Definitions of Managed Objects for
Service Level Agreements
Performance Monitoring
<draft-white-slapm-mib-04.txt>

Status of this Memo

Copyright Notice

Abstract

This memo defines a Management Information Base (MIB) for performance
monitoring of Service Level Agreements (SLAs) defined via policy
definitions. The MIB defined herein focuses on defining a set of
objects for monitoring SLAs and not on replication of the content of the
policy definitions being monitored. The goal of the MIB defined within
this document is to defined statistics related to a policy rule
definition for reporting on the effect that a policy rule has on a
system and to defined a method of monitoring this data.

Table of Contents

1.0 Introduction

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT",
"SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this
document are to be interpreted as described in RFC 2119, reference [13].

This document's purpose is to define a MIB module for performance
management of Service Level Agreements (SLAs). It is assumed that an
SLA is defined via policy schema definitions. The policy definitions
being modeled with respect to performance management is primarily
related to network Quality of Service (QOS). There are a number of
methods that exist for defining and administering policy. Definition of
these methods is considered out side of the scope of this document.

The MIB module defined within this memo has been modeled using the
various versions of the schema definitions being developed within the
Policy Framework Working Group in the IETF. The content of the MIB
defined within this memo has evolved along with the Policy Framework
Working Group schema definitions.

2.0 The SNMP Network Management Framework

The SNMP Management Framework presently consists of five major components:

o   An overall architecture, described in RFC 2571 [7].

o   Mechanisms for describing and naming objects and events for the
    purpose of management. The first version of this Structure of
    Management Information (SMI) is called SMIv1 and described in RFC
    1155 [14], RFC 1212 [15] and RFC 1215 [16]. The second version,
    called SMIv2, is described in RFC 2578 [3], RFC 2579 [4] and RFC
    2580 [5].

o   Message protocols for transferring management information. The
    first version of the SNMP message protocol is called SNMPv1 and
    described in RFC 1157 [1]. A second version of the SNMP message
    protocol, which is not an Internet standards track protocol, is
    called SNMPv2c and described in RFC 1901 [17] and RFC 1906 [18].
    The third version of the message protocol is called SNMPv3 and
    described in RFC 1906 [18], RFC 2572 [8] and RFC 2574 [10].

o   Protocol operations for accessing management information. The first
    set of protocol operations and associated PDU formats is described
    in RFC 1157 [1]. A second set of protocol operations and associated
    PDU formats is described in RFC 1905 [6].

o   A set of fundamental applications described in RFC 2573 [9] and the
    view-based access control mechanism described in RFC 2575 [11].

Managed objects are accessed via a virtual information store, termed the
Management Information Base or MIB. Objects in the MIB are defined
using the mechanisms defined in the SMI.

This memo specifies a MIB module that is compliant to the SMIv2. A MIB
conforming to the SMIv1 can be produced through the appropriate
translations. The resulting translated MIB must be semantically
equivalent, except where objects or events are omitted because no
translation is possible (use of Counter64). Some machine readable
information in SMIv2 will be converted into textual descriptions in
SMIv1 during the translation process. However, this loss of machine
readable information is not considered to change the semantics of the
MIB.

3.0 Structure of the MIB

The SLAPM-MIB consists of the following components:

o   Global simple objects

o   slapmPolicyNameTable

o   slapmPolicyRuleStatsTable (equivalent to the deprecated
     slapmPolicyStatsTable)

o   slapmPRMonTable (equivalent to the deprecated
     slapmPolicyMonitorTable)

o   slapmSubcomponentTable

Refer to the compliance statement defined within SLAPM-MIB for a
definition of what objects and notifications MUST be implemented by all
systems as opposed to those that MUST be implemented by end systems
only.

Initially most of the tables defined by the MIB module within this
document where directly indexed using a policy's name and a subbordinate
traffic profile name. Over time the structure and resulting naming has
grown more complex and as such has exceeded the capacity of being used
as a direct MIB table index. As a result of this the original tables
(slapmPolicyStatsTable and slapmPolicyMonitorTable) have been deprecated
and replaced with new tables that use an Unsigned32 index element
instead of "names". A new table has been defined, slapmPolicyNameTable,
that maps the Unsigned32 index to a unique name associated with a given
policy rule definition.

3.1 Global simple objects

Global objects defined within SLAPM-MIB:

o   slapmSpinLock

     Enables multiple management application access to SLAPM-MIB. An
     agent MUST implement the slapmSpinLock object to enable management
     applications to coordinate their use of the SLAPM-MIB. Management
     application use of slapmSpinLock is OPTIONAL.

o   slapmPolicyCountQueries, slapmPolicyCountAccesses,
     slapmPolicyCountSuccessAccesses, and slapmPolicyCountNotFounds

     Basic statistics on the amount of policy directory access that has
     occurred at a system.

o   slapmPolicyPurgeTime

     Used to prevent the entries in various SLAPM-MIB tables that relate
     to a policy definition from immediately being deleted when the
     corresponding policy definition no longer exists. This gives
     management applications time to discover this condition and close
     out any polled based interval data that may be being collected. All
     dependent slapmPRMonTable entries are also deleted when its parent
     slapmPolicyRuleStatsEntry is removed. Refer to the OBJECT

description for slapmPolicyPurgeTime for a more precise description
of this function.

o   slapmPolicyTrapEnable

     This object enables or suppresses generation of
     slapmPolicyRuleDeleted or slapmPolicyRuleMonDeleted notifications.

o   slapmPolicyTrapFilter

     This object enables suppression of slapmSubcMonitorNotOkay
     notifications.

o   slapmPolicyTotalRsvpFlows and slapmPolicyTotalActiveRsvpFlows

     Indicates total number of RSVP flows initiated and the current
     number of active flows.

3.2 slapmPolicyNameTable

The slapmPolicyNameTable maps a Unsigned32 index to a unique name
associated with a given policy rule definition.

Currently, the core schema definition being worked on within the Policy
Framework working group defines five general classes: policyGroup,
policyRule, policyCondition, policyTimePeriodCondition, and
policyAction. "Policies can either be used in a stand-alone fashion or
aggregated into policy groups to perform more elaborate functions.
Stand-alone policies are called policy rules. Policy groups are
aggregations of policy rules, or aggregations of policy groups, but not
both." Each policy rule consists of a set of conditions and a set of
actions. Policy rules may be aggregated into policy groups.

"Instances in a directory are identified by distinguished names (DNs),
which provide the same type of hierarchical organization that a file
system provides in a computer system. A distinguished name is a
sequence of relative distinguished names (RDNs), where an RDN provides a
unique identifier for an instance within the context of its immediate
superior, in the same way that a filename provides a unique identifier
for a file within the context of the folder in which it resides."

Each of these instances can also be named to fit in with the existing
DEN practice with a commonName (cn) attribute as oppose to the classes
name attribute.

"The cn, or commonName, attribute is an X.500 attribute. It stands for
commonName. It specifies a user-friendly name by which the object is
commonly known. This name may be ambiguous by itself. This name is
used in a limited scope (such as an organization). It conforms to the
naming conventions of the country or culture with which it is
associated. CN is used universally in DEN as the naming attribute for a
class."

An slapmPolicyNameEntry contains a single object, slapmPolicyNameOfRule,
that contains the unique name associated with a policy rule instance.

An slapmPolicyNameEntry is indexed by a Unsigned32 index,
slapmPolciNameIndex, that is assigned by the implementation of this MIB.

3.3 slapmPolicyRuleStatsTable

This table is functionally equivalent to the deprecated
slapmPolicyStatsTable. The slapmPolicyStatsTable uses the name of both a
policy definition and a traffic profile name to index an entry. The
slapmPolicyRuleStatsTable uses an slapmPolicyNameEntry index
(Unsigned32) instead.

The slapmPolicyRuleStatsTable is the main table defined by SLAPM-MIB.
The primary index for this table is slapmPolicyNameSystemAddress that
enables support of multiple systems from a single policy agent. The
index element, slapmPolicyNameSystemAddress, value must be either the
zero-length octet string when at a policy agent only a single system is
being support, 4 octets for a ipv4 address, or 16 octets for a ipv6
address.

It is possible that on a single system multiple policy agent instances
exists. The Entity MIB, refer to [19], should be used to handle the
resulting MIBs.

With respect to slapmPolicyNameSystemAddress one
slapmPolicyRuleStatsEntry exists for each policy rule instance. Entries
in this table are not administered via SNMP. An agent implementation
for this table MUST reflect its current set of policy rule instances via
table entries. The mechanisms for policy administration are outside of
the scope of this memo.

3.4 slapmPRMonTable

This table is functionally equivalent to the deprecated
slapmPolicyMonitorTable. The slapmPolicyMonitorTable uses the name of
both a policy definition and a traffic profile name to index an entry.
The slapmPRMonTable uses an slapmPolicyNameEntry index (Unsigned32)
instead.

The slapmPRMonTable provides a method of monitoring the effect of SLA
policy being used at a system. A management application creates an
slapmPRMonEntry for each collection that it requires. The value of the
BITS slapmPRMonControl object determines what type of monitoring occurs,
at what level to monitor and whether trap support is enabled:

o   monitorMinRate(0)

    Use the value of slapmPRMonInterval as the interval to determine
    current traffic in and out rates, using slapmPRMonCurrentInRate and
    slapmPRMonCurrentOutRate, that can be compared to
    slapmPRMonMinRateLow for determining when to generate a

slapmPolicyRuleMonNotOkay notification. The notification
slapmPolicyRuleMonOkay is generated when the problem is resolved.

     This can be determined by comparing the current rates to
     slapmPRMonMinRateHigh.

o   monitorMaxRate(1)

     Use the value of slapmPRMonInterval as the interval to determine
     current traffic in and out rate, using slapmPRMonCurrentInRate and
     slapmPRMonCurrentOutRate, that can be compared to
     slapmPRMonMaxRateHigh for determining when to generate a
     slapmPolicyRuleMonNotOkay notification. The notification
     slapmPolicyRuleMonOkay is generated when the problem is resolved.
     This can be determined by comparing the current rates to
     slapmPRMonMaxRateLow.

o   monitorMaxDelay(2)

     Use the value of slapmPRMonInterval as the interval to determine the
     current delay. This can be calculated on an aggregate level by
     averaging the round trip times for all TCP connections associated
     with the policy definition. For an individual subcomponent its
     round trip time can be used directly. Compare this value to
     slapmPRMonMaxDelayHigh for determining when to generate a
     slapmPolicyRuleMonNotOkay notification. The notification
     slapmPolicyRuleMonOkay is generated when the problem is resolved.
     This can be determined by comparing the current rates to
     slapmPRMonMaxDelayLow.

     UDP subcomponents don't support max delay monitoring.

o   enableAggregateTraps(3)

     The slapmPRMonitorControl BITS setting, enableAggregateTraps(3),
     MUST be set in order for any notifications relating to
     slapmPolicyRuleStatsTable monitoring to be generated.

o   enableSubcomponentTraps(4)

     This slapmPRMonControl BITS setting MUST be set in order for any
     notifications relating to slapmSubcomponetTable monitoring to be
     generated. The slapmPRMonControl BITS setting
     monitorSubcomponents(5) MUST be selected in order for this setting
     to be allowed.

o   monitorSubcomponents(5)

     If selected monitor slapmSubcomponentTable entries individually.
     Note: aggregate policy rule monitoring is always enabled.

The index element slapmPRMonOwnerIndex is used as the first index in
slapmPRMonTable in order to enable SNMPv3 VACM security control. The

slapmPRMonTable is the only table that supports SNMP RowStatus
operations.

3.5 slapmSubcomponentTable

Entries are made into this table for the protocol entities (policy
traffic profile subcomponents) to indicate actual policy rule usage,
provide general statistics at either a TCP connection or UDP listener
level, and enable subcomponent monitoring.

4.0 Definitions

```
  SLAPM-MIB DEFINITIONS ::= BEGIN

    IMPORTS
       MODULE-IDENTITY, OBJECT-TYPE,
       experimental, Integer32, NOTIFICATION-TYPE,
       Gauge32, Counter32, Unsigned32
           FROM SNMPv2-SMI                   -- RFC2578
       TEXTUAL-CONVENTION, RowStatus,
       TestAndIncr, DateAndTime
           FROM SNMPv2-TC                    -- RFC2579
       MODULE-COMPLIANCE, OBJECT-GROUP,
       NOTIFICATION-GROUP
           FROM SNMPv2-CONF                  -- RFC2580
       SnmpAdminString
           FROM SNMP-FRAMEWORK-MIB;          -- RFC2571

    slapmMIB MODULE-IDENTITY
       LAST-UPDATED "9905200000Z"
       ORGANIZATION "Internet Engineering Task Force (IETF)"
       CONTACT-INFO
           "Kenneth White

           International Business Machines Corporation
           Network Computing Software Division
           Research Triangle Park, NC, USA

           E-mail: wkenneth@us.ibm.com"
       DESCRIPTION
           "The Service Level Agreement Performance Monitoring MIB
           (SLAPM-MIB) provides data collection and monitoring
           capabilities for Service Level Agreements (SLAs)
           policy definitions."
       ::= { experimental 88 }

    -- Textual Conventions

    SlapmNameType ::= TEXTUAL-CONVENTION
       STATUS  deprecated
       DESCRIPTION
           "The textual convention for naming entities
           within this MIB.  The actual contents of an object
```

defined using this textual convention should consist
of the distinguished name portion of an name.

                This is usually the right-most
                portion of the name. This convention is necessary,
                since names within this MIB can be used as index
                items and an instance identifier is limited to 128
                subidentifiers.

