RADIUS Accounting Client MIB for IPv6

Status of This Memo

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Abstract

This memo defines a set of extensions that instrument RADIUS accounting client functions. These extensions represent a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. Using these extensions, IP-based management stations can manage RADIUS accounting clients.

This memo obsoletes RFC 2620 by deprecating the MIB table containing IPv4-only address formats and defining a new table to add support for version-neutral IP address formats. The remaining MIB objects from RFC 2620 are carried forward into this document. This memo also adds UNITS and REFERENCE clauses to selected objects.
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1. Introduction

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. The objects defined within this memo relate to the Remote Authentication Dial-In User Service (RADIUS) Accounting Client as defined in RFC 2866 [RFC2866].

2. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

This document uses terminology from RFC 2865 [RFC2865] and RFC 2866 [RFC2866].

This document uses the word "malformed" with respect to RADIUS packets, particularly in the context of counters of "malformed packets". While RFC 2866 does not provide an explicit definition of "malformed", malformed generally means that the implementation has determined the packet does not match the format defined in RFC 2866. Those implementations are used in deployments today, and thus set the de facto definition of "malformed".

3. 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 RFC 3410 [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, RFC 2578 [RFC2578], STD 58, RFC 2579 [RFC2579] and STD 58, RFC 2580 [RFC2580].

4. Scope of Changes

This document obsoletes RFC 2620 [RFC2620], RADIUS Accounting Client MIB, by deprecating the radiusAccServerTable table and adding a new table, radiusAccServerExtTable, containing radiusAccServerInetAddressType, radiusAccServerInetAddress, and radiusAccClientServerInetPortNumber. The purpose of these added MIB objects is to support version-neutral IP addressing formats.
existing table containing radiusAuthServerAddress and
radiusAuthClientServerPortNumber is deprecated. The remaining MIB
objects from RFC 2620 are carried forward into this document.

RFC 4001 [RFC4001], which defines the SMI Textual Conventions for
IPv6 addresses, contains the following recommendation.

‘In particular, when revising a MIB module that contains IPv4
specific tables, it is suggested to define new tables using the
textual conventions defined in this memo [RFC4001] that support all
versions of IP. The status of the new tables SHOULD be "current",
whereas the status of the old IP version specific tables SHOULD be
changed to "deprecated". The other approach, of having multiple
similar tables for different IP versions, is strongly discouraged.’

5. Structure of the MIB Module

The RADIUS accounting protocol, described in RFC 2866 [RFC2866],
distinguishes between the client function and the server function.
In RADIUS accounting, clients send Accounting-Requests, and servers
reply with Accounting-Responses. Typically, Network Access Server
(NAS) devices implement the client function, and thus would be
expected to implement the RADIUS accounting client MIB, while RADIUS
accounting servers implement the server function, and thus would be
expected to implement the RADIUS accounting server MIB.

However, it is possible for a RADIUS accounting entity to perform
both client and server functions. For example, a RADIUS proxy may
act as a server to one or more RADIUS accounting clients, while
simultaneously acting as an accounting client to one or more
accounting servers. In such situations, it is expected that RADIUS
entities combining client and server functionality will support both
the client and server MIBs. The client MIB is defined in this
document, and the server MIB is defined in [RFC4671].

This MIB module contains two scalars as well as a single table, the
RADIUS Accounting Server Table, which contains one row for each
RADIUS server with which the client shares a secret. Each entry in
the RADIUS Accounting Server Table includes fifteen columns
presenting a view of the activity of the RADIUS client.

This MIB imports from [RFC2578], [RFC2580], [RFC3411], and [RFC4001].
6. Deprecated Objects

The deprecated table in this MIB is carried forward from RFC 2620 [RFC2620]. There are two conditions under which it MAY be desirable for managed entities to continue to support the deprecated table:

1. The managed entity only supports IPv4 address formats.

2. The managed entity supports both IPv4 and IPv6 address formats, and the deprecated table is supported for backwards compatibility with older management stations. This option SHOULD only be used when the IP addresses in the new table are in IPv4 format and can accurately be represented in both the new table and the deprecated table.

