

Network Working Group
Internet-Draft
Obsoletes: [4008](#) (if approved)
Intended status: Standards Track
Expires: December 26, 2015

S. Perreault
Jive Communications
T. Tsou
Huawei Technologies
S. Sivakumar
Cisco Systems
T. Taylor
PT Taylor Consulting
June 24, 2015

Deprecation of MIB Module NAT-MIB (Managed Objects for Network Address
Translators (NAT))
draft-perrault-behave-deprecate-nat-mib-v1-04

Abstract

This memo deprecates MIB module NAT-MIB, a portion of the Management Information Base (MIB) previously defined in [RFC 4008](#) for devices implementing Network Address Translator (NAT) function. A companion document defines a new version, NAT-MIB-V2, which responds to deficiencies found in module NAT-MIB and adds new capabilities.

This document obsoletes [RFC 4008](#). All [RFC 4008](#) MIB objects are included in this version unchanged with only the STATUS changed to deprecated, with a non-substantive exception. The exception was to retype internet addresses with a (SIZE (4|16) qualification to get rid of a SMILINT warning.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on December 26, 2015.

Copyright Notice

Copyright (c) 2015 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
2.	The Internet-Standard Management Framework	3
3.	Motivation For Deprecating NAT-MIB	3
3.1.	Deprecated Features	3
3.2.	Desirable New Features	4
4.	Definitions	4
5.	Security Considerations	54
6.	IANA Considerations	54
7.	References	55
7.1.	Normative References	55
7.2.	Informative References	56
	Authors' Addresses	56

[1.](#) Introduction

This memo deprecates a portion of the Management Information Base (MIB), MIB module NAT-MIB, for devices implementing the Network Address Translator (NAT) function. New implementations are encouraged to base themselves upon the second version of this MIB module, NAT-MIB-V2, defined in [[I-D.ietf-behave-nat-mib-v2](#)]. NAT types and their characteristics are defined in [[RFC2663](#)]. Traditional NAT function, in particular is defined in [[RFC3022](#)]. Neither NAT-MIB nor NAT-MIB-V2 addresses firewall functions and neither can be used for configuring or monitoring them.

[Section 2](#) provides references to the Simple Network Management

Protocol (SNMP) management framework, which was used as the basis for the original MIB module definition and its deprecation. [Section 3](#) provides motivation for the deprecation of module NAT-MIB and its replacement by module NAT-MIB-V2. [Section 4](#) has the complete NAT-MIB module definition, with the STATUS of all objects changed to

deprecated. [Section 5](#) describes security considerations relating to NAT-MIB, basically relying on the security considerations in [\[RFC4008\]](#) and [\[I-D.ietf-behave-nat-mib-v2\]](#).

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [\[RFC2119\]](#).

[2.](#) The Internet-Standard Management Framework

For a detailed overview of the documents that describe the current Internet-Standard Management Framework, please refer to [Section 7 of \[RFC3410\]](#).

Managed objects are accessed via a virtual information store, termed the Management Information Base or MIB. MIB objects are generally accessed through the Simple Network Management Protocol (SNMP). Objects in the MIB are defined using the mechanisms defined in the Structure of Management Information (SMI). This memo specifies a MIB module that is compliant to the SMIV2, which is described in STD 58, [\[RFC2578\]](#), STD 58, [\[RFC2579\]](#) and STD 58, [\[RFC2580\]](#).

[3.](#) Motivation For Deprecating NAT-MIB

This section provides the motivation for deprecating the NAT-MIB module and its replacement by a new version.

[3.1.](#) Deprecated Features

All objects defined in [\[RFC4008\]](#) have been marked with "STATUS deprecated" for the following reasons:

Writability: Experience with NAT has shown that implementations vary tremendously. The NAT algorithms and data structures have little in common across devices, and this results in wildly incompatible

configuration parameters. Therefore, few implementations were ever able to claim full compliance.

Lesson learned: the MIB should be read-only as much as possible.

Exposing configuration parameters: Even in read-only mode, many configuration parameters were exposed by [\[RFC4008\]](#) (e.g. timeouts). Since implementations vary wildly in their sets of configuration parameters, few implementations could claim even basic compliance.

Lesson learned: the NAT MIB's purpose is not to expose configuration parameters.

Interfaces: Objects from [\[RFC4008\]](#) tie NAT state with interfaces (e.g. the interface table, the way map entries are grouped by interface). Many NAT implementations either never keep track of the interface or associate a mapping to a set of interfaces. Since interfaces are at the core of [\[RFC4008\]](#), many NAT devices were unable to have a proper implementation.

Lesson learned: NAT is a logical function that may be independent of interfaces. Do not tie NAT state with interfaces.

NAT service types: [\[RFC4008\]](#) used four categories of NAT service: basicNat, napt, bidirectionalNat, twiceNat. These are ill-defined and many implementations either use different categories or do not use categories at all.

Lesson learned: do not try to categorize NAT types.

Limited transport protocol set: The set of transport protocols was defined as: other, icmp, udp, tcp. Furthermore, the numeric values corresponding to those labels were arbitrary, without relation to the actual standard protocol numbers. This meant that NAT implementations were limited to those protocols and were unable to expose information about DCCP, SCTP, etc.

Lesson learned: use standard transport protocol numbers.

[3.2.](#) Desirable New Features

A number of desirable new features have been identified that are not present in NAT-MIB. See the latter part of [\[I-D.ietf-behave-nat-mib-v2\]](#) [Section 2](#).

[4.](#) Definitions

This MIB module IMPORTs objects from [\[RFC2578\]](#), [\[RFC2579\]](#), and [\[RFC4001\]](#).

NAT-MIB DEFINITIONS ::= BEGIN

IMPORTS

MODULE-IDENTITY,
OBJECT-TYPE,
Integer32,
Unsigned32,
Gauge32,

Perreault, et al.

Expires December 26, 2015

[Page 4]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

Counter64,
TimeTicks,
mib-2,
NOTIFICATION-TYPE
 FROM SNMPv2-SMI
TEXTUAL-CONVENTION,
StorageType,
RowStatus
 FROM SNMPv2-TC
MODULE-COMPLIANCE,
NOTIFICATION-GROUP,
OBJECT-GROUP
 FROM SNMPv2-CONF
ifIndex,
ifCounterDiscontinuityGroup
 FROM IF-MIB
SnmAdminString
 FROM SNMP-FRAMEWORK-MIB
InetAddressType,
InetAddress,
InetPortNumber
 FROM INET-ADDRESS-MIB;

natMIB MODULE-IDENTITY

LAST-UPDATED "201506240000Z"

-- RFC Ed.: set to publication date

ORGANIZATION

"IETF Behavior Engineering for Hindrance Avoidance
(BEHAVE) Working Group"

CONTACT-INFO

"Working Group Email: behave@ietf.org"

Simon Perreault
Jive Communications
Quebec, QC
Canada

Email: sperreault@jive.com

Tina Tsou
Huawei Technologies
Bantian, Longgang District
Shenzhen 518129
PR China

Email: tina.tsou.zouting@huawei.com

Perreault, et al.

Expires December 26, 2015

[Page 5]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

Senthil Sivakumar
Cisco Systems
7100-8 Kit Creek Road
Research Triangle Park, North Carolina 27709
USA

Phone: +1 919 392 5158
Email: ssenthil@cisco.com

Tom Taylor
PT Taylor Consulting
Ottawa
Canada

Email: tom.taylor.stds@gmail.com"

```

DESCRIPTION
    "This MIB module defines the generic managed objects
    for NAT.

    Copyright (C) The Internet Society (2015).  This
    version of this MIB module is part of RFC yyyy; see
    the RFC itself for full legal notices."
-- RFC Ed.: replace yyyy with actual RFC number & remove this note"
    REVISION      "201506240000Z"
-- RFC Ed.: set to publication date
    DESCRIPTION
        "Deprecation, published as RFC yyyy."
-- RFC Ed.: replace yyyy with actual RFC number & set date"
    REVISION      "200503210000Z"  -- 21 March 2005
    DESCRIPTION
        "Initial version, published as RFC 4008."
    ::= { mib-2 123 }

```

```

natMIBObjects OBJECT IDENTIFIER ::= { natMIB 1 }

```

```

NatProtocolType ::= TEXTUAL-CONVENTION
    STATUS      deprecated
    DESCRIPTION
        "A list of protocols that support the network
        address translation.  Inclusion of the values is
        not intended to imply that those protocols
        need to be supported.  Any change in this
        TEXTUAL-CONVENTION should also be reflected in
        the definition of NatProtocolMap, which is a
        BITS representation of this."
    SYNTAX      INTEGER {
        none (1),  -- not specified
        other (2), -- none of the following

```

Perreault, et al.	Expires December 26, 2015	[Page 6]
-------------------	---------------------------	----------

Internet-Draft	Deprecation of NAT MIB v1	June 2015
----------------	---------------------------	-----------

```

        icmp (3),
        udp (4),
        tcp (5)
    }

```

```

NatProtocolMap ::= TEXTUAL-CONVENTION
    STATUS      deprecated
    DESCRIPTION

```

"A bitmap of protocol identifiers that support the network address translation. Any change in this TEXTUAL-CONVENTION should also be reflected in the definition of NatProtocolType."

SYNTAX BITS {
 other (0),
 icmp (1),
 udp (2),
 tcp (3)
}

NatAddrMapId ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS deprecated

DESCRIPTION

"A unique id that is assigned to each address map by a NAT enabled device."