                This textual convention has been deprecated. All of the
                tables defined within this MIB that use this textual
                convention have been deprecated as well since the method
                of using a portion of the name (either of a policy
                definition or of a traffic profile) has been replaced
                by using an Unsigned32 index. The new slapmPolicyNameTable
                would then map the Unsigned32 index to a real name."
            SYNTAX SnmpAdminString (SIZE(0..32))

        SlapmStatus ::= TEXTUAL-CONVENTION
            STATUS current
            DESCRIPTION
                "The textual convention for defining the various
                slapmPRMonTable (or old slapmPolicyMonitorTable)
                and the slapmSubcomponentTable states for actual policy
                rule traffic monitoring."
            SYNTAX BITS {
                        slaMinInRateNotAchieved(0),
                        slaMaxInRateExceeded(1),
                        slaMaxDelayExceeded(2),
                        slaMinOutRateNotAchieved(3),
                        slaMaxOutRateExceeded(4),
                        monitorMinInRateNotAchieved(5),
                        monitorMaxInRateExceeded(6),
                        monitorMaxDelayExceeded(7),
                        monitorMinOutRateNotAchieved(8),
                        monitorMaxOutRateExceeded(9)
                      }

        SlapmPolicyRuleName ::= TEXTUAL-CONVENTION
            DISPLAY-HINT "1024a"
            STATUS current
            DESCRIPTION
                "To facilitate internationalization, this TC
                represents information taken from the ISO/IEC IS
                10646-1 character set, encoded as an octet string
                using the UTF-8 character encoding scheme described
                in RFC 2044.   For strings in 7-bit US-ASCII,
                there is no impact since the UTF-8 representation
                is identical to the US-ASCII encoding."
            SYNTAX OCTET STRING (SIZE (0..1024))

        -- Top-level structure of the MIB

```
        slapmNotifications  OBJECT IDENTIFIER ::= { slapmMIB 0 }
        slapmObjects        OBJECT IDENTIFIER ::= { slapmMIB 1 }
```

```
slapmConformance    OBJECT IDENTIFIER ::= { slapmMIB 2 }

-- All simple objects

slapmBaseObjects    OBJECT IDENTIFIER ::= { slapmObjects 1 }

-- Simple Object Definitions

slapmSpinLock OBJECT-TYPE
   SYNTAX       TestAndIncr
   MAX-ACCESS   read-write
   STATUS       current
   DESCRIPTION
      "An advisory lock used to allow cooperating applications
      to coordinate their use of the contents of this MIB.  This
      typically occurs when an application seeks to create an
      new entry or alter an existing entry in
      slapmPRMonTable (or old slapmPolicyMonitorTable).  A
      management implementation MAY utilize the slapmSpinLock to
      serialize its changes or additions.  This usage is not
      required.   However, slapmSpinLock MUST be supported by
      agent implementations."
   ::= { slapmBaseObjects 1 }

slapmPolicyCountQueries OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       current
   DESCRIPTION
      "The total number of times that a policy lookup occurred
      with respect to a policy agent.
      This is the number of times that a reference was made to
      a policy definition at a system and includes the number
      of times that a policy repository was accessed,
      slapmPolicyCountAccesses.  The object
      slapmPolicyCountAccesses should be less than
      slapmPolicyCountQueries when policy definitions are
      cached at a system."
   ::= { slapmBaseObjects 2 }

slapmPolicyCountAccesses OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       current
   DESCRIPTION
      "Total number of times that a policy repository was
       accessed with respect to a policy agent.
       The value of this object should be less than
       slapmPolicyCountQueries, since typically policy entries
```

```
               are cached to minimize repository accesses."
          ::= { slapmBaseObjects 3 }

     slapmPolicyCountSuccessAccesses OBJECT-TYPE
```

```
        SYNTAX       Counter32
     MAX-ACCESS  read-only
     STATUS       current
     DESCRIPTION
        "Total number of successful policy repository accesses
        with respect to a policy agent."
     ::= { slapmBaseObjects 4 }

  slapmPolicyCountNotFounds OBJECT-TYPE
     SYNTAX       Counter32
     MAX-ACCESS  read-only
     STATUS       current
     DESCRIPTION
        "Total number of policy repository accesses,
        with respect to a policy agent, that
        resulted in an entry not being located."
     ::= { slapmBaseObjects 5 }

  slapmPolicyPurgeTime OBJECT-TYPE
     SYNTAX       Integer32 (0..3600)  -- maximum of 1 hour
     UNITS        "seconds"
     MAX-ACCESS  read-write
     STATUS       current
     DESCRIPTION
        "The purpose of this object is to define the amount
        of time (in seconds) to wait before removing an
        slapmPolicyRuleStatsEntry (or old slapmPolicyStatsEntry)
        when a system detects that the associated policy
        definition has been deleted.  This gives any polling
        management applications time to complete their last poll
        before an entry is removed.  An slapmPolicyRuleStatsEntry
        (or old slapmPolicyStatsEntry) enters the
        deleteNeeded(3) state via slapmPolicyRuleStatsOperStatus
        (or old slapmPolicyStatsOperStatus) when a system first
        detects that the entry needs to be removed.

        Once slapmPolicyPurgeTime has expired for an entry in
        deleteNeeded(3) state it is removed a long with any
        dependent slapmPRMonTable (or slapmPolicyMonitorTable)
        entries.

        A value of 0 for this option disables this function and
        results in the automatic purging of slapmPRMonTable
        (or slapmPolicyTable) entries upon transition into
        deleteNeeded(3) state.

        A slapmPolicyRuleDeleted (or slapmPolicyProfileDeleted)
        notification is sent when an slapmPolicyRuleStatsEntry (or
        slapmPolicyStatsEntry) is removed.   Dependent
```

slapmPRMonTable (or slapmPolicyMonitorTable)
deletion results in a slapmPolicyRuleMonDeleted (or
slapmPolicyMonitorDeleted) notification being sent.
These notifications are suppressed if the value of

```
            slapmPolicyTrapEnable is disabled(2)."
      DEFVAL { 900 }  -- 15 minute default purge time
      ::= { slapmBaseObjects 6 }

slapmPolicyTrapEnable OBJECT-TYPE
   SYNTAX      INTEGER { enabled(1), disabled(2) }
   MAX-ACCESS  read-write
   STATUS      current
   DESCRIPTION
      "Indicates whether slapmPolicyRuleDeleted and
      slapmPolicyRuleMonDeleted (or slapmPolicyProfileDeleted
      and slapmPolicyMonitorDeleted) notifications should be
      generated by this system."
   DEFVAL { disabled }
   ::= { slapmBaseObjects 7 }

slapmPolicyTrapFilter   OBJECT-TYPE
   SYNTAX      Integer32 (0..64)
   UNITS       "intervals"
   MAX-ACCESS  read-create
   STATUS      current
   DESCRIPTION
      "The purpose of this object is to suppress unnecessary
      slapmSubcMonitorNotOkay (or
      slapmSubcomponentMonitoredEventNotAchieved), for example,
      notifications.  Basically, a monitored event has to
      not meet its SLA requirement for the number of
      consecutive intervals indicated by the value of this
      object."
   DEFVAL { 3 }
   ::= { slapmBaseObjects 8 }

slapmPolicyTotalRsvpFlows OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Total number of RSVP flows that have be activated."
   ::= { slapmBaseObjects 9 }

slapmPolicyTotalActiveRsvpFlows OBJECT-TYPE
   SYNTAX      Gauge32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "Current number of active RSVP flows."
   ::= { slapmBaseObjects 10 }

slapmTableObjects    OBJECT IDENTIFIER ::= { slapmObjects 2 }
```

-- Sla Performance Monitoring Policy Statistics Table

slapmPolicyStatsTable OBJECT-TYPE

```
     SYNTAX SEQUENCE OF SlapmPolicyStatsEntry
     MAX-ACCESS not-accessible
     STATUS deprecated
     DESCRIPTION
         "Provides statistics on all policies known at a
         system.

         This table has been deprecated and replaced with
         the slapmPolicyRuleStatsTable.  Older implementations of
         this MIB are expected to continue their support of this
         table."
   ::= { slapmTableObjects 1 }

slapmPolicyStatsEntry OBJECT-TYPE
   SYNTAX SlapmPolicyStatsEntry
   MAX-ACCESS not-accessible
   STATUS deprecated
   DESCRIPTION
       "Defines an entry in the slapmPolicyStatsTable.  This table
       defines a set of statistics that is kept on a per system,
       policy and traffic profile basis.  A policy can be
       defined to contain multiple traffic profiles that map to
       a single action.

       Entries in this table are not created or deleted via SNMP
       but reflect the set of policy definitions known at a system."
   INDEX {
           slapmPolicyStatsSystemAddress,
           slapmPolicyStatsPolicyName,
           slapmPolicyStatsTrafficProfileName
           }
   ::= { slapmPolicyStatsTable 1 }

SlapmPolicyStatsEntry ::=
   SEQUENCE {
       slapmPolicyStatsSystemAddress       OCTET STRING,
       slapmPolicyStatsPolicyName          SlapmNameType,
       slapmPolicyStatsTrafficProfileName SlapmNameType,
       slapmPolicyStatsOperStatus          INTEGER,
       slapmPolicyStatsActiveConns         Gauge32,
       slapmPolicyStatsTotalConns          Counter32,
       slapmPolicyStatsFirstActivated      DateAndTime,
       slapmPolicyStatsLastMapping         DateAndTime,
       slapmPolicyStatsInOctets            Counter32,
       slapmPolicyStatsOutOctets           Counter32,
       slapmPolicyStatsConnectionLimit     Integer32,
       slapmPolicyStatsCountAccepts        Counter32,
       slapmPolicyStatsCountDenies         Counter32,
       slapmPolicyStatsInDiscards          Counter32,
```

```
            slapmPolicyStatsOutDiscards        Counter32,
            slapmPolicyStatsInPackets          Counter32,
            slapmPolicyStatsOutPackets         Counter32,
            slapmPolicyStatsInProfileOctets    Counter32,
```

```
         slapmPolicyStatsOutProfileOctets    Counter32,
         slapmPolicyStatsMinRate             Integer32,
         slapmPolicyStatsMaxRate             Integer32,
         slapmPolicyStatsMaxDelay            Integer32
      }

   slapmPolicyStatsSystemAddress OBJECT-TYPE
      SYNTAX      OCTET STRING (SIZE(0..16))
      MAX-ACCESS  not-accessible
      STATUS      deprecated
      DESCRIPTION
        "Address of a system that an Policy definition relates to.
         A zero length octet string must be used to indicate that
         only a single system is being represented.
         Otherwise, the length of the octet string must be
         4 for an ipv4 address or 16 for an ipv6 address."
      ::= { slapmPolicyStatsEntry 1 }

   slapmPolicyStatsPolicyName OBJECT-TYPE
      SYNTAX      SlapmNameType
      MAX-ACCESS  not-accessible
      STATUS      deprecated
      DESCRIPTION
        "Policy name that this entry relates to."
      ::= { slapmPolicyStatsEntry 2 }

   slapmPolicyStatsTrafficProfileName OBJECT-TYPE
      SYNTAX      SlapmNameType
      MAX-ACCESS  not-accessible

      STATUS      deprecated
      DESCRIPTION
        "The name of a traffic profile that is associated with
         a policy."
      ::= { slapmPolicyStatsEntry 3 }

   slapmPolicyStatsOperStatus OBJECT-TYPE
      SYNTAX      INTEGER {
                          inactive(1),
                          active(2),
                          deleteNeeded(3)
                     }
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
        "The state of a policy entry:

           inactive(1)      - An policy entry was either defined
                              by local SYSDEF or discovered via
```

a directory search but has not been
                         activated (not currently being used).
              active(2)   - Policy entry is being used to affect
                                   traffic flows.
              deleteNeeded(3) - Either though local implementation

                                    dependent methods or by discovering
                                    that the directory entry corresponding
                                    to this table entry no longer
                                    exists and slapmPolicyPurgeTime needs
                                    to expire before attempting to remove
                                    the corresponding slapmPolicyStatsEntry
                                    and any dependent slapmPolicyMonitor
                                    table entries.
              Note: a policy traffic profile in a state other than
              active(1) is not being used to affect traffic flows."
          ::= { slapmPolicyStatsEntry 4 }

     slapmPolicyStatsActiveConns OBJECT-TYPE
        SYNTAX   Gauge32
        MAX-ACCESS   read-only
        STATUS   deprecated
        DESCRIPTION
           "The number of active TCP connections that are
           affected by the corresponding policy entry."
        ::= { slapmPolicyStatsEntry 5 }

     slapmPolicyStatsTotalConns OBJECT-TYPE
        SYNTAX   Counter32
        MAX-ACCESS   read-only
        STATUS   deprecated
        DESCRIPTION
           "The number of total TCP connections that are
           affected by the corresponding policy entry."
        ::= { slapmPolicyStatsEntry 6 }

     slapmPolicyStatsFirstActivated OBJECT-TYPE
        SYNTAX   DateAndTime
        MAX-ACCESS   read-only
        STATUS   deprecated
        DESCRIPTION
           "The timestamp for when the corresponding policy entry
           is activated. The value of this object serves as
           the discontinuity event indicator when polling entries
           in this table. The value of this object is updated on
           transition of slapmPolicyStatsOperStatus into the active(2)
           state."
        DEFVAL { '0000000000000000'H }
        ::= { slapmPolicyStatsEntry 7 }