Managed entities SHOULD NOT instantiate row entries in the deprecated table, containing IPv4-only address objects, when the RADIUS accounting server address represented in such a table row is not an IPv4 address. Managed entities SHOULD NOT return inaccurate values of IP address or SNMP object access errors for IPv4-only address objects in otherwise populated tables. When row entries exist in both the deprecated IPv4-only table and the new IP-version-neutral table that describe the same RADIUS accounting server, the row indexes SHOULD be the same for the corresponding rows in each table, to facilitate correlation of these related rows by management applications.

7. Definitions

RADIUS-ACC-CLIENT-MIB DEFINITIONS ::= BEGIN

IMPORTS
MODULE-IDENTITY, OBJECT-TYPE, OBJECT-IDENTITY,
Counter32, Integer32, Gauge32,
IpAddress, TimeTicks, mib-2 FROM SNMPv2-SMI
SnmpAdminString                  FROM SNMP-FRAMEWORK-MIB
InetAddressType, InetAddress,
InetPortNumber                   FROM INET-ADDRESS-MIB

radiusAccClientMIB MODULE-IDENTITY
LAST-UPDATED "200608210000Z" -- 21 August 2006
ORGANIZATION "IETF RADIUS Extensions Working Group."
CONTACT-INFO
" Bernard Aboba
 Microsoft
 One Microsoft Way
DESCRIPTION
"The MIB module for entities implementing the client
side of the Remote Authentication Dial-In User Service
(RADIUS) accounting protocol. Copyright (C) The
Internet Society (2006). This version of this MIB
module is part of RFC 4670; see the RFC itself for
full legal notices."
REVISION "200608210000Z" -- 21 August 2006
DESCRIPTION
"Revised version as published in RFC 4670.
This version obsoletes that of RFC 2620 by
deprecating the MIB table containing IPv4-only
address formats and defining a new table to add support
for version-neutral IP address formats. The remaining
MIB objects from RFC 2620 are carried forward into this
version."
REVISION "199906110000Z" -- 11 Jun 1999
DESCRIPTION "Initial version as published in RFC 2620."

::= { radiusAccounting 2 }

radiusMIB OBJECT-IDENTITY
STATUS current
DESCRIPTION
"The OID assigned to RADIUS MIB work by the IANA."
::= { mib-2 67 }

radiusAccounting OBJECT IDENTIFIER ::= {radiusMIB 2}

radiusAccClientMIBObjects OBJECT IDENTIFIER
 ::= { radiusAccClientMIB 1 }

radiusAccClient OBJECT IDENTIFIER
 ::= { radiusAccClientMIBObjects 1 }

radiusAccClientInvalidServerAddresses OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS Accounting-Response packets
received from unknown addresses."
::= { radiusAccClient 1 }
radiusAccClientIdentifier OBJECT-TYPE
SYNTAX SnmpAdminString
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The NAS-Identifier of the RADIUS accounting client. This is not necessarily the same as sysName in MIB II."
REFERENCE "RFC 2865 section 5.32"
 ::= { radiusAccClient 2 }

radiusAccServerTable OBJECT-TYPE
SYNTAX SEQUENCE OF RadiusAccServerEntry
MAX-ACCESS not-accessible
STATUS deprecated
DESCRIPTION
"The (conceptual) table listing the RADIUS accounting servers with which the client shares a secret."
 ::= { radiusAccClient 3 }

radiusAccServerEntry OBJECT-TYPE
SYNTAX RadiusAccServerEntry
MAX-ACCESS not-accessible
STATUS deprecated
DESCRIPTION
"An entry (conceptual row) representing a RADIUS accounting server with which the client shares a secret."
INDEX { radiusAccServerIndex }
 ::= { radiusAccServerTable 1 }

