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RADIUS Auth Client MIB (IPv6)  
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#### Abstract

This memo updates [RFC 2618](#) by deprecating the MIB table containing IPv4-only address formats and defining a new table to add support for version neutral IP address formats.

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## 1. 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](#)].

## 2. 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) Authentication Client as defined in [RFC 2865](#) [[RFC2865](#)].

## 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 updates [RFC 2618](#) [[RFC2618](#)], RADIUS Authentication Client MIB, by deprecating the radiusAuthServerTable table and adding a new table, radiusAuthServerExtTable, containing

radiusAuthServerInetAddressType, radiusAuthServerInetAddress, and radiusAuthClientServerInetPortNumber. The purpose of these added MIB objects is to support version neutral IP addressing formats. The existing table containing radiusAuthServerAddress and radiusAuthClientServerPortNumber is deprecated.

[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 [[RFC 4001](#)] that support all

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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 structure of the MIB Module defined in this memo corresponds to the structure of the MIB Module defined in RADIUS Authentication Client MIB, [RFC 2618](#) [[RFC2618](#)]. This MIB module contains two scalars as well as a single table, the RADIUS Authentication Server Table, which contains one row for each RADIUS authentication server with which the client shares a secret.

Each entry in the RADIUS Authentication Server Table includes sixteen columns presenting a view of the activity of the RADIUS authentication client.

## [6.](#) Deprecated Objects

The deprecated table in this MIB is carried forward from [RFC 2618](#) [[RFC2618](#)]. 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 the deprecated table containing IPv4-only address objects when the RADIUS server address represented in the 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.

## 7. Definitions

RADIUS-AUTH-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

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InetAddressType, InetAddress,  
InetPortNumber FROM INET-ADDRESS-MIB  
MODULE-COMPLIANCE, OBJECT-GROUP FROM SNMPv2-CONF;

radiusAuthClientMIB MODULE-IDENTITY

LAST-UPDATED "200507150000Z" -- 15 Jul 2005

ORGANIZATION "IETF RADIUS Working Group."

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DESCRIPTION

"The MIB module for entities implementing the client side of the Remote Authentication Dial-In User Service (RADIUS) authentication protocol."

REVISION "9906110000Z" -- 11 Jun 1999

DESCRIPTION "Initial version as published in [RFC 2618](#)"

REVISION "200507150000Z" -- 15 Jul 2005  
DESCRIPTION "Revised version as published in RFC XXXX"

-- RFC Editor: replace xxx with actual RFC number at the time of  
-- publication, and remove this note.

::= { radiusAuthentication 2 }

radiusMIB OBJECT-IDENTITY

STATUS current

DESCRIPTION

"The OID assigned to RADIUS MIB work by the IANA."

::= { mib-2 67 }

radiusAuthClientExtMIB OBJECT-IDENTITY

STATUS current

DESCRIPTION

"The OID assigned to RADIUS MIB Extension work by  
the IANA."

::= { mib-2 TBA }

-- RFC Editor: replace TBA with IANA assigned OID value, and  
-- remove this note.

radiusAuthentication OBJECT IDENTIFIER ::= {radiusMIB 1}

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radiusAuthClientMIBObjects OBJECT IDENTIFIER

::= { radiusAuthClientMIB 1 }

radiusAuthClient OBJECT IDENTIFIER

::= { radiusAuthClientMIBObjects 1 }

radiusAuthClientInvalidServerAddresses OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS Access-Response packets  
received from unknown addresses."