     slapmPolicyStatsLastMapping OBJECT-TYPE
        SYNTAX   DateAndTime
        MAX-ACCESS   read-only
        STATUS   deprecated
        DESCRIPTION

```
            "The timestamp for when the last time
            that the associated policy entry was used."
        DEFVAL { '0000000000000000'H }
        ::= { slapmPolicyStatsEntry 8 }
```

```
slapmPolicyStatsInOctets OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "The number of octets that was received by IP for an
      entity that map to this entry."
   ::= { slapmPolicyStatsEntry 9 }

slapmPolicyStatsOutOctets OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "The number of octets that was transmitted by IP for an
      entity that map to this entry."
   ::= { slapmPolicyStatsEntry 10 }

slapmPolicyStatsConnectionLimit OBJECT-TYPE
   SYNTAX       Integer32
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "The limit for the number of active TCP connections that
      are allowed for this policy definition.  A value of zero
      for this object implies that a connection limit has not
      been specified."
   ::= { slapmPolicyStatsEntry 11 }

slapmPolicyStatsCountAccepts OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
       "This counter is incremented when a policy action's
       Permission value is set to Accept and a session
       (TCP connection) is accepted."
   ::= { slapmPolicyStatsEntry 12 }

slapmPolicyStatsCountDenies OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
       "This counter is incremented when a policy action's
       Permission value is set to Deny and a session is denied,
       or when a session (TCP connection) is rejected due to a
       policy's connection limit (slapmPolicyStatsConnectLimit)
       being reached."
```

```
        ::= { slapmPolicyStatsEntry 13 }

    slapmPolicyStatsInDiscards OBJECT-TYPE
```

```
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
          "This counter counts the number of in octets discarded.
          This occurs when an error is detected.  Examples of this
          are buffer overflow, checksum error, or bad packet
          format."
      ::= { slapmPolicyStatsEntry 14 }

   slapmPolicyStatsOutDiscards OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
          "This counter counts the number of out octets discarded.
          Examples of this are buffer overflow, checksum error, or
          bad packet format."
      ::= { slapmPolicyStatsEntry 15 }

   slapmPolicyStatsInPackets OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
          "This counter counts the number of in packets received
          that relate to this policy entry from IP."
      ::= { slapmPolicyStatsEntry 16 }

   slapmPolicyStatsOutPackets OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
          "This counter counts the number of out packets sent
          by IP that relate to this policy entry."
      ::= { slapmPolicyStatsEntry 17 }

   slapmPolicyStatsInProfileOctets OBJECT-TYPE
      SYNTAX      Counter32
      MAX-ACCESS  read-only
      STATUS      deprecated
      DESCRIPTION
          "This counter counts the number of in octets that are
          determined to be within profile."
      ::= { slapmPolicyStatsEntry 18 }

   slapmPolicyStatsOutProfileOctets OBJECT-TYPE
      SYNTAX      Counter32
```

```
        MAX-ACCESS  read-only
        STATUS      deprecated
        DESCRIPTION
            "This counter counts the number of out octets that are
```

```
             determined to be within profile."
         ::= { slapmPolicyStatsEntry 19 }


     slapmPolicyStatsMinRate OBJECT-TYPE
        SYNTAX        Integer32
        UNITS         "Kilobits per second"
        MAX-ACCESS  read-only
        STATUS        deprecated
        DESCRIPTION
            "The minimum transfer rate defined for this entry."
         ::= { slapmPolicyStatsEntry 20 }


     slapmPolicyStatsMaxRate OBJECT-TYPE
        SYNTAX        Integer32
        UNITS         "Kilobits per second"
        MAX-ACCESS  read-only
        STATUS        deprecated
        DESCRIPTION
            "The maximum transfer rate defined for this entry."
         ::= { slapmPolicyStatsEntry 21 }


     slapmPolicyStatsMaxDelay OBJECT-TYPE
        SYNTAX        Integer32
        UNITS         "milliseconds"
        MAX-ACCESS  read-only
        STATUS        deprecated
        DESCRIPTION
            "The maximum delay defined for this entry."
         ::= { slapmPolicyStatsEntry 22 }


     -- SLA Performance Monitoring Policy Monitor Table

     slapmPolicyMonitorTable OBJECT-TYPE
        SYNTAX SEQUENCE OF SlapmPolicyMonitorEntry
        MAX-ACCESS not-accessible
        STATUS        deprecated
        DESCRIPTION
            "Provides a method of monitoring policies and their
            effect at a system.

            This table has been deprecated and replaced with
            the slapmPRMonTable.  Older implementations of
            this MIB are expected to continue their support
            of this table."
       ::= { slapmTableObjects 2 }


     slapmPolicyMonitorEntry OBJECT-TYPE
        SYNTAX        SlapmPolicyMonitorEntry
        MAX-ACCESS not-accessible
```

```
    STATUS      deprecated
    DESCRIPTION
        "Defines an entry in the slapmPolicyMonitorTable. This
        table defines which policies should be monitored on a
```

```
            per policy traffic profile basis."
        INDEX {
              slapmPolicyMonitorOwnerIndex,
              slapmPolicyMonitorSystemAddress,
              slapmPolicyMonitorPolicyName,
              slapmPolicyMonitorTrafficProfileName
              }
        ::= { slapmPolicyMonitorTable 1 }


     SlapmPolicyMonitorEntry ::=
        SEQUENCE {
            slapmPolicyMonitorOwnerIndex           SnmpAdminString,
            slapmPolicyMonitorSystemAddress        OCTET STRING,
            slapmPolicyMonitorPolicyName           SlapmNameType,
            slapmPolicyMonitorTrafficProfileName   SlapmNameType,
            slapmPolicyMonitorControl              BITS,
            slapmPolicyMonitorStatus               SlapmStatus,
            slapmPolicyMonitorInterval             Integer32,
            slapmPolicyMonitorIntTime              DateAndTime,
            slapmPolicyMonitorCurrentInRate        Gauge32,
            slapmPolicyMonitorCurrentOutRate       Gauge32,
            slapmPolicyMonitorMinRateLow           Integer32,
            slapmPolicyMonitorMinRateHigh          Integer32,
            slapmPolicyMonitorMaxRateHigh          Integer32,
            slapmPolicyMonitorMaxRateLow           Integer32,
            slapmPolicyMonitorMaxDelayHigh         Integer32,
            slapmPolicyMonitorMaxDelayLow          Integer32,
            slapmPolicyMonitorMinInRateNotAchieves Counter32,
            slapmPolicyMonitorMaxInRateExceeds     Counter32,
            slapmPolicyMonitorMaxDelayExceeds      Counter32,
            slapmPolicyMonitorMinOutRateNotAchieves Counter32,
            slapmPolicyMonitorMaxOutRateExceeds    Counter32,
            slapmPolicyMonitorCurrentDelayRate     Gauge32,
            slapmPolicyMonitorRowStatus            RowStatus
        }

     slapmPolicyMonitorOwnerIndex OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..16))
        MAX-ACCESS  not-accessible
        STATUS      deprecated
        DESCRIPTION
          "To facilitate the provisioning of access control by a
          security administrator using the View-Based Access
          Control Model (RFC 2575, VACM) for tables in which
          multiple users may need to independently create or modify
          entries, the initial index is used as an 'owner index'.
          Such an initial index has a syntax of SnmpAdminString,
          and can thus be trivially mapped to a securityName or
          groupName as defined in VACM, in accordance with a
```

security policy.

All entries in that table belonging to a particular user
will have the same value for this initial index. For a

```
            given user's entries in a particular table, the object
            identifiers for the information in these entries will
            have the same subidentifiers (except for the 'column'
            subidentifier) up to the end of the encoded owner index.
            To configure VACM to permit access to this portion of the
            table, one would create vacmViewTreeFamilyTable entries
            with the value of vacmViewTreeFamilySubtree including the
            owner index portion, and vacmViewTreeFamilyMask
            'wildcarding' the column subidentifier.  More elaborate
            configurations are possible."
        ::= { slapmPolicyMonitorEntry 1 }

slapmPolicyMonitorSystemAddress OBJECT-TYPE
    SYNTAX       OCTET STRING (SIZE(0..16))
    MAX-ACCESS   not-accessible
    STATUS       deprecated
    DESCRIPTION
        "Address of a system that an Policy definition relates to.
        A zero length octet string can be used to indicate that
        only a single system is being represented.
        Otherwise, the length of the octet string should be
        4 for an ipv4 address and 16 for an ipv6 address."
    ::= { slapmPolicyMonitorEntry 2 }

slapmPolicyMonitorPolicyName OBJECT-TYPE
    SYNTAX       SlapmNameType
    MAX-ACCESS   not-accessible
    STATUS       deprecated
    DESCRIPTION
        "Policy name that this entry relates to."
    ::= { slapmPolicyMonitorEntry 3 }

slapmPolicyMonitorTrafficProfileName OBJECT-TYPE
    SYNTAX       SlapmNameType
    MAX-ACCESS   not-accessible
    STATUS       deprecated
    DESCRIPTION
        "The corresponding Traffic Profile name."
    ::= { slapmPolicyMonitorEntry 4 }

slapmPolicyMonitorControl OBJECT-TYPE
    SYNTAX       BITS {
                        monitorMinRate(0),
                        monitorMaxRate(1),
                        monitorMaxDelay(2),
                        enableAggregateTraps(3),
                        enableSubcomponentTraps(4),
                        monitorSubcomponents(5)
                       }
```

```
        MAX-ACCESS  read-create
        STATUS      deprecated
        DESCRIPTION
           "The value of this object determines the type and level
```

           of monitoring that is applied to a policy/profile. The
           value of this object can't be changed once the table
           entry that it is a part of is activated via a
           slapmPolicyMonitorRowStatus transition to active state.

                monitorMinRate(0) - Monitor minimum transfer rate.
                monitorMaxRate(1) - Monitor maximum transfer rate.
                monitorMaxDelay(2) - Monitor maximum delay.
                enableAggregateTraps(3) - The enableAggregateTraps(3)
                       BITS setting enables notification generation
                       when monitoring a policy traffic profile as an
                       aggregate using the values in the corresponding
                       slapmPolicyStatsEntry. By default this function
                       is not enabled.
                enableSubcomponentTraps(4) - This BITS setting enables
                       notification generation when monitoring all
                       subcomponents that are mapped to an corresponding
                       slapmPolicyStatsEntry. By default this
                       function is not enabled.
                monitorSubcomponents(5) - This BITS setting enables
                       monitoring of each subcomponent (typically a
                       TCP connection or UDP listener) individually."
         DEFVAL   { { monitorMinRate, monitorMaxRate,
                     monitorMaxDelay } }
         ::= { slapmPolicyMonitorEntry 5 }

      slapmPolicyMonitorStatus OBJECT-TYPE
         SYNTAX   SlapmStatus
         MAX-ACCESS   read-only
         STATUS   deprecated
         DESCRIPTION
            "The value of this object indicates when a monitored
            value has not meet a threshold or isn't meeting the
            defined service level. The SlapmStatus TEXTUAL-CONVENTION
            defines two levels of not meeting a threshold. The first
            set:

                       slaMinInRateNotAchieved(0),
                       slaMaxInRateExceeded(1),
                       slaMaxDelayExceeded(2),
                       slaMinOutRateNotAchieved(3),
                       slaMaxOutRateExceeded(4)

            are used to indicate when the SLA as an aggregate is
            not meeting a threshold while the second set:

                       monitorMinInRateNotAchieved(5),
                       monitorMaxInRateExceeded(6),
                       monitorMaxDelayExceeded(7),
                       monitorMinOutRateNotAchieved(8),

monitorMaxOutRateExceeded(9)

          indicate that at least one subcomponent is not meeting
          a threshold."

```
        ::= { slapmPolicyMonitorEntry 6 }

slapmPolicyMonitorInterval OBJECT-TYPE
   SYNTAX       Integer32 (15..86400) -- 15 second min, 24 hour max
   UNITS        "seconds"
   MAX-ACCESS   read-create
   STATUS       deprecated
   DESCRIPTION
      "The number of seconds that defines the sample period."
   DEFVAL   {20}    -- 20 seconds
   ::= { slapmPolicyMonitorEntry 7 }

slapmPolicyMonitorIntTime OBJECT-TYPE
   SYNTAX       DateAndTime
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "The timestamp for when the last interval ended."
   DEFVAL { '0000000000000000'H }
   ::= { slapmPolicyMonitorEntry 8 }

slapmPolicyMonitorCurrentInRate OBJECT-TYPE
   SYNTAX       Gauge32
   UNITS        "kilobits per second"
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "Using the value of the corresponding
      slapmPolicyMonitorInterval, slapmPolicyStatsInOctets
      is sampled and then divided by slapmPolicyMonitorInterval
      to determine the current in transfer rate."
   ::= { slapmPolicyMonitorEntry 9 }

slapmPolicyMonitorCurrentOutRate OBJECT-TYPE
   SYNTAX       Gauge32
   UNITS        "kilobits per second"
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "Using the value of the corresponding
      slapmPolicyMonitorInterval, slapmPolicyStatsOutOctets
      is sampled and then divided by slapmPolicyMonitorInterval
      to determine the current out transfer rate."
   ::= { slapmPolicyMonitorEntry 10 }

slapmPolicyMonitorMinRateLow OBJECT-TYPE
   SYNTAX       Integer32
   UNITS        "kilobits per second"
   MAX-ACCESS   read-create
```

```
        STATUS        deprecated
        DESCRIPTION
          "The threshold for generating a
          slapmMonitoredEventNotAchieved notification, signalling
```

that a monitored minimum transfer rate has not been meet.

A slapmMonitoredEventNotAchieved notification is not
generated again for an slapmPolicyMonitorEntry until
the minimum transfer rate
exceeds slapmPolicyMonitorMinRateHigh (a
slapmMonitoredEventOkay notification is then transmitted)
and then fails below slapmPolicyMonitorMinRateLow. This
behavior reduces the slapmMonitoredEventNotAchieved
notifications that are transmitted.

A value of zero for this object is returned when the
slapmPolicyMonitorControl monitorMinRate(0) is not
enabled. When enabled the default value for this object
is the min rate value specified in the associated
action definition minus 10%. If the action definition
doesn't have a min rate defined then there is no
default for this object and a value MUST be specified
prior to activating this entry when monitorMinRate(0)
is selected.

Note: The corresponding slapmPolicyMonitorControl
BITS setting, enableAggregateTraps(3), MUST be selected in
order for any notification relating to this entry to
potentially be generated."
::= { slapmPolicyMonitorEntry 11 }

slapmPolicyMonitorMinRateHigh OBJECT-TYPE
    SYNTAX   Integer32
    UNITS   "kilobits per second"
    MAX-ACCESS read-create
    STATUS   deprecated
    DESCRIPTION
        "The threshold for generating a slapmMonitoredEventOkay
        notification, signalling that a monitored minimum
        transfer rate has increased to an acceptable level.

        A value of zero for this object is returned when the
        slapmPolicyMonitorControl monitorMinRate(0) is not
        enabled. When enabled the default value for this object
        is the min rate value specified in the associated
        action definition plus 10%. If the action definition
        doesn't have a min rate defined then there is no
        default for this object and a value MUST be specified
        prior to activating this entry when monitorMinRate(0)
        is selected.

        Note: The corresponding slapmPolicyMonitorControl
        BITS setting, enableAggregateTraps(3), MUST be selected

```
     in order for any notification relating to this entry to
     potentially be generated."
  ::= { slapmPolicyMonitorEntry 12 }
```

```
      slapmPolicyMonitorMaxRateHigh OBJECT-TYPE
         SYNTAX       Integer32
         UNITS        "kilobits per second"
         MAX-ACCESS   read-create
         STATUS       deprecated
         DESCRIPTION
            "The threshold for generating a
            slapmMonitoredEventNotAchieved notification, signalling
            that a monitored maximum transfer rate has been exceeded.

            A slapmMonitoredEventNotAchieved notification is not
            generated again for an slapmPolicyMonitorEntry until the
            maximum transfer rate fails below
            slapmPolicyMonitorMaxRateLow (a slapmMonitoredEventOkay
            notification is then transmitted) and then raises above
            slapmPolicyMonitorMaxRateHigh.  This behavior reduces the
            slapmMonitoredEventNotAchieved notifications that are
            transmitted.

            A value of zero for this object is returned when the
            slapmPolicyMonitorControl monitorMaxRate(1) is not
            enabled.  When enabled the default value for this object
            is the max rate value specified in the associated
            action definition plus 10%.  If the action definition
            doesn't have a max rate defined then there is no
            default for this object and a value MUST be specified
            prior to activating this entry when monitorMaxRate(1)
            is selected.

            Note: The corresponding slapmPolicyMonitorControl
            BITS setting, enableAggregateTraps(3), MUST be selected in
            order for any notification relating to this entry to
            potentially be generated."
         ::= { slapmPolicyMonitorEntry 13 }

      slapmPolicyMonitorMaxRateLow OBJECT-TYPE
         SYNTAX       Integer32
         UNITS        "kilobits per second"
         MAX-ACCESS   read-create
         STATUS       deprecated
         DESCRIPTION
            "The threshold for generating a slapmMonitoredEventOkay
            notification, signalling that a monitored maximum
            transfer rate has fallen to an acceptable level.

            A value of zero for this object is returned when the
            slapmPolicyMonitorControl monitorMaxRate(1) is not
            enabled.  When enabled the default value for this object
            is the max rate value specified in the associated
```

action definition minus 10%. If the action definition
doesn't have a max rate defined then there is no
default for this object and a value MUST be specified
prior to activating this entry when monitorMaxRate(1)

         is selected.

         Note: The corresponding slapmPolicyMonitorControl
         BITS setting, enableAggregateTraps(3), MUST be selected in
         order for any notification relating to this entry to
         potentially be generated."
      ::= { slapmPolicyMonitorEntry 14 }

   slapmPolicyMonitorMaxDelayHigh OBJECT-TYPE
      SYNTAX   Integer32
      UNITS   "milliseconds"
      MAX-ACCESS   read-create
      STATUS   deprecated
      DESCRIPTION
         "The threshold for generating a
         slapmMonitoredEventNotAchieved notification, signalling
         that a monitored maximum delay rate has been exceeded.

