protocol   in   use,   specified   by
              rsvpResvFwdProtocol, is 50 (ESP) or 51 (AH),
              this represents a virtual destination port
              number.   A value of zero indicates that the IP
              protocol in use does not have ports. This ob-
              ject may not be changed when the value of the
              RowStatus object is 'active'."
         ::= { rsvpResvFwdEntry 8 }

    rsvpResvFwdPort OBJECT-TYPE
         SYNTAX   Port
         MAX-ACCESS   read-only
         STATUS   current
         DESCRIPTION
            "The UDP or TCP port number used as a source
            port for this sender in this session. If the
            IP   protocol   in   use,   specified   by
            rsvpResvFwdProtocol is 50 (ESP) or 51 (AH),
            this represents a generalized port identifier
            (GPI).   A value of zero indicates that the IP
            protocol in use does not have ports. This ob-
            ject may not be changed when the value of the
            RowStatus object is 'active'."
         ::= { rsvpResvFwdEntry 9 }

    rsvpResvFwdHopAddr OBJECT-TYPE
         SYNTAX   OCTET STRING (SIZE(4..16))
         MAX-ACCESS   read-only
         STATUS   current
         DESCRIPTION
            "The address of the (previous) RSVP that will
            receive this message."
         ::= { rsvpResvFwdEntry 10 }

    rsvpResvFwdHopLih OBJECT-TYPE
         SYNTAX   Integer32
         MAX-ACCESS   read-only
         STATUS   current
         DESCRIPTION
            "The Logical Interface Handle sent to the (pre-
            vious) RSVP that will receive this message."
         ::= { rsvpResvFwdEntry 11 }

    rsvpResvFwdInterface OBJECT-TYPE

```
        SYNTAX       InterfaceIndex
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The ifIndex value of the  interface  on  which
           this RESV message was most recently sent."
        ::= { rsvpResvFwdEntry 12 }


    rsvpResvFwdService OBJECT-TYPE
        SYNTAX       QosService
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The QoS Service classification requested."
        ::= { rsvpResvFwdEntry 13 }


    rsvpResvFwdTSpecRate OBJECT-TYPE
        SYNTAX       BitRate
        UNITS        "bits per second"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The Average Bit  Rate  of  the  sender's  data
           stream.   Within  a transmission burst, the ar-
           rival rate may be as fast as  rsvpResvFwdTSpec-
           PeakRate  (if  supported by the service model);
           however, averaged across two or more burst  in-
           tervals,    the    rate    should   not   exceed
           rsvpResvFwdTSpecRate.

           Note that this is a prediction, often based  on
           the  general  capability  of a type of codec or
           particular encoding; the measured average  rate
           may be significantly lower."
        ::= { rsvpResvFwdEntry 14 }


    rsvpResvFwdTSpecPeakRate OBJECT-TYPE
        SYNTAX       BitRate
        UNITS        "bits per second"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The Peak Bit Rate of the sender's data  stream
           Traffic  arrival is not expected to exceed this
           rate at any time, apart  from  the  effects  of
```

```
      jitter in the network.  If not specified in the
      TSpec, this returns zero or noSuchValue."
   ::= { rsvpResvFwdEntry 15 }


rsvpResvFwdTSpecBurst OBJECT-TYPE
    SYNTAX      BurstSize
    UNITS       "bytes"
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The size of the largest  burst  expected  from
       the sender at a time.

       If this is less than  the  sender's  advertised
       burst  size, the receiver is asking the network
       to provide flow pacing  beyond  what  would  be
       provided  under normal circumstances. Such pac-
       ing is at the network's option."
   ::= { rsvpResvFwdEntry 16 }


rsvpResvFwdTSpecMinTU OBJECT-TYPE
    SYNTAX      MessageSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The minimum message size for  this  flow.  The
       policing  algorithm will treat smaller messages
       as though they are this size."
   ::= { rsvpResvFwdEntry 17 }


rsvpResvFwdTSpecMaxTU OBJECT-TYPE
    SYNTAX      MessageSize
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
       "The maximum message size for  this  flow.  The
       admission  algorithm  will  reject TSpecs whose
       Maximum Transmission Unit, plus  the  interface
       headers, exceed the interface MTU."
   ::= { rsvpResvFwdEntry 18 }


rsvpResvFwdRSpecRate OBJECT-TYPE
    SYNTAX      BitRate
    UNITS       "bytes per second"
```

```
                     MAX-ACCESS  read-only
                     STATUS      current
                     DESCRIPTION
                        "If the requested  service  is  Guaranteed,  as
                        specified  by  rsvpResvService,  this  is  the
                        clearing rate that is being requested.   Other-
                        wise,  it  is  zero,  or  the  agent may return
                        noSuchValue."
                   ::= { rsvpResvFwdEntry 19 }


                rsvpResvFwdRSpecSlack OBJECT-TYPE
                     SYNTAX      Integer32
                     UNITS       "microseconds"
                     MAX-ACCESS  read-only
                     STATUS      current
                     DESCRIPTION
                        "If the requested  service  is  Guaranteed,  as
                        specified by rsvpResvService, this is the delay
                        slack.  Otherwise, it is zero, or the agent may
                        return noSuchValue."
                   ::= { rsvpResvFwdEntry 20 }


                rsvpResvFwdInterval OBJECT-TYPE
                     SYNTAX      RefreshInterval
                     MAX-ACCESS  read-only
                     STATUS      current
                     DESCRIPTION
                        "The interval between refresh  messages  adver-
                        tised to the Previous Hop."
                   ::= { rsvpResvFwdEntry 21 }


                rsvpResvFwdScope OBJECT-TYPE
                     SYNTAX      OCTET STRING (SIZE(0..65536))
                     MAX-ACCESS  read-only
                     STATUS      current
                     DESCRIPTION
                        "The contents of the scope object, displayed as
                        an  uninterpreted  string  of octets, including
                        the object header.  In the absence of  such  an
                        object, this should be of zero length."
                   ::= { rsvpResvFwdEntry 22 }


                rsvpResvFwdShared OBJECT-TYPE
                     SYNTAX      TruthValue
```

