

Alarm MIB
draft-chisholm-disman-active-alarm-01.txt

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1. Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it describes management objects used for maintaining a list of alarms currently active on a network element.

2. The SNMP Management Framework

The SNMP Management Framework presently consists of five major components:

- o An overall architecture, described in [RFC 2571](#) [[RFC2571](#)].
- 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 STD 16, [RFC 1155](#) [[RFC1155](#)], STD 16, [RFC 1212](#) [[RFC1212](#)] and RFC

Expires 22 April 2001

[Page 1]

1215 [[RFC1215](#)]. The second version, called SMiv2, is described in STD 58, [RFC 2578](#) [[RFC2578](#)], STD 58, [RFC 2579](#) [[RFC2579](#)] and STD 58, [RFC 2580](#) [[RFC2580](#)].

- o Message protocols for transferring management information. The first version of the SNMP message protocol is called SNMPv1 and described in STD 15, [RFC 1157](#) [[RFC1157](#)]. A second version of the SNMP message protocol, which is not an Internet standards track protocol, is called SNMPv2c and described in [RFC 1901](#) [[RFC1901](#)] and [RFC 1906](#) [[RFC1906](#)]. The third version of the message protocol is called SNMPv3 and described in [RFC 1906](#) [[RFC1906](#)], [RFC 2572](#) [[RFC2572](#)] and [RFC 2574](#) [[RFC2574](#)].
- o Protocol operations for accessing management information. The first set of protocol operations and associated PDU formats is described in STD 15, [RFC 1157](#) [[RFC1157](#)]. A second set of protocol operations and associated PDU formats is described in [RFC 1905](#) [[RFC1905](#)].
- o A set of fundamental applications described in [RFC 2573](#) [[RFC2573](#)] and the view-based access control mechanism described in [RFC 2575](#) [[RFC2575](#)].

A more detailed introduction to the current SNMP Management Framework can be found in [RFC 2570](#) [[RFC2570](#)].

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. Introduction

An alarm is an error condition occurring on a system that needs to be fixed, either automatically or through manual intervention.

The alarm details table contains information which is applicable to all instances of an alarm. It is populated at start-up with

Expires 22 April 2001

[Page 2]

all alarms that could happen on a system. The information in this table should be fairly static during system operation.

The active alarm table contains a list of alarms which are currently occurring on a system. It is intended that this table be queried upon device discovery and rediscovery to determine which alarms are currently active on the device. This allows the network management station to find out about any problems that may have occurred before it started managing a particular network element, or while it was out of contact with it.

Each alarm should have a corresponding clear which removes it from the active alarm table. Alternatively it could be aged out. The configuring and querying of alarm age-outs is not covered in this document.

4. Relation to Notification Log MIB

This MIB is intended to compliment the notification log MIB, but can be used independently. The active alarm table is defined in manner similar to that of the notification log table. This format allows for the storage of any NOTIFICATION that can be defined using SMI. Using the same format as the notification log MIB also simplifies operations for systems choosing to implement both MIBs.

5. Alarm Raise and Clear

The alarm details table provides a means of defining the raise/clear relationship between alarms. The alarmDetailsPerceivedSeverity object indicates whether this is a raise alarm or a clear alarm. The alarmDetailsNotificationId gives the OID of this particular alarm. If this is a raise alarm, the alarmDetailsClearNotificationId object gives the OID of corresponding clear alarm. If this is a clear alarm, the alarmDetailsClearNotificationId object gives the OID of one of the corresponding raise alarms for this clear.

6. ITU-T X.733, X.736 Trap Content

Selected information from ITU-T X.733, X.736 alarm documents has been included in the alarmDetailsTable and the alarmActiveTable, depending on the variability of this information. Support of these objects is not necessary to support the alarm raise/clear and active alarm components of this MIB.