SYNTAX Unsigned32 (1..4294967295)

NatBindIdOrZero ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS deprecated

DESCRIPTION

"A unique id that is assigned to each bind by a NAT enabled device. The bind id will be zero in the case of a Symmetric NAT."

SYNTAX Unsigned32 (0..4294967295)

NatBindId ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS deprecated

DESCRIPTION

"A unique id that is assigned to each bind by a NAT enabled device."

SYNTAX Unsigned32 (1..4294967295)

NatSessionId ::= TEXTUAL-CONVENTION

DISPLAY-HINT "d"

STATUS deprecated

DESCRIPTION

"A unique id that is assigned to each session by

a NAT enabled device."
SYNTAX Unsigned32 (1..4294967295)

NatBindMode ::= TEXTUAL-CONVENTION

 STATUS deprecated

 DESCRIPTION

 "An indication of whether the bind is
 an address bind or an address port bind."

SYNTAX INTEGER {
 addressBind (1),
 addressPortBind (2)
 }

NatAssociationType ::= TEXTUAL-CONVENTION

 STATUS deprecated

 DESCRIPTION

 "An indication of whether the association is
 static or dynamic."

SYNTAX INTEGER {
 static (1),
 dynamic (2)
 }

NatTranslationEntity ::= TEXTUAL-CONVENTION

 STATUS deprecated

 DESCRIPTION

 "An indication of a) the direction of a session for
 which an address map entry, address bind or port
 bind is applicable, and b) the entity (source or
 destination) within the session that is subject to
 translation."

SYNTAX BITS {
 inboundSrcEndPoint (0),
 outboundDstEndPoint(1),
 inboundDstEndPoint (2),
 outboundSrcEndPoint(3)
 }

--

-- Default Values for the Bind and NAT Protocol Timers

--

natDefTimeouts OBJECT IDENTIFIER ::= { natMIBObjects 1 }

natNotifCtrl OBJECT IDENTIFIER ::= { natMIBObjects 2 }

```
--
-- Address Bind and Port Bind related NAT configuration
--

natBindDefIdleTimeout OBJECT-TYPE
    SYNTAX      Unsigned32  (0..4294967295)
    UNITS        "seconds"
    MAX-ACCESS   read-write
    STATUS       deprecated
    DESCRIPTION
        "The default Bind (Address Bind or Port Bind) idle
        timeout parameter.

        If the agent is capable of storing non-volatile
        configuration, then the value of this object must be
        restored after a re-initialization of the management
        system."
    DEFVAL { 0 }
    ::= { natDefTimeouts 1 }

--
-- UDP related NAT configuration
--

natUdpDefIdleTimeout OBJECT-TYPE
    SYNTAX      Unsigned32  (1..4294967295)
    UNITS        "seconds"
    MAX-ACCESS   read-write
    STATUS       deprecated
    DESCRIPTION
        "The default UDP idle timeout parameter.

        If the agent is capable of storing non-volatile
        configuration, then the value of this object must be
        restored after a re-initialization of the management
        system."
    DEFVAL { 300 }
    ::= { natDefTimeouts 2 }

--
-- ICMP related NAT configuration
--

natIcmpDefIdleTimeout OBJECT-TYPE
    SYNTAX      Unsigned32  (1..4294967295)
    UNITS        "seconds"
```

MAX-ACCESS read-write
STATUS deprecated

DESCRIPTION

"The default ICMP idle timeout parameter.

If the agent is capable of storing non-volatile configuration, then the value of this object must be restored after a re-initialization of the management system."

DEFVAL { 300 }

::= { natDefTimeouts 3 }

--

-- Other protocol parameters

--

natOtherDefIdleTimeout OBJECT-TYPE

SYNTAX Unsigned32 (1..4294967295)

UNITS "seconds"

MAX-ACCESS read-write

STATUS deprecated

DESCRIPTION

"The default idle timeout parameter for protocols represented by the value other (2) in NatProtocolType.

If the agent is capable of storing non-volatile configuration, then the value of this object must be restored after a re-initialization of the management system."

DEFVAL { 60 }

::= { natDefTimeouts 4 }

--

-- TCP related NAT Timers

--

natTcpDefIdleTimeout OBJECT-TYPE

SYNTAX Unsigned32 (1..4294967295)

UNITS "seconds"

MAX-ACCESS read-write

STATUS deprecated

DESCRIPTION

"The default time interval that a NAT session for an established TCP connection is allowed to remain valid without any activity on the TCP connection.

If the agent is capable of storing non-volatile configuration, then the value of this object must be restored after a re-initialization of the management

Perreault, et al.

Expires December 26, 2015

[Page 10]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

system."

DEFVAL { 86400 }

::= { natDefTimeouts 5 }

natTcpDefNegTimeout OBJECT-TYPE

SYNTAX Unsigned32 (1..4294967295)

UNITS "seconds"

MAX-ACCESS read-write

STATUS deprecated

DESCRIPTION

"The default time interval that a NAT session for a TCP connection that is not in the established state is allowed to remain valid without any activity on the TCP connection.

If the agent is capable of storing non-volatile configuration, then the value of this object must be restored after a re-initialization of the management system."

DEFVAL { 60 }

::= { natDefTimeouts 6 }

natNotifThrottlingInterval OBJECT-TYPE

SYNTAX Integer32 (0 | 5..3600)

UNITS "seconds"

MAX-ACCESS read-write

STATUS deprecated

DESCRIPTION

"This object controls the generation of the natPacketDiscard notification.

If this object has a value of zero, then no

natPacketDiscard notifications will be transmitted by the agent.

If this object has a non-zero value, then the agent must not generate more than one natPacketDiscard 'notification-event' in the indicated period, where a 'notification-event' is the generation of a single notification PDU type to a list of notification destinations. If additional NAT packets are discarded within the throttling period, then notification-events for these changes must be suppressed by the agent until the current throttling period expires.

If natNotifThrottlingInterval notification generation is enabled, the suggested default throttling period is 60 seconds, but generation of the natPacketDiscard

notification should be disabled by default.

If the agent is capable of storing non-volatile configuration, then the value of this object must be restored after a re-initialization of the management system.

The actual transmission of notifications is controlled via the MIB modules in [RFC 3413](#)."

```
DEFVAL { 0 }  
::= { natNotifCtrl 1 }
```

```
--  
-- The NAT Interface Table  
--
```

```
natInterfaceTable OBJECT-TYPE  
    SYNTAX      SEQUENCE OF NatInterfaceEntry  
    MAX-ACCESS  not-accessible  
    STATUS      deprecated  
    DESCRIPTION  
        "This table specifies the attributes for interfaces on a  
        device supporting NAT function."  
    ::= { natMIBObjects 3 }
```

```

natInterfaceEntry OBJECT-TYPE
    SYNTAX      NatInterfaceEntry
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "Each entry in the natInterfaceTable holds a set of
        parameters for an interface, instantiated by
        ifIndex. Therefore, the interface index must have been
        assigned, according to the applicable procedures,
        before it can be meaningfully used.
        Generally, this means that the interface must exist.

        When natStorageType is of type nonVolatile, however,
        this may reflect the configuration for an interface
        whose ifIndex has been assigned but for which the
        supporting implementation is not currently present."
    INDEX      { ifIndex }
    ::= { natInterfaceTable 1 }

NatInterfaceEntry ::= SEQUENCE {
    natInterfaceRealm      INTEGER,
    natInterfaceServiceType  BITS,

```

Perreault, et al. Expires December 26, 2015 [Page 12]

Internet-Draft Deprecation of NAT MIB v1 June 2015

```

    natInterfaceInTranslates      Counter64,
    natInterfaceOutTranslates     Counter64,
    natInterfaceDiscards          Counter64,
    natInterfaceStorageType       StorageType,
    natInterfaceRowStatus         RowStatus
}

```

```

natInterfaceRealm OBJECT-TYPE
    SYNTAX      INTEGER {
        private (1),
        public (2)
    }
    MAX-ACCESS  read-create
    STATUS      deprecated
    DESCRIPTION
        "This object identifies whether this interface is
        connected to the private or the public realm."
    DEFVAL      { public }

```

```

::= { natInterfaceEntry 1 }

natInterfaceServiceType OBJECT-TYPE
    SYNTAX  BITS {
        basicNat (0),
        napt (1),
        bidirectionalNat (2),
        twiceNat (3)
    }
    MAX-ACCESS  read-create
    STATUS      deprecated
    DESCRIPTION
        "An indication of the direction in which new sessions
         are permitted and the extent of translation done within
         the IP and transport headers."
    ::= { natInterfaceEntry 2 }

natInterfaceInTranslates OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "Number of packets received on this interface that
         were translated.
         Discontinuities in the value of this counter can occur
         at reinitialization of the management system and at
         other times as indicated by the value of
         ifCounterDiscontinuityTime on the relevant interface."
    ::= { natInterfaceEntry 3 }

```

```

natInterfaceOutTranslates OBJECT-TYPE
    SYNTAX      Counter64
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "Number of translated packets that were sent out this
         interface.

         Discontinuities in the value of this counter can occur
         at reinitialization of the management system and at
         other times as indicated by the value of

```

ifCounterDiscontinuityTime on the relevant interface."
::= { natInterfaceEntry 4 }

natInterfaceDiscards OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"Number of packets that had to be rejected/dropped due to
a lack of resources for this interface.