::= { radiusAuthClient 1 }

```

radiusAuthClientIdentifier OBJECT-TYPE
    SYNTAX SnmpAdminString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The NAS-Identifier of the RADIUS authentication client.
        This is not necessarily the same as sysName in MIB II."
    ::= { radiusAuthClient 2 }

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

radiusAuthServerEntry OBJECT-TYPE
    SYNTAX      RadiusAuthServerEntry
    MAX-ACCESS not-accessible
    STATUS      deprecated
    DESCRIPTION
        "An entry (conceptual row) representing a RADIUS
        authentication server with which the client shares
        a secret."
    INDEX       { radiusAuthServerIndex }
    ::= { radiusAuthServerTable 1 }

RadiusAuthServerEntry ::= SEQUENCE {
    radiusAuthServerIndex          Integer32,
    radiusAuthServerAddress        IpAddress,
    radiusAuthClientServerPortNumber Integer32,

```

```

radiusAuthClientRoundTripTime      TimeTicks,
radiusAuthClientAccessRequests     Counter32,
radiusAuthClientAccessRetransmissions Counter32,
radiusAuthClientAccessAccepts      Counter32,
radiusAuthClientAccessRejects      Counter32,
radiusAuthClientAccessChallenges   Counter32,
radiusAuthClientMalformedAccessResponses Counter32,
radiusAuthClientBadAuthenticators  Counter32,

```

radiusAuthClientPendingRequests	Gauge32,
radiusAuthClientTimeouts	Counter32,
radiusAuthClientUnknownTypes	Counter32,
radiusAuthClientPacketsDropped	Counter32

}

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

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

radiusAuthClientServerPortNumber 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."  
 ::= { radiusAuthServerEntry 3 }

radiusAuthClientRoundTripTime OBJECT-TYPE  
 SYNTAX TimeTicks  
 MAX-ACCESS read-only  
 STATUS deprecated  
 DESCRIPTION  
 "The time interval (in hundredths of a second) between



```

        Access-Request that matched it from this RADIUS
        authentication server."
 ::= { radiusAuthServerEntry 4 }

-- Request/Response statistics
--
-- TotalIncomingPackets = Accepts + Rejects + Challenges +
-- UnknownTypes
--
-- TotalIncomingPackets - MalformedResponses -
-- BadAuthenticators - UnknownTypes - PacketsDropped =
-- Successfully received
--
-- AccessRequests + PendingRequests + ClientTimeouts =
-- Successfully received
--
--

radiusAuthClientAccessRequests OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of RADIUS Access-Request packets sent
        to this server. This does not include retransmissions."
    ::= { radiusAuthServerEntry 5 }

radiusAuthClientAccessRetransmissions OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of RADIUS Access-Request packets
        retransmitted to this RADIUS authentication server."
    ::= { radiusAuthServerEntry 6 }

radiusAuthClientAccessAccepts OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of RADIUS Access-Accept packets
        (valid or invalid) received from this server."
    ::= { radiusAuthServerEntry 7 }

radiusAuthClientAccessRejects OBJECT-TYPE
    SYNTAX Counter32

```

```
MAX-ACCESS read-only
STATUS deprecated
DESCRIPTION
    "The number of RADIUS Access-Reject packets
    (valid or invalid) received from this server."
 ::= { radiusAuthServerEntry 8 }
```

```
radiusAuthClientAccessChallenges OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of RADIUS Access-Challenge packets
        (valid or invalid) received from this server."
    ::= { radiusAuthServerEntry 9 }
```

```
-- "Access-Response" includes an Access-Accept, Access-Challenge
-- or Access-Reject
```

```
radiusAuthClientMalformedAccessResponses OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of malformed RADIUS Access-Response
        packets received from this server.
        Malformed packets include packets with
        an invalid length. Bad authenticators or
        Message Authenticator attributes or unknown types
        are not included as malformed access responses."
    ::= { radiusAuthServerEntry 10 }
```

```
radiusAuthClientBadAuthenticators OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS deprecated
    DESCRIPTION
        "The number of RADIUS Access-Response packets
        containing invalid authenticators or Message
        Authenticator attributes received from this server."
    ::= { radiusAuthServerEntry 11 }
```

```
radiusAuthClientPendingRequests OBJECT-TYPE
    SYNTAX Gauge32
    MAX-ACCESS read-only
    STATUS deprecated
```

## DESCRIPTION

"The number of RADIUS Access-Request packets

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destined for this server that have not yet timed out or received a response. This variable is incremented when an Access-Request is sent and decremented due to receipt of an Access-Accept, Access-Reject or Access-Challenge, a timeout or retransmission."