RadiusAccServerEntry ::= SEQUENCE {
  radiusAccServerIndex,  
  radiusAccServerAddress,  
  radiusAccClientServerPortNumber,  
  radiusAccClientRoundTripTime,  
  radiusAccClientRequests,  
  radiusAccClientRetransmissions,  
  radiusAccClientResponses,  
  radiusAccClientMalformedResponses,  
  radiusAccClientBadAuthenticators,  
  radiusAccClientPendingRequests,  
  radiusAccClientTimeouts,  
  radiusAccClientUnknownTypes,  
  radiusAccClientPacketsDropped
}
radiusAccServerIndex OBJECT-TYPE
SYNTAX     Integer32 (1..2147483647)
MAX-ACCESS not-accessible
STATUS     deprecated
DESCRIPTION
 "A number uniquely identifying each RADIUS
 Accounting server with which this client
 communicates."
 ::= { radiusAccServerEntry 1 }

radiusAccServerAddress OBJECT-TYPE
SYNTAX     IpAddress
MAX-ACCESS read-only
STATUS     deprecated
DESCRIPTION
 "The IP address of the RADIUS accounting server
 referred to in this table entry."
 ::= { radiusAccServerEntry 2 }

radiusAccClientServerPortNumber  OBJECT-TYPE
SYNTAX Integer32 (0..65535)
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
 "The UDP port the client is using to send requests to
 this server."
REFERENCE "RFC 2866 section 3"
 ::= { radiusAccServerEntry 3 }

radiusAccClientRoundTripTime  OBJECT-TYPE
SYNTAX TimeTicks
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
 "The time interval between the most recent
 Accounting-Response and the Accounting-Request that
 matched it from this RADIUS accounting server."
REFERENCE "RFC 2866 section 2"
 ::= { radiusAccServerEntry 4 }

-- Request/Response statistics
--
-- Requests = Responses + PendingRequests + ClientTimeouts
--
-- Responses - MalformedResponses - BadAuthenticators -
-- UnknownTypes - PacketsDropped = Successfully received
radiusAccClientRequests OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS Accounting-Request packets sent. This does not include retransmissions."
REFERENCE "RFC 2866 section 4.1"
::= { radiusAccServerEntry 5 }

radiusAccClientRetransmissions OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS Accounting-Request packets retransmitted to this RADIUS accounting server. Retransmissions include retries where the Identifier and Acct-Delay have been updated, as well as those in which they remain the same."
REFERENCE "RFC 2866 section 2"
::= { radiusAccServerEntry 6 }

radiusAccClientResponses OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS packets received on the accounting port from this server."
REFERENCE "RFC 2866 section 4.2"
::= { radiusAccServerEntry 7 }

radiusAccClientMalformedResponses OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of malformed RADIUS Accounting-Response packets received from this server. Malformed packets include packets with an invalid length. Bad authenticators and unknown types are not included as malformed accounting responses."
REFERENCE "RFC 2866 section 3"
::= { radiusAccServerEntry 8 }

radiusAccClientBadAuthenticators OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS Accounting-Response packets that contained invalid authenticators received from this server."
REFERENCE "RFC 2866 section 3"
::= { radiusAccServerEntry 9 }

radiusAccClientPendingRequests OBJECT-TYPE
SYNTAX Gauge32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS Accounting-Request packets sent to this server that have not yet timed out or received a response. This variable is incremented when an Accounting-Request is sent and decremented due to receipt of an Accounting-Response, a timeout, or a retransmission."
REFERENCE "RFC 2866 section 2"
::= { radiusAccServerEntry 10 }

radiusAccClientTimeouts OBJECT-TYPE
SYNTAX Counter32
UNITS "timeouts"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of accounting timeouts to this server. After a timeout, the client may retry to the same server, send to a different server, or give up. A retry to the same server is counted as a retransmit as well as a timeout. A send to a different server is counted as an Accounting-Request as well as a timeout."
REFERENCE "RFC 2866 section 2"
::= { radiusAccServerEntry 11 }

radiusAccClientUnknownTypes OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS packets of unknown type that were received from this server on the accounting port."
REFERENCE "RFC 2866 section 4"
::= { radiusAccServerEntry 12 }

radiusAccClientPacketsDropped OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
"The number of RADIUS packets that were received from this server on the accounting port and dropped for some other reason."
::= { radiusAccServerEntry 13 }

