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Dynamic Authorization Server MIB
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Status of this Memo

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Abstract

This memo defines a portion of the Management Information Base (MIB) for use with network management protocols in the Internet community. In particular, it describes the RADIUS Dynamic Authorization Server (DAS) functions that support the dynamic authorization extensions as defined in RFC 3576.

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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. It is becoming increasingly important to support Dynamic Authorization extensions on the network access server (NAS) devices to handle the Disconnect and Change-of-Authorization (CoA) messages as described in [RFC3576] . As a result, the effective management of RADIUS Dynamic Authorization entities is of considerable importance. This RADIUS Dynamic Authorization Server (DAS) MIB complements the managed objects used for managing RADIUS authentication and accounting clients as described in [RFC2618] and [RFC2620], respectively. The corresponding version neutral IP address MIBs [RFC2618bis] and [RFC2620bis] will obsolete (if approved) [RFC2618] and [RFC2620].

1.1. Requirements notation

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 [RFC2119].

1.2. Terminology

Dynamic Authorization Server (DAS)

The component that resides on the NAS which processes the Disconnect and Change-of-Authorization (CoA) Request packets [RFC3576] sent by the Dynamic Authorization Client.

Dynamic Authorization Client (DAC)

The component which sends Disconnect and CoA-Request packets to the Dynamic Authorization Server. While often residing on the RADIUS server, it is also possible for this component to be located on a separate host, such as a Rating Engine.

Dynamic Authorization Server Port

The UDP port on which the Dynamic Authorization Server listens for the Disconnect and CoA requests sent by the Dynamic Authorization Client.

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 [RFC2578], STD 58, RFC2579 [RFC2579] and STD 58, RFC2580 [RFC2580].

3. Overview

"Dynamic Authorization Extensions to RADIUS" [RFC3576] defines the operation of Disconnect-Request, Disconnect-ACK, Disconnect-NAK, CoA-Request, CoA-ACK and CoA-NAK packets. Typically NAS devices implement the DAS function, and thus would be expected to implement the RADIUS Dynamic Authorization Server MIB, while DACs implement the client function, and thus would be expected to implement the RADIUS Dynamic Authorization Client MIB.

However, it is possible for a RADIUS Dynamic Authorization entity to perform both client and server functions. For example, a RADIUS proxy may act as a DAS to one or more DACs, while simultaneously acting as a DAC to one or more DASs. In such situations, it is expected that RADIUS entities combining client and server functionality will support both the client and server MIBs.

This memo describes the MIB for Dynamic Authorization Servers and relates to the following documents as follows:

[RFC2618] describes the MIB for a RADIUS Authentication Client.

[RFC2619] describes the MIB for a RADIUS Authentication Server.

[RFC2620] describes the MIB for a RADIUS Accounting Client.

[RFC2621] describes the MIB for a RADIUS Accounting Server.

The above MIBs support IPv4-only address format. The following MIBs support version neutral IP address formats and (if approved) obsolete the respective MIBs mentioned above.

[RFC2618bis] describes the MIB for a RADIUS Auth Client MIB (IPv6).

[RFC2619bis] describes the MIB for a RADIUS Auth Server MIB (IPv6).

[RFC2620bis] describes the MIB for a RADIUS Acct Client MIB (IPv6).

[RFC2621bis] describes the MIB for a RADIUS Acct Server MIB (IPv6).

[DYNCLNT] describes the MIB for a RADIUS Dynamic Authorization Client.

A NAS typically implements the MIBs for a RADIUS Authentication Client, a RADIUS accounting client, and a RADIUS Dynamic Authorization Server. However, there is not strict relationship between these three MIBs, i.e. one MIB can be implemented without implementing the other MIBs. Similarly, for the other 3 MIBs

mentioned above, a typical case would be where the MIBs for a RADIUS authentication server, a RADIUS accounting server, and a RADIUS Dynamic Authorization Client are implemented by the same device. However, also for these 3 MIBs, they can be implemented independent from each other. A RADIUS proxy might implement any of these 6 MIBs, but can also implement any subset of these MIBs.

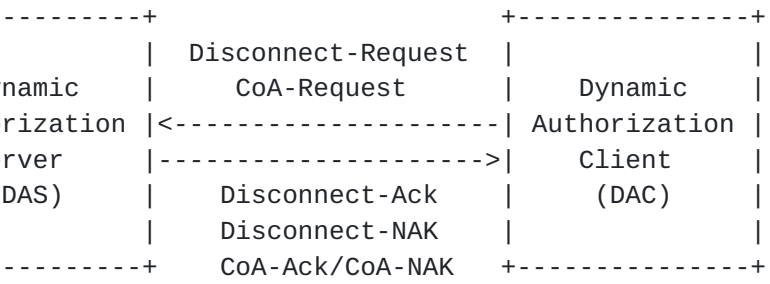

Figure 1: Mapping of clients and servers.