::= { radiusAuthServerEntry 12 }

radiusAuthClientTimeouts OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of authentication 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 a Request as well as a timeout."

::= { radiusAuthServerEntry 13 }

radiusAuthClientUnknownTypes OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of RADIUS packets of unknown type which were received from this server on the authentication port."

::= { radiusAuthServerEntry 14 }

radiusAuthClientPacketsDropped OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS deprecated

DESCRIPTION

"The number of RADIUS packets of which were received from this server on the authentication port and dropped for some other reason."

::= { radiusAuthServerEntry 15 }

-- Extended MIB Objects

radiusAuthClientExtMIBNotifications OBJECT IDENTIFIER  
 ::= { radiusAuthClientExtMIB 0 }

radiusAuthClientExtMIBObjects OBJECT IDENTIFIER  
 ::= { radiusAuthClientExtMIB 1 }

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radiusAuthClientExtMIBConformance OBJECT IDENTIFIER  
 ::= { radiusAuthClientExtMIB 2 }

radiusAuthServerExtTable OBJECT-TYPE  
 SYNTAX SEQUENCE OF RadiusAuthServerExtEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION  
 "The (conceptual) table listing the RADIUS authentication  
 servers with which the client shares a secret."  
 ::= { radiusAuthClientExtMIB 1 }

radiusAuthServerExtEntry OBJECT-TYPE  
 SYNTAX RadiusAuthServerExtEntry  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION  
 "An entry (conceptual row) representing a RADIUS  
 authentication server with which the client shares  
 a secret."  
 INDEX { radiusAuthServerExtIndex }  
 ::= { radiusAuthServerExtTable 1 }

RadiusAuthServerExtEntry ::= SEQUENCE {  
 radiusAuthServerExtIndex Integer32,  
 radiusAuthServerInetAddressType InetAddressType,  
 radiusAuthServerInetAddress InetAddress,  
 radiusAuthClientServerInetPortNumber InetPortNumber,  
 radiusAuthClientExtRoundTripTime TimeTicks,  
 radiusAuthClientExtAccessRequests Counter32,  
 radiusAuthClientExtAccessRetransmissions Counter32,  
 radiusAuthClientExtAccessAccepts Counter32,

radiusAuthClientExtAccessRejects	Counter32,
radiusAuthClientExtAccessChallenges	Counter32,
radiusAuthClientExtMalformedAccessResponses	Counter32,
radiusAuthClientExtBadAuthenticators	Counter32,
radiusAuthClientExtPendingRequests	Gauge32,
radiusAuthClientExtTimeouts	Counter32,
radiusAuthClientExtUnknownTypes	Counter32,
radiusAuthClientExtPacketsDropped	Counter32

}

radiusAuthServerExtIndex OBJECT-TYPE  
 SYNTAX Integer32 (1..2147483647)  
 MAX-ACCESS not-accessible  
 STATUS current  
 DESCRIPTION  
 "A number uniquely identifying each RADIUS

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Authentication server with which this client  
 communicates."  
 ::= { radiusAuthServerExtEntry 1 }

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

radiusAuthServerInetAddress OBJECT-TYPE  
 SYNTAX InetAddress  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
 "The IP address of the RADIUS authentication  
 server referred to in this table entry, using  
 the IPv6 address format."  
 ::= { radiusAuthServerExtEntry 3 }

radiusAuthClientServerInetPortNumber OBJECT-TYPE

```

SYNTAX InetPortNumber
MAX-ACCESS read-only
STATUS current
DESCRIPTION
    "The UDP port the client is using to send requests
    to this server."
 ::= { radiusAuthServerExtEntry 4 }

radiusAuthClientExtRoundTripTime OBJECT-TYPE
    SYNTAX TimeTicks
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The time interval (in hundredths of a second) between
        the most recent Access-Reply/Access-Challenge and the
        Access-Request that matched it from this RADIUS
        authentication server."
    ::= { radiusAuthServerExtEntry 5 }

-- Request/Response statistics
--
-- TotalIncomingPackets = Accepts + Rejects + Challenges +
-- UnknownTypes