         MAX-ACCESS read-only
         STATUS   current
         DESCRIPTION
            "If TRUE, a reservation shared among senders is
            requested. If FALSE, a reservation specific to
            this sender is requested."
         ::= { rsvpResvFwdEntry 23 }

    rsvpResvFwdExplicit OBJECT-TYPE
         SYNTAX   TruthValue
         MAX-ACCESS read-only
         STATUS   current
         DESCRIPTION
            "If TRUE, individual senders are listed using
            Filter Specifications.   If FALSE, all senders
            are implicitly selected. The Scope Object will
            contain a list of senders that need to receive
            this reservation request for the purpose of
            routing the RESV message."
         ::= { rsvpResvFwdEntry 24 }

    rsvpResvFwdRSVPHop OBJECT-TYPE
         SYNTAX   TruthValue
         MAX-ACCESS read-only
         STATUS   current
         DESCRIPTION
            "If TRUE, the node believes that the next IP
            hop is an RSVP hop. If FALSE, the node be-
            lieves that the next IP hop may not be an RSVP
            hop."
         ::= { rsvpResvFwdEntry 25 }

    rsvpResvFwdLastChange OBJECT-TYPE
         SYNTAX   TimeStamp
         MAX-ACCESS read-only
         STATUS   current
         DESCRIPTION
            "The time of the last change in this request;
            This is either the first time it was sent or
            the time of the most recent change in parame-
            ters."
         ::= { rsvpResvFwdEntry 26 }

    rsvpResvFwdPolicy OBJECT-TYPE

```
        SYNTAX       OCTET STRING (SIZE(0..65536))
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The contents of the policy  object,  displayed
           as an uninterpreted string of octets, including
           the object header.  In the absence of  such  an
           object, this should be of zero length."
        ::= { rsvpResvFwdEntry 27 }


    rsvpResvFwdStatus OBJECT-TYPE
        SYNTAX       RowStatus
        MAX-ACCESS   read-write
        STATUS       current
        DESCRIPTION
           "'active' for all active RESV  messages.   This
           object may be used to delete RESV information."
        ::= { rsvpResvFwdEntry 28 }


    rsvpResvFwdTTL OBJECT-TYPE
        SYNTAX       INTEGER (0..255)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The TTL value in the RSVP header that was last
           received."
        ::= { rsvpResvFwdEntry 29 }


    rsvpResvFwdFlowId OBJECT-TYPE
        SYNTAX       INTEGER (0..16777215)
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "The flow ID that this receiver  is  using,  if
           this  is  an IPv6 session."
        ::= { rsvpResvFwdEntry 30 }


--      The RSVP Interface Attributes Database contains the
--      RSVP-specific information for an interface. Information
--      that is shared with other reservation procedures such
--      as ST-II is in the Integrated Interface Attributes
--      Database.
```