Discontinuities in the value of this counter can occur
at reinitialization of the management system and at
other times as indicated by the value of
ifCounterDiscontinuityTime on the relevant interface."

::= { natInterfaceEntry 5 }

natInterfaceStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"The storage type for this conceptual row.
Conceptual rows having the value 'permanent'
need not allow write-access to any columnar objects
in the row."

REFERENCE

"Textual Conventions for SMIV2, [Section 2](#)."

DEFVAL { nonVolatile }

::= { natInterfaceEntry 6 }

natInterfaceRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"The status of this conceptual row.

Until instances of all corresponding columns are
appropriately configured, the value of the
corresponding instance of the natInterfaceRowStatus
column is 'notReady'.

In particular, a newly created row cannot be made active until the corresponding instance of natInterfaceServiceType has been set.

None of the objects in this row may be modified while the value of this object is active(1)."

REFERENCE

"Textual Conventions for SMIV2, [Section 2](#)."

::= { natInterfaceEntry 7 }

--

-- The Address Map Table

--

natAddrMapTable OBJECT-TYPE

SYNTAX SEQUENCE OF NatAddrMapEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"This table lists address map parameters for NAT."

::= { natMIBObjects 4 }

natAddrMapEntry OBJECT-TYPE

SYNTAX NatAddrMapEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"This entry represents an address map to be used for NAT and contributes to the dynamic and/or static address mapping tables of the NAT device."

INDEX { ifIndex, natAddrMapIndex }

::= { natAddrMapTable 1 }

NatAddrMapEntry ::= SEQUENCE {

natAddrMapIndex	NatAddrMapId,
natAddrMapName	SnmpAdminString,
natAddrMapEntryType	NatAssociationType,
natAddrMapTranslationEntity	NatTranslationEntity,
natAddrMapLocalAddrType	InetAddressType,
natAddrMapLocalAddrFrom	InetAddress,
natAddrMapLocalAddrTo	InetAddress,
natAddrMapLocalPortFrom	InetPortNumber,

```
    natAddrMapLocalPortTo      InetPortNumber,
    natAddrMapGlobalAddrType   InetAddressType,
    natAddrMapGlobalAddrFrom   InetAddress,
    natAddrMapGlobalAddrTo     InetAddress,
    natAddrMapGlobalPortFrom   InetPortNumber,
    natAddrMapGlobalPortTo     InetPortNumber,
    natAddrMapProtocol         NatProtocolMap,
    natAddrMapInTranslates     Counter64,
    natAddrMapOutTranslates    Counter64,
    natAddrMapDiscards         Counter64,
    natAddrMapAddrUsed         Gauge32,
    natAddrMapStorageType      StorageType,
    natAddrMapRowStatus        RowStatus
}

natAddrMapIndex OBJECT-TYPE
    SYNTAX      NatAddrMapId
    MAX-ACCESS   not-accessible
    STATUS       deprecated
    DESCRIPTION
        "Along with ifIndex, this object uniquely
         identifies an entry in the natAddrMapTable.
         Address map entries are applied in the order
         specified by natAddrMapIndex."
    ::= { natAddrMapEntry 1 }

natAddrMapName OBJECT-TYPE
    SYNTAX      SnmpAdminString (SIZE(1..32))
    MAX-ACCESS   read-create
    STATUS       deprecated
    DESCRIPTION
        "Name identifying all map entries in the table associated
         with the same interface. All map entries with the same
         ifIndex MUST have the same map name."
    ::= { natAddrMapEntry 2 }

natAddrMapEntryType OBJECT-TYPE
    SYNTAX      NatAssociationType
    MAX-ACCESS   read-create
    STATUS       deprecated
    DESCRIPTION
        "This parameter can be used to set up static
         or dynamic address maps."
    ::= { natAddrMapEntry 3 }

natAddrMapTranslationEntity OBJECT-TYPE
    SYNTAX      NatTranslationEntity
```

STATUS deprecated

DESCRIPTION

"The end-point entity (source or destination) in inbound or outbound sessions (i.e., first packets) that may be translated by an address map entry.

Session direction (inbound or outbound) is derived from the direction of the first packet of a session traversing a NAT interface. NAT address (and Transport-ID) maps may be defined to effect inbound or outbound sessions.

Traditionally, address maps for Basic NAT and NAPT are configured on a public interface for outbound sessions, effecting translation of source end-point. The value of this object must be set to outboundSrcEndPoint for those interfaces.

Alternately, if address maps for Basic NAT and NAPT were to be configured on a private interface, the desired value for this object for the map entries would be inboundSrcEndPoint (i.e., effecting translation of source end-point for inbound sessions).

If TwiceNAT were to be configured on a private interface, the desired value for this object for the map entries would be a bitmask of inboundSrcEndPoint and inboundDstEndPoint."

```
::= { natAddrMapEntry 4 }
```

natAddrMapLocalAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"This object specifies the address type used for natAddrMapLocalAddrFrom and natAddrMapLocalAddrTo."

```
::= { natAddrMapEntry 5 }
```

natAddrMapLocalAddrFrom OBJECT-TYPE

SYNTAX InetAddress
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"This object specifies the first IP address of the range of IP addresses mapped by this translation entry. The value of this object must be less than or equal to the value of the natAddrMapLocalAddrTo object.

Perreault, et al.

Expires December 26, 2015

[Page 17]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

The type of this address is determined by the value of the natAddrMapLocalAddrType object."
::= { natAddrMapEntry 6 }

natAddrMapLocalAddrTo OBJECT-TYPE

SYNTAX InetAddress
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"This object specifies the last IP address of the range of IP addresses mapped by this translation entry. If only a single address is being mapped, the value of this object is equal to the value of natAddrMapLocalAddrFrom. For a static NAT, the number of addresses in the range defined by natAddrMapLocalAddrFrom and natAddrMapLocalAddrTo must be equal to the number of addresses in the range defined by natAddrMapGlobalAddrFrom and natAddrMapGlobalAddrTo. The value of this object must be greater than or equal to the value of the natAddrMapLocalAddrFrom object.

The type of this address is determined by the value of the natAddrMapLocalAddrType object."
::= { natAddrMapEntry 7 }

natAddrMapLocalPortFrom OBJECT-TYPE

SYNTAX InetPortNumber
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"If this conceptual row describes a Basic NAT address mapping, then the value of this object must be zero. If this conceptual row describes NAPT, then the value of

this object specifies the first port number in the range of ports being mapped.

The value of this object must be less than or equal to the value of the natAddrMapLocalPortTo object. If the translation specifies a single port, then the value of this object is equal to the value of natAddrMapLocalPortTo."

DEFVAL { 0 }

::= { natAddrMapEntry 8 }

natAddrMapLocalPortTo OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-create

STATUS deprecated

Perreault, et al.

Expires December 26, 2015

[Page 18]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

DESCRIPTION

"If this conceptual row describes a Basic NAT address mapping, then the value of this object must be zero. If this conceptual row describes NAPT, then the value of this object specifies the last port number in the range of ports being mapped.

The value of this object must be greater than or equal to the value of the natAddrMapLocalPortFrom object. If the translation specifies a single port, then the value of this object is equal to the value of natAddrMapLocalPortFrom."

DEFVAL { 0 }

::= { natAddrMapEntry 9 }

natAddrMapGlobalAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"This object specifies the address type used for natAddrMapGlobalAddrFrom and natAddrMapGlobalAddrTo."

::= { natAddrMapEntry 10 }

natAddrMapGlobalAddrFrom OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"This object specifies the first IP address of the range of IP addresses being mapped to. The value of this object must be less than or equal to the value of the natAddrMapGlobalAddrTo object.

The type of this address is determined by the value of the natAddrMapGlobalAddrType object."

::= { natAddrMapEntry 11 }

natAddrMapGlobalAddrTo OBJECT-TYPE

SYNTAX InetAddress
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"This object specifies the last IP address of the range of IP addresses being mapped to. If only a single address is being mapped to, the value of this object is equal to the value of natAddrMapGlobalAddrFrom. For a static NAT, the number of addresses in the range defined

by natAddrMapGlobalAddrFrom and natAddrMapGlobalAddrTo must be equal to the number of addresses in the range defined by natAddrMapLocalAddrFrom and natAddrMapLocalAddrTo. The value of this object must be greater than or equal to the value of the natAddrMapGlobalAddrFrom object.

The type of this address is determined by the value of the natAddrMapGlobalAddrType object."

::= { natAddrMapEntry 12 }

natAddrMapGlobalPortFrom OBJECT-TYPE

SYNTAX InetPortNumber
MAX-ACCESS read-create
STATUS deprecated
DESCRIPTION

"If this conceptual row describes a Basic NAT address mapping, then the value of this object must be zero. If this conceptual row describes NAPT, then the value of

this object specifies the first port number in the range of ports being mapped to.

The value of this object must be less than or equal to the value of the natAddrMapGlobalPortTo object. If the translation specifies a single port, then the value of this object is equal to the value natAddrMapGlobalPortTo."

DEFVAL { 0 }

::= { natAddrMapEntry 13 }

natAddrMapGlobalPortTo OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"If this conceptual row describes a Basic NAT address mapping, then the value of this object must be zero. If this conceptual row describes NAPT, then the value of this object specifies the last port number in the range of ports being mapped to.