         A slapmMonitoredEventNotAchieved notification is not
         generated again for an slapmPolicyMonitorEntry until
         the maximum delay rate falls below
         slapmPolicyMonitorMaxDelayLow (a slapmMonitoredEventOkay
         notification is then transmitted) and raises above
         slapmPolicyMonitorMaxDelayHigh. This behavior reduces
         the slapmMonitoredEventNotAchieved notifications that are
         transmitted.

         A value of zero for this object is returned when the
         slapmPolicyMonitorControl monitorMaxDelay(4) is not
         enabled. When enabled the default value for this object
         is the max delay value specified in the associated
         action definition plus 10%. If the action definition
         doesn't have a max delay defined then there is no
         default for this object and a value MUST be specified
         prior to activating this entry when monitorMaxDelay(4)
         is selected.

         Note: The corresponding slapmPolicyMonitorControl
         BITS setting, enableAggregateTraps(3), MUST be selected
         in order for any notification relating to this entry to
         potentially be generated."
      ::= { slapmPolicyMonitorEntry 15 }

   slapmPolicyMonitorMaxDelayLow OBJECT-TYPE
      SYNTAX   Integer32
      UNITS   "milliseconds"
      MAX-ACCESS   read-create
      STATUS   deprecated
      DESCRIPTION

"The threshold for generating a slapmMonitoredEventOkay
notification, signalling that a monitored maximum delay
rate has fallen to an acceptable level.

          A value of zero for this object is returned when the
          slapmPolicyMonitorControl monitorMaxDelay(4) is not
          enabled. When enabled the default value for this object
          is the max delay value specified in the associated
          action definition minus 10%. If the action definition
          doesn't have a max delay defined then there is no
          default for this object and a value MUST be specified
          prior to activating this entry when monitorMaxDelay(4)
          is selected.

          Note: The corresponding slapmPolicyMonitorControl
          BITS setting, enableAggregateTraps(3), MUST be selected
          in order for any notification relating to this entry to
          potentially be generated."
       ::= { slapmPolicyMonitorEntry 16 }

   slapmPolicyMonitorMinInRateNotAchieves OBJECT-TYPE
       SYNTAX   Counter32
       MAX-ACCESS   read-only
       STATUS   deprecated
       DESCRIPTION
          "The number of times that a minimum transfer in rate
          was not achieved."
       ::= { slapmPolicyMonitorEntry 17 }

   slapmPolicyMonitorMaxInRateExceeds OBJECT-TYPE
       SYNTAX   Counter32
       MAX-ACCESS   read-only
       STATUS   deprecated
       DESCRIPTION
          "The number of times that a maximum transfer in rate
          was exceeded."
       ::= { slapmPolicyMonitorEntry 18 }

   slapmPolicyMonitorMaxDelayExceeds OBJECT-TYPE
       SYNTAX   Counter32
       MAX-ACCESS   read-only
       STATUS   deprecated
       DESCRIPTION
          "The number of times that a maximum delay in rate
          was exceeded."
       ::= { slapmPolicyMonitorEntry 19 }

   slapmPolicyMonitorMinOutRateNotAchieves OBJECT-TYPE
       SYNTAX   Counter32
       MAX-ACCESS   read-only
       STATUS   deprecated
       DESCRIPTION
          "The number of times that a minimum transfer out rate

```
         was not achieved."
     ::= { slapmPolicyMonitorEntry 20 }

  slapmPolicyMonitorMaxOutRateExceeds OBJECT-TYPE
```

```
         SYNTAX        Counter32
         MAX-ACCESS  read-only
         STATUS        deprecated
         DESCRIPTION
             "The number of times that a maximum transfer out rate
              was exceeded."
         ::= { slapmPolicyMonitorEntry 21 }

     slapmPolicyMonitorCurrentDelayRate OBJECT-TYPE
         SYNTAX        Gauge32
         UNITS         "milliseconds"
         MAX-ACCESS  read-only
         STATUS        deprecated
         DESCRIPTION
             "The current delay rate for this entry.  This is
              calculated by taking the average of the TCP
              round trip times for all associating
              slapmSubcomponentTable entries within a interval."
         ::= { slapmPolicyMonitorEntry 22 }

     slapmPolicyMonitorRowStatus   OBJECT-TYPE
         SYNTAX        RowStatus
         MAX-ACCESS  read-create
         STATUS        deprecated
         DESCRIPTION
           "This object allows entries to be created and deleted
            in the slapmPolicyMonitorTable.  An entry in this table
            is deleted by setting this object to destroy(6).

            Removal of a corresponding (same policy and traffic profile
            names) slapmPolicyStatsEntry has the side effect of the
            automatic deletion an entry in this table."
         ::= { slapmPolicyMonitorEntry 23 }

     -- Subcomponent Table

     slapmSubcomponentTable OBJECT-TYPE
          SYNTAX        SEQUENCE OF SlapmSubcomponentEntry
          MAX-ACCESS  not-accessible
          STATUS        current
          DESCRIPTION
              "Defines a table to provide information on the
               individually components that are mapped to
               a policy rule (or old traffic profile).

               The indexing for this table is designed to support
               the use of an SNMP GET-NEXT operation using only
               the remote address and remote port as a way for
```

```
            a management station to retrieve the table entries
            relating to a particular client."
        ::= { slapmTableObjects 3 }
```

```
     slapmSubcomponentEntry OBJECT-TYPE
         SYNTAX      SlapmSubcomponentEntry
         MAX-ACCESS  not-accessible
         STATUS      current
         DESCRIPTION
             "Describes a particular subcomponent entry.  This
             table does not have an OwnerIndex as
             part of its indexing since this table's contents
             is intended to span multiple users."
         INDEX {
                 slapmSubcomponentRemAddress,
                 slapmSubcomponentRemPort,
                 slapmSubcomponentLocalAddress,
                 slapmSubcomponentLocalPort
               }
         ::= { slapmSubcomponentTable 1 }

     SlapmSubcomponentEntry ::=
         SEQUENCE {
             slapmSubcomponentRemAddress          OCTET STRING,
             slapmSubcomponentRemPort             Integer32,
             slapmSubcomponentLocalAddress        OCTET STRING,
             slapmSubcomponentLocalPort           Integer32,
             slapmSubcomponentProtocol            INTEGER,
             slapmSubcomponentSystemAddress       OCTET STRING,
             slapmSubcomponentPolicyName          SlapmNameType,
             slapmSubcomponentTrafficProfileName  SlapmNameType,
             slapmSubcomponentLastActivity        DateAndTime,
             slapmSubcomponentInOctets            Counter32,
             slapmSubcomponentOutOctets           Counter32,
             slapmSubcomponentTcpOutBufferedOctets Counter32,
             slapmSubcomponentTcpInBufferedOctets  Counter32,
             slapmSubcomponentTcpReXmts           Counter32,
             slapmSubcomponentTcpRoundTripTime    Integer32,
             slapmSubcomponentTcpRoundTripVariance Integer32,
             slapmSubcomponentInPdus              Counter32,
             slapmSubcomponentOutPdus             Counter32,
             slapmSubcomponentApplName            SnmpAdminString,
             slapmSubcomponentMonitorStatus       SlapmStatus,
             slapmSubcomponentMonitorIntTime      DateAndTime,
             slapmSubcomponentMonitorCurrentInRate Gauge32,
             slapmSubcomponentMonitorCurrentOutRate Gauge32,
             slapmSubcomponentPolicyRuleIndex     Unsigned32
           }

     slapmSubcomponentRemAddress OBJECT-TYPE
        SYNTAX      OCTET STRING (SIZE(0..16))
        MAX-ACCESS  not-accessible
        STATUS      current
```

DESCRIPTION
            "Indicate the remote address of a subcomponent.
            A remote address can be either an ipv4 address in which
            case 4 octets are required or as an ipv6 address that

```
        requires 16 octets.  The value of this subidentifier
        is a zero length octet string when this entry relates
        to a UDP listener."
     ::= { slapmSubcomponentEntry 1 }

   slapmSubcomponentRemPort OBJECT-TYPE
      SYNTAX       Integer32(0..65535)
      MAX-ACCESS   not-accessible
      STATUS       current
      DESCRIPTION
        "Indicate the remote port of a subcomponent.
        The value of this subidentifier
        is 0 when this entry relates to a UDP listener."
     ::= { slapmSubcomponentEntry 2 }

   slapmSubcomponentLocalAddress OBJECT-TYPE
      SYNTAX       OCTET STRING (SIZE(4 | 16))
      MAX-ACCESS   not-accessible
      STATUS       current
      DESCRIPTION
        "Indicate the local address of a subcomponent.
        A local address can be either an ipv4 address in which
        case 4 octets are required or as an ipv6 address that
        requires 16 octets."
     ::= { slapmSubcomponentEntry 3 }

   slapmSubcomponentLocalPort OBJECT-TYPE
      SYNTAX       Integer32(0..65535)
      MAX-ACCESS   not-accessible

      STATUS       current
      DESCRIPTION
        "Indicate the local port of a subcomponent."
     ::= { slapmSubcomponentEntry 4 }

   slapmSubcomponentProtocol OBJECT-TYPE
      SYNTAX        INTEGER {
                              udpListener(1),
                              tcpConnection(2)
                       }
      MAX-ACCESS   read-only
      STATUS       current
      DESCRIPTION
        "Indicate the protocol in use that identifies the
        type of subcomponent."
     ::= { slapmSubcomponentEntry 5 }

   slapmSubcomponentSystemAddress OBJECT-TYPE
      SYNTAX       OCTET STRING (SIZE(0..16))
```

```
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
   "Address of a system that an Policy definition relates to.
```

```
      A zero length octet string can be used to indicate that
      only a single system is being represented.
      Otherwise, the length of the octet string should be
      4 for an ipv4 address and 16 for an ipv6 address."
   ::= { slapmSubcomponentEntry 6 }

slapmSubcomponentPolicyName OBJECT-TYPE
   SYNTAX       SlapmNameType
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "Policy name that this entry relates to.

      This object, along with slapmSubcomponentTrafficProfileName,
      have been replaced with the use of an unsigned integer
      index that is mapped to an slapmPolicyNameEntry to actually
      identify policy naming."
   ::= { slapmSubcomponentEntry 7 }

slapmSubcomponentTrafficProfileName OBJECT-TYPE
   SYNTAX       SlapmNameType
   MAX-ACCESS   read-only
   STATUS       deprecated
   DESCRIPTION
      "The corresponding traffic profile name.

      This object, along with slapmSubcomponentProfileName,
      have been replaced with the use of an unsigned integer
      index that is mapped to an slapmPolicyNameEntry to
      actually identify policy naming."
   ::= { slapmSubcomponentEntry 8 }

slapmSubcomponentLastActivity OBJECT-TYPE
   SYNTAX       DateAndTime
   MAX-ACCESS   read-only
   STATUS       current
   DESCRIPTION
      "The number of 100ths of seconds  since  this  entry
      was last used."
   DEFVAL { '0000000000000000'H }
   ::= { slapmSubcomponentEntry 9 }

slapmSubcomponentInOctets OBJECT-TYPE
   SYNTAX       Counter32
   MAX-ACCESS   read-only
   STATUS       current
   DESCRIPTION
      "The number of octets received from IP for this
      connection."
```

```
             ::= { slapmSubcomponentEntry 10 }

     slapmSubcomponentOutOctets OBJECT-TYPE
         SYNTAX       Counter32
```

```
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
         "The number of octets sent to IP for this connection."
     ::= { slapmSubcomponentEntry 11 }

slapmSubcomponentTcpOutBufferedOctets OBJECT-TYPE
     SYNTAX      Counter32
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
         "Number of outgoing octets buffered.  The value
         of this object is zero when the entry is not
         for a TCP connection."
     ::= { slapmSubcomponentEntry 12 }

slapmSubcomponentTcpInBufferedOctets OBJECT-TYPE
     SYNTAX      Counter32
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
         "Number of incoming octets buffered.  The value
         of this object is zero when the entry is not
         for a TCP connection."
     ::= { slapmSubcomponentEntry 13 }

slapmSubcomponentTcpReXmts OBJECT-TYPE
     SYNTAX      Counter32
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
         "Number of retransmissions.  The value
         of this object is zero when the entry is not
         for a TCP connection."
     ::= { slapmSubcomponentEntry 14 }

slapmSubcomponentTcpRoundTripTime OBJECT-TYPE
     SYNTAX       Integer32
     UNITS        "milliseconds"
     MAX-ACCESS   read-only
     STATUS       current
     DESCRIPTION
         "The amount of time that has elapsed, measured in
         milliseconds, from when the last TCP segment was
         transmitted by the TCP Stack until the ACK was
         received.

         The value of this object is zero when the entry is not
         for a TCP connection."
```

```
        ::= { slapmSubcomponentEntry 15 }

    slapmSubcomponentTcpRoundTripVariance OBJECT-TYPE
        SYNTAX        Integer32
```

```
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "Round trip time variance.

            The value of this object is zero when the entry is not
            for a TCP connection."
        ::= { slapmSubcomponentEntry 16 }

    slapmSubcomponentInPdus OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The number of protocol related data units transferred
            inbound:

               slapmSubcomponentProtocol     PDU Type

                    udpListener(1)            UDP datagrams
                    tcpConnection(2)          TCP segments"
        ::= { slapmSubcomponentEntry 17 }

    slapmSubcomponentOutPdus OBJECT-TYPE
        SYNTAX       Counter32
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The number of protocol related data units transferred
            outbound:

               slapmSubcomponentProtocol     PDU Type

                    udpListener(1)            UDP datagrams
                    tcpConnection(2)          TCP segments"
        ::= { slapmSubcomponentEntry 18 }

    slapmSubcomponentApplName OBJECT-TYPE
        SYNTAX       SnmpAdminString (SIZE(0..32))
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The application name associated with this entry if known,
            otherwise a zero-length octet string is returned as the
            value of this object."
        ::= { slapmSubcomponentEntry 19 }

    slapmSubcomponentMonitorStatus OBJECT-TYPE
       SYNTAX       SlapmStatus
      MAX-ACCESS   read-only
```

```
   STATUS        current
   DESCRIPTION
      "The value of this object indicates when a monitored
```

          value has exceeded a threshold or isn't meeting the
          defined service level. Only the following SlapmStatus
          BITS setting can be reported here:

                    monitorMinInRateNotAchieved(5),
                    monitorMaxInRateExceeded(6),
                    monitorMaxDelayExceeded(7),
                    monitorMinOutRateNotAchieved(8),
                    monitorMaxOutRateExceeded(9)

          This object only has meaning when an corresponding
          slapmPolicyMonitorEntry exists with the
          slapmPolicyMonitorControl BITS setting
          monitorSubcomponents(5) enabled."
       ::= { slapmSubcomponentEntry 20 }

    slapmSubcomponentMonitorIntTime OBJECT-TYPE
       SYNTAX   DateAndTime
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "The timestamp for when the last interval ended.