```

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```

--
-- TotalIncomingPackets - MalformedResponses -
-- BadAuthenticators - UnknownTypes - PacketsDropped =
-- Successfully received
--
-- AccessRequests + PendingRequests + ClientTimeouts =
-- Successfully received
--
--

radiusAuthClientExtAccessRequests OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS Access-Request packets sent
        to this server. This does not include retransmissions."
    ::= { radiusAuthServerExtEntry 6 }

```

```

radiusAuthClientExtAccessRetransmissions OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS Access-Request packets
         retransmitted to this RADIUS authentication server."
    ::= { radiusAuthServerExtEntry 7 }

```

```

radiusAuthClientExtAccessAccepts OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS Access-Accept packets
         (valid or invalid) received from this server."
    ::= { radiusAuthServerExtEntry 8 }

```

```

radiusAuthClientExtAccessRejects OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS Access-Reject packets
         (valid or invalid) received from this server."
    ::= { radiusAuthServerExtEntry 9 }

```

```

radiusAuthClientExtAccessChallenges OBJECT-TYPE
    SYNTAX Counter32

```

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```

    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS Access-Challenge packets
         (valid or invalid) received from this server."
    ::= { radiusAuthServerExtEntry 10 }

```

```

-- "Access-Response" includes an Access-Accept, Access-Challenge
-- or Access-Reject

```

```

radiusAuthClientExtMalformedAccessResponses OBJECT-TYPE

```

SYNTAX Counter32  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
   "The number of malformed RADIUS Access-Response packets received from this server. Malformed packets include packets with an invalid length. Bad authenticators or Message Authenticator attributes or unknown types are not included as malformed access responses."  
 ::= { radiusAuthServerExtEntry 11 }

radiusAuthClientExtBadAuthenticators OBJECT-TYPE  
 SYNTAX Counter32  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
   "The number of RADIUS Access-Response packets containing invalid authenticators or Message Authenticator attributes received from this server."  
 ::= { radiusAuthServerExtEntry 12 }

radiusAuthClientExtPendingRequests OBJECT-TYPE  
 SYNTAX Gauge32  
 MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
   "The number of RADIUS Access-Request packets destined for this server that have not yet timed out or received a response. This variable is incremented when an Access-Request is sent and decremented due to receipt of an Access-Accept, Access-Reject or Access-Challenge, a timeout or retransmission."  
 ::= { radiusAuthServerExtEntry 13 }

radiusAuthClientExtTimeouts OBJECT-TYPE  
 SYNTAX Counter32

MAX-ACCESS read-only  
 STATUS current  
 DESCRIPTION  
   "The number of authentication 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 a Request as well as a timeout."

```
::= { radiusAuthServerExtEntry 14 }
```

```
radiusAuthClientExtUnknownTypes OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS packets of unknown type which
         were received from this server on the authentication
         port."
    ::= { radiusAuthServerExtEntry 15 }
```

```
radiusAuthClientExtPacketsDropped OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of RADIUS packets of which were
         received from this server on the authentication port
         and dropped for some other reason."
    ::= { radiusAuthServerExtEntry 16 }
```

-- conformance information

```
radiusAuthClientMIBConformance OBJECT IDENTIFIER
    ::= { radiusAuthClientMIB 2 }
```

```
radiusAuthClientMIBCompliances OBJECT IDENTIFIER
    ::= { radiusAuthClientMIBConformance 1 }
```

```
radiusAuthClientMIBGroups OBJECT IDENTIFIER
    ::= { radiusAuthClientMIBConformance 2 }
```

```
radiusAuthClientExtMIBCompliances OBJECT IDENTIFIER
    ::= { radiusAuthClientExtMIBConformance 1 }
```

```
radiusAuthClientExtMIBGroups OBJECT IDENTIFIER
    ::= { radiusAuthClientExtMIBConformance 2 }
```