The value of this object must be greater than or equal to the value of the natAddrMapGlobalPortFrom object. If the translation specifies a single port, then the value of this object is equal to the value of natAddrMapGlobalPortFrom."

DEFVAL { 0 }

::= { natAddrMapEntry 14 }

natAddrMapProtocol OBJECT-TYPE

SYNTAX NatProtocolMap

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"This object specifies a bitmap of protocol identifiers."

::= { natAddrMapEntry 15 }

natAddrMapInTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only
 STATUS deprecated
 DESCRIPTION
 "The number of inbound packets pertaining to this address map entry that were translated.
 Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."
 ::= { natAddrMapEntry 16 }

natAddrMapOutTranslates OBJECT-TYPE

SYNTAX Counter64
 MAX-ACCESS read-only
 STATUS deprecated
 DESCRIPTION
 "The number of outbound packets pertaining to this address map entry that were translated.
 Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."
 ::= { natAddrMapEntry 17 }

natAddrMapDiscards OBJECT-TYPE

SYNTAX Counter64
 MAX-ACCESS read-only
 STATUS deprecated
 DESCRIPTION
 "The number of packets pertaining to this address map entry that were dropped due to lack of addresses in the address pool identified by this address map. The value of this object must always be zero in case of static address map.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."
 ::= { natAddrMapEntry 18 }

natAddrMapAddrUsed OBJECT-TYPE

SYNTAX Gauge32

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of addresses pertaining to this address map that are currently being used from the NAT pool. The value of this object must always be zero in the case of a static address map."

::= { natAddrMapEntry 19 }

natAddrMapStorageType OBJECT-TYPE

SYNTAX StorageType

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"The storage type for this conceptual row. Conceptual rows having the value 'permanent' need not allow write-access to any columnar objects in the row."

REFERENCE

"Textual Conventions for SMIV2, [Section 2](#)."

DEFVAL { nonVolatile }

::= { natAddrMapEntry 20 }

natAddrMapRowStatus OBJECT-TYPE

SYNTAX RowStatus

MAX-ACCESS read-create

STATUS deprecated

DESCRIPTION

"The status of this conceptual row.

Until instances of all corresponding columns are appropriately configured, the value of the corresponding instance of the natAddrMapRowStatus column is 'notReady'.

None of the objects in this row may be modified while the value of this object is active(1)."

REFERENCE

"Textual Conventions for SMIV2, [Section 2](#)."

::= { natAddrMapEntry 21 }

```

--
-- Address Bind section
--

natAddrBindNumberOfEntries OBJECT-TYPE
    SYNTAX      Gauge32
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object maintains a count of the number of entries
         that currently exist in the natAddrBindTable."
    ::= { natMIBObjects 5 }

--
-- The NAT Address BIND Table
--

natAddrBindTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF NatAddrBindEntry
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "This table holds information about the currently
         active NAT BINDs."
    ::= { natMIBObjects 6 }

natAddrBindEntry OBJECT-TYPE
    SYNTAX      NatAddrBindEntry
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "Each entry in this table holds information about
         an active address BIND.  These entries are lost
         upon agent restart.

        This row has indexing which may create variables with
        more than 128 subidentifiers.  Implementers of this
        table must be careful not to create entries that would
        result in OIDs which exceed the 128 subidentifier limit.
        Otherwise, the information cannot be accessed using
        SNMPv1, SNMPv2c or SNMPv3."

    INDEX      { ifIndex,
                 natAddrBindLocalAddrType,
                 natAddrBindLocalAddr }
    ::= { natAddrBindTable 1 }

NatAddrBindEntry ::= SEQUENCE {

```

Internet-Draft

Deprecation of NAT MIB v1

June 2015

```
    natAddrBindLocalAddrType      InetAddressType,
    natAddrBindLocalAddr          InetAddress,
    natAddrBindGlobalAddrType     InetAddressType,
    natAddrBindGlobalAddr         InetAddress,
    natAddrBindId                 NatBindId,
    natAddrBindTranslationEntity  NatTranslationEntity,
    natAddrBindType               NatAssociationType,
    natAddrBindMapIndex           NatAddrMapId,
    natAddrBindSessions           Gauge32,
    natAddrBindMaxIdleTime        TimeTicks,
    natAddrBindCurrentIdleTime    TimeTicks,
    natAddrBindInTranslates       Counter64,
    natAddrBindOutTranslates      Counter64
}

natAddrBindLocalAddrType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "This object specifies the address type used for
         natAddrBindLocalAddr."
    ::= { natAddrBindEntry 1 }

natAddrBindLocalAddr OBJECT-TYPE
    SYNTAX      InetAddress (SIZE (4|16))
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "This object represents the private-realm specific
         network layer address, which maps to the public-realm
         address represented by natAddrBindGlobalAddr.

         The type of this address is determined by the value of
         the natAddrBindLocalAddrType object."
    ::= { natAddrBindEntry 2 }

natAddrBindGlobalAddrType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
```

"This object specifies the address type used for
natAddrBindGlobalAddr."
::= { natAddrBindEntry 3 }

natAddrBindGlobalAddr OBJECT-TYPE
SYNTAX InetAddress

Perreault, et al.

Expires December 26, 2015

[Page 24]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"This object represents the public-realm network layer
address that maps to the private-realm network layer
address represented by natAddrBindLocalAddr.

The type of this address is determined by the value of
the natAddrBindGlobalAddrType object."

::= { natAddrBindEntry 4 }

natAddrBindId OBJECT-TYPE
SYNTAX NatBindId
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"This object represents a bind id that is dynamically
assigned to each bind by a NAT enabled device. Each
bind is represented by a bind id that is
unique across both, the natAddrBindTable and the
natAddrPortBindTable."

::= { natAddrBindEntry 5 }

natAddrBindTranslationEntity OBJECT-TYPE
SYNTAX NatTranslationEntity
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"This object represents the direction of sessions
for which this bind is applicable and the endpoint
entity (source or destination) within the sessions that
is subject to translation using the BIND.

Orientation of the bind can be a superset of
translationEntity of the address map entry which

forms the basis for this bind.

For example, if the translationEntity of an address map entry is outboundSrcEndPoint, the translationEntity of a bind derived from this map entry may either be outboundSrcEndPoint or it may be bidirectional (a bitmask of outboundSrcEndPoint and inboundDstEndPoint)."

::= { natAddrBindEntry 6 }

natAddrBindType OBJECT-TYPE
SYNTAX NatAssociationType
MAX-ACCESS read-only

Perreault, et al. Expires December 26, 2015 [Page 25]

Internet-Draft Deprecation of NAT MIB v1 June 2015

STATUS deprecated
DESCRIPTION
"This object indicates whether the bind is static or dynamic."
::= { natAddrBindEntry 7 }

natAddrBindMapIndex OBJECT-TYPE
SYNTAX NatAddrMapId
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"This object is a pointer to the natAddrMapTable entry (and the parameters of that entry) which was used in creating this BIND. This object, in conjunction with the ifIndex (which identifies a unique addrMapName) points to a unique entry in the natAddrMapTable."
::= { natAddrBindEntry 8 }

natAddrBindSessions OBJECT-TYPE
SYNTAX Gauge32
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"Number of sessions currently using this BIND."
::= { natAddrBindEntry 9 }

natAddrBindMaxIdleTime OBJECT-TYPE
SYNTAX TimeTicks

MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"This object indicates the maximum time for which this bind can be idle with no sessions attached to it.

The value of this object is of relevance only for dynamic NAT."

::= { natAddrBindEntry 10 }

natAddrBindCurrentIdleTime OBJECT-TYPE

SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"At any given instance, this object indicates the time that this bind has been idle without any sessions attached to it.

The value of this object is of relevance only for dynamic NAT."

::= { natAddrBindEntry 11 }

natAddrBindInTranslates OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"The number of inbound packets that were successfully translated by using this bind entry.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natAddrBindEntry 12 }

natAddrBindOutTranslates OBJECT-TYPE

SYNTAX Counter64
MAX-ACCESS read-only

```

STATUS      deprecated
DESCRIPTION
    "The number of outbound packets that were successfully
      translated using this bind entry.

      Discontinuities in the value of this counter can occur
      at reinitialization of the management system and at
      other times as indicated by the value of
      ifCounterDiscontinuityTime on the relevant interface."
 ::= { natAddrBindEntry 13 }

--
-- Address Port Bind section
--

natAddrPortBindNumberOfEntries OBJECT-TYPE
    SYNTAX      Gauge32
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object maintains a count of the number of entries
          that currently exist in the natAddrPortBindTable."
    ::= { natMIBObjects 7 }

--
-- The NAT Address Port Bind Table
--

```

Perreault, et al.	Expires December 26, 2015	[Page 27]
-------------------	---------------------------	-----------

Internet-Draft	Deprecation of NAT MIB v1	June 2015
----------------	---------------------------	-----------

```

natAddrPortBindTable OBJECT-TYPE
    SYNTAX      SEQUENCE OF NatAddrPortBindEntry
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "This table holds information about the currently
          active NAPT BINDs."
    ::= { natMIBObjects 8 }

natAddrPortBindEntry OBJECT-TYPE
    SYNTAX      NatAddrPortBindEntry
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION

```

"Each entry in the this table holds information about a NAT bind that is currently active. These entries are lost upon agent restart.