          This object only has meaning when an corresponding
          slapmPRMonEntry (or old slapmPolicyMonitorEntry)
          exists with the slapmPRMonControl (or
          slapmPolicyMonitorControl) BITS setting
          monitorSubcomponents(5) enabled. All of the
          octets returned when monitoring is not in effect
          must be zero."
       DEFVAL { '0000000000000000'H }
       ::= { slapmSubcomponentEntry 21 }

    slapmSubcomponentMonitorCurrentInRate OBJECT-TYPE
       SYNTAX   Gauge32
       UNITS   "kilobits per second"
       MAX-ACCESS   read-only
       STATUS   current
       DESCRIPTION
          "Using the value of the corresponding
          slapmPRMonInterval (or slapmPolicyMonitorInterval),
          slapmSubcomponentStatsInOctets
          is divided by slapmSubcomponentMonitorInterval to determine
          the current in transfer rate.

          This object only has meaning when an corresponding
          slapmPRMonEntry (or slapmPolicyMonitorEntry)
          exists with the slapmPRMonControl (or
          slapmPolicyMonitorControl) BITS setting

```
                monitorSubcomponents(5) enabled.  The value of this
                object is zero when monitoring is not in effect."
            ::= { slapmSubcomponentEntry 22 }
```

```
     slapmSubcomponentMonitorCurrentOutRate OBJECT-TYPE
        SYNTAX       Gauge32
        UNITS        "kilobits per second"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "Using the value of the corresponding slapmPRMonInterval (or
           slapmPolicyMonitorInterva)l, slapmSubcomponentStatsOutOctets
           is divided by slapmPRMonInterval (or
           slapmPolicyMonitorInterval) to determine the
           current out transfer rate.

           This object only has meaning when an corresponding
           slapmPRMonEntry (or slapmPolicyMonitorEntry) exists with
           the slapmPRMonControl (or slapmPolicyMonitorControl)
           BITS setting monitorSubcomponents(5) enabled.  The value
           of this object is zero when monitoring is not in effect."
        ::= { slapmSubcomponentEntry 23 }

     slapmSubcomponentPolicyRuleIndex OBJECT-TYPE
        SYNTAX       Unsigned32
        UNITS        "kilobits per second"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
           "Points to an slapmPolicyNameEntry to indicate the
           policy naming that relates to this entry."
        ::= { slapmSubcomponentEntry 24 }

  -- Table that maps an unsigned integer index to whatever
  -- names a policy rule.

  slapmPolicyNameTable OBJECT-TYPE
     SYNTAX SEQUENCE OF SlapmPolicyNameEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
         "Provides the mapping between a policy index as a
         unsigned 32 bit integer and the unique name associated
         with a policy rule."
    ::= { slapmTableObjects 4 }

  slapmPolicyNameEntry OBJECT-TYPE
     SYNTAX SlapmPolicyNameEntry
     MAX-ACCESS not-accessible
     STATUS current
     DESCRIPTION
         "Defines an entry in the slapmPolicyNameTable."
     INDEX {
```

```
            slapmPolicyNameSystemAddress,
            slapmPolicyNameIndex
          }
```

```
        ::= { slapmPolicyNameTable 1 }

SlapmPolicyNameEntry ::=
   SEQUENCE {
       slapmPolicyNameSystemAddress   OCTET STRING,
       slapmPolicyNameIndex           Unsigned32,
       slapmPolicyNameOfRule          SlapmPolicyRuleName
   }

slapmPolicyNameSystemAddress OBJECT-TYPE
   SYNTAX      OCTET STRING (SIZE(0..16))
   MAX-ACCESS  not-accessible
   STATUS      current
   DESCRIPTION
      "Address of a system that an Policy rule definition relates
      to.  A zero length octet string must be used to indicate
      that only a single system is being represented.
      Otherwise, the length of the octet string must be
      4 for an ipv4 address or 16 for an ipv6 address."
   ::= { slapmPolicyNameEntry 1 }

slapmPolicyNameIndex OBJECT-TYPE
   SYNTAX      Unsigned32
   MAX-ACCESS  not-accessible
   STATUS      current
   DESCRIPTION
       "A locally arbitrary, but unique identifier associated
       with this table entry.  This value is not expected to
       remain constant across reIPLs."
   ::= { slapmPolicyNameEntry 2 }

slapmPolicyNameOfRule OBJECT-TYPE
   SYNTAX      SlapmPolicyRuleName
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
      "The unique name that identifies a policy rule definition."
   ::= { slapmPolicyNameEntry 3 }

-- Sla Performance Monitoring Policy Rule Statistics Table

slapmPolicyRuleStatsTable OBJECT-TYPE
   SYNTAX SEQUENCE OF SlapmPolicyRuleStatsEntry
   MAX-ACCESS not-accessible
   STATUS current
   DESCRIPTION
       "Provides statistics on a per system and a per policy
       rule basis."
 ::= { slapmTableObjects 5 }
```

```
slapmPolicyRuleStatsEntry OBJECT-TYPE
    SYNTAX SlapmPolicyRuleStatsEntry
```

```
      MAX-ACCESS not-accessible
      STATUS current
      DESCRIPTION
          "Defines an entry in the slapmPolicyRuleStatsTable.
          This table defines a set of statistics that is kept
          on a per system and per policy rule basis.

          Entries in this table are not created or deleted via SNMP
          but reflect the set of policy rule definitions known
          at a system."
      INDEX {
            slapmPolicyNameSystemAddress,
            slapmPolicyNameIndex
           }
      ::= { slapmPolicyRuleStatsTable 1 }

  SlapmPolicyRuleStatsEntry ::=
     SEQUENCE {
         slapmPolicyRuleStatsOperStatus      INTEGER,
         slapmPolicyRuleStatsActiveConns     Gauge32,
         slapmPolicyRuleStatsTotalConns      Counter32,
         slapmPolicyRuleStatsLActivated      DateAndTime,
         slapmPolicyRuleStatsLastMapping     DateAndTime,
         slapmPolicyRuleStatsInOctets        Counter32,
         slapmPolicyRuleStatsOutOctets       Counter32,
         slapmPolicyRuleStatsConnLimit       Unsigned32,
         slapmPolicyRuleStatsCountAccepts    Counter32,
         slapmPolicyRuleStatsCountDenies     Counter32,
         slapmPolicyRuleStatsInDiscards      Counter32,
         slapmPolicyRuleStatsOutDiscards     Counter32,
         slapmPolicyRuleStatsInPackets       Counter32,
         slapmPolicyRuleStatsOutPackets      Counter32,
         slapmPolicyRuleStatsInProOctets     Counter32,
         slapmPolicyRuleStatsOutProOctets    Counter32,
         slapmPolicyRuleStatsMinRate         Unsigned32,
         slapmPolicyRuleStatsMaxRate         Unsigned32,
         slapmPolicyRuleStatsMaxDelay        Unsigned32
     }

  slapmPolicyRuleStatsOperStatus OBJECT-TYPE
     SYNTAX       INTEGER {
                         inactive(1),
                         active(2),
                         deleteNeeded(3)
                     }
     MAX-ACCESS  read-only
     STATUS      current
     DESCRIPTION
        "The state of a policy entry:
```

inactive(1)   - An policy entry was either defined
                                    by local SYSDEF or discovered via
                                    a directory search but has not been

                                 activated (not currently being used).
              active(2)   - Policy entry is being used to affect
                                  traffic flows.
              deleteNeeded(3)   - Either though local implementation
                                  dependent methods or by discovering
                                  that the directory entry corresponding
                                  to this table entry no longer
                                  exists and slapmPolicyPurgeTime needs
                                  to expire before attempting to remove
                                  the corresponding slapmPolicyStatsEntry
                                  and any dependent slapmPolicyMonitor
                                  table entries.
           Note: a policy traffic profile in a state other than
           active(1) is not being used to affect traffic flows."
        ::= { slapmPolicyRuleStatsEntry 1 }

     slapmPolicyRuleStatsActiveConns OBJECT-TYPE
        SYNTAX   Gauge32
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The number of active TCP connections that are
           affected by the corresponding policy entry."
        ::= { slapmPolicyRuleStatsEntry 2 }

     slapmPolicyRuleStatsTotalConns OBJECT-TYPE
        SYNTAX   Counter32
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The number of total TCP connections that are
           affected by the corresponding policy entry."
        ::= { slapmPolicyRuleStatsEntry 3 }

     slapmPolicyRuleStatsLActivated OBJECT-TYPE
        SYNTAX   DateAndTime
        MAX-ACCESS   read-only
        STATUS   current
        DESCRIPTION
           "The timestamp for when the corresponding policy entry
           was last activated. The value of this object serves as
           the discontinuity event indicator when polling entries
           in this table. The value of this object is updated on
           transition of slapmPolicyRuleStatsOperStatus into the
           active(2) state."
        DEFVAL { '0000000000000000'H }
        ::= { slapmPolicyRuleStatsEntry 4 }

     slapmPolicyRuleStatsLastMapping OBJECT-TYPE

```
SYNTAX      DateAndTime
MAX-ACCESS  read-only
STATUS      current
DESCRIPTION
```

```
            "The timestamp for when the last time
            that the associated policy entry was used."
         DEFVAL { '0000000000000000'H }
         ::= { slapmPolicyRuleStatsEntry 5 }


     slapmPolicyRuleStatsInOctets OBJECT-TYPE
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
            "The number of octets that was received by IP for an
            entity that map to this entry."
         ::= { slapmPolicyRuleStatsEntry 6 }


     slapmPolicyRuleStatsOutOctets OBJECT-TYPE
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
            "The number of octets that was transmitted by IP for an
            entity that map to this entry."
         ::= { slapmPolicyRuleStatsEntry 7 }


     slapmPolicyRuleStatsConnLimit OBJECT-TYPE
         SYNTAX       Unsigned32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
            "The limit for the number of active TCP connections that
            are allowed for this policy definition.  A value of zero
            for this object implies that a connection limit has not
            been specified."
         ::= { slapmPolicyRuleStatsEntry 8 }


     slapmPolicyRuleStatsCountAccepts OBJECT-TYPE
         SYNTAX       Counter32
         MAX-ACCESS   read-only
         STATUS       current
         DESCRIPTION
             "This counter is incremented when a policy action's
             Permission value is set to Accept and a session
             (TCP connection) is accepted."
         ::= { slapmPolicyRuleStatsEntry 9 }


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

"This counter is incremented when a policy action's
        Permission value is set to Deny and a session is denied,
        or when a session (TCP connection) is rejected due to a
        policy's connection limit (slapmPolicyRuleStatsConnectLimit)

```
        being reached."
   ::= { slapmPolicyRuleStatsEntry 10 }


slapmPolicyRuleStatsInDiscards OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of in octets discarded.
       This occurs when an error is detected.  Examples of this
       are buffer overflow, checksum error, or bad packet
       format."
   ::= { slapmPolicyRuleStatsEntry 11 }


slapmPolicyRuleStatsOutDiscards OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of out octets discarded.
       Examples of this are buffer overflow, checksum error, or
       bad packet format."
   ::= { slapmPolicyRuleStatsEntry 12 }


slapmPolicyRuleStatsInPackets OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of in packets received
       that relate to this policy entry from IP."
   ::= { slapmPolicyRuleStatsEntry 13 }


slapmPolicyRuleStatsOutPackets OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of out packets sent
       by IP that relate to this policy entry."
   ::= { slapmPolicyRuleStatsEntry 14 }


slapmPolicyRuleStatsInProOctets OBJECT-TYPE
   SYNTAX      Counter32
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of in octets that are
       determined to be within profile."
```

```
          ::= { slapmPolicyRuleStatsEntry 15 }

     slapmPolicyRuleStatsOutProOctets OBJECT-TYPE
        SYNTAX         Counter32
```

```
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "This counter counts the number of out octets that are
       determined to be within profile."
   ::= { slapmPolicyRuleStatsEntry 16 }

slapmPolicyRuleStatsMinRate OBJECT-TYPE
   SYNTAX      Unsigned32
   UNITS       "Kilobits per second"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "The minimum transfer rate defined for this entry."
   ::= { slapmPolicyRuleStatsEntry 17 }

slapmPolicyRuleStatsMaxRate OBJECT-TYPE
   SYNTAX      Unsigned32
   UNITS       "Kilobits per second"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "The maximum transfer rate defined for this entry."
   ::= { slapmPolicyRuleStatsEntry 18 }

slapmPolicyRuleStatsMaxDelay OBJECT-TYPE
   SYNTAX      Unsigned32
   UNITS       "milliseconds"
   MAX-ACCESS  read-only
   STATUS      current
   DESCRIPTION
       "The maximum delay defined for this entry."
   ::= { slapmPolicyRuleStatsEntry 19 }

-- SLA Performance Monitoring Policy Rule Monitor Table

slapmPRMonTable OBJECT-TYPE
   SYNTAX SEQUENCE OF SlapmPRMonEntry
   MAX-ACCESS not-accessible
   STATUS current
   DESCRIPTION
       "Provides a method of monitoring policies and their
       effect at a system."
  ::= { slapmTableObjects 6 }

slapmPRMonEntry OBJECT-TYPE
   SYNTAX SlapmPRMonEntry
   MAX-ACCESS not-accessible
   STATUS current
```

DESCRIPTION
            "Defines an entry in the slapmPRMonTable. This
            table defines which policies should be monitored on a

```
            per policy rule basis."
        INDEX {
             slapmPRMonOwnerIndex,
             slapmPRMonSystemAddress,
             slapmPRMonIndex
            }
        ::= { slapmPRMonTable 1 }