This MIB module for the Dynamic Authorization Server contains the following:

1. Three scalar objects.

2. One Dynamic Authorization Client Table. This table contains one row for each DAC with which the DAS shares a secret.

4. RADIUS Dynamic Authorization Server MIB Definitions

```
RADIUS-DYNAUTH-SERVER-MIB DEFINITIONS ::= BEGIN

IMPORTS
       MODULE-IDENTITY, OBJECT-TYPE,
       Counter32, Integer32, mib-2  FROM SNMPv2-SMI  -- [RFC2578]
       SnmpAdminString   FROM SNMP-FRAMEWORK-MIB     -- [RFC3411]
       InetAddressType,
       InetAddress   FROM INET-ADDRESS-MIB           -- [RFC4001]
       MODULE-COMPLIANCE,
       OBJECT-GROUP  FROM SNMPv2-CONF;               -- [RFC2580]

radiusDynAuthServerMIB MODULE-IDENTITY
       LAST-UPDATED "200510160000Z" -- 16 October 2005
       ORGANIZATION "IETF RADEXT Working Group"
       CONTACT-INFO
              " Stefaan De Cnodder
                Alcatel
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                Murtaza Chiba
                Cisco Systems, Inc.
                170 West Tasman Dr.
                San Jose CA, 95134

                Phone: +1 408 525 7198
                EMail: mchiba@cisco.com "
       DESCRIPTION
           "The MIB module for entities implementing the server
            side of the Dynamic Authorization extensions Remote
            Access Dialin User Service (RADIUS) protocol.

            Copyright (C) The Internet Society (2005).  This initial
```

```
              version of this MIB module was published in RFC yyyy;
              for full legal notices see the RFC itself.  Supplementary
              information may be available on
              http://www.ietf.org/copyrights/ianamib.html."
   -- RFC Ed.: replace yyyy with actual RFC number & remove this note

          REVISION "200510160000Z" -- 16 October 2005
          DESCRIPTION "Initial version as published in RFC yyyy."
   -- RFC Ed.: replace yyyy with actual RFC number & remove this note
          ::= { mib-2 xxx }
   -- The value xxx to be assigned by IANA.

   radiusDynAuthServerMIBObjects OBJECT IDENTIFIER ::=
                                       { radiusDynAuthServerMIB 1 }

   radiusDynAuthServer           OBJECT IDENTIFIER ::=
                                  { radiusDynAuthServerMIBObjects 1 }

   radiusDynAuthServerDisconInvalidClientAddresses OBJECT-TYPE
         SYNTAX Counter32
         MAX-ACCESS read-only
         STATUS current
         DESCRIPTION
               "The number of Disconnect messages received from unknown
                addresses."
         ::= { radiusDynAuthServer 1 }

   radiusDynAuthServerCoAInvalidClientAddresses OBJECT-TYPE
         SYNTAX Counter32
         MAX-ACCESS read-only
         STATUS current
         DESCRIPTION
               "The number of CoA messages received from unknown
                addresses."
         ::= { radiusDynAuthServer 2 }

   radiusDynAuthServerIdentifier OBJECT-TYPE
         SYNTAX SnmpAdminString
         MAX-ACCESS read-only
         STATUS current
         DESCRIPTION
                "The NAS-Identifier of the RADIUS Dynamic Authorization
                 Server."
         REFERENCE
                "RFC 2865, Section 5.32, NAS-Identifier."
         ::= { radiusDynAuthServer 3 }

   radiusDynAuthClientTable OBJECT-TYPE
```

```
        SYNTAX SEQUENCE OF RadiusDynAuthClientEntry
        MAX-ACCESS not-accessible
        STATUS     current
        DESCRIPTION
              "The (conceptual) table listing the RADIUS Dynamic
               Authorization Clients with which the server shares a
               secret."
        ::= { radiusDynAuthServer 4 }

   radiusDynAuthClientEntry OBJECT-TYPE
          SYNTAX     RadiusDynAuthClientEntry
          MAX-ACCESS not-accessible
          STATUS     current
          DESCRIPTION
                "An entry (conceptual row) representing one Dynamic
                 Authorization Client with which the server shares a
                 secret."
          INDEX      { radiusDynAuthClientIndex }
          ::= { radiusDynAuthClientTable 1 }

   RadiusDynAuthClientEntry ::= SEQUENCE {
          radiusDynAuthClientIndex                    Integer32,
          radiusDynAuthClientAddressType              InetAddressType,
          radiusDynAuthClientAddress                  InetAddress,
          radiusDynAuthServDisconRequests             Counter32,
          radiusDynAuthServDisconAuthOnlyRequests     Counter32,
          radiusDynAuthServDupDisconRequests          Counter32,
          radiusDynAuthServDisconAcks                 Counter32,
          radiusDynAuthServDisconNaks                 Counter32,
          radiusDynAuthServDisconNakAuthOnlyRequests  Counter32,
          radiusDynAuthServDisconNakSessNoContext     Counter32,
          radiusDynAuthServDisconUserSessRemoved      Counter32,
          radiusDynAuthServMalformedDisconRequests    Counter32,
          radiusDynAuthServDisconBadAuthenticators    Counter32,
          radiusDynAuthServDisconPacketsDropped       Counter32,
          radiusDynAuthServCoARequests                Counter32,
          radiusDynAuthServCoAAuthOnlyRequests        Counter32,
          radiusDynAuthServDupCoARequests             Counter32,
          radiusDynAuthServCoAAcks                    Counter32,
          radiusDynAuthServCoANaks                    Counter32,
          radiusDynAuthServCoANakAuthOnlyRequests     Counter32,
          radiusDynAuthServCoANakSessNoContext        Counter32,
          radiusDynAuthServCoAUserSessChanged         Counter32,
          radiusDynAuthServMalformedCoARequests       Counter32,
          radiusDynAuthServCoABadAuthenticators       Counter32,