-- compliance statements

```
radiusAuthClientMIBCompliance MODULE-COMPLIANCE
    STATUS deprecated
    DESCRIPTION
        "The compliance statement for authentication clients
        implementing the RADIUS Authentication Client MIB."
    MODULE -- this module
        MANDATORY-GROUPS { radiusAuthClientMIBGroup }

    ::= { radiusAuthClientMIBCompliances 1 }
```

```
radiusAuthClientExtMIBCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "The compliance statement for authentication
        clients implementing the RADIUS Authentication
        Client IPv6 Extensions MIB."
    MODULE -- this module
        MANDATORY-GROUPS { radiusAuthClientExtMIBGroup }

    ::= { radiusAuthClientExtMIBCompliances 1 }
```

-- units of conformance

```
radiusAuthClientMIBGroup OBJECT-GROUP
    OBJECTS { radiusAuthClientIdentifier,
        radiusAuthClientInvalidServerAddresses,
        radiusAuthServerAddress,
        radiusAuthClientServerPortNumber,
        radiusAuthClientRoundTripTime,
        radiusAuthClientAccessRequests,
        radiusAuthClientAccessRetransmissions,
        radiusAuthClientAccessAccepts,
        radiusAuthClientAccessRejects,
        radiusAuthClientAccessChallenges,
        radiusAuthClientMalformedAccessResponses,
        radiusAuthClientBadAuthenticators,
        radiusAuthClientPendingRequests,
        radiusAuthClientTimeouts,
        radiusAuthClientUnknownTypes,
        radiusAuthClientPacketsDropped
    }
    STATUS deprecated
    DESCRIPTION
        "The basic collection of objects providing management of
```

```
::= { radiusAuthClientMIBGroups 1 }
```

```
radiusAuthClientExtMIBGroup OBJECT-GROUP
    OBJECTS { radiusAuthClientIdentifier,
                radiusAuthClientInvalidServerAddresses,
                radiusAuthServerInetAddressType,
                radiusAuthServerInetAddress,
                radiusAuthClientServerInetPortNumber,
                radiusAuthClientExtRoundTripTime,
                radiusAuthClientExtAccessRequests,
                radiusAuthClientExtAccessRetransmissions,
                radiusAuthClientExtAccessAccepts,
                radiusAuthClientExtAccessRejects,
                radiusAuthClientExtAccessChallenges,
                radiusAuthClientExtMalformedAccessResponses,
                radiusAuthClientExtBadAuthenticators,
                radiusAuthClientExtPendingRequests,
                radiusAuthClientExtTimeouts,
                radiusAuthClientExtUnknownTypes,
                radiusAuthClientExtPacketsDropped
            }
    STATUS current
    DESCRIPTION
        "The collection of extended objects providing
        management of RADIUS Authentication Clients
        using version neutral IP address format."
    ::= { radiusAuthClientExtMIBGroups 1 }
```

```
END
```

## [8.](#) IANA Considerations

This document requires IANA assignment of a number in the MIB-2 OID number space.

## [9.](#) Security Considerations

There are no management objects defined in this MIB that have a MAX-

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

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

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

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

radiusAuthClientServerInetPortNumber This can be used to determine the port number on which the RADIUS authentication client is sending. This information could be useful in impersonating the client in order to send data to the authentication 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 the implementers consider the security features as provided by the SNMPv3 framework. Specifically, the use of the User-based Security Model [[RFC2574](#)] and the View-based Access Control Model [[RFC2575](#)] is recommended. Using these security features, customer/users can give access to the objects only to those principals (users) that have legitimate rights to GET or SET (change/create/delete) them.

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#### [Appendix A](#). Acknowledgments

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