Expires 22 April 2001

[Page 3]

7. Definitions

ALARM-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,
experimental, Integer32, Unsigned32,
TimeTicks, Counter32, Counter64,
IpAddress, Opaque, mib-2 FROM SNMPv2-SMI
TimeStamp, DateAndTime, DisplayString,
StorageType, RowStatus FROM SNMPv2-TC
SnmpAdminString, SnmpEngineID FROM SNMP-FRAMEWORK-MIB
MODULE-COMPLIANCE, OBJECT-GROUP FROM SNMPv2-CONF;

alarm MODULE-IDENTITY

LAST-UPDATED "000010220000Z"

ORGANIZATION "Alarm MIB"

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DESCRIPTION

"The MIB module describes a generic solution
to improve the reliability of SNMP traps by storing alarm
details and the current list of active alarms."

::= { mib-2 xx }

alarmObjects OBJECT IDENTIFIER ::= { alarm 1 }

alarmDetailsTable OBJECT-TYPE

SYNTAX SEQUENCE OF AlarmDetailsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of information about possible alarms on the system."

::= { alarmObjects 1 }

alarmDetailsEntry OBJECT-TYPE

SYNTAX AlarmDetailsEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"Entries appear in this table for each possible alarm."

Expires 22 April 2001

[Page 4]

```
INDEX      { alarmListName, alarmDetailsIndex }
 ::= { alarmDetailsTable 1 }
```

```
AlarmDetailsEntry ::= SEQUENCE {
  alarmDetailsIndex      Unsigned32,
  alarmDetailsNotificationId OBJECT IDENTIFIER,
  alarmDetailsClearNotificationId OBJECT IDENTIFIER,
  alarmDetailsEventType  INTEGER,
  alarmDetailsProbableCause  INTEGER,
  alarmDetailsPerceivedSeverity  INTEGER,
  alarmDetailsAdditionalText  DisplayString }
```

```
alarmDetailsIndex OBJECT-TYPE
  SYNTAX      Unsigned32 (1..4294967295)
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION
    "A integer which acts as the
    index of entries within the named alarm list. "
  ::= { alarmDetailsEntry 1 }
```

```
alarmDetailsNotificationId OBJECT-TYPE
  SYNTAX      OBJECT IDENTIFIER
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION
    "The NOTIFICATION-TYPE object identifier of this alarm."
  ::= { alarmDetailsEntry 2 }
```

```
alarmDetailsClearNotificationId OBJECT-TYPE
  SYNTAX      OBJECT IDENTIFIER
  MAX-ACCESS  read-only
  STATUS      current
  DESCRIPTION
    "The NOTIFICATION-TYPE object identifier of the alarm which
    clears this alarm. If this entry corresponds to a clear
    alarm, then this object should be one of the notifications
    which sets this alarm condition"
  ::= { alarmDetailsEntry 3 }
```

```
alarmDetailsEventType OBJECT-TYPE
  SYNTAX      INTEGER
    {
      other (1),
      communityAlarmType (2),
      qualityOfServerAlarmType (3),
      processingErrorAlarmType (4),
```

Expires 22 April 2001

[Page 5]

```
        equipmentAlarmType (5),
        environmentalAlarmType (6)           }
MAX-ACCESS    read-only
STATUS        current
DESCRIPTION
    " Represents the event type values for the alarms as per
      (ITU-T X.733)."
 ::= { alarmDetailsEntry 4 }
```

alarmDetailsProbableCause OBJECT-TYPE

```
SYNTAX        INTEGER
              {
                other (1),
                adapterError (2),
                applicationSubsystemFailure (3),
                bandwidthReduced (4),
                callEstablishmentError (5),
                communicationsProtocolError (6),
                communicationsSubsystemFailure (7),
                configurationOrCustomizationError (8),
                congestion (9),
                corruptData (10),
                cpuCyclesLimitExceeded (11),
                dataSetOrModemError (12),
                degradedSignal (13),
                dteDceInterfaceError (14),
                enclosureDoorOpen (15),
                equipmentMalfunction (16),
                excessiveVibration (17),
                fileError (18),
                fireDetected (19),
                floodDetected (20),
                framingError (21),
                heatingOrVentilationOrCoolingSystemProblem (22),
                humidityUnacceptable (23),
                inputOutputDeviceError (24),
                inputDeviceError (25),
                lanError (26),
                leakDetected (27),
                localNodeTransmissionError (28),
                lossOfFrame (29),
                lossOfSignal (30),
                materialSupplyExhausted (31),
                multiplexerProblem (32),
                outOfMemory (33),
                ouputDeviceError (34),
                performanceDegraded (35),
                powerProblem (36),
```