     rsvpIfTable OBJECT-TYPE
         SYNTAX   SEQUENCE OF RsvpIfEntry
         MAX-ACCESS   not-accessible
         STATUS   current
         DESCRIPTION
            "The RSVP-specific attributes of the system's
            interfaces."
        ::= { rsvpObjects 6 }

     rsvpIfEntry OBJECT-TYPE
         SYNTAX   RsvpIfEntry
         MAX-ACCESS   not-accessible
         STATUS   current
         DESCRIPTION
            "The RSVP-specific attributes of the a given
            interface."
         INDEX { ifIndex }
         ::= { rsvpIfTable 1 }

 RsvpIfEntry ::=
     SEQUENCE {
     rsvpIfUdpNbrs   Gauge32,
     rsvpIfIpNbrs   Gauge32,
     rsvpIfNbrs   Gauge32,
     rsvpIfEnabled   TruthValue,
     rsvpIfUdpRequired   TruthValue,
     rsvpIfRefreshBlockadeMultiple   INTEGER,
     rsvpIfRefreshMultiple   INTEGER,
     rsvpIfTTL   INTEGER,
     rsvpIfRefreshInterval   TimeInterval,
     rsvpIfRouteDelay   TimeInterval,
     rsvpIfStatus   RowStatus
     }

     rsvpIfUdpNbrs OBJECT-TYPE
         SYNTAX   Gauge32
         MAX-ACCESS   read-only
         STATUS   current
         DESCRIPTION
            "The number of neighbors perceived to be using
            only the RSVP UDP Encapsulation."
        ::= { rsvpIfEntry 1 }