    SlapmPRMonEntry ::=
        SEQUENCE {
            slapmPRMonOwnerIndex              SnmpAdminString,
            slapmPRMonSystemAddress           OCTET STRING,
            slapmPRMonIndex                   Unsigned32,
            slapmPRMonControl                 BITS,
            slapmPRMonStatus                  SlapmStatus,
            slapmPRMonInterval                Unsigned32,
            slapmPRMonIntTime                 DateAndTime,
            slapmPRMonCurrentInRate           Gauge32,
            slapmPRMonCurrentOutRate          Gauge32,
            slapmPRMonMinRateLow              Unsigned32,
            slapmPRMonMinRateHigh             Unsigned32,
            slapmPRMonMaxRateHigh             Unsigned32,
            slapmPRMonMaxRateLow              Unsigned32,
            slapmPRMonMaxDelayHigh            Unsigned32,
            slapmPRMonMaxDelayLow             Unsigned32,
            slapmPRMonMinInRateNotAchieves    Counter32,
            slapmPRMonMaxInRateExceeds        Counter32,
            slapmPRMonMaxDelayExceeds         Counter32,
            slapmPRMonMinOutRateNotAchieves   Counter32,
            slapmPRMonMaxOutRateExceeds       Counter32,
            slapmPRMonCurrentDelayRate        Gauge32,
            slapmPRMonRowStatus               RowStatus
        }

    slapmPRMonOwnerIndex OBJECT-TYPE
        SYNTAX      SnmpAdminString (SIZE(0..16))
        MAX-ACCESS  not-accessible
        STATUS      current
        DESCRIPTION
           "To facilitate the provisioning of access control by a
           security administrator using the View-Based Access
           Control Model (RFC 2575, VACM) for tables in which
           multiple users may need to independently create or modify
           entries, the initial index is used as an 'owner index'.
           Such an initial index has a syntax of SnmpAdminString,
           and can thus be trivially mapped to a securityName or
           groupName as defined in VACM, in accordance with a
           security policy.
```

All entries in that table belonging to a particular user
will have the same value for this initial index. For a
given user's entries in a particular table, the object
identifiers for the information in these entries will

          have the same subidentifiers (except for the 'column'
          subidentifier) up to the end of the encoded owner index.
          To configure VACM to permit access to this portion of the

          table, one would create vacmViewTreeFamilyTable entries
          with the value of vacmViewTreeFamilySubtree including the
          owner index portion, and vacmViewTreeFamilyMask
          'wildcarding' the column subidentifier. More elaborate
          configurations are possible."
       ::= { slapmPRMonEntry 1 }

    slapmPRMonSystemAddress OBJECT-TYPE
       SYNTAX   OCTET STRING (SIZE(0..16))
       MAX-ACCESS   not-accessible
       STATUS   current
       DESCRIPTION
          "Address of a system that an Policy definition relates to.
          A zero length octet string can be used to indicate that
          only a single system is being represented.
          Otherwise, the length of the octet string should be
          4 for an ipv4 address and 16 for an ipv6 address."
       ::= { slapmPRMonEntry 2 }

    slapmPRMonIndex OBJECT-TYPE
       SYNTAX   Unsigned32
       MAX-ACCESS   not-accessible
       STATUS   current
       DESCRIPTION
          "An slapmPolicyNameTable index, slapmPolicyNameIndex,
          that points to the unique name associated with a
          policy rule definition."
       ::= { slapmPRMonEntry 3 }

    slapmPRMonControl OBJECT-TYPE
       SYNTAX   BITS {
                        monitorMinRate(0),
                        monitorMaxRate(1),
                        monitorMaxDelay(2),
                        enableAggregateTraps(3),
                        enableSubcomponentTraps(4),
                        monitorSubcomponents(5)
                        }
       MAX-ACCESS   read-create
       STATUS   current
       DESCRIPTION
          "The value of this object determines the type and level
          of monitoring that is applied to a policy rule. The
          value of this object can't be changed once the table
          entry that it is a part of is activated via a

slapmPRMonRowStatus transition to active state.

            monitorMinRate(0) - Monitor minimum transfer rate.
            monitorMaxRate(1) - Monitor maximum transfer rate.
            monitorMaxDelay(2) - Monitor maximum delay.

```
             enableAggregateTraps(3) - The enableAggregateTraps(3)
                     BITS setting enables notification generation
                     when monitoring a policy traffic profile as an
                     aggregate using the values in the corresponding
                     slapmPRMonStatsEntry.  By default this function
                     is not enabled.
             enableSubcomponentTraps(4) - This BITS setting enables
                     notification generation when monitoring all
                     subcomponents that are mapped to an corresponding
                     slapmPRMonStatsEntry.  By default this
                     function is not enabled.
             monitorSubcomponents(5) - This BITS setting enables
                     monitoring of each subcomponent (typically a
                     TCP connection or UDP listener) individually."
        DEFVAL   { { monitorMinRate, monitorMaxRate,
                     monitorMaxDelay } }
        ::= { slapmPRMonEntry 4 }

    slapmPRMonStatus OBJECT-TYPE
        SYNTAX       SlapmStatus
        MAX-ACCESS  read-only
        STATUS       current
        DESCRIPTION
           "The value of this object indicates when a monitored
           value has not meet a threshold or isn't meeting the
           defined service level.  The SlapmStatus TEXTUAL-CONVENTION
           defines two levels of not meeting a threshold.  The first
           set:
                       slaMinInRateNotAchieved(0),
                       slaMaxInRateExceeded(1),
                       slaMaxDelayExceeded(2),
                       slaMinOutRateNotAchieved(3),
                       slaMaxOutRateExceeded(4)

           are used to indicate when the SLA as an aggregate is
           not meeting a threshold while the second set:

                       monitorMinInRateNotAchieved(5),
                       monitorMaxInRateExceeded(6),
                       monitorMaxDelayExceeded(7),
                       monitorMinOutRateNotAchieved(8),
                       monitorMaxOutRateExceeded(9)

           indicate that at least one subcomponent is not meeting
           a threshold."
        ::= { slapmPRMonEntry 5 }

    slapmPRMonInterval OBJECT-TYPE
        SYNTAX       Unsigned32 (15..86400) -- 15 second min, 24 hour max
```

```
        UNITS        "seconds"
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
```

```
        "The number of seconds that defines the sample period."
      DEFVAL   {20}    -- 20 seconds
      ::= { slapmPRMonEntry 6 }

slapmPRMonIntTime OBJECT-TYPE
   SYNTAX       DateAndTime
   MAX-ACCESS  read-only
   STATUS       current
   DESCRIPTION
      "The timestamp for when the last interval ended."
   DEFVAL { '0000000000000000'H }
   ::= { slapmPRMonEntry 7 }

slapmPRMonCurrentInRate OBJECT-TYPE
   SYNTAX       Gauge32
   UNITS        "kilobits per second"
   MAX-ACCESS  read-only
   STATUS       current
   DESCRIPTION
      "Using the value of the corresponding
      slapmPRMonInterval, slapmPolicyRuleStatsInOctets
      is sampled and then divided by slapmPRMonInterval
      to determine the current in transfer rate."
   ::= { slapmPRMonEntry 8 }

slapmPRMonCurrentOutRate OBJECT-TYPE
   SYNTAX       Gauge32
   UNITS        "kilobits per second"
   MAX-ACCESS  read-only
   STATUS       current
   DESCRIPTION
      "Using the value of the corresponding
      slapmPolicyMonInterval, slapmPolicyRuleStatsOutOctets
      is sampled and then divided by slapmPRMonInterval
      to determine the current out transfer rate."
   ::= { slapmPRMonEntry 9 }

slapmPRMonMinRateLow OBJECT-TYPE
   SYNTAX       Unsigned32
   UNITS        "kilobits per second"
   MAX-ACCESS  read-create
   STATUS       current
   DESCRIPTION
      "The threshold for generating a
      slapmPolicyRuleMonNotOkay notification, signalling
      that a monitored minimum transfer rate has not been meet.

      A slapmPolicyRuleMonNotOkay notification is not
      generated again for an slapmPRMonEntry until
```

the minimum transfer rate
exceeds slapmPRMonMinRateHigh (a
slapmPolicyRuleMonOkay notification is then transmitted)
and then fails below slapmPRMonMinRateLow. This

          behavior reduces the slapmPolicyRuleMonNotOkay
          notifications that are transmitted.

          A value of zero for this object is returned when the
          slapmPRMonControl monitorMinRate(0) is not
          enabled. When enabled the default value for this object
          is the min rate value specified in the associated
          action definition minus 10%. If the action definition
          doesn't have a min rate defined then there is no
          default for this object and a value MUST be specified
          prior to activating this entry when monitorMinRate(0)
          is selected.

          Note: The corresponding slapmPRMonControl
          BITS setting, enableAggregateTraps(3), MUST be selected in
          order for any notification relating to this entry to
          potentially be generated."
       ::= { slapmPRMonEntry 10 }

    slapmPRMonMinRateHigh OBJECT-TYPE
       SYNTAX   Unsigned32
       UNITS   "kilobits per second"
       MAX-ACCESS read-create
       STATUS   current
       DESCRIPTION
          "The threshold for generating a slapmPolicyRuleMonOkay
          notification, signalling that a monitored minimum
          transfer rate has increased to an acceptable level.

          A value of zero for this object is returned when the
          slapmPRMonControl monitorMinRate(0) is not
          enabled. When enabled the default value for this object
          is the min rate value specified in the associated
          action definition plus 10%. If the action definition
          doesn't have a min rate defined then there is no
          default for this object and a value MUST be specified
          prior to activating this entry when monitorMinRate(0)
          is selected.

          Note: The corresponding slapmPRMonControl
          BITS setting, enableAggregateTraps(3), MUST be selected
          in order for any notification relating to this entry to
          potentially be generated."
       ::= { slapmPRMonEntry 11 }

    slapmPRMonMaxRateHigh OBJECT-TYPE
       SYNTAX   Unsigned32
       UNITS   "kilobits per second"
       MAX-ACCESS read-create

```
     STATUS      current
     DESCRIPTION
        "The threshold for generating a
        slapmPolicyRuleMonNotOkay notification, signalling
```

that a monitored maximum transfer rate has been exceeded.

A slapmPolicyRuleNotOkay notification is not
generated again for an slapmPRMonEntry until the
maximum transfer rate fails below
slapmPRMonMaxRateLow (a slapmPolicyRuleMonOkay
notification is then transmitted) and then raises above
slapmPRMonMaxRateHigh. This behavior reduces the
slapmPolicyRuleMonNotOkay notifications that are
transmitted.

A value of zero for this object is returned when the
slapmPRMonControl monitorMaxRate(1) is not
enabled. When enabled the default value for this object
is the max rate value specified in the associated
action definition plus 10%. If the action definition
doesn't have a max rate defined then there is no
default for this object and a value MUST be specified
prior to activating this entry when monitorMaxRate(1)
is selected.

Note: The corresponding slapmPRMonControl
BITS setting, enableAggregateTraps(3), MUST be selected in
order for any notification relating to this entry to
potentially be generated."
    ::= { slapmPRMonEntry 12 }

slapmPRMonMaxRateLow OBJECT-TYPE
    SYNTAX   Unsigned32
    UNITS   "kilobits per second"
    MAX-ACCESS   read-create
    STATUS   current
    DESCRIPTION
       "The threshold for generating a slapmPolicyRuleMonOkay
       notification, signalling that a monitored maximum
       transfer rate has fallen to an acceptable level.

       A value of zero for this object is returned when the
       slapmPRMonControl monitorMaxRate(1) is not
       enabled. When enabled the default value for this object
       is the max rate value specified in the associated
       action definition minus 10%. If the action definition
       doesn't have a max rate defined then there is no
       default for this object and a value MUST be specified
       prior to activating this entry when monitorMaxRate(1)
       is selected.

       Note: The corresponding slapmPRMonControl
       BITS setting, enableAggregateTraps(3), MUST be selected in

```
        order for any notification relating to this entry to
        potentially be generated."
   ::= { slapmPRMonEntry 13 }
```

```
slapmPRMonMaxDelayHigh OBJECT-TYPE
   SYNTAX       Unsigned32
   UNITS        "milliseconds"
   MAX-ACCESS   read-create
   STATUS       current
   DESCRIPTION
      "The threshold for generating a
      slapmPolicyRuleMonNotOkay notification, signalling
      that a monitored maximum delay rate has been exceeded.

      A slapmPolicyRuleMonNotOkay notification is not
      generated again for an slapmPRMonEntry until
      the maximum delay rate falls below
      slapmPRMonMaxDelayLow (a slapmPolicyRuleMonOkay
      notification is then transmitted) and raises above
      slapmPRMonMaxDelayHigh.  This behavior reduces
      the slapmPolicyRuleMonNotOkay notifications that are
      transmitted.

      A value of zero for this object is returned when the
      slapmPRMonControl monitorMaxDelay(4) is not
      enabled.  When enabled the default value for this object
      is the max delay value specified in the associated
      action definition plus 10%.  If the action definition
      doesn't have a max delay defined then there is no
      default for this object and a value MUST be specified
      prior to activating this entry when monitorMaxDelay(4)
      is selected.

      Note: The corresponding slapmPRMonControl
      BITS setting, enableAggregateTraps(3), MUST be selected
      in order for any notification relating to this entry to
      potentially be generated."
   ::= { slapmPRMonEntry 14 }

slapmPRMonMaxDelayLow OBJECT-TYPE
   SYNTAX       Unsigned32
   UNITS        "milliseconds"
   MAX-ACCESS   read-create
   STATUS       current
   DESCRIPTION
      "The threshold for generating a slapmPolicyRuleMonOkay
      notification, signalling that a monitored maximum delay
      rate has fallen to an acceptable level.

      A value of zero for this object is returned when the
      slapmPRMonControl monitorMaxDelay(4) is not
      enabled.  When enabled the default value for this object
      is the max delay value specified in the associated
```

action definition minus 10%. If the action definition
doesn't have a max delay defined then there is no
default for this object and a value MUST be specified
prior to activating this entry when monitorMaxDelay(4)

```
          is selected.

          Note: The corresponding slapmPRMonControl
          BITS setting, enableAggregateTraps(3), MUST be selected
          in order for any notification relating to this entry to
          potentially be generated."
       ::= { slapmPRMonEntry 15 }

   slapmPRMonMinInRateNotAchieves OBJECT-TYPE
      SYNTAX       Counter32
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
          "The number of times that a minimum transfer in rate
          was not achieved."
       ::= { slapmPRMonEntry 16 }

   slapmPRMonMaxInRateExceeds OBJECT-TYPE
      SYNTAX       Counter32
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
          "The number of times that a maximum transfer in rate
          was exceeded."
       ::= { slapmPRMonEntry 17 }

   slapmPRMonMaxDelayExceeds OBJECT-TYPE
      SYNTAX       Counter32
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
          "The number of times that a maximum delay in rate
          was exceeded."
       ::= { slapmPRMonEntry 18 }

   slapmPRMonMinOutRateNotAchieves OBJECT-TYPE
      SYNTAX       Counter32
      MAX-ACCESS  read-only
      STATUS       current
      DESCRIPTION
          "The number of times that a minimum transfer out rate
          was not achieved."
       ::= { slapmPRMonEntry 19 }

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

```
        "The number of times that a maximum transfer out rate
        was exceeded."
  ::= { slapmPRMonEntry 20 }
```

```
     slapmPRMonCurrentDelayRate OBJECT-TYPE
        SYNTAX       Gauge32
        UNITS        "milliseconds"
        MAX-ACCESS   read-only
        STATUS       current
        DESCRIPTION
            "The current delay rate for this entry.  This is
             calculated by taking the average of the TCP
             round trip times for all associating
             slapmSubcomponentTable entries within a interval."
        ::= { slapmPRMonEntry 21 }


     slapmPRMonRowStatus  OBJECT-TYPE
        SYNTAX       RowStatus
        MAX-ACCESS   read-create
        STATUS       current
        DESCRIPTION
          "This object allows entries to be created and deleted
           in the slapmPRMonTable.  An entry in this table
           is deleted by setting this object to destroy(6).

           Removal of an corresponding (same policy index)
           slapmPolicyRuleStatsEntry has the side effect of the
           automatic deletion an entry in this table."
        ::= { slapmPRMonEntry 22 }

     -- Notifications

     slapmMonitoredEventNotAchieved NOTIFICATION-TYPE
        OBJECTS {
            slapmPolicyMonitorIntTime,
            slapmPolicyMonitorControl,
            slapmPolicyMonitorStatus,
            slapmPolicyMonitorStatus,
            slapmPolicyMonitorCurrentInRate,
            slapmPolicyMonitorCurrentOutRate,
            slapmPolicyMonitorCurrentDelayRate
        }
        STATUS  deprecated
        DESCRIPTION
          "This notification is generated when an monitored event
           is not achieved with respect to threshold.  This
           applies only towards monitoring a policy traffic
           profile as an aggregate via an associating
           slapmPolicyStatsEntry.  The value
           of slapmPolicyMonitorControl can be examined to
           determine what is being monitored.  The first
           slapmPolicyMonitorStatus value supplies the current
           monitor status while the 2nd value supplies the
```

previous status.