Expires 22 April 2001

[Page 6]

```
    pressureUnacceptable (37),
    processorProblem (38),
    pumpFailure (39),
    queueSizeExceeded (40),
    receiveFailure (41),
    receiverFailure (42),
    remoteNodeTransmissionError (43),
    resourceAtOrNearingCapacity (44),
    responseTimeExcessive (45),
    retransmissionRateExcessive (46),
    softwareError (47),
    softwareProgramAbnormallyTerminated (48),
    softwareProgramError (49),
    storageCapacityProblem (50),
    temperatureUnacceptable (51),
    thresholdCrossed (52),
    timingProblem (53),
    toxicLeakDetected (54),
    transmitFailure (55),
    transmitterFailure (56),
    underlyingResourceUnavailable (57),
    versionMismatch (58),
    authenticationFailure (59),
    breachOfConfidentiality (60),
    cableTamper (61),
    delayedInformation (62),
    denialOfService (63),
    duplicateInformation (64),
    informationMissing (65),
    informationModificationDetected (66),
    informationOutOfSequence (67),
    intrusionDetection (68),
    keyExpired (69),
    nonRepudiationFailure (70),
    outOfHoursActivity (71),
    outOfService (72),
    proceduralError (73),
    unauthorizedAccessAttempt (74),
    unexpectedInformation (75)
}
MAX-ACCESS    read-only
STATUS        current

DESCRIPTION
    " Represents the probable cause values for the alarms as
      per (ITU-T X.733, X.736). "
 ::= { alarmDetailsEntry 5 }
```

Expires 22 April 2001

[Page 7]

alarmDetailsPerceivedSeverity OBJECT-TYPE

```

    SYNTAX          INTEGER          {
        cleared (1),
        indeterminate (2),
        critical (3),
        major (4),
        minor (5),
        warning (6)
    }
    MAX-ACCESS      read-only
    STATUS          current
    DESCRIPTION
        " Represents the perceived severity values for the alarms
          as per (ITU-T X.733). "
    ::= { alarmDetailsEntry 6 }

```

alarmDetailsAdditionalText OBJECT-TYPE

```

    SYNTAX DisplayString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        " Represents the additional text field for the alarm as per
          (ITU-T X.733). "
    ::= { alarmDetailsEntry 7}

```

-- -- Active Alarm Table --

alarmActiveTable OBJECT-TYPE

```

    SYNTAX          SEQUENCE OF AlarmActiveEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "A table of Active Alarms entries."
    ::= { alarmObjects 2 }

```

alarmActiveEntry OBJECT-TYPE

```

    SYNTAX          AlarmActiveEntry
    MAX-ACCESS      not-accessible
    STATUS          current
    DESCRIPTION
        "Entries appear in this table when alarms are active. They are
          removed when the alarm is no longer occurring."
    INDEX          { alarmListName, alarmActiveIndex }
    ::= { alarmActiveTable 1 }

```

AlarmActiveEntry ::= SEQUENCE {

```

    alarmListName          SnmpAdminString,
    alarmActiveIndex       Unsigned32,
```

Expires 22 April 2001

[Page 8]

alarmActiveTime	TimeStamp,
alarmActiveDateAndTime	DateAndTime,
alarmActiveEngineID	SnmpEngineID,
alarmActiveEngineAddress	IpAddress,
alarmActiveContextEngineID	SnmpEngineID,
alarmActiveContextName	SnmpAdminString,
alarmActiveVariables	Unsigned32,
alarmActiveNotificationID	OBJECT IDENTIFIER,
alarmActiveTrendIndication	INTEGER,
alarmActiveLogIndex	Unsigned32,
alarmActiveDetailsIndex	Unsigned32 }

alarmListName OBJECT-TYPE

SYNTAX SnmpAdminString (SIZE(0..32))

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"The name of the list of alarms. This is the same as nlmLogName if the Notification Log MIB is supported.