     rsvpIfIpNbrs OBJECT-TYPE
         SYNTAX   Gauge32

```
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The number of neighbors perceived to be  using
           only the RSVP IP Encapsulation."
       ::= { rsvpIfEntry 2 }


    rsvpIfNbrs OBJECT-TYPE
        SYNTAX      Gauge32
        MAX-ACCESS  read-only
        STATUS      current
        DESCRIPTION
           "The number of neighbors  currently  perceived;
           this  will  exceed rsvpIfIpNbrs + rsvpIfUdpNbrs
           by the number of neighbors using both  encapsu-
           lations."
       ::= { rsvpIfEntry 3 }


    rsvpIfRefreshBlockadeMultiple OBJECT-TYPE
        SYNTAX      INTEGER (1..65536)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "The value of the RSVP value 'Kb', Which is the
           minimum   number   of   refresh  intervals  that
           blockade state will last once entered."
      DEFVAL      { 4 }
       ::= { rsvpIfEntry 4 }


    rsvpIfRefreshMultiple OBJECT-TYPE
        SYNTAX      INTEGER (1..65536)
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "The value of the RSVP value 'K', which is  the
           number  of  refresh intervals which must elapse
           (minimum) before a PATH or RESV  message  which
           is not being refreshed will be aged out."
      DEFVAL      { 3 }
       ::= { rsvpIfEntry 5 }


    rsvpIfTTL OBJECT-TYPE
        SYNTAX      INTEGER (0..255)
        MAX-ACCESS  read-create
```

```
        STATUS       current
        DESCRIPTION
           "The value of SEND_TTL used on  this  interface
           for  messages  this node originates.  If set to
           zero, the node determines  the  TTL  via  other
           means."
       DEFVAL { 0 } -- which is to say, no override
       ::= { rsvpIfEntry 6 }


   rsvpIfRefreshInterval OBJECT-TYPE
       SYNTAX       TimeInterval
       UNITS        "milliseconds"
       MAX-ACCESS   read-create
       STATUS       current
       DESCRIPTION
          "The value of the RSVP value 'R', which is  the
          minimum period between refresh transmissions of
          a given PATH or RESV message on an interface."
      DEFVAL       { 3000 }         -- 30 seconds
       ::= { rsvpIfEntry 7 }


   rsvpIfRouteDelay OBJECT-TYPE
       SYNTAX       TimeInterval
       UNITS        "hundredths of a second"
       MAX-ACCESS   read-create
       STATUS       current
       DESCRIPTION
          "The approximate period from the time  a  route
          is  changed to the time a resulting message ap-
          pears on the interface."
      DEFVAL       { 200 } -- 2 seconds
       ::= { rsvpIfEntry 8 }


   rsvpIfEnabled OBJECT-TYPE
       SYNTAX       TruthValue
       MAX-ACCESS   read-create
       STATUS       current
       DESCRIPTION
          "If TRUE, RSVP is enabled  on  this  Interface.
          If  FALSE,  RSVP  is not enabled on this inter-
          face."
       ::= { rsvpIfEntry 9 }


   rsvpIfUdpRequired OBJECT-TYPE
```

```
        SYNTAX      TruthValue
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "If TRUE, manual configuration forces  the  use
           of  UDP  encapsulation  on  the  interface.  If
           FALSE, UDP encapsulation is only used if rsvpI-
           fUdpNbrs is not zero."

        ::= { rsvpIfEntry 10 }


    rsvpIfStatus OBJECT-TYPE
        SYNTAX      RowStatus
        MAX-ACCESS  read-create
        STATUS      current
        DESCRIPTION
           "'active' on interfaces that are configured for
           RSVP."
        ::= { rsvpIfEntry 11 }


--      The RSVP Neighbor Database lists the neighbors the RSVP
--      process currently is receiving messages from.


    rsvpNbrTable OBJECT-TYPE
        SYNTAX      SEQUENCE OF RsvpNbrEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "Information describing  the  Neighbors  of  an
           RSVP system."
        ::= { rsvpObjects 7 }


    rsvpNbrEntry OBJECT-TYPE
        SYNTAX      RsvpNbrEntry
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "Information describing a  single  RSVP  Neigh-
           bor."
        INDEX { ifIndex, rsvpNbrAddress }
        ::= { rsvpNbrTable 1 }

RsvpNbrEntry ::=
    SEQUENCE {
```

```
      rsvpNbrAddress        OCTET STRING,
      rsvpNbrProtocol       RsvpEncapsulation,
      rsvpNbrStatus         RowStatus
      }

      rsvpNbrAddress OBJECT-TYPE
          SYNTAX      OCTET STRING (SIZE(4..16))
          MAX-ACCESS  not-accessible
          STATUS      current
          DESCRIPTION
             "The IP4 or IP6 Address used by this  neighbor.
             This  object  may not be changed when the value
             of the RowStatus object is 'active'."
          ::= { rsvpNbrEntry 1 }


      rsvpNbrProtocol OBJECT-TYPE
          SYNTAX      RsvpEncapsulation
          MAX-ACCESS  read-create
          STATUS      current
          DESCRIPTION
             "The encapsulation being used  by  this  neigh-
             bor."
          ::= { rsvpNbrEntry 2 }


      rsvpNbrStatus OBJECT-TYPE
          SYNTAX      RowStatus
          MAX-ACCESS  read-create
          STATUS      current
          DESCRIPTION
             "'active' for all neighbors.  This  object  may
             be  used  to configure neighbors.  In the pres-
             ence of configured neighbors,  the  implementa-
             tion may (but is not required to) limit the set
             of valid neighbors to those configured."
          ::= { rsvpNbrEntry 3 }


--
--      Notifications used to signal events
--

      rsvpNotifications OBJECT IDENTIFIER
                       ::= { rsvpNotificationsPrefix 0 }


      newFlow NOTIFICATION-TYPE
```

```
        OBJECTS {
                   intSrvFlowStatus, rsvpSessionDestAddr,
                   rsvpResvFwdStatus, rsvpResvStatus, rsvpSenderStatus
               }
        STATUS  current
        DESCRIPTION
           "The newFlow trap indicates that the  originat-
           ing  system  has  installed  a  new flow in its
           classifier, or (when reservation  authorization
           is  in view) is prepared to install such a flow
           in the classifier and is requesting  authoriza-
           tion.   The objects included with the Notifica-
           tion may be used to  read   further  information
           using  the  Integrated  Services and RSVP MIBs.
           Authorization  or  non-authorization   may   be
           enacted by a write to the variable intSrvFlowS-
           tatus."
        ::= { rsvpNotifications 1 }


    lostFlow NOTIFICATION-TYPE
        OBJECTS {
                   intSrvFlowStatus, rsvpSessionDestAddr,
                   rsvpResvFwdStatus, rsvpResvStatus, rsvpSenderStatus
               }
        STATUS  current
        DESCRIPTION
           "The lostFlow trap indicates that the originat-
           ing system has removed a flow from its classif-
           ier."
        ::= { rsvpNotifications 2 }


-- conformance information


rsvpGroups       OBJECT IDENTIFIER ::= { rsvpConformance 1 }
rsvpCompliances OBJECT IDENTIFIER ::= { rsvpConformance 2 }

-- compliance statements


    rsvpCompliance MODULE-COMPLIANCE
        STATUS  current
        DESCRIPTION
           "The compliance statement. Note that  the  im-
           plementation  of this module requires implemen-
           tation of the Integrated Services MIB as well."
```

```
      MODULE  -- this module
      MANDATORY-GROUPS {
          rsvpSessionGroup, rsvpSenderGroup, rsvpResvGroup,
          rsvpIfGroup, rsvpNbrGroup
          }

      GROUP rsvpResvFwdGroup
        DESCRIPTION
         "The Reservation Requests table  is  appropriate
         in  implementations that store upstream reserva-
         tion messages, but not appropriate in  implemen-
         tations  which  calculate them on each transmis-
         sion."

     GROUP rsvpNotificationGroup
        DESCRIPTION
         "The notifications in this module may be used  to
         advise a network management station of changes in
         flow status, and are required when this use is in
         view."

   OBJECT        rsvpSessionRequests
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This object is optional."

   OBJECT        rsvpSenderType
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
      read-only."

   OBJECT        rsvpSenderDestAddr
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
      read-only."

   OBJECT        rsvpSenderAddr
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
      read-only."

   OBJECT        rsvpSenderDestAddrLength
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
```