-- New MIB objects added in this revision

radiusAccServerExtTable OBJECT-TYPE
SYNTAX SEQUENCE OF RadiusAccServerExtEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"The (conceptual) table listing the RADIUS accounting servers with which the client shares a secret."
::= { radiusAccClient 4 }

RadiusAccServerExtEntry OBJECT-TYPE
SYNTAX RadiusAccServerExtEntry
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"An entry (conceptual row) representing a RADIUS accounting server with which the client shares a secret."
INDEX { radiusAccServerExtIndex }
::= { radiusAccServerExtTable 1 }

RadiusAccServerExtEntry ::= SEQUENCE {
  radiusAccServerExtIndex                    Integer32,
  radiusAccServerInetAddressType             InetAddressType,
  radiusAccServerInetAddress                InetAddress,
  radiusAccClientServerInetPortNumber        InetPortNumber,
  radiusAccClientExtRoundTripTime            TimeTicks,
radiusAccClientExtRequests          Counter32,
radiusAccClientExtRetransmissions   Counter32,
radiusAccClientExtResponses         Counter32,
radiusAccClientExtMalformedResponses Counter32,
radiusAccClientExtBadAuthenticators Counter32,
radiusAccClientExtPendingRequests   Gauge32,
radiusAccClientExtTimeouts          Counter32,
radiusAccClientExtUnknownTypes      Counter32,
radiusAccClientExtPacketsDropped    Counter32,
radiusAccClientCounterDiscontinuity TimeTicks

radiusAccServerExtIndex OBJECT-TYPE
SYNTAX Integer32 (1..2147483647)
MAX-ACCESS not-accessible
STATUS current
DESCRIPTION
"A number uniquely identifying each RADIUS
Accounting server with which this client
communicates."
 ::= { radiusAccServerExtEntry 1 }

radiusAccServerInetAddressType OBJECT-TYPE
SYNTAX InetAddressType
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The type of address format used for the
radiusAccServerInetAddress object."
 ::= { radiusAccServerExtEntry 2 }

radiusAccServerInetAddress OBJECT-TYPE
SYNTAX InetAddress
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The IP address of the RADIUS accounting
server referred to in this table entry, using
the version-neutral IP address format."
 ::= { radiusAccServerExtEntry 3 }

radiusAccClientServerInetPortNumber OBJECT-TYPE
SYNTAX InetPortNumber { 1..65535 }
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The UDP port the client is using to send requests to this accounting server. The value zero (0) is invalid."
REFERENCE "RFC 2866 section 3"
::= { radiusAccServerExtEntry 4 }

radiusAccClientExtRoundTripTime  OBJECT-TYPE
SYNTAX  TimeTicks
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The time interval between the most recent Accounting-Response and the Accounting-Request that matched it from this RADIUS accounting server."
REFERENCE "RFC 2866 section 2"
::= { radiusAccServerExtEntry 5 }

-- Request/Response statistics
--
-- Requests = Responses + PendingRequests + ClientTimeouts
--
-- Responses - MalformedResponses - BadAuthenticators -
-- UnknownTypes - PacketsDropped = Successfully received

radiusAccClientExtRequests OBJECT-TYPE
SYNTAX  Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS Accounting-Request packets sent. This does not include retransmissions. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."
REFERENCE "RFC 2866 section 4.1"
::= { radiusAccServerExtEntry 6 }

radiusAccClientExtRetransmissions OBJECT-TYPE
SYNTAX  Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS Accounting-Request packets retransmitted to this RADIUS accounting server."
Retransmissions include retries where the Identifier and Acct-Delay have been updated, as well as those in which they remain the same. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."  

REFERENCE "RFC 2866 section 2"  
::= { radiusAccServerExtEntry 7 }

radiusAccClientExtResponses OBJECT-TYPE  
SYNTAX Counter32  
UNITS "packets"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"The number of RADIUS packets received on the accounting port from this server. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."

REFERENCE "RFC 2866 section 4.2"  
::= { radiusAccServerExtEntry 8 }

radiusAccClientExtMalformedResponses OBJECT-TYPE  
SYNTAX Counter32  
UNITS "packets"  
MAX-ACCESS read-only  
STATUS current  
DESCRIPTION  
"The number of malformed RADIUS Accounting-Response packets received from this server. Malformed packets include packets with an invalid length. Bad authenticators and unknown types are not included as malformed accounting responses. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."