An implementation may allow multiple named alarm lists, up to some implementation-specific limit (which may be none). A zero-length list name is reserved for creation and deletion by the managed system, and MUST be used as the default log name by systems that do not support named alarm lists."

::= { alarmActiveEntry 1 }

alarmActiveIndex OBJECT-TYPE

SYNTAX Unsigned32 (1..4294967295)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"A monotonically increasing integer which acts as the index of entries within the named alarm list. It wraps back to 1 after it reaches its maximum value."

::= { alarmActiveEntry 2 }

alarmActiveTime OBJECT-TYPE

SYNTAX TimeStamp

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value of sysUpTime when the alarm occurred. Alarms tend to get cleared and resent if still applicable at reboot, so this value tends to be is a valid sysUptime. In the case where the alarms are not cleared at reboot, and the alarm occurred before the most recent management system initialization, this object value MUST be set to zero."

Expires 22 April 2001

[Page 9]

```
::= { alarmActiveEntry 3 }
```

alarmActiveDateAndTime OBJECT-TYPE

SYNTAX DateAndTime

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The local date and time when the alarm occurred, instantiated only by systems that have date and time capability."

```
::= { alarmActiveEntry 4 }
```

alarmActiveEngineID OBJECT-TYPE

SYNTAX SnmpEngineID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The identification of the SNMP engine at which the alarm originated.

If the alarm list can contain Notifications from only one engine or the Trap is from an SNMPv1 system, this object is not instantiated."

```
::= { alarmActiveEntry 5 }
```

alarmActiveEngineAddress OBJECT-TYPE

SYNTAX IPAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The IP Address of the SNMP engine on which the alarm is occurring. This is used to identify the source of an SNMPv1 trap, since an alarmActiveEngineId cannot be extracted from the SNMPv1 trap pdu.

This object MUST always be instantiated, even if the list can contain alarms from only one engine."

```
::= { alarmActiveEntry 6 }
```

alarmActiveContextEngineID OBJECT-TYPE

SYNTAX SnmpEngineID

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"If the alarm is occurring on a device using a protocol which has a contextEngineID element like SNMPv3, this object has that value. Otherwise its value is a zero-length string."

```
::= { alarmActiveEntry 7 }
```

Expires 22 April 2001

[Page 10]

alarmActiveContextName OBJECT-TYPE

SYNTAX SnmpAdminString

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The name of the SNMP MIB context from which the alarm came.
For SNMPv1 Traps this is the community string from the Trap.
If the alarm's source SNMP engine is known not to support
multiple contexts, this object is not instantiated."

::= { alarmActiveEntry 8 }

alarmActiveVariables OBJECT-TYPE

SYNTAX Unsigned32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of variables in alarmActiveVariableTable for this
Notification."

::= { alarmActiveEntry 9 }

alarmActiveNotificationID OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The NOTIFICATION-TYPE object identifier of the Notification
that occurred."

::= { alarmActiveEntry 10 }

alarmActiveTrendIndication OBJECT-TYPE

SYNTAX INTEGER

```
{  
  moreSevere (1),  
  noChange (2),  
  lessSevere (3)  
}
```

MAX-ACCESS read-only

STATUS current

DESCRIPTION

" Represents the trend indication values for the alarms
as per (ITU-T X.733)."