      read-only."

    OBJECT   rsvpSenderAddrLength
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderProtocol
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderDestPort
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderPort
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderHopAddr
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderHopLih
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderInterface
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be
       read-only."

    OBJECT   rsvpSenderTSpecRate
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required. This may be

```
      read-only."

    OBJECT        rsvpSenderTSpecPeakRate
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderTSpecBurst
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderTSpecMinTU
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderTSpecMaxTU
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderInterval
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderRSVPHop
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderPolicy
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
       read-only."

    OBJECT        rsvpSenderAdspecBreak
      MIN-ACCESS read-only
      DESCRIPTION
        "read-create access is not required.  This  may  be
```

          read-only."

     OBJECT   rsvpSenderAdspecHopCount
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpSenderAdspecPathBw
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpSenderAdspecMinLatency
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpSenderAdspecMtu
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpSenderAdspecGuaranteedSvc
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedBreak
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedCtot
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedDtot
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not

     support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedCsum
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedDsum
       MIN-ACCESS read-only
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedHopCount
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedPathBw
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedMinLatency
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecGuaranteedMtu
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Guaranteed Service."

     OBJECT   rsvpSenderAdspecCtrlLoadSvc
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not
        support Controlled Load."

     OBJECT   rsvpSenderAdspecCtrlLoadBreak
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This may be not-accessible if the system does not

```
     support Controlled Load."

   OBJECT       rsvpSenderAdspecCtrlLoadHopCount
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This may be not-accessible if the system does  not
      support Controlled Load."

   OBJECT       rsvpSenderAdspecCtrlLoadPathBw
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This may be not-accessible if the system does  not
      support Controlled Load."

   OBJECT       rsvpSenderAdspecCtrlLoadMinLatency
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This may be not-accessible if the system does  not
      support Controlled Load."

   OBJECT       rsvpSenderAdspecCtrlLoadMtu
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This may be not-accessible if the system does  not
      support Controlled Load."

   OBJECT       rsvpSenderStatus
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
      read-only."

   OBJECT       rsvpSenderFlowId
     MIN-ACCESS not-accessible
     DESCRIPTION
      "This object is needed only in a system that imple-
      ments IPv6."


   OBJECT       rsvpResvType
     MIN-ACCESS read-only
     DESCRIPTION
      "read-create access is not required.  This  may  be
      read-only."

   OBJECT       rsvpResvDestAddr
     MIN-ACCESS read-only
     DESCRIPTION
```

              "read-create access is not required. This may be
              read-only."

      OBJECT   rsvpResvSenderAddr
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvDestAddrLength
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvSenderAddrLength
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvProtocol
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvDestPort
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvPort
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvHopAddr
        MIN-ACCESS read-only
        DESCRIPTION
          "read-create access is not required. This may be
          read-only."