Note: The corresponding slapmPolicyMonitorControl

```
      BITS setting, enableAggregateTraps(3), MUST be
      selected in order for this notification to
      potentially be generated."
   ::= { slapmNotifications 1 }

slapmMonitoredEventOkay NOTIFICATION-TYPE
   OBJECTS {
       slapmPolicyMonitorIntTime,
       slapmPolicyMonitorControl,
       slapmPolicyMonitorStatus,
       slapmPolicyMonitorStatus,
       slapmPolicyMonitorCurrentInRate,
       slapmPolicyMonitorCurrentOutRate,
       slapmPolicyMonitorCurrentDelayRate
   }
   STATUS  deprecated
   DESCRIPTION
      "This notification is generated when a monitored
      event has improved to an acceptable level.  This
      applies only towards monitoring a policy traffic
      profile as an aggregate via an associating
      slapmPolicyStatsEntry.  The value
      of slapmPolicyMonitorControl can be examined to
      determine what is being monitored.  The first
      slapmPolicyMonitorStatus value supplies the current
      monitor status while the 2nd value supplies the
      previous status.

      Note: The corresponding slapmPolicyMonitorControl
      BITS setting, enableAggregateTraps(3), MUST be
      selected in order for this notification to
      potentially be generated."
   ::= { slapmNotifications 2 }

slapmPolicyProfileDeleted NOTIFICATION-TYPE
   OBJECTS {
       slapmPolicyStatsActiveConns,
       slapmPolicyStatsTotalConns,
       slapmPolicyStatsFirstActivated,
       slapmPolicyStatsLastMapping,
       slapmPolicyStatsInOctets,
       slapmPolicyStatsOutOctets,
       slapmPolicyStatsConnectionLimit,
       slapmPolicyStatsCountAccepts,
       slapmPolicyStatsCountDenies,
       slapmPolicyStatsInDiscards,
       slapmPolicyStatsOutDiscards,
       slapmPolicyStatsInPackets,
       slapmPolicyStatsOutPackets,
```

```
slapmPolicyStatsInProfileOctets,
slapmPolicyStatsOutProfileOctets,
slapmPolicyStatsMinRate,
slapmPolicyStatsMaxRate,
```

```
             slapmPolicyStatsMaxDelay
      }
      STATUS  deprecated
      DESCRIPTION
         "A slapmPolicyDeleted notification is sent when a
         slapmPolicyStatsEntry is deleted if the value of
         slapmPolicyTrapEnable is enabled(1)."
      ::= { slapmNotifications 3 }

   slapmPolicyMonitorDeleted NOTIFICATION-TYPE
      OBJECTS {
          slapmPolicyMonitorStatus,
          slapmPolicyMonitorInterval,
          slapmPolicyMonitorIntTime,
          slapmPolicyMonitorCurrentInRate,
          slapmPolicyMonitorCurrentOutRate,
          slapmPolicyMonitorCurrentDelayRate,
          slapmPolicyMonitorMinRateLow,
          slapmPolicyMonitorMinRateHigh,
          slapmPolicyMonitorMaxRateHigh,
          slapmPolicyMonitorMaxRateLow,
          slapmPolicyMonitorMaxDelayHigh,
          slapmPolicyMonitorMaxDelayLow,
          slapmPolicyMonitorMinInRateNotAchieves,
          slapmPolicyMonitorMaxInRateExceeds,
          slapmPolicyMonitorMaxDelayExceeds,
          slapmPolicyMonitorMinOutRateNotAchieves,
          slapmPolicyMonitorMaxOutRateExceeds
      }
      STATUS  deprecated
      DESCRIPTION
         "A slapmPolicyMonitorDeleted notification is sent when a
         slapmPolicyMonitorEntry is deleted if the value of
         slapmPolicyTrapEnable is enabled(1)."
      ::= { slapmNotifications 4 }

   slapmSubcomponentMonitoredEventNotAchieved NOTIFICATION-TYPE
      OBJECTS {
          slapmSubcomponentSystemAddress,
          slapmSubcomponentPolicyName,
          slapmSubcomponentTrafficProfileName,
          slapmSubcomponentMonitorStatus,
          slapmSubcomponentMonitorStatus,
          slapmSubcomponentMonitorIntTime,
          slapmSubcomponentMonitorCurrentInRate,
          slapmSubcomponentMonitorCurrentOutRate,
          slapmSubcomponentTcpRoundTripTime
      }
      STATUS  deprecated
```

DESCRIPTION
            "This notification is generated when a monitored value
            does not achieved a threshold specification. This
            applies only towards monitoring the individual components

          of a policy traffic profile. The value of the
          corresponding slapmPolicyMonitorControl can be examined
          to determine what is being monitored. The first
          slapmSubcomponentMonitorStatus value supplies the current
          monitor status while the 2nd value supplies the
          previous status.

          Note: The corresponding slapmPolicyMonitorControl
          BITS setting, enableSubcomponentTraps(4), MUST be selected
          in order for this notification to potentially be generated."
       ::= { slapmNotifications 5 }

     slapmSubcomponentMonitoredEventOkay NOTIFICATION-TYPE
        OBJECTS {
           slapmSubcomponentSystemAddress,
           slapmSubcomponentPolicyName,
           slapmSubcomponentTrafficProfileName,
           slapmSubcomponentMonitorStatus,
           slapmSubcomponentMonitorStatus,
           slapmSubcomponentMonitorIntTime,
           slapmSubcomponentMonitorCurrentInRate,
           slapmSubcomponentMonitorCurrentOutRate,
           slapmSubcomponentTcpRoundTripTime
        }
        STATUS deprecated
        DESCRIPTION
           "This notification is generated when a monitored value
           has reached an acceptable level.

           Note: The corresponding slapmPolicyMonitorControl
           BITS setting, enableSubcomponentTraps(3), MUST be
           selected in order for this notification to potentially
           be generated."
        ::= { slapmNotifications 6 }

     slapmPolicyRuleMonNotOkay NOTIFICATION-TYPE
        OBJECTS {
           slapmPRMonIntTime,
           slapmPRMonControl,
           slapmPRMonStatus,
           slapmPRMonStatus,
           slapmPRMonCurrentInRate,
           slapmPRMonCurrentOutRate,
           slapmPRMonCurrentDelayRate
        }
        STATUS current
        DESCRIPTION
           "This notification is generated when an monitored event
           is not achieved with respect to a threshold. This

applies only towards monitoring a policy rule
as an aggregate via an associating
slapmPolicyRuleStatsEntry. The value
of slapmPRMonControl can be examined to

         determine what is being monitored. The first
         slapmPRMonStatus value supplies the current
         monitor status while the 2nd value supplies the
         previous status.

         Note: The corresponding slapmPRMonControl
         BITS setting, enableAggregateTraps(3), MUST be
         selected in order for this notification to
         potentially be generated."
      ::= { slapmNotifications 7 }

   slapmPolicyRuleMonOkay NOTIFICATION-TYPE
      OBJECTS {
          slapmPRMonIntTime,
          slapmPRMonControl,
          slapmPRMonStatus,
          slapmPRMonStatus,
          slapmPRMonCurrentInRate,
          slapmPRMonCurrentOutRate,
          slapmPRMonCurrentDelayRate
      }
      STATUS current
      DESCRIPTION
         "This notification is generated when a monitored
         event has improved to an acceptable level. This
         applies only towards monitoring a policy rule
         as an aggregate via an associating
         slapmPolicyRuleStatsEntry. The value
         of slapmPRMonControl can be examined to
         determine what is being monitored. The first
         slapmPRMonStatus value supplies the current
         monitor status while the 2nd value supplies the
         previous status.

         Note: The corresponding slapmPRMonControl
         BITS setting, enableAggregateTraps(3), MUST be
         selected in order for this notification to
         potentially be generated."
      ::= { slapmNotifications 8 }