::= { alarmActiveEntry 11 }

alarmActiveLogIndex OBJECT-TYPE

SYNTAX Unsigned32 (0..4294967295)

MAX-ACCESS read-only

Expires 22 April 2001

[Page 11]

```

STATUS      current
DESCRIPTION
    "This number can be considered a sequence number for the trap.
    It should be the same as the log index in the notification log
    MIB, if used.  If no log index or sequence number applies to the
    trap, then this object should have the value of 0."
 ::= { alarmActiveEntry 12 }

```

```

alarmActiveDetailsIndex OBJECT-TYPE
    SYNTAX      Unsigned32 (0..4294967295)
    MAX-ACCESS  read-only
    STATUS      current
    DESCRIPTION
        "The index of the corresponding row in the alarmDetails table.
        If the alarmDetails table is not supported this object should
        have a value of 0."
    ::= { alarmActiveEntry 13 }

```

-- -- Active Alarm Variable Table --

```

alarmActiveVariableTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF AlarmActiveVariableEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "A table of variables to go with active alarm entries."
    ::= { alarmObjects 3 }

```

```

alarmActiveVariableEntry OBJECT-TYPE
    SYNTAX      AlarmActiveVariableEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "Entries appear in this table when there are variables in
        the varbind list of a corresponding alarm in alarmActiveTable."
    INDEX      { alarmListName, alarmActiveIndex, alarmActiveVariableIndex
}
    ::= { alarmActiveVariableTable 1 }

```

```

AlarmActiveVariableEntry ::= SEQUENCE {
    alarmActiveVariableIndex      Unsigned32,
    alarmActiveVariableID         OBJECT IDENTIFIER,
    alarmActiveVariableValueType  INTEGER,
    alarmActiveVariableCounter32Val Counter32,
    alarmActiveVariableUnsigned32Val Unsigned32,
    alarmActiveVariableTimeTicksVal TimeTicks,
    alarmActiveVariableInteger32Val Integer32,
    alarmActiveVariableOctetStringVal OCTET STRING,

```

Expires 22 April 2001

[Page 12]

```
alarmActiveVariableIpAddressVal      IPAddress,
alarmActiveVariableOidVal            OBJECT IDENTIFIER,
alarmActiveVariableCounter64Val      Counter64,
alarmActiveVariableOpaqueVal        Opaque }
```

alarmActiveVariableIndex OBJECT-TYPE

```
SYNTAX      Unsigned32 (1..4294967295)
MAX-ACCESS  not-accessible
STATUS      current
```

DESCRIPTION

"A monotonically increasing integer, starting at 1 for a given alarmActiveIndex, for indexing variables within the active alarm list."

```
::= { alarmActiveVariableEntry 1 }
```

alarmActiveVariableID OBJECT-TYPE

```
SYNTAX      OBJECT IDENTIFIER
MAX-ACCESS  read-only
STATUS      current
```

DESCRIPTION

"The variable's object identifier."

```
::= { alarmActiveVariableEntry 2 }
```

alarmActiveVariableValueType OBJECT-TYPE

```
SYNTAX      INTEGER { counter32(1), unsigned32(2), timeTicks(3),
                    integer32(4), ipAddress(5), octetString(6),
                    objectId(7), counter64(8), opaque(9) }
```

```
MAX-ACCESS  read-only
STATUS      current
```

DESCRIPTION

"The type of the value. One and only one of the value objects that follow is used, based on this type."

```
::= { alarmActiveVariableEntry 3 }
```

alarmActiveVariableCounter32Val OBJECT-TYPE

```
SYNTAX      Counter32
MAX-ACCESS  read-only
STATUS      current
```

DESCRIPTION

"The value when alarmActiveVariableType is 'counter32'."

```
::= { alarmActiveVariableEntry 4 }
```

alarmActiveVariableUnsigned32Val OBJECT-TYPE

```
SYNTAX      Unsigned32
MAX-ACCESS  read-only
STATUS      current
```

DESCRIPTION

"The value when alarmActiveVariableType is 'unsigned32'."