      OBJECT   rsvpResvHopLih
        MIN-ACCESS read-only
        DESCRIPTION

          "read-create access is not required. This may be
          read-only."

     OBJECT   rsvpResvInterface
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvService
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvTSpecRate
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvTSpecPeakRate
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvTSpecBurst
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvTSpecMinTU
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvTSpecMaxTU
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required. This may be
        read-only."

     OBJECT   rsvpResvRSpecRate
       MIN-ACCESS read-only
       DESCRIPTION

```
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvRSpecSlack
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvInterval
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvScope
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvShared
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvExplicit
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvRSVPHop
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvPolicy
             MIN-ACCESS read-only
             DESCRIPTION
                 "read-create access is not required.  This  may  be
                 read-only."

           OBJECT        rsvpResvStatus
             MIN-ACCESS read-only
             DESCRIPTION
```

```
          "read-create access is not required.  This  may  be
         read-only."
     OBJECT       rsvpResvFlowId
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This object is needed only in a system that imple-
         ments IPv6."

     OBJECT       rsvpResvFwdStatus
       MIN-ACCESS read-only
       DESCRIPTION
        "read-create access is not required.  This  may  be
         read-only."

     OBJECT       rsvpResvFwdFlowId
       MIN-ACCESS not-accessible
       DESCRIPTION
        "This object is needed only in a system that imple-
         ments IPv6."

     ::= { rsvpCompliances 1 }


     rsvpSessionGroup OBJECT-GROUP
         OBJECTS {
            rsvpSessionType, rsvpSessionDestAddr,
            rsvpSessionDestAddrLength, rsvpSessionProtocol,
            rsvpSessionPort, rsvpSessionSenders, rsvpSessionReceivers,
            rsvpSessionRequests
          }
         STATUS   current
         DESCRIPTION
            "These objects are required for RSVP Systems."
        ::= { rsvpGroups 1 }

     rsvpSenderGroup OBJECT-GROUP
         OBJECTS {
            rsvpSenderType, rsvpSenderDestAddr, rsvpSenderAddr,
            rsvpSenderDestAddrLength, rsvpSenderAddrLength,
            rsvpSenderProtocol, rsvpSenderDestPort, rsvpSenderPort,
            rsvpSenderHopAddr, rsvpSenderHopLih, rsvpSenderInterface,
            rsvpSenderTSpecRate, rsvpSenderTSpecPeakRate,
            rsvpSenderTSpecBurst, rsvpSenderTSpecMinTU,
            rsvpSenderTSpecMaxTU, rsvpSenderInterval,
            rsvpSenderLastChange, rsvpSenderStatus,
            rsvpSenderRSVPHop, rsvpSenderPolicy,
            rsvpSenderAdspecBreak, rsvpSenderAdspecHopCount,
            rsvpSenderAdspecPathBw, rsvpSenderAdspecMinLatency,
```

             rsvpSenderAdspecMtu, rsvpSenderAdspecGuaranteedSvc,
             rsvpSenderAdspecGuaranteedBreak,
             rsvpSenderAdspecGuaranteedCtot,
             rsvpSenderAdspecGuaranteedDtot,
             rsvpSenderAdspecGuaranteedCsum,
             rsvpSenderAdspecGuaranteedDsum,
             rsvpSenderAdspecGuaranteedHopCount,
             rsvpSenderAdspecGuaranteedPathBw,
             rsvpSenderAdspecGuaranteedMinLatency,
             rsvpSenderAdspecGuaranteedMtu, rsvpSenderAdspecCtrlLoadSvc,
             rsvpSenderAdspecCtrlLoadBreak,
             rsvpSenderAdspecCtrlLoadHopCount,
             rsvpSenderAdspecCtrlLoadPathBw,
             rsvpSenderAdspecCtrlLoadMinLatency,
             rsvpSenderAdspecCtrlLoadMtu, rsvpSenderNewIndex
          }
         STATUS current
         DESCRIPTION
            "These objects are required for RSVP Systems."
         ::= { rsvpGroups 2 }

