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RSVP Management Information Base using SMIv2

Status of this Memo

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.

Table of Contents

1. The SNMPv2 Network Management Framework

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

- RFC 1441 which defines the SMI, the mechanisms used for describing and naming objects for the purpose of management.
- STD 17, RFC 1213 defines MIB-II, the core set of managed objects for the Internet suite of protocols.
- RFC 1445 which defines the administrative and other architectural aspects of the framework.
- 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
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                   519 Lado Drive
                   Santa Barbara, California 93111
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```

```
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                  Westford, Massachusetts 01886
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                  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"
```

```
       ::= { 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
```

```
        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


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6. Acknowledgements

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7. References

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