          radiusDynAuthServCoAPacketsDropped          Counter32,
          radiusDynAuthServUnknownTypes               Counter32
   }
```

```
   radiusDynAuthClientIndex OBJECT-TYPE
          SYNTAX     Integer32 (1..2147483647)
          MAX-ACCESS not-accessible
          STATUS     current
          DESCRIPTION
                "A number uniquely identifying each RADIUS Dynamic
                 Authorization Client with which this Dynamic
                 Authorization Server communicates. This number is
                 allocated by the agent implementing this MIB module,
                 and is unique in this context."
          ::= { radiusDynAuthClientEntry 1 }

   radiusDynAuthClientAddressType OBJECT-TYPE
          SYNTAX     InetAddressType
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The type of IP-Address of the RADIUS Dynamic
                 Authorization Client referred to in this table entry."
          ::= { radiusDynAuthClientEntry 2 }

   radiusDynAuthClientAddress OBJECT-TYPE
          SYNTAX     InetAddress
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The IP-Address value of the RADIUS Dynamic
                 Authorization Client referred to in this table entry."
          ::= { radiusDynAuthClientEntry 3 }

   radiusDynAuthServDisconRequests OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of RADIUS Disconnect-Requests received
                 from this Dynamic Authorization Client. This includes
                 the RADIUS Disconnect-Requests that have a
                 Service-Type attribute with value 'Authorize Only'."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM)."
          ::= { radiusDynAuthClientEntry 4 }

   radiusDynAuthServDisconAuthOnlyRequests OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
          MAX-ACCESS read-only
```

```
            STATUS     current
            DESCRIPTION
                  "The number of RADIUS Disconnect-Requests including a
                   Service-Type attribute with value 'Autorize Only'
                   received from this Dynamic Authorization Client."
            REFERENCE
                  "RFC 3576, Section 2.1, Disconnect Messages (DM)."
            ::= { radiusDynAuthClientEntry 5 }

      radiusDynAuthServDupDisconRequests OBJECT-TYPE
            SYNTAX     Counter32
            UNITS      "requests"
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                  "The number of duplicate RADIUS Disconnect-Request
                   packets received from this Dynamic Authorization
                   Client."
            REFERENCE
                  "RFC 3576, Section 2.1, Disconnect Messages (DM)."
            ::= { radiusDynAuthClientEntry 6 }

      radiusDynAuthServDisconAcks  OBJECT-TYPE
            SYNTAX     Counter32
            UNITS      "replies"
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                  "The number of RADIUS Disconnect-ACK packets
                   sent to this Dynamic Authorization Client"
            REFERENCE
                  "RFC 3576, Section 2.1, Disconnect Messages (DM)."
            ::= { radiusDynAuthClientEntry 7 }

      radiusDynAuthServDisconNaks OBJECT-TYPE
            SYNTAX     Counter32
            UNITS      "replies"
            MAX-ACCESS read-only
            STATUS     current
            DESCRIPTION
                  "The number of RADIUS Disconnect-NAK packets
                   sent to this Dynamic Authorization Client. This
                   includes the RADIUS Disconnect-NAK packets sent
                   with a Service-Type attribute with value 'Authorize
                   Only' and the RADIUS Disconnect-NAK packets sent
                   because no session context was found."
            REFERENCE
                  "RFC 3576, Section 2.1, Disconnect Messages (DM)."
```

```
        ::= { radiusDynAuthClientEntry 8 }

   radiusDynAuthServDisconNakAuthOnlyRequests OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "replies"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of RADIUS Disconnect-NAK packets
                 including a Service-Type attribute with value
                 'Autorize Only' sent to this Dynamic Authorization
                 Client."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM)."
          ::= { radiusDynAuthClientEntry 9 }

   radiusDynAuthServDisconNakSessNoContext OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "replies"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of RADIUS Disconnect-NAK packets
                 sent to this Dynamic Authorization Client
                 because no session context was found."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM)."
          ::= { radiusDynAuthClientEntry 10 }

   radiusDynAuthServDisconUserSessRemoved OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "sessions"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of user sessions removed for the
                 Disconnect-Requests received from this
                 Dynamic Authorization Client. Depending on site
                 specific policies, a single Disconnect request
                 can remove multiple user sessions. In the case this
                 Dynamic Authorization Server has no knowledge of
                 the number of user sessions that are affected, then
                 it counts a single user session for each such
                 Disconnect-Request."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM)."
          ::= { radiusDynAuthClientEntry 11 }
```

```
   radiusDynAuthServMalformedDisconRequests OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of malformed RADIUS Disconnect-Request