Expires 22 April 2001

[Page 13]

```
 ::= { alarmActiveVariableEntry 5 }
```

alarmActiveVariableTimeTicksVal OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'timeTicks'."

```
 ::= { alarmActiveVariableEntry 6 }
```

alarmActiveVariableInteger32Val OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'integer32'."

```
 ::= { alarmActiveVariableEntry 7 }
```

alarmActiveVariableOctetStringVal OBJECT-TYPE

SYNTAX OCTET STRING

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'octetString'."

```
 ::= { alarmActiveVariableEntry 8 }
```

alarmActiveVariableIpAddressVal OBJECT-TYPE

SYNTAX IpAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'ipAddress'."

```
 ::= { alarmActiveVariableEntry 9 }
```

alarmActiveVariableOidVal OBJECT-TYPE

SYNTAX OBJECT IDENTIFIER

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'objectId'."

```
 ::= { alarmActiveVariableEntry 10 }
```

alarmActiveVariableCounter64Val OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The value when alarmActiveVariableType is 'counter64'."

Expires 22 April 2001

[Page 14]

```
::= { alarmActiveVariableEntry 11 }
```

```
alarmActiveVariableOpaqueVal OBJECT-TYPE
```

```
SYNTAX      Opaque
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The value when alarmActiveVariableType is 'opaque'."
```

```
::= { alarmActiveVariableEntry 12 }
```

```
-- -- Statistics --
```

```
alarmActiveStatsTable OBJECT-TYPE
```

```
SYNTAX      SEQUENCE OF AlarmActiveStatsEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "This table represents the alarm statistics type  
    information."
```

```
::= { alarmObjects 4 }
```

```
alarmActiveStatsEntry OBJECT-TYPE
```

```
SYNTAX      AlarmActiveStatsEntry
```

```
MAX-ACCESS  not-accessible
```

```
STATUS      current
```

```
DESCRIPTION
```

```
    "Statistics on the current active alarms."
```

```
INDEX      { alarmListName }
```

```
::= { alarmActiveStatsTable 1 }
```

```
AlarmActiveStatsEntry ::=
```

```
SEQUENCE {
```

```
    alarmActiveStatsTotalActive    Unsigned32
```

```
}
```

```
alarmActiveStatsTotalActive OBJECT-TYPE
```

```
SYNTAX      Unsigned32
```

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

```
STATUS      current
```

```
DESCRIPTION
```

```
    "The total number of currently active alarms on the system."
```

Expires 22 April 2001

[Page 15]

```
::= { alarmActiveStatsEntry 1 }
```

```
-- Conformance Stuff
```

```
alarmConformance OBJECT IDENTIFIER ::= { alarm 2 }
```

```
alarmDetailsGroup OBJECT-GROUP
```

```
  OBJECTS {  
    alarmDetailsIndex,  
    alarmDetailsNotificationId,  
    alarmDetailsClearNotificationId,  
    alarmDetailsEventType,  
    alarmDetailsProbableCause,  
    alarmDetailsPerceivedSeverity,  
    alarmDetailsAdditionalText  
  }
```

```
  STATUS current
```

```
  DESCRIPTION
```

```
    "Alarm details list group."
```

```
  ::= { alarmConformance 2 }
```

```
alarmActiveListGroup OBJECT-GROUP
```

```
OBJECTS {
```

```
  alarmListName,  
  alarmActiveIndex,  
  alarmActiveTime,  
  alarmActiveDateAndTime,  
  alarmActiveEngineID,  
  alarmActiveEngineAddress,  
  alarmActiveContextEngineID,  
  alarmActiveContextName,  
  alarmActiveVariables,  
  alarmActiveNotificationID,  
  alarmActiveLogIndex,  
  alarmActiveVariableIndex,  
  alarmActiveVariableID,  
  alarmActiveVariableValueType,  
  alarmActiveVariableCounter32Val,  
  alarmActiveVariableUnsigned32Val,  
  alarmActiveVariableTimeTicksVal,  
  alarmActiveVariableInteger32Val,  
  alarmActiveVariableOctetStringVal,  
  alarmActiveVariableIpAddressVal,  
  alarmActiveVariableOidVal,  
  alarmActiveVariableCounter64Val,  
  alarmActiveVariableOpaqueVal
```