This row has indexing which may create variables with more than 128 subidentifiers. Implementers of this table must be careful not to create entries which would result in OIDs that exceed the 128 subidentifier limit. Otherwise, the information cannot be accessed using SNMPv1, SNMPv2c or SNMPv3."

```

INDEX { ifIndex, natAddrPortBindLocalAddrType,
        natAddrPortBindLocalAddr, natAddrPortBindLocalPort,
        natAddrPortBindProtocol }
 ::= { natAddrPortBindTable 1 }

NatAddrPortBindEntry ::= SEQUENCE {
    natAddrPortBindLocalAddrType      InetAddressType,
    natAddrPortBindLocalAddr          InetAddress,
    natAddrPortBindLocalPort          InetPortNumber,
    natAddrPortBindProtocol           NatProtocolType,
    natAddrPortBindGlobalAddrType     InetAddressType,
    natAddrPortBindGlobalAddr         InetAddress,
    natAddrPortBindGlobalPort         InetPortNumber,
    natAddrPortBindId                 NatBindId,
    natAddrPortBindTranslationEntity  NatTranslationEntity,
    natAddrPortBindType               NatAssociationType,
    natAddrPortBindMapIndex           NatAddrMapId,
    natAddrPortBindSessions           Gauge32,
    natAddrPortBindMaxIdleTime        TimeTicks,
    natAddrPortBindCurrentIdleTime    TimeTicks,
    natAddrPortBindInTranslates       Counter64,
    natAddrPortBindOutTranslates      Counter64
}

```

natAddrPortBindLocalAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"This object specifies the address type used for natAddrPortBindLocalAddr."

```
::= { natAddrPortBindEntry 1 }
```

natAddrPortBindLocalAddr OBJECT-TYPE

SYNTAX InetAddress (SIZE(4|16))

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"This object represents the private-realm specific network layer address which, in conjunction with natAddrPortBindLocalPort, maps to the public-realm network layer address and transport id represented by natAddrPortBindGlobalAddr and natAddrPortBindGlobalPort respectively.

The type of this address is determined by the value of the natAddrPortBindLocalAddrType object."

```
::= { natAddrPortBindEntry 2 }
```

natAddrPortBindLocalPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"For a protocol value TCP or UDP, this object represents the private-realm specific port number. On the other hand, for ICMP a bind is created only for query/response type ICMP messages such as ICMP echo, Timestamp, and Information request messages, and this object represents the private-realm specific identifier in the ICMP message, as defined in [RFC 792](#) for ICMPv4 and in [RFC 2463](#) for ICMPv6.

This object, together with natAddrPortBindProtocol, natAddrPortBindLocalAddrType, and natAddrPortBindLocalAddr, constitutes a session endpoint in the private realm. A bind entry binds a private realm specific endpoint to a public realm specific endpoint, as represented by the tuple of (natAddrPortBindGlobalPort, natAddrPortBindProtocol, natAddrPortBindGlobalAddrType, and

```

        natAddrPortBindGlobalAddr)."
 ::= { natAddrPortBindEntry 3 }

natAddrPortBindProtocol OBJECT-TYPE
    SYNTAX      NatProtocolType
    MAX-ACCESS  not-accessible
    STATUS      deprecated
    DESCRIPTION
        "This object specifies a protocol identifier.  If the
         value of this object is none(1), then this bind entry
         applies to all IP traffic.  Any other value of this
         object specifies the class of IP traffic to which this
         BIND applies."
 ::= { natAddrPortBindEntry 4 }

natAddrPortBindGlobalAddrType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object specifies the address type used for
         natAddrPortBindGlobalAddr."
 ::= { natAddrPortBindEntry 5 }

natAddrPortBindGlobalAddr OBJECT-TYPE
    SYNTAX      InetAddress
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object represents the public-realm specific network
         layer address that, in conjunction with
         natAddrPortBindGlobalPort, maps to the private-realm

         network layer address and transport id represented by
         natAddrPortBindLocalAddr and natAddrPortBindLocalPort,
         respectively.

         The type of this address is determined by the value of
         the natAddrPortBindGlobalAddrType object."
 ::= { natAddrPortBindEntry 6 }

natAddrPortBindGlobalPort OBJECT-TYPE
    SYNTAX      InetPortNumber
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "For a protocol value TCP or UDP, this object represents
         the public-realm specific port number.  On the other

```

hand, for ICMP a bind is created only for query/response type ICMP messages such as ICMP echo, Timestamp, and Information request messages, and this object represents the public-realm specific identifier in the ICMP message, as defined in [RFC 792](#) for ICMPv4 and in [RFC 2463](#) for ICMPv6.

This object, together with natAddrPortBindProtocol, natAddrPortBindGlobalAddrType, and natAddrPortBindGlobalAddr, constitutes a session endpoint in the public realm. A bind entry binds a public realm specific endpoint to a private realm specific endpoint, as represented by the tuple of (natAddrPortBindLocalPort, natAddrPortBindProtocol, natAddrPortBindLocalAddrType, and natAddrPortBindLocalAddr)."

```
::= { natAddrPortBindEntry 7 }
```

natAddrPortBindId OBJECT-TYPE

SYNTAX NatBindId

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object represents a bind id that is dynamically assigned to each bind by a NAT enabled device. Each bind is represented by a unique bind id across both the natAddrBindTable and the natAddrPortBindTable."

```
::= { natAddrPortBindEntry 8 }
```

natAddrPortBindTranslationEntity OBJECT-TYPE

SYNTAX NatTranslationEntity

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object represents the direction of sessions for which this bind is applicable and the entity (source or destination) within the sessions that is subject to translation with the BIND.

Orientation of the bind can be a superset of the translationEntity of the address map entry that forms the basis for this bind.

For example, if the translationEntity of an address map entry is outboundSrcEndPoint, the translationEntity of a bind derived from this map entry may either be outboundSrcEndPoint or may be bidirectional (a bitmask of

```
        outboundSrcEndPoint and inboundDstEndPoint)."  
 ::= { natAddrPortBindEntry 9 }
```

natAddrPortBindType OBJECT-TYPE

SYNTAX NatAssociationType

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object indicates whether the bind is static or
dynamic."

```
 ::= { natAddrPortBindEntry 10 }
```

natAddrPortBindMapIndex OBJECT-TYPE

SYNTAX NatAddrMapId

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object is a pointer to the natAddrMapTable entry
(and the parameters of that entry) used in
creating this BIND. This object, in conjunction with
the ifIndex (which identifies a unique addrMapName),
points to a unique entry in the natAddrMapTable."

```
 ::= { natAddrPortBindEntry 11 }
```

natAddrPortBindSessions OBJECT-TYPE

SYNTAX Gauge32

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"Number of sessions currently using this BIND."

```
 ::= { natAddrPortBindEntry 12 }
```

natAddrPortBindMaxIdleTime OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object indicates the maximum time for which this bind can be idle without any sessions attached to it.

The value of this object is of relevance only for dynamic NAT."

::= { natAddrPortBindEntry 13 }

natAddrPortBindCurrentIdleTime OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

Perreault, et al.

Expires December 26, 2015

[Page 32]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

STATUS deprecated

DESCRIPTION

"At any given instance, this object indicates the time that this bind has been idle without any sessions attached to it.

The value of this object is of relevance only for dynamic NAT."

::= { natAddrPortBindEntry 14 }

natAddrPortBindInTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of inbound packets that were translated as per this bind entry.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natAddrPortBindEntry 15 }

natAddrPortBindOutTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of outbound packets that were translated as per this bind entry.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natAddrPortBindEntry 16 }

--

-- The Session Table

--

natSessionTable OBJECT-TYPE

SYNTAX SEQUENCE OF NatSessionEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"The (conceptual) table containing one entry for each

NAT session currently active on this NAT device."

::= { natMIBObjects 9 }

natSessionEntry OBJECT-TYPE

SYNTAX NatSessionEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"An entry (conceptual row) containing information about an active NAT session on this NAT device. These entries are lost upon agent restart."

INDEX { ifIndex, natSessionIndex }

::= { natSessionTable 1 }

NatSessionEntry ::= SEQUENCE {

natSessionIndex

natSessionPrivateSrcEPBindId

natSessionPrivateSrcEPBindMode

natSessionPrivateDstEPBindId

natSessionPrivateDstEPBindMode

natSessionDirection

natSessionUpTime

NatSessionId,

NatBindIdOrZero,

NatBindMode,

NatBindIdOrZero,

NatBindMode,

INTEGER,

TimeTicks,

natSessionAddrMapIndex	NatAddrMapId,
natSessionProtocolType	NatProtocolType,
natSessionPrivateAddrType	InetAddressType,
natSessionPrivateSrcAddr	InetAddress,
natSessionPrivateSrcPort	InetPortNumber,
natSessionPrivateDstAddr	InetAddress,
natSessionPrivateDstPort	InetPortNumber,
natSessionPublicAddrType	InetAddressType,
natSessionPublicSrcAddr	InetAddress,
natSessionPublicSrcPort	InetPortNumber,
natSessionPublicDstAddr	InetAddress,
natSessionPublicDstPort	InetPortNumber,
natSessionMaxIdleTime	TimeTicks,
natSessionCurrentIdleTime	TimeTicks,
natSessionInTranslates	Counter64,
natSessionOutTranslates	Counter64

}

natSessionIndex OBJECT-TYPE
 SYNTAX NatSessionId
 MAX-ACCESS not-accessible
 STATUS deprecated
 DESCRIPTION
 "The session ID for this NAT session."
 ::= { natSessionEntry 1 }