   slapmPolicyRuleDeleted NOTIFICATION-TYPE
      OBJECTS {
          slapmPolicyRuleStatsOperStatus,
          slapmPolicyRuleStatsActiveConns,
          slapmPolicyRuleStatsTotalConns,
          slapmPolicyRuleStatsLActivated,
          slapmPolicyRuleStatsLastMapping,
          slapmPolicyRuleStatsInOctets,
          slapmPolicyRuleStatsOutOctets,

```
                slapmPolicyRuleStatsConnLimit,
                slapmPolicyRuleStatsCountAccepts,
                slapmPolicyRuleStatsCountDenies,
                slapmPolicyRuleStatsInDiscards,
```

```
            slapmPolicyRuleStatsOutDiscards,
            slapmPolicyRuleStatsInPackets,
            slapmPolicyRuleStatsOutPackets,
            slapmPolicyRuleStatsInProOctets,
            slapmPolicyRuleStatsOutProOctets,
            slapmPolicyRuleStatsMinRate,
            slapmPolicyRuleStatsMaxRate,
            slapmPolicyRuleStatsMaxDelay
         }
         STATUS  current
         DESCRIPTION
            "A slapmPolicyRuleDeleted notification is sent when a
            slapmPolicyRuleStatsEntry is deleted if the value of
            slapmPolicyTrapEnable is enabled(1)."
         ::= { slapmNotifications 9 }

      slapmPolicyRuleMonDeleted NOTIFICATION-TYPE
         OBJECTS {
            slapmPRMonControl,
            slapmPRMonStatus,
            slapmPRMonInterval,
            slapmPRMonIntTime,
            slapmPRMonCurrentInRate,
            slapmPRMonCurrentOutRate,
            slapmPRMonCurrentDelayRate,
            slapmPRMonMinRateLow,
            slapmPRMonMinRateHigh,
            slapmPRMonMaxRateHigh,
            slapmPRMonMaxRateLow,
            slapmPRMonMaxDelayHigh,
            slapmPRMonMaxDelayLow,
            slapmPRMonMinInRateNotAchieves,
            slapmPRMonMaxInRateExceeds,
            slapmPRMonMaxDelayExceeds,
            slapmPRMonMinOutRateNotAchieves,
            slapmPRMonMaxOutRateExceeds
         }
         STATUS  current
         DESCRIPTION
            "A slapmPolicyRuleMonDeleted notification is sent when a
            slapmPRMonEntry is deleted if the value of
            slapmPolicyTrapEnable is enabled(1)."
         ::= { slapmNotifications 10 }

      slapmSubcMonitorNotOkay NOTIFICATION-TYPE
         OBJECTS {
            slapmSubcomponentSystemAddress,
            slapmSubcomponentPolicyRuleIndex,
            slapmPRMonControl,
```

```
        slapmSubcomponentMonitorStatus,
        slapmSubcomponentMonitorStatus,
        slapmSubcomponentMonitorIntTime,
        slapmSubcomponentMonitorCurrentInRate,
```

```
        slapmSubcomponentMonitorCurrentOutRate,
        slapmSubcomponentTcpRoundTripTime
    }
STATUS  current
DESCRIPTION
    "This notification is generated when a monitored value
    does not achieved a threshold specification.  This
    applies only towards monitoring the individual components
    of a policy rule.  The value of the
    corresponding slapmPRMonControl can be examined
    to determine what is being monitored.  The first
    slapmSubcomponentMonitorStatus value supplies the current
    monitor status while the 2nd value supplies the
    previous status.

    Note: The corresponding slapmPRMonControl
    BITS setting, enableSubcomponentTraps(4), MUST be selected
    in order for this notification to potentially be generated."
::= { slapmNotifications 11 }

slapmSubcMonitorOkay NOTIFICATION-TYPE
    OBJECTS {
        slapmSubcomponentSystemAddress,
        slapmSubcomponentPolicyRuleIndex,
        slapmPRMonControl,
        slapmSubcomponentMonitorStatus,
        slapmSubcomponentMonitorStatus,
        slapmSubcomponentMonitorIntTime,
        slapmSubcomponentMonitorCurrentInRate,
        slapmSubcomponentMonitorCurrentOutRate,
        slapmSubcomponentTcpRoundTripTime
    }
STATUS  current
DESCRIPTION
    "This notification is generated when a monitored value
    has reached an acceptable level.

    Note: The corresponding slapmPRMonControl
    BITS setting, enableSubcomponentTraps(3), MUST be
    selected in order for this notification to potentially
    be generated."
::= { slapmNotifications 12 }

-- Conformance information
-- Compliance statements

slapmCompliances OBJECT IDENTIFIER ::= { slapmConformance 1 }
slapmGroups      OBJECT IDENTIFIER ::= { slapmConformance 2 }
```

```
     -- Compliance statements

     slapmCompliance MODULE-COMPLIANCE
```

```
          STATUS  current
          DESCRIPTION
                "The compliance statement for the SLAPM-MIB."
          MODULE  -- this module
              MANDATORY-GROUPS {
                                slapmBaseGroup2,
                                slapmNotGroup2
                              }
              GROUP slapmEndSystemGroup2
              DESCRIPTION
                  "The contents of this group is required by end-system
                  implementations."
              GROUP slapmEndSystemNotGroup2
              DESCRIPTION
                  "The contents of this group is required by end-system
                  implementations."
              GROUP slapmBaseGroup
              DESCRIPTION
                  "The contents of this group has been deprecated in favor
                  of the new slapmBaseGroup2.  Older implementations of this
                  MIB would continue its support of the contents of this
                  group."
              GROUP slapmNotGroup
              DESCRIPTION
                  "The contents of this group has been deprecated in favor
                  of the new slapmNotGroup2.  Older implementations of this
                  MIB would continue its support of the contents of
                  this group."
              GROUP slapmOptionalGroup
              DESCRIPTION
                  "The contents of this group has been deprecated."
              GROUP slapmEndSystemGroup
              DESCRIPTION
                  "The contents of this group has been deprecated in favor
                  of the new slapmEndSystemGroup2.  Older implementations
                  of this MIB would continue its support of the
                  contents of this group."
              GROUP slapmEndSystemNotGroup
              DESCRIPTION
                  "The contents of this group has been deprecated in favor
                  of the new slapmEndSystemNotGroup2.  Older
                  implementations of this MIB would continue its support
                  of the contents of this group."
          ::= { slapmCompliances 1 }

      -- MIB groupings

      slapmBaseGroup OBJECT-GROUP
        OBJECTS {
```

```
                slapmSpinLock,
                slapmPolicyCountQueries,
                slapmPolicyCountAccesses,
                slapmPolicyCountSuccessAccesses,
```

```
                    slapmPolicyCountNotFounds,
                    slapmPolicyPurgeTime,
                    slapmPolicyTrapEnable,
                    slapmPolicyStatsOperStatus,
                    slapmPolicyStatsActiveConns,
                    slapmPolicyStatsFirstActivated,
                    slapmPolicyStatsLastMapping,
                    slapmPolicyStatsInOctets,
                    slapmPolicyStatsOutOctets,
                    slapmPolicyStatsConnectionLimit,
                    slapmPolicyStatsTotalConns,
                    slapmPolicyStatsCountAccepts,
                    slapmPolicyStatsCountDenies,
                    slapmPolicyStatsInDiscards,
                    slapmPolicyStatsOutDiscards,
                    slapmPolicyStatsInPackets,
                    slapmPolicyStatsOutPackets,
                    slapmPolicyStatsMinRate,
                    slapmPolicyStatsMaxRate,
                    slapmPolicyStatsMaxDelay,
                    slapmPolicyMonitorControl,
                    slapmPolicyMonitorStatus,
                    slapmPolicyMonitorInterval,
                    slapmPolicyMonitorIntTime,
                    slapmPolicyMonitorCurrentInRate,
                    slapmPolicyMonitorCurrentOutRate,
                    slapmPolicyMonitorMinRateLow,
                    slapmPolicyMonitorMinRateHigh,
                    slapmPolicyMonitorMaxRateHigh,
                    slapmPolicyMonitorMaxRateLow,
                    slapmPolicyMonitorMaxDelayHigh,
                    slapmPolicyMonitorMaxDelayLow,
                    slapmPolicyMonitorMinInRateNotAchieves,
                    slapmPolicyMonitorMaxInRateExceeds,
                    slapmPolicyMonitorMaxDelayExceeds,
                    slapmPolicyMonitorMinOutRateNotAchieves,
                    slapmPolicyMonitorMaxOutRateExceeds,
                    slapmPolicyMonitorCurrentDelayRate,
                    slapmPolicyMonitorRowStatus
                  }
       STATUS deprecated
       DESCRIPTION
           "The group of objects defined by this MIB that are
           required for all implementations to be compliant."
       ::= { slapmGroups 1 }

      slapmOptionalGroup OBJECT-GROUP
        OBJECTS {
                    slapmPolicyStatsInProfileOctets,
```

```
                    slapmPolicyStatsOutProfileOctets
                }
        STATUS deprecated
        DESCRIPTION
```

```
          "The group of objects defined by this MIB that are
          optional."
       ::= { slapmGroups 2 }

      slapmEndSystemGroup OBJECT-GROUP
        OBJECTS {
                slapmPolicyTrapFilter,
                slapmSubcomponentProtocol,
                slapmSubcomponentSystemAddress,
                slapmSubcomponentPolicyName,
                slapmSubcomponentTrafficProfileName,
                slapmSubcomponentLastActivity,
                slapmSubcomponentInOctets,
                slapmSubcomponentOutOctets,
                slapmSubcomponentTcpOutBufferedOctets,
                slapmSubcomponentTcpInBufferedOctets,
                slapmSubcomponentTcpReXmts,
                slapmSubcomponentTcpRoundTripTime,
                slapmSubcomponentTcpRoundTripVariance,
                slapmSubcomponentInPdus,
                slapmSubcomponentOutPdus,
                slapmSubcomponentApplName,
                slapmSubcomponentMonitorStatus,
                slapmSubcomponentMonitorIntTime,
                slapmSubcomponentMonitorCurrentOutRate,
                slapmSubcomponentMonitorCurrentInRate
              }
        STATUS  deprecated
        DESCRIPTION
            "The group of objects defined by this MIB that are
            required for end system implementations."
        ::= { slapmGroups 3 }

      slapmNotGroup NOTIFICATION-GROUP
        NOTIFICATIONS {
                slapmMonitoredEventNotAchieved,
                slapmMonitoredEventOkay,
                slapmPolicyProfileDeleted,
                slapmPolicyMonitorDeleted
              }
        STATUS  deprecated
        DESCRIPTION
            "The group of notifications defined by this MIB that MUST
            be implemented."
        ::= { slapmGroups 4 }

      slapmEndSystemNotGroup NOTIFICATION-GROUP
        NOTIFICATIONS {
                slapmSubcomponentMonitoredEventNotAchieved,
```

```
                 slapmSubcomponentMonitoredEventOkay
              }
         STATUS  deprecated
         DESCRIPTION
```

```
        "The group of objects defined by this MIB that are
        required for end system implementations."
     ::= { slapmGroups 5 }

  slapmBaseGroup2 OBJECT-GROUP
    OBJECTS {
              slapmSpinLock,
              slapmPolicyCountQueries,
              slapmPolicyCountAccesses,
              slapmPolicyCountSuccessAccesses,
              slapmPolicyCountNotFounds,
              slapmPolicyPurgeTime,
              slapmPolicyTrapEnable,
              slapmPolicyTotalRsvpFlows,
              slapmPolicyTotalActiveRsvpFlows,
              slapmPolicyNameOfRule,
              slapmPolicyRuleStatsOperStatus,
              slapmPolicyRuleStatsActiveConns,
              slapmPolicyRuleStatsTotalConns,
              slapmPolicyRuleStatsLActivated,
              slapmPolicyRuleStatsLastMapping,
              slapmPolicyRuleStatsInOctets,
              slapmPolicyRuleStatsOutOctets,
              slapmPolicyRuleStatsConnLimit,
              slapmPolicyRuleStatsCountAccepts,
              slapmPolicyRuleStatsCountDenies,
              slapmPolicyRuleStatsInDiscards,
              slapmPolicyRuleStatsOutDiscards,
              slapmPolicyRuleStatsInPackets,
              slapmPolicyRuleStatsOutPackets,
              slapmPolicyRuleStatsInProOctets,
              slapmPolicyRuleStatsOutProOctets,
              slapmPolicyRuleStatsMinRate,
              slapmPolicyRuleStatsMaxRate,
              slapmPolicyRuleStatsMaxDelay,
              slapmPRMonControl,
              slapmPRMonStatus,
              slapmPRMonInterval,
              slapmPRMonIntTime,
              slapmPRMonCurrentInRate,
              slapmPRMonCurrentOutRate,
              slapmPRMonMinRateLow,
              slapmPRMonMinRateHigh,
              slapmPRMonMaxRateHigh,
              slapmPRMonMaxRateLow,
              slapmPRMonMaxDelayHigh,
              slapmPRMonMaxDelayLow,
              slapmPRMonMinInRateNotAchieves,
              slapmPRMonMaxInRateExceeds,
```

```
                    slapmPRMonMaxDelayExceeds,
                    slapmPRMonMinOutRateNotAchieves,
                    slapmPRMonMaxOutRateExceeds,
                    slapmPRMonCurrentDelayRate,
```

```
                slapmPRMonRowStatus
              }
 STATUS current
 DESCRIPTION
     "The group of objects defined by this MIB that are
     required for all implementations to be compliant."
 ::= { slapmGroups 6 }


slapmEndSystemGroup2 OBJECT-GROUP
  OBJECTS {
             slapmPolicyTrapFilter,
             slapmSubcomponentProtocol,
             slapmSubcomponentSystemAddress,
             slapmSubcomponentLastActivity,
             slapmSubcomponentInOctets,
             slapmSubcomponentOutOctets,
             slapmSubcomponentTcpOutBufferedOctets,
             slapmSubcomponentTcpInBufferedOctets,
             slapmSubcomponentTcpReXmts,
             slapmSubcomponentTcpRoundTripTime,
             slapmSubcomponentTcpRoundTripVariance,
             slapmSubcomponentInPdus,
             slapmSubcomponentOutPdus,
             slapmSubcomponentApplName,
             slapmSubcomponentMonitorStatus,
             slapmSubcomponentMonitorIntTime,
             slapmSubcomponentMonitorCurrentOutRate,
             slapmSubcomponentMonitorCurrentInRate,
             slapmSubcomponentPolicyRuleIndex
           }
  STATUS  current
  DESCRIPTION
      "The group of objects defined by this MIB that are
      required for end system implementations."
  ::= { slapmGroups 7 }

slapmNotGroup2 NOTIFICATION-GROUP
  NOTIFICATIONS {
             slapmPolicyRuleMonNotOkay,
             slapmPolicyRuleMonOkay,
             slapmPolicyRuleDeleted,
             slapmPolicyRuleMonDeleted
           }
  STATUS  current
  DESCRIPTION
      "The group of notifications defined by this MIB that MUST
      be implemented."
  ::= { slapmGroups 8 }
```

```
slapmEndSystemNotGroup2 NOTIFICATION-GROUP
  NOTIFICATIONS {
            slapmSubcMonitorNotOkay,
            slapmSubcMonitorOkay
```

```
            }
      STATUS   current
      DESCRIPTION
          "The group of objects defined by this MIB that are
          required for end system implementations."
      ::= { slapmGroups 9 }
```

   END

5.0 Security Considerations

Certain management information defined in this MIB may be considered
sensitive in some network environments. Therefore, authentication of
received SNMP requests and controlled access to management information
SHOULD be employed in such environments. The method for this
authentication is a function of the SNMP Administrative Framework, and
has not been expanded by this MIB.

It is RECOMMENDED that the slapmPRMonTable (equivalent to the deprecated
slapmPolicyMonitorTable) and the slapmSubcomponentTable not be supported
in insecure environments.

6.0 Intellectual Property

The IETF takes no position regarding the validity or scope of any
intellectual property or other rights that might be claimed to pertain
to the implementation or use of the technology described in this
document or the extent to which any license under such rights might or
might not be available; neither does it represent that it has made any
effort to identify any such rights. Information on the IETF's
procedures with respect to rights in standards-track and
standards-related documentation can be found in BCP-11. Copies of
claims of rights made available for publication and any assurances of
licenses to be made available, or the result of an attempt made to
obtain a general license or permission for the use of such proprietary
rights by implementers or users of this specification can be obtained
from the IETF Secretariat.

The IETF invites any interested party to bring to its attention any
copyrights, patents or patent applications, or other proprietary rights
which may cover technology that may be required to practice this
standard. Please address the information to the IETF Executive
Director.

7.0 Acknowledgments

This document is an individual submission and not the product of any
IETF working group. Special thanks should be given to Robert Moore of
IBM for his numerous reviews.

8.0 **References**

[1] Case, J., M. Fedor, M. Schoffstall, J. Davin, "Simple Network
     Management Protocol", RFC 1157, SNMP Research, Performance Systems
     International, MIT Laboratory for Computer Science, May 1990.

[2] McCloghrie, K., and M. Rose, Editors, "Management Information Base
     for Network Management of TCP/IP-based internets: MIB-II", STD 17,
     RFC 1213, Hughes LAN Systems, Performance Systems International,
     March 1991.

[3] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M.,
     and S. Waldbusser, "Structure of Management Information Version 2
     (SMIv2)", RFC 2578, STD 58, Cisco Systems, SNMPinfo, TU
     Braunschweig, SNMP Research, First Virtual Holdings, International
     Network Services, April 1999.

[4] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M.,
     and S. Waldbusser, "Textual Conventions for SMIv2", RFC 2579, STD
     58, Cisco Systems, SNMPinfo, TU Braunschweig, SNMP Research, First
     Virtual Holdings, International Network Services, April 1999.

[5] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M.,
     and S. Waldbusser, "Conformance Statements for SMIv2", RFC 2580,
     STD 58, Cisco Systems, SNMPinfo, TU Braunschweig, SNMP Research,
     First Virtual Holdings, International Network Services, April 1999.

[6] Case, J., McCloghrie, K., Rose, M., and Waldbusser, S., "Protocol
     Operations for Version 2 of the Simple Network Management Protocol
     (SNMPv2)", RFC 1905, January 1996.

[7] Harrington D., Presuhn, R., Wijnen, B., "An Architecture for
     Describing SNMP Management Frameworks", RFC 2571, Cabletron
     Systems, BMC Software, Inc., IBM T.J. Watson Research, April 1999.

[8] Case, J., Harrington D., Presuhn, R., Wijnen, B., "Message
     Processing and Dispatching for the Simple Network Management
     Protocol (SNMP)", RFC 2572, SNMP Research Inc., Cabletron Systems,
     BMC Software, Inc., IBM T.J. Watson Research, April 1999.

[9] Levi D., Meyer P., Stewart, B., "SNMPv3 Applications", RFC 2573,
     SNMP Research, Inc., Secure Computing Corporation, Cisco Systems,
     April 1999.

[10] Blumenthal, U., Wijnen, B., "User-based Security Model (USM) for
     version 3 of the Simple Network Management Protocol (SNMPv3)", RFC
     2574, IBM T. J. Watson Research, April 1999.

[11] Wijnen, B., Presuhn, R., McCloghrie, K., "View-based Access Control
     Model (VACM) for the Simple Network Management Protocol (SNMP)",

RFC 2575, IBM T.J. Watson Research, BMC Software, Inc., Cisco
Systems, Inc., April 1999.

[12] Hovey, R., and S. Bradner, "The Organizations Involved in the IETF
     Standards Process", BCP 11, RFC 2028, October 1996.

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

[14] Rose, M., and K. McCloghrie, "Structure and Identification of
     Management Information for TCP/IP-based Internets", RFC 1155,
     Performance Systems International, Hughes LAN Systems, May 1990.

[15] Rose, M., and K. McCloghrie, "Concise MIB Definitions", RFC 1212,
     Performance Systems International, Hughes LAN Systems, March 1991.

[16] M. Rose, "A Convention for Defining Traps for use with the SNMP",
     RFC 1215, Performance Systems International, March 1991.

[17] Case, J., McCloghrie, K., Rose, M., and S. Waldbusser,
     "Introduction to Community-based SNMPv2", RFC 1901, SNMP Research,
     Inc., Cisco Systems, Inc., Dover Beach Consulting, Inc.,
     International Network Services, January 1996.

[18] Case, J., McCloghrie, K., Rose, M., and S. Waldbusser, "Transport
     Mappings for Version 2 of the Simple Network Management Protocol
     (SNMPv2)", RFC 1906, SNMP Research, Inc., Cisco Systems, Inc.,
     Dover Beach Consulting, Inc., International Network Services,
     January 1996.

[19] McCloghrie, K. and Bierman, A., "Entity MIB using SMIv2", RFC 2037,
     October 1996.

[20] Bradner, S., "The Internet Standards Process -- Revision 3", RFC
     2026, BCP 9, Harvard University, October 1996.

9.0 Author's Address

   Kenneth D. White
   Dept. BRQA/Bldg. 501/G114
   IBM Corporation
   P.O.Box 12195
   3039 Cornwallis
   Research Triangle Park, NC 27709, USA
   E-mail: wkenneth@us.ibm.com

10.0 Full Copyright Statement

distributed, in whole or in part, without restriction of any kind,

provided that the above copyright notice and this paragraph are included
on all such copies and derivative works. However, this document itself
may not be modified in any way, such as by removing the copyright notice
or references to the Internet Society or other Internet organizations,
except as needed for the purpose of developing Internet standards in
which case the procedures for copyrights defined in the Internet
Standards process must be followed, or as required to translate it into
languages other than English.

The limited permissions granted above are perpetual and will not be
revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an "AS
IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK
FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT
LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT
INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR
FITNESS FOR A PARTICULAR PURPOSE.