

Network Working Group  
Internet-draft  
Expiration Date: March 2000

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September 1999

**Definitions of Managed Objects for  
Service Level Agreements  
Performance Monitoring**  
<[draft-white-slapm-mib-06.txt](#)>

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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.

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**[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 scalar objects

o slapmPolicyNameTable

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- 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 were directly indexed using a policy's name and a subordinate 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 Scalar 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.

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- o slapmPolicyTrapEnable

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

- o slapmPolicyTrapFilter

This object enables suppression of slapmSubcMonitorNotOkay notifications.

### **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, slapmPolicyNameIndex, 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.

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- 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 `slapmSubcomponentTable` 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 SNMP 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

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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](#)  
SnmAdminString  
FROM SNMP-FRAMEWORK-MIB; -- [RFC2571](#)

slapmMIB MODULE-IDENTITY

LAST-UPDATED "9910130000Z"  
ORGANIZATION "Internet Engineering Task Force (IETF)"  
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DESCRIPTION

"The Service Level Agreement Performance Monitoring MIB  
(SLAPM-MIB) provides data collection and monitoring  
capabilities for Service Level Agreements (SLAs)  
policy definitions."

-- Revision history

REVISION "9910130000Z" -- 13 Oct. 1999

DESCRIPTION

"This version published as RFC xxxx."  
-- RFC-editor assigns xxxx

::= { experimental 88 }

-- Textual Conventions

SlapmNameType ::= TEXTUAL-CONVENTION  
STATUS deprecated

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## 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 "1024t"

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))

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-- Top-level structure of the MIB

```
slapmNotifications OBJECT IDENTIFIER ::= { slapmMIB 0 }
slapmObjects        OBJECT IDENTIFIER ::= { slapmMIB 1 }
slapmConformance    OBJECT IDENTIFIER ::= { slapmMIB 2 }
```

-- All scalar objects

```
slapmBaseObjects    OBJECT IDENTIFIER ::= { slapmObjects 1 }
```

-- Scalar 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 a 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

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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 along 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 }

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

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```

        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 | 4 | 16))  
MAX-ACCESS not-accessible  
STATUS deprecated

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## 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 system definition 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 through 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 }

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## 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 }

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## 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

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"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 }
```

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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 | 4 | 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	

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"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

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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 }
```

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## 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 }

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## 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 | 4 | 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

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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 | 4 | 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
```

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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
```

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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 }
```

## slapmSubcomponentAppName 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),
```

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## 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

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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 (1..4294967295)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Points to an slapmPolicyNameEntry when combined with slapmSubcomponentSystemAddress 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  
    }
```

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## slapmPolicyNameSystemAddress OBJECT-TYPE

SYNTAX OCTET STRING (SIZE(0 | 4 | 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 (1..4294967295)

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

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- active(2) - Policy entry is being used to affect traffic flows.
- deleteNeeded(3) - Either through local implementation dependent methods or by discovering

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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 rule in a state other than active(2) 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 }
```

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## 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
```

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```
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."

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```
::= { 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 }
```

```
slapmPolicyRuleStatsTotalRsvpFlows OBJECT-TYPE
```

```
SYNTAX      Counter32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Total number of RSVP flows that have be activated."
```

```
::= { slapmPolicyRuleStatsEntry 20 }
```

```
slapmPolicyRuleStatsActRsvpFlows OBJECT-TYPE
```

```
SYNTAX      Gauge32
```

```
MAX-ACCESS  read-only
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Current number of active RSVP flows."
```

```
::= { slapmPolicyRuleStatsEntry 21 }
```

```
-- SLA Performance Monitoring Policy Rule Monitor Table
```

```
slapmPRMonTable OBJECT-TYPE
```

```
SYNTAX SEQUENCE OF SlapmPRMonEntry
```

MAX-ACCESS not-accessible  
STATUS current  
DESCRIPTION

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"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

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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 | 4 | 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
```

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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 rule 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)
```

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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

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## 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

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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

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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."

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```
::= { 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

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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,

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```
    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,

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```
    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,

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```
        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 {
```

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```
    slapmPolicyRuleStatsActiveConns,
    slapmPolicyRuleStatsTotalConns,
    slapmPolicyRuleStatsLActivated,
    slapmPolicyRuleStatsLastMapping,
    slapmPolicyRuleStatsInOctets,
    slapmPolicyRuleStatsOutOctets,
    slapmPolicyRuleStatsConnLimit,
    slapmPolicyRuleStatsCountAccepts,
    slapmPolicyRuleStatsCountDenies,
    slapmPolicyRuleStatsInDiscards,
    slapmPolicyRuleStatsOutDiscards,
    slapmPolicyRuleStatsInPackets,
    slapmPolicyRuleStatsOutPackets,
    slapmPolicyRuleStatsInProOctets,
    slapmPolicyRuleStatsOutProOctets,
    slapmPolicyRuleStatsMinRate,
    slapmPolicyRuleStatsMaxRate,
    slapmPolicyRuleStatsMaxDelay,
    slapmPolicyRuleStatsTotalRsvpFlows,
    slapmPolicyRuleStatsActRsvpFlows
}
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

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```
    slapmPolicyTrapEnable is enabled(1)."  
 ::= { slapmNotifications 10 }
```

slapmSubMonitorNotOkay 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 }
```

slapmSubMonitorOkay 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

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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
```

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## 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,
    slapmSubcomponentAppIName,
    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
```

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## 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,  
    slapmPolicyNameOfRule,  
    slapmPolicyRuleStatsOperStatus,  
    slapmPolicyRuleStatsActiveConns,  
    slapmPolicyRuleStatsTotalConns,  
    slapmPolicyRuleStatsLActivated,  
    slapmPolicyRuleStatsLastMapping,  
    slapmPolicyRuleStatsInOctets,  
    slapmPolicyRuleStatsOutOctets,  
    slapmPolicyRuleStatsConnLimit,  
    slapmPolicyRuleStatsCountAccepts,  
    slapmPolicyRuleStatsCountDenies,  
    slapmPolicyRuleStatsInDiscards,  
    slapmPolicyRuleStatsOutDiscards,  
    slapmPolicyRuleStatsInPackets,  
    slapmPolicyRuleStatsOutPackets,  
    slapmPolicyRuleStatsInProOctets,  
    slapmPolicyRuleStatsOutProOctets,  
    slapmPolicyRuleStatsMinRate,  
    slapmPolicyRuleStatsMaxRate,  
    slapmPolicyRuleStatsMaxDelay,  
    slapmPolicyRuleStatsTotalRsvpFlows,  
    slapmPolicyRuleStatsActRsvpFlows,  
    slapmPRMonControl,  
    slapmPRMonStatus,

slapmPRMonInterval,  
slapmPRMonIntTime,  
slapmPRMonCurrentInRate,  
slapmPRMonCurrentOutRate,

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```
        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,
```

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```
        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 in the MIB defined by this document 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.

To facilitate the provisioning of access control by a security administrator using the View-Based Access Control Model (VACM) defined in [RFC 2575](#) [11] for tables in which multiple users may need to independently create or modify entries, the initial index is used as an "owner index" (refer to slapmPRMonOwnerIndex in an slapmPRMonEntry). 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 related tables 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. The VACM access control



mechanism described above provides control

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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**

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- [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.
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