Perreault, et al.	Expires December 26, 2015	[Page 34]
-------------------	---------------------------	-----------

Internet-Draft	Deprecation of NAT MIB v1	June 2015
----------------	---------------------------	-----------

natSessionPrivateSrcEPBindId OBJECT-TYPE
 SYNTAX NatBindIdOrZero
 MAX-ACCESS read-only
 STATUS deprecated
 DESCRIPTION
 "The bind id associated between private and public
 source end points. In the case of Symmetric-NAT,
 this should be set to zero."
 ::= { natSessionEntry 2 }

natSessionPrivateSrcEPBindMode OBJECT-TYPE
 SYNTAX NatBindMode
 MAX-ACCESS read-only
 STATUS deprecated
 DESCRIPTION

"This object indicates whether the bind indicated
by the object natSessionPrivateSrcEPBindId
is an address bind or an address port bind."
::= { natSessionEntry 3 }

natSessionPrivateDstEPBindId OBJECT-TYPE
SYNTAX NatBindIdOrZero
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The bind id associated between private and public
destination end points."
::= { natSessionEntry 4 }

natSessionPrivateDstEPBindMode OBJECT-TYPE
SYNTAX NatBindMode
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"This object indicates whether the bind indicated
by the object natSessionPrivateDstEPBindId
is an address bind or an address port bind."
::= { natSessionEntry 5 }

natSessionDirection OBJECT-TYPE
SYNTAX INTEGER {
inbound (1),
outbound (2)
}

MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION

"The direction of this session with respect to the
local network. 'inbound' indicates that this session
was initiated from the public network into the private
network. 'outbound' indicates that this session was
initiated from the private network into the public
network."
::= { natSessionEntry 6 }

```

natSessionUpTime OBJECT-TYPE
    SYNTAX      TimeTicks
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "The up time of this session in one-hundredths of a
        second."
    ::= { natSessionEntry 7 }

natSessionAddrMapIndex OBJECT-TYPE
    SYNTAX      NatAddrMapId
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object is a pointer to the natAddrMapTable entry
        (and the parameters of that entry) used in
        creating this session. This object, in conjunction with
        the ifIndex (which identifies a unique addrMapName),
        points to a unique entry in the natAddrMapTable."
    ::= { natSessionEntry 8 }

natSessionProtocolType OBJECT-TYPE
    SYNTAX      NatProtocolType
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "The protocol type of this session."
    ::= { natSessionEntry 9 }

natSessionPrivateAddrType OBJECT-TYPE
    SYNTAX      InetAddressType
    MAX-ACCESS  read-only
    STATUS      deprecated
    DESCRIPTION
        "This object specifies the address type used for
        natSessionPrivateSrcAddr and natSessionPrivateDstAddr."
    ::= { natSessionEntry 10 }

natSessionPrivateSrcAddr OBJECT-TYPE
    SYNTAX      InetAddress

```

STATUS deprecated

DESCRIPTION

"The source IP address of the session endpoint that lies in the private network.

The value of this object must be zero only when the natSessionPrivateSrcEPBindId object has a zero value. When the value of this object is zero, the NAT session lookup will match any IP address to this field.

The type of this address is determined by the value of the natSessionPrivateAddrType object."

::= { natSessionEntry 11 }

natSessionPrivateSrcPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"When the value of protocol is TCP or UDP, this object represents the source port in the first packet of session while in private-realm. On the other hand, when the protocol is ICMP, a NAT session is created only for query/response type ICMP messages such as ICMP echo, Timestamp, and Information request messages, and this object represents the private-realm specific identifier in the ICMP message, as defined in [RFC 792](#) for ICMPv4 and in [RFC 2463](#) for ICMPv6.

The value of this object must be zero when the natSessionPrivateSrcEPBindId object has zero value and value of natSessionPrivateSrcEPBindMode is addressPortBind(2). In such a case, the NAT session lookup will match any port number to this field.

The value of this object must be zero when the object is not a representative field (SrcPort, DstPort, or ICMP identifier) of the session tuple in either the public realm or the private realm."

::= { natSessionEntry 12 }

natSessionPrivateDstAddr OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The destination IP address of the session endpoint that

lies in the private network.

The value of this object must be zero when the natSessionPrivateDstEPBindId object has a zero value. In such a scenario, the NAT session lookup will match any IP address to this field.

The type of this address is determined by the value of the natSessionPrivateAddrType object."

::= { natSessionEntry 13 }

natSessionPrivateDstPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"When the value of protocol is TCP or UDP, this object represents the destination port in the first packet of session while in private-realm. On the other hand, when the protocol is ICMP, this object is not relevant and should be set to zero.

The value of this object must be zero when the natSessionPrivateDstEPBindId object has a zero value and natSessionPrivateDstEPBindMode is set to addressPortBind(2). In such a case, the NAT session lookup will match any port number to this field.

The value of this object must be zero when the object is not a representative field (SrcPort, DstPort, or ICMP identifier) of the session tuple in either the public realm or the private realm."

::= { natSessionEntry 14 }

natSessionPublicAddrType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"This object specifies the address type used for natSessionPublicSrcAddr and natSessionPublicDstAddr."

::= { natSessionEntry 15 }

natSessionPublicSrcAddr OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS read-only

STATUS deprecated
DESCRIPTION

Perreault, et al. Expires December 26, 2015

[Page 38]

Internet-Draft Deprecation of NAT MIB v1

June 2015

"The source IP address of the session endpoint that lies in the public network.

The value of this object must be zero when the natSessionPrivateSrcEPBindId object has a zero value. In such a scenario, the NAT session lookup will match any IP address to this field.

The type of this address is determined by the value of the natSessionPublicAddrType object."

::= { natSessionEntry 16 }

natSessionPublicSrcPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"When the value of protocol is TCP or UDP, this object represents the source port in the first packet of session while in public-realm. On the other hand, when protocol is ICMP, a NAT session is created only for query/response type ICMP messages such as ICMP echo, Timestamp, and Information request messages, and this object represents the public-realm specific identifier in the ICMP message, as defined in [RFC 792](#) for ICMPv4 and in [RFC 2463](#) for ICMPv6.

The value of this object must be zero when the natSessionPrivateSrcEPBindId object has a zero value and natSessionPrivateSrcEPBindMode is set to addressPortBind(2). In such a scenario, the NAT session lookup will match any port number to this field.

The value of this object must be zero when the object is not a representative field (SrcPort, DstPort or ICMP identifier) of the session tuple in either the public realm or the private realm."

::= { natSessionEntry 17 }

natSessionPublicDstAddr OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The destination IP address of the session endpoint that lies in the public network."

Perreault, et al.

Expires December 26, 2015

[Page 39]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

The value of this object must be non-zero when the natSessionPrivateDstEPBindId object has a non-zero value. If the value of this object and the corresponding natSessionPrivateDstEPBindId object value is zero, then the NAT session lookup will match any IP address to this field.

The type of this address is determined by the value of the natSessionPublicAddrType object."

::= { natSessionEntry 18 }

natSessionPublicDstPort OBJECT-TYPE

SYNTAX InetPortNumber

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"When the value of protocol is TCP or UDP, this object represents the destination port in the first packet of session while in public-realm. On the other hand, when the protocol is ICMP, this object is not relevant for translation and should be zero.

The value of this object must be zero when the natSessionPrivateDstEPBindId object has a zero value and natSessionPrivateDstEPBindMode is addressPortBind(2). In such a scenario, the NAT session lookup will match any port number to this field.

The value of this object must be zero when the object is not a representative field (SrcPort, DstPort, or ICMP identifier) of the session tuple in either the

```
        public realm or the private realm."
 ::= { natSessionEntry 19 }
```

natSessionMaxIdleTime OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The max time for which this session can be idle
without detecting a packet."

```
 ::= { natSessionEntry 20 }
```

natSessionCurrentIdleTime OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS deprecated

Perreault, et al.

Expires December 26, 2015

[Page 40]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

DESCRIPTION

"The time since a packet belonging to this session was
last detected."

```
 ::= { natSessionEntry 21 }
```

natSessionInTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of inbound packets that were translated for
this session.

Discontinuities in the value of this counter can occur
at reinitialization of the management system and at
other times, as indicated by the value of
ifCounterDiscontinuityTime on the relevant interface."

```
 ::= { natSessionEntry 22 }
```

natSessionOutTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of outbound packets that were translated for

this session.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natSessionEntry 23 }

--

-- The Protocol table

--

natProtocolTable OBJECT-TYPE

SYNTAX SEQUENCE OF NatProtocolEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"The (conceptual) table containing per protocol NAT statistics."

::= { natMIBObjects 10 }

natProtocolEntry OBJECT-TYPE

SYNTAX NatProtocolEntry

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"An entry (conceptual row) containing NAT statistics pertaining to a particular protocol."

INDEX { natProtocol }

::= { natProtocolTable 1 }

NatProtocolEntry ::= SEQUENCE {

natProtocol NatProtocolType,

natProtocolInTranslates Counter64,

natProtocolOutTranslates Counter64,

natProtocolDiscards Counter64

}

natProtocol OBJECT-TYPE

SYNTAX NatProtocolType

MAX-ACCESS not-accessible

STATUS deprecated

DESCRIPTION

"This object represents the protocol pertaining to which parameters are reported."