REFERENCE "RFC 2866 section 3"  
::= { radiusAccServerExtEntry 9 }

radiusAccClientExtBadAuthenticators OBJECT-TYPE  
SYNTAX Counter32  
UNITS "packets"  
MAX-ACCESS read-only  
STATUS current
DESCRIPTION
"The number of RADIUS Accounting-Response
packets that contained invalid authenticators
received from this server. This counter may
experience a discontinuity when the RADIUS
Accounting Client module within the managed
entity is reinitialized, as indicated by the
current value of
radiusAccClientCounterDiscontinuity."
REFERENCE "RFC 2866 section 3"
::= { radiusAccServerExtEntry 10 }

radiusAccClientExtPendingRequests OBJECT-TYPE
SYNTAX Gauge32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS Accounting-Request packets
sent to this server that have not yet timed out or
received a response. This variable is incremented
when an Accounting-Request is sent and decremented
due to receipt of an Accounting-Response, a timeout,
or a retransmission. This counter may experience a
discontinuity when the RADIUS Accounting Client module
within the managed entity is reinitialized, as
indicated by the current value of
radiusAccClientCounterDiscontinuity."
REFERENCE "RFC 2866 section 2"
::= { radiusAccServerExtEntry 11 }

radiusAccClientExtTimeouts OBJECT-TYPE
SYNTAX Counter32
UNITS "timeouts"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of accounting timeouts to this server.
After a timeout, the client may retry to the same
server, send to a different server, or give up.
A retry to the same server is counted as a
retransmit as well as a timeout. A send to a different
server is counted as an Accounting-Request as well as
a timeout. This counter may experience a discontinuity
when the RADIUS Accounting Client module within the
managed entity is reinitialized, as indicated by the
current value of radiusAccClientCounterDiscontinuity."
REFERENCE "RFC 2866 section 2"
radiusAccClientExtUnknownTypes OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS packets of unknown type that were received from this server on the accounting port. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."
REFERENCE "RFC 2866 section 4"

radiusAccClientExtPacketsDropped OBJECT-TYPE
SYNTAX Counter32
UNITS "packets"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS packets that were received from this server on the accounting port and dropped for some other reason. This counter may experience a discontinuity when the RADIUS Accounting Client module within the managed entity is reinitialized, as indicated by the current value of radiusAccClientCounterDiscontinuity."

radiusAccClientCounterDiscontinuity OBJECT-TYPE
SYNTAX TimeTicks
UNITS "centiseconds"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of centiseconds since the last discontinuity in the RADIUS Accounting Client counters. A discontinuity may be the result of a reinitialization of the RADIUS Accounting Client module within the managed entity."
-- conformance information

radiusAccClientMIBConformance OBJECT IDENTIFIER ::= { radiusAccClientMIB 2 }

radiusAccClientMIBCompliances OBJECT IDENTIFIER ::= { radiusAccClientMIBConformance 1 }

radiusAccClientMIBGroups OBJECT IDENTIFIER ::= { radiusAccClientMIBConformance 2 }

-- units of conformance

radiusAccClientMIBCompliance MODULE-COMPLIANCE
  STATUS deprecated
  DESCRIPTION "The compliance statement for accounting clients implementing the RADIUS Accounting Client MIB. Implementation of this module is for IPv4-only entities, or for backwards compatibility use with entities that support both IPv4 and IPv6."
  MODULE -- this module
    MANDATORY-GROUPS { radiusAccClientMIBGroup }

::= { radiusAccClientMIBCompliances 1 }

radiusAccClientExtMIBCompliance MODULE-COMPLIANCE
  STATUS current
  DESCRIPTION "The compliance statement for accounting clients implementing the RADIUS Accounting Client IPv6 Extensions MIB. Implementation of this module is for entities that support IPv6, or support IPv4 and IPv6."
  MODULE -- this module
    MANDATORY-GROUPS { radiusAccClientExtMIBGroup }

OBJECT radiusAccServerInetAddressType
SYNTAX InetAddressType { ipv4(1), ipv6(2) }
DESCRIPTION "An implementation is only required to support IPv4 and globally unique IPv6 addresses."