                 packets received from this Dynamic Authorization
                 Client. Bad authenticators and unknown types are not
                 included as malformed Disconnect-Requests."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM), and
                 Section 2.3, Packet Format."
          ::= { radiusDynAuthClientEntry 12 }

   radiusDynAuthServDisconBadAuthenticators OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of RADIUS Disconnect-Request packets
                 which contained invalid Authenticator field
                 received from this Dynamic Authorization Client."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM), and
                 Section 2.3, Packet Format."
          ::= { radiusDynAuthClientEntry 13 }

   radiusDynAuthServDisconPacketsDropped OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
          MAX-ACCESS read-only
          STATUS     current
          DESCRIPTION
                "The number of incoming Disconnect-Requests
                 from this Dynamic Authorization Client silently
                 discarded by the server application for some reason
                 other than malformed, bad authenticators or unknown
                 types."
          REFERENCE
                "RFC 3576, Section 2.1, Disconnect Messages (DM), and
                 Section 2.3, Packet Format."
          ::= { radiusDynAuthClientEntry 14 }

   radiusDynAuthServCoARequests OBJECT-TYPE
          SYNTAX     Counter32
          UNITS      "requests"
```

```
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-requests received from this
               Dynamic Authorization Client. This includes
               the CoA requests that have a Service-Type attribute
               with value 'Authorize Only'."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 15 }

   radiusDynAuthServCoAAuthOnlyRequests OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-requests including a
               Service-Type attribute with value 'Autorize Only'
               received from this Dynamic Authorization Client."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 16 }


   radiusDynAuthServDupCoARequests OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of duplicate RADIUS CoA-Request
               packets received from this Dynamic Authorization
               Client."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 17 }

   radiusDynAuthServCoAAcks  OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "replies"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-ACK packets
```

```
                sent to this Dynamic Authorization Client."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 18 }

   radiusDynAuthServCoANaks OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "replies"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-NAK packets sent to
               this Dynamic Authorization Client. This includes
               the RADIUS CoA-NAK packets sent with a Service-Type
               attribute with value 'Authorize Only' and the RADIUS
               CoA-NAK packets sent because no session context was
               found."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 19 }

   radiusDynAuthServCoANakAuthOnlyRequests OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "replies"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-NAK packets including a
               Service-Type attribute with value 'Autorize Only'
               sent to this Dynamic Authorization Client."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 20 }

   radiusDynAuthServCoANakSessNoContext OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "replies"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-NAK packets
               sent to this Dynamic Authorization Client
               because no session context was found."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
```

```
                Messages (CoA)."
        ::= { radiusDynAuthClientEntry 21 }

   radiusDynAuthServCoAUserSessChanged OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "sessions"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of user sessions authorization
               changed for the CoA-Requests received from this
               Dynamic Authorization Client. Depending on site
               specific policies, a single CoA request can change
               multiple user sessions' authorization.  In the case
               this Dynamic Authorization Server has no knowledge of
               the number of user sessions that are affected, then
               it counts a single user session for each such
               CoA-Request."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA)."
        ::= { radiusDynAuthClientEntry 22 }

   radiusDynAuthServMalformedCoARequests OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of malformed RADIUS CoA-Request
               packets received from this Dynamic Authorization
               Client. Bad authenticators and unknown types are not
               included as malformed CoA-Requests."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA), and Section 2.3, Packet Format."
        ::= { radiusDynAuthClientEntry  23 }

   radiusDynAuthServCoABadAuthenticators OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of RADIUS CoA-Request packets which
               contained invalid Authenticator field received
               from this Dynamic Authorization Client."
        REFERENCE
```

```
                "RFC 3576, Section 2.2, Change-of-Authorization
                 Messages (CoA), and Section 2