::= { natProtocolEntry 1 }

natProtocolInTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of inbound packets pertaining to the protocol identified by natProtocol that underwent NAT.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natProtocolEntry 2 }

natProtocolOutTranslates OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of outbound packets pertaining to the protocol identified by natProtocol that underwent NAT.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at

other times, as indicated by the value of

ifCounterDiscontinuityTime on the relevant interface."

::= { natProtocolEntry 3 }

natProtocolDiscards OBJECT-TYPE

SYNTAX Counter64

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of packets pertaining to the protocol identified by natProtocol that had to be

rejected/dropped due to lack of resources. These rejections could be due to session timeout, resource unavailability, lack of address space, etc.

Discontinuities in the value of this counter can occur at reinitialization of the management system and at other times, as indicated by the value of ifCounterDiscontinuityTime on the relevant interface."

::= { natProtocolEntry 4 }

--

-- Notifications section

--

natMIBNotifications OBJECT IDENTIFIER ::= { natMIB 0 }

--

-- Notifications

--

natPacketDiscard NOTIFICATION-TYPE

OBJECTS { ifIndex }

STATUS deprecated

DESCRIPTION

"This notification is generated when IP packets are discarded by the NAT function; e.g., due to lack of mapping space when NAT is out of addresses or ports.

Note that the generation of natPacketDiscard notifications is throttled by the agent, as specified by the 'natNotifThrottlingInterval' object."

::= { natMIBNotifications 1 }

--

-- Conformance information.

--

natMIBConformance OBJECT IDENTIFIER ::= { natMIB 2 }

```

natMIBGroups      OBJECT IDENTIFIER ::= { natMIBConformance 1 }
natMIBCompliances OBJECT IDENTIFIER ::= { natMIBConformance 2 }

--
-- Units of conformance
--

natConfigGroup OBJECT-GROUP
    OBJECTS { natInterfaceRealm,
               natInterfaceServiceType,
               natInterfaceStorageType,
               natInterfaceRowStatus,
               natAddrMapName,
               natAddrMapEntryType,
               natAddrMapTranslationEntity,
               natAddrMapLocalAddrType,
               natAddrMapLocalAddrFrom,
               natAddrMapLocalAddrTo,
               natAddrMapLocalPortFrom,
               natAddrMapLocalPortTo,
               natAddrMapGlobalAddrType,
               natAddrMapGlobalAddrFrom,
               natAddrMapGlobalAddrTo,
               natAddrMapGlobalPortFrom,
               natAddrMapGlobalPortTo,
               natAddrMapProtocol,
               natAddrMapStorageType,
               natAddrMapRowStatus,
               natBindDefIdleTimeout,
               natUdpDefIdleTimeout,
               natIcmpDefIdleTimeout,
               natOtherDefIdleTimeout,
               natTcpDefIdleTimeout,
               natTcpDefNegTimeout,
               natNotifThrottlingInterval }
    STATUS deprecated
    DESCRIPTION
        "A collection of configuration-related information
        required to support management of devices supporting
        NAT."
    ::= { natMIBGroups 1 }

natTranslationGroup OBJECT-GROUP
    OBJECTS { natAddrBindNumberOfEntries,

```

```
natAddrBindGlobalAddrType,  
natAddrBindGlobalAddr,  
natAddrBindId,  
natAddrBindTranslationEntity,  
natAddrBindType,  
natAddrBindMapIndex,  
natAddrBindSessions,  
natAddrBindMaxIdleTime,  
natAddrBindCurrentIdleTime,  
natAddrBindInTranslates,  
natAddrBindOutTranslates,  
natAddrPortBindNumberOfEntries,  
natAddrPortBindGlobalAddrType,  
natAddrPortBindGlobalAddr,  
natAddrPortBindGlobalPort,  
natAddrPortBindId,  
natAddrPortBindTranslationEntity,  
natAddrPortBindType,  
natAddrPortBindMapIndex,  
natAddrPortBindSessions,  
natAddrPortBindMaxIdleTime,  
natAddrPortBindCurrentIdleTime,  
natAddrPortBindInTranslates,  
natAddrPortBindOutTranslates,  
natSessionPrivateSrcEPBindId,  
natSessionPrivateSrcEPBindMode,  
natSessionPrivateDstEPBindId,  
natSessionPrivateDstEPBindMode,  
natSessionDirection,  
natSessionUpTime,  
natSessionAddrMapIndex,  
natSessionProtocolType,  
natSessionPrivateAddrType,  
natSessionPrivateSrcAddr,  
natSessionPrivateSrcPort,  
natSessionPrivateDstAddr,  
natSessionPrivateDstPort,  
natSessionPublicAddrType,  
natSessionPublicSrcAddr,  
natSessionPublicSrcPort,  
natSessionPublicDstAddr,  
natSessionPublicDstPort,  
natSessionMaxIdleTime,  
natSessionCurrentIdleTime,  
natSessionInTranslates,  
natSessionOutTranslates }
```

STATUS deprecated

```
DESCRIPTION
    "A collection of BIND-related objects required to support
    management of devices supporting NAT."
 ::= { natMIBGroups 2 }

natStatsInterfaceGroup OBJECT-GROUP
    OBJECTS { natInterfaceInTranslates,
               natInterfaceOutTranslates,
               natInterfaceDiscards }
    STATUS deprecated
    DESCRIPTION
        "A collection of NAT statistics associated with the
        interface on which NAT is configured, to aid
        troubleshooting/monitoring of the NAT operation."
 ::= { natMIBGroups 3 }

natStatsProtocolGroup OBJECT-GROUP
    OBJECTS { natProtocolInTranslates,
               natProtocolOutTranslates,
               natProtocolDiscards }
    STATUS deprecated
    DESCRIPTION
        "A collection of protocol specific NAT statistics,
        to aid troubleshooting/monitoring of NAT operation."
 ::= { natMIBGroups 4 }

natStatsAddrMapGroup OBJECT-GROUP
    OBJECTS { natAddrMapInTranslates,
               natAddrMapOutTranslates,
               natAddrMapDiscards,
               natAddrMapAddrUsed }
    STATUS deprecated
    DESCRIPTION
        "A collection of address map specific NAT statistics,
        to aid troubleshooting/monitoring of NAT operation."
 ::= { natMIBGroups 5 }

natMIBNotificationGroup NOTIFICATION-GROUP
    NOTIFICATIONS { natPacketDiscard }
    STATUS deprecated
```

DESCRIPTION

"A collection of notifications generated by
devices supporting this MIB."

::= { natMIBGroups 6 }

--

-- Compliance statements

Perreault, et al.

Expires December 26, 2015

[Page 46]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

--

natMIBFullCompliance MODULE-COMPLIANCE

STATUS deprecated

DESCRIPTION

"When this MIB is implemented with support for
read-create, then such an implementation can claim
full compliance. Such devices can then be both
monitored and configured with this MIB.

The following index objects cannot be added as OBJECT
clauses but nevertheless have the compliance
requirements:

"

-- OBJECT natAddrBindLocalAddrType

-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }

-- DESCRIPTION

-- "An implementation is required to support
-- global IPv4 and/or IPv6 addresses, depending
-- on its support for IPv4 and IPv6."

-- OBJECT natAddrBindLocalAddr

-- SYNTAX InetAddress (SIZE(4|16))

-- DESCRIPTION

-- "An implementation is required to support
-- global IPv4 and/or IPv6 addresses, depending
-- on its support for IPv4 and IPv6."

-- OBJECT natAddrPortBindLocalAddrType

-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }

-- DESCRIPTION

-- "An implementation is required to support
-- global IPv4 and/or IPv6 addresses, depending

```

--          on its support for IPv4 and IPv6."

-- OBJECT  natAddrPortBindLocalAddr
-- SYNTAX  InetAddress (SIZE(4|16))
-- DESCRIPTION
--          "An implementation is required to support
--          global IPv4 and/or IPv6 addresses, depending
--          on its support for IPv4 and IPv6."

MODULE IF-MIB -- The interfaces MIB, RFC2863
    MANDATORY-GROUPS {
        ifCounterDiscontinuityGroup
    }

MODULE -- this module

```

Perreault, et al. Expires December 26, 2015 [Page 47]

Internet-Draft Deprecation of NAT MIB v1 June 2015

```

MANDATORY-GROUPS { natConfigGroup, natTranslationGroup,
                    natStatsInterfaceGroup }

```

```

GROUP          natStatsProtocolGroup
DESCRIPTION
    "This group is optional."

```

```

GROUP          natStatsAddrMapGroup
DESCRIPTION
    "This group is optional."

```

```

GROUP          natMIBNotificationGroup
DESCRIPTION
    "This group is optional."

```

```

OBJECT  natAddrMapLocalAddrType
SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
DESCRIPTION
    "An implementation is required to support global IPv4
    and/or IPv6 addresses, depending on its support
    for IPv4 and IPv6."

```

```

OBJECT  natAddrMapLocalAddrFrom
SYNTAX  InetAddress (SIZE(4|16))
DESCRIPTION
    "An implementation is required to support global IPv4
    and/or IPv6 addresses, depending on its support
    for IPv4 and IPv6."

```

OBJECT natAddrMapLocalAddrTo
SYNTAX InetAddress (SIZE(4|16))
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapGlobalAddrType
SYNTAX InetAddressType { ipv4(1), ipv6(2) }
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapGlobalAddrFrom
SYNTAX InetAddress (SIZE(4|16))
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

Perreault, et al. Expires December 26, 2015 [Page 48]

Internet-Draft Deprecation of NAT MIB v1 June 2015

OBJECT natAddrMapGlobalAddrTo
SYNTAX InetAddress (SIZE(4|16))
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrBindGlobalAddrType
SYNTAX InetAddressType { ipv4(1), ipv6(2) }
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrBindGlobalAddr
SYNTAX InetAddress (SIZE(4|16))
DESCRIPTION
"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

for IPv4 and IPv6."

OBJECT natAddrPortBindGlobalAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrPortBindGlobalAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPrivateAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPrivateSrcAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPrivateDstAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPublicAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support

for IPv4 and IPv6."

OBJECT natSessionPublicSrcAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPublicDstAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

::= { natMIBCompliances 1 }

natMIBReadOnlyCompliance MODULE-COMPLIANCE

STATUS deprecated

DESCRIPTION

"When this MIB is implemented without support for read-create (i.e., in read-only mode), then such an implementation can claim read-only compliance. Such a device can then be monitored but cannot be configured with this MIB.

The following index objects cannot be added as OBJECT clauses but nevertheless have the compliance requirements:

"

-- OBJECT natAddrBindLocalAddrType

-- SYNTAX InetAddressType { ipv4(1), ipv6(2) }

-- DESCRIPTION

-- "An implementation is required to support

-- global IPv4 and/or IPv6 addresses, depending

-- on its support for IPv4 and IPv6."

-- OBJECT natAddrBindLocalAddr

-- SYNTAX InetAddress (SIZE(4|16))

```

-- DESCRIPTION
--      "An implementation is required to support
--      global IPv4 and/or IPv6 addresses, depending
--      on its support for IPv4 and IPv6."

-- OBJECT  natAddrPortBindLocalAddrType
-- SYNTAX  InetAddressType { ipv4(1), ipv6(2) }
-- DESCRIPTION
--      "An implementation is required to support
--      global IPv4 and/or IPv6 addresses, depending
--      on its support for IPv4 and IPv6."
-- OBJECT  natAddrPortBindLocalAddr
-- SYNTAX  InetAddress (SIZE(4|16))
-- DESCRIPTION
--      "An implementation is required to support
--      global IPv4 and/or IPv6 addresses, depending
--      on its support for IPv4 and IPv6."

MODULE IF-MIB -- The interfaces MIB, RFC2863
    MANDATORY-GROUPS {
        ifCounterDiscontinuityGroup
    }

MODULE -- this module
    MANDATORY-GROUPS { natConfigGroup, natTranslationGroup,
        natStatsInterfaceGroup }

    GROUP      natStatsProtocolGroup
    DESCRIPTION
        "This group is optional."
    GROUP      natStatsAddrMapGroup
    DESCRIPTION
        "This group is optional."
    GROUP      natMIBNotificationGroup
    DESCRIPTION
        "This group is optional."
    OBJECT natInterfaceRowStatus
    SYNTAX RowStatus { active(1) }
    MIN-ACCESS read-only
    DESCRIPTION
        "Write access is not required, and active is the only
        status that needs to be supported."

```

OBJECT natAddrMapLocalAddrType
SYNTAX InetAddressType { ipv4(1), ipv6(2) }
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapLocalAddrFrom
SYNTAX InetAddress (SIZE(4|16))
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapLocalAddrTo
SYNTAX InetAddress (SIZE(4|16))
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapGlobalAddrType
SYNTAX InetAddressType { ipv4(1), ipv6(2) }
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapGlobalAddrFrom
SYNTAX InetAddress (SIZE(4|16))
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrMapGlobalAddrTo
SYNTAX InetAddress (SIZE(4|16))
MIN-ACCESS read-only
DESCRIPTION
 "Write access is not required. An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

Internet-Draft

Deprecation of NAT MIB v1

June 2015

OBJECT natAddrMapRowStatus

SYNTAX RowStatus { active(1) }

MIN-ACCESS read-only

DESCRIPTION

"Write access is not required, and active is the only status that needs to be supported."

OBJECT natAddrBindGlobalAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrBindGlobalAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrPortBindGlobalAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natAddrPortBindGlobalAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPrivateAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPrivateSrcAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

Perreault, et al.

Expires December 26, 2015

[Page 53]

Internet-Draft

Deprecation of NAT MIB v1

June 2015

OBJECT natSessionPrivateDstAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPublicAddrType

SYNTAX InetAddressType { ipv4(1), ipv6(2) }

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPublicSrcAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

OBJECT natSessionPublicDstAddr

SYNTAX InetAddress (SIZE(4|16))

DESCRIPTION

"An implementation is required to support global IPv4 and/or IPv6 addresses, depending on its support for IPv4 and IPv6."

::= { natMIBCompliances 2 }

END

[5.](#) Security Considerations

All objects in this MIB module have been deprecated. As a result,

security considerations in [[I-D.ietf-behave-nat-mib-v2](#)] apply instead. Amongst other matters, these considerations cover the case where both this MIB module and NAT-MIB-V2 are present. In fact, such a situation is unlikely because [[RFC4008](#)], as a MIB module oriented toward configuration, was overtaken by events and saw little implementation.

[6.](#) IANA Considerations

IANA has assigned object identifier 123 to the natMIB module, with prefix iso.org.dod.internet.mgmt.mib-2 in the Network Management Parameters registry [[SMI-NUMBERS](#)].

Perreault, et al. Expires December 26, 2015 [Page 54]

Internet-Draft Deprecation of NAT MIB v1 June 2015

IANA is requested to mark that identifier as OBSOLETE and to update the reference from [[RFC4008](#)] to the present document.

[7.](#) References

[7.1.](#) Normative References

- [I-D.ietf-behave-nat-mib-v2]
Perrault, S., Tsou, T., Sivakumar, S., and T. Taylor,
"Definitions of Managed Objects for Network Address
Translators (NAT), Version 2", June 2015.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate
Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC2578] McCloghrie, K., Ed., Perkins, D., Ed., and J.
Schoenwaelder, Ed., "Structure of Management Information
Version 2 (SMIv2)", STD 58, [RFC 2578](#), April 1999.
- [RFC2579] McCloghrie, K., Ed., Perkins, D., Ed., and J.
Schoenwaelder, Ed., "Textual Conventions for SMIv2", STD
58, [RFC 2579](#), April 1999.
- [RFC2580] McCloghrie, K., Perkins, D., and J. Schoenwaelder,
"Conformance Statements for SMIv2", STD 58, [RFC 2580](#),
April 1999.
- [RFC3411] Harrington, D., Presuhn, R., and B. Wijnen, "An

Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks", STD 62, [RFC 3411](#), December 2002.

- [RFC3414] Blumenthal, U. and B. Wijnen, "User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)", STD 62, [RFC 3414](#), December 2002.
- [RFC3826] Blumenthal, U., Maino, F., and K. McCloghrie, "The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model", [RFC 3826](#), June 2004.
- [RFC4001] Daniele, M., Haberman, B., Routhier, S., and J. Schoenwaelder, "Textual Conventions for Internet Network Addresses", [RFC 4001](#), February 2005.
- [RFC5591] Harrington, D. and W. Hardaker, "Transport Security Model for the Simple Network Management Protocol (SNMP)", STD 78, [RFC 5591](#), June 2009.

Perreault, et al.	Expires December 26, 2015	[Page 55]
-------------------	---------------------------	-----------

Internet-Draft	Deprecation of NAT MIB v1	June 2015
----------------	---------------------------	-----------

- [RFC5592] Harrington, D., Salowey, J., and W. Hardaker, "Secure Shell Transport Model for the Simple Network Management Protocol (SNMP)", [RFC 5592](#), June 2009.
- [RFC6353] Hardaker, W., "Transport Layer Security (TLS) Transport Model for the Simple Network Management Protocol (SNMP)", STD 78, [RFC 6353](#), July 2011.

[7.2.](#) Informative References

- [RFC2663] Srisuresh, P. and M. Holdrege, "IP Network Address Translator (NAT) Terminology and Considerations", [RFC 2663](#), August 1999.
- [RFC3022] Srisuresh, P. and K. Egevang, "Traditional IP Network Address Translator (Traditional NAT)", [RFC 3022](#), January 2001.
- [RFC3410] Case, J., Mundy, R., Partain, D., and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", [RFC 3410](#), December 2002.

[RFC4008] Rohit, R., Srisuresh, P., Raghunarayan, R., Pai, N., and C. Wang, "Definitions of Managed Objects for Network Address Translators (NAT)", [RFC 4008](#), March 2005.

[SMI-NUMBERS]

"Network Management Parameters registry at IANA",
<<http://www.iana.org/assignments/smi-numbers>>.

Authors' Addresses

Simon Perreault
Jive Communications
Quebec, QC
Canada

Email: sperreault@jive.com

Tina Tsou
Huawei Technologies
Bantian, Longgang District
Shenzhen 518129
PR China

Email: tina.tsou.zouting@huawei.com

Perreault, et al.	Expires December 26, 2015	[Page 56]
-------------------	---------------------------	-----------

Internet-Draft	Deprecation of NAT MIB v1	June 2015
----------------	---------------------------	-----------

Senthil Sivakumar
Cisco Systems
7100-8 Kit Creek Road
Research Triangle Park, North Carolina 27709
USA

Phone: +1 919 392 5158
Email: ssenthil@cisco.com

Tom Taylor
PT Taylor Consulting
Ottawa
Canada

Email: tom.taylor.stds@gmail.com