    rsvpResvGroup OBJECT-GROUP
         OBJECTS {
             rsvpResvType, rsvpResvDestAddr, rsvpResvSenderAddr,
             rsvpResvDestAddrLength, rsvpResvSenderAddrLength,
             rsvpResvProtocol, rsvpResvDestPort, rsvpResvPort,
             rsvpResvHopAddr, rsvpResvHopLih, rsvpResvInterface,
             rsvpResvService, rsvpResvTSpecRate, rsvpResvTSpecBurst,
             rsvpResvTSpecPeakRate, rsvpResvTSpecMinTU,
             rsvpResvTSpecMaxTU, rsvpResvRSpecRate,
             rsvpResvRSpecSlack, rsvpResvInterval,
             rsvpResvScope, rsvpResvShared, rsvpResvExplicit,
             rsvpResvRSVPHop, rsvpResvLastChange, rsvpResvPolicy,
             rsvpResvStatus, rsvpResvNewIndex
          }
         STATUS current
         DESCRIPTION
            "These objects are required for RSVP Systems."
         ::= { rsvpGroups 3 }

    rsvpResvFwdGroup OBJECT-GROUP
         OBJECTS {
             rsvpResvFwdType, rsvpResvFwdDestAddr, rsvpResvFwdSenderAddr,
             rsvpResvFwdDestAddrLength, rsvpResvFwdSenderAddrLength,
             rsvpResvFwdProtocol, rsvpResvFwdDestPort, rsvpResvFwdPort,
             rsvpResvFwdHopAddr, rsvpResvFwdHopLih, rsvpResvFwdInterface,

            rsvpResvFwdNewIndex, rsvpResvFwdService,
            rsvpResvFwdTSpecPeakRate, rsvpResvFwdTSpecMinTU,
            rsvpResvFwdTSpecMaxTU, rsvpResvFwdTSpecRate,
            rsvpResvFwdTSpecBurst, rsvpResvFwdRSpecRate,
            rsvpResvFwdRSpecSlack, rsvpResvFwdInterval,
            rsvpResvFwdScope, rsvpResvFwdShared, rsvpResvFwdExplicit,
            rsvpResvFwdRSVPHop, rsvpResvFwdLastChange,
            rsvpResvFwdPolicy, rsvpResvFwdStatus
         }
        STATUS current
        DESCRIPTION
           "These objects are optional, used for some RSVP
           Systems."
        ::= { rsvpGroups 4 }

    rsvpIfGroup OBJECT-GROUP
        OBJECTS {
            rsvpIfUdpNbrs, rsvpIfIpNbrs, rsvpIfNbrs, rsvpIfEnabled,
            rsvpIfUdpRequired, rsvpIfRefreshBlockadeMultiple,
            rsvpIfRefreshMultiple, rsvpIfRefreshInterval, rsvpIfTTL,
            rsvpIfRouteDelay, rsvpIfStatus
         }
        STATUS current
        DESCRIPTION
           "These objects are required for RSVP Systems."
        ::= { rsvpGroups 6 }

    rsvpNbrGroup OBJECT-GROUP
         OBJECTS {
            rsvpNbrProtocol, rsvpNbrStatus
         }
        STATUS current
        DESCRIPTION
           "These objects are required for RSVP Systems."
        ::= { rsvpGroups 7 }

    rsvpNotificationGroup NOTIFICATION-GROUP
        NOTIFICATIONS { newFlow, lostFlow }
        STATUS current
        DESCRIPTION
           "This notification is required for Systems sup-
           porting the RSVP Policy Module using an SNMP
           interface to the Policy Manager."
        ::= { rsvpGroups 8 }

END

4. Security Considerations

   The use of an SNMP SET results in an RSVP or Integrated Services
   reservation under rules that are different compared to if the
   reservation was negotiated using RSVP. However, no other security
   considerations exist other than those imposed by SNMP itself.

5. Authors' Addresses

           Fred Baker
   Postal: Cisco Systems
           519 Lado Drive
           Santa Barbara, California 93111

   Phone: +1 805 681 0115
   EMail: fred@cisco.com

           John Krawczyk
   Postal: ArrowPoint Communications
           235 Littleton Road
           Westford, Massachusetts 01886

   Phone: +1 508 692 5875
   EMail: jjk@tiac.net

           Arun Sastry
   Postal: Cisco Systems
           210 W. Tasman Drive
           San Jose, California 95134

   Phone: +1 408 526 7685
   EMail: arun@cisco.com

6. Acknowledgements

   This document was produced by the RSVP Working Group.

7. References

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