OBJECT radiusAccServerInetAddress
SYNTAX InetAddress ( SIZE (4|16) )
DESCRIPTION
"An implementation is only required to support IPv4 and globally unique IPv6 addresses."

::= { radiusAccClientMIBCompliances 2 }

-- units of conformance

radiusAccClientMIBGroup OBJECT-GROUP
  OBJECTS { radiusAccClientIdentifier,
            radiusAccClientInvalidServerAddresses,
            radiusAccServerAddress,
            radiusAccClientServerPortNumber,
            radiusAccClientRoundTripTime,
            radiusAccClientRequests,
            radiusAccClientRetransmissions,
            radiusAccClientResponses,
            radiusAccClientMalformedResponses,
            radiusAccClientBadAuthenticators,
            radiusAccClientPendingRequests,
            radiusAccClientTimeouts,
            radiusAccClientUnknownTypes,
            radiusAccClientPacketsDropped
  }
  STATUS deprecated
  DESCRIPTION "The basic collection of objects providing management of RADIUS Accounting Clients."
  ::= { radiusAccClientMIBGroups 1 }

radiusAccClientExtMIBGroup OBJECT-GROUP
  OBJECTS { radiusAccClientIdentifier,
            radiusAccClientInvalidServerAddresses,
            radiusAccServerInetAddressType,
            radiusAccServerInetAddress,
            radiusAccClientServerInetPortNumber,
            radiusAccClientExtRoundTripTime,
            radiusAccClientExtRequests,
            radiusAccClientExtRetransmissions,
            radiusAccClientExtResponses,
            radiusAccClientExtMalformedResponses,
            radiusAccClientExtBadAuthenticators,
            radiusAccClientExtPendingRequests,
            radiusAccClientExtTimeouts,
            radiusAccClientExtUnknownTypes,
            radiusAccClientExtPacketsDropped,
            radiusAccClientCounterDiscontinuity
8. 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.

There are a number of managed objects in this MIB that may contain sensitive information. These are:

radiusAcctServerIPAddress
This can be used to determine the address of the RADIUS accounting server with which the client is communicating. This information could be useful in mounting an attack on the accounting server.

radiusAcctServerInetAddress
This can be used to determine the address of the RADIUS accounting server with which the client is communicating. This information could be useful in mounting an attack on the accounting server.

radiusAcctClientServerPortNumber
This can be used to determine the port number on which the RADIUS accounting client is sending. This information could be useful in impersonating the client in order to send data to the accounting server.

radiusAcctClientServerInetPortNumber
This can be used to determine the port number on which the RADIUS accounting client is sending. This information could be useful in impersonating the client in order to send data to the accounting server.

It is thus important to control even GET access to these objects and possibly to even encrypt the values of these object when sending them over the network via SNMP. Not all versions of SNMP provide features for such a secure environment.
SNMP versions prior to SNMPv3 do not provide a secure environment. Even if the network itself is secure (for example by using IPsec), there is no control as to who on the secure network is allowed to access and GET/SET (read/change/create/delete) the objects in this MIB.

It is RECOMMENDED that implementers consider the security features as provided by the SNMPv3 framework (see [RFC3410], section 8), including full support for the SNMPv3 cryptographic mechanisms (for authentication and privacy).

Further, deployment of SNMP versions prior to SNMPv3 is NOT RECOMMENDED. Instead, it is RECOMMENDED to deploy SNMPv3 and to enable cryptographic security. It is then a customer/operator responsibility to ensure that the SNMP entity giving access to an instance of this MIB module is properly configured to give access to the objects only to those principals (users) that have legitimate rights to indeed GET or SET (change/create/delete) them.

9. References

9.1. Normative References


9.2. Informative References


Appendix A. Acknowledgements

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Author’s Address

David B. Nelson
Enterasys Networks
50 Minuteman Road
Andover, MA  01810
USA

EMail: dnelson@enterasys.com
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