Expires 22 April 2001

[Page 16]

```

    }                STATUS    current
DESCRIPTION
    "Active Alarm list group."
 ::= { alarmConformance 3}

```

```

alarmActiveSummaryGroup OBJECT-GROUP
  OBJECTS {
    alarmActiveStatsTotalActive
  }
  STATUS    current
DESCRIPTION
  " Active alarm summary group."
 ::= { alarmConformance 4}

```

```

alarmCompliance MODULE-COMPLIANCE
  STATUS    current
DESCRIPTION
  "The compliance statement for systems supporting
  the Alarm MIB."
MODULE -- this module
  MANDATORY-GROUPS {
    alarmActiveListGroup
  }
  GROUP alarmActiveSummaryGroup
DESCRIPTION
  "The actual active alarms."

 ::= { alarmConformance 1 }          END

```

8. Example

```

Define the following Object:
acmeWidgetIndex OBJECT-TYPE
  SYNTAX    Integer32
  MAX-ACCESS read-only
  STATUS    current
DESCRIPTION
  "A unique number which identifies a particular Widget."
 ::= { acmeWidgetEntry 1 }

```

```

Define the following three traps:
acmeWidgetTemperatureCritical NOTIFICATION-TYPE
  OBJECTS { acmeWidgetIndex }
  STATUS    current
DESCRIPTION
  "This trap indicates that the indicated

```

Expires 22 April 2001

[Page 17]

```

        widget has reached a critical temperature."
 ::= { acmeWidgetTraps 1 }

```

```

acmeWidgetTemperatureNormal NOTIFICATION-TYPE
  OBJECTS { acmeWidgetIndex }
  STATUS    current
  DESCRIPTION
    "This trap indicates that the indicated widget has
    reached a normal temperature."
 ::= { acmeWidgetTraps 2 }

```

```

bgpBackwardTransition NOTIFICATION-TYPE
  OBJECTS { bgpPeerLastError,
            bgpPeerState      }
  STATUS    current
  DESCRIPTION
    "The BGPBackwardTransition Event is generated
    when the BGP FSM moves from a higher numbered
    state to a lower numbered state."
 ::= { bgpTraps 2 }

```

0. Active alarm table empty and nothing in notification log

alarmActiveTable		nlmLogTable	
-----		-----	
alarmActiveIndex	alarm	nlmLogIndex	alarm
-----		-----	

1. Temperature of widget 2 goes critical

alarmActiveTable	

alarmActiveIndex	alarm

1	acmeWidgetTemperatureCritical

nlmLogTable	

nlmLogIndex	alarm

1	acmeWidgetTemperatureCritical

2. BGP peering session transitions from a state of established

Expires 22 April 2001

[Page 18]

to opensent

alarmActiveTable	
alarmActiveIndex	alarm
1	acmeWidgetTemperatureCritical
2	bgpBackwardTransition

nlmLogTable	
nlmLogIndex	alarm
1	acmeWidgetTemperatureCritical
2	bgpBackwardTransition

3. Temperature of widget 2 goes back to normal

alarmActiveTable	
alarmActiveIndex	alarm
2	bgpBackwardTransition

nlmLogTable	
nlmLogIndex	alarm
1	acmeWidgetTemperatureCritical
2	bgpBackwardTransition
3	acmeWidgetTemperatureNormal

4. Time passes BGP alarm ages out.

alarmActiveTable	
alarmActiveIndex	alarm

Expires 22 April 2001

[Page 19]

nlmLogTable	

nlmLogIndex	alarm

1	acmeWidgetTemperatureCritical
2	bgpBackwardTransition
3	acmeWidgetTemperatureNormal

9. Security Considerations

There are no management objects defined in this MIB that have a MAX-ACCESS clause of read-write and/or read-create. So, if this MIB is implemented correctly, then there is no risk that an intruder can alter or create any management objects of this MIB via direct SNMP SET operations.

10. Author's Address

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11. References

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Expires 22 April 2001

[Page 20]

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Expires 22 April 2001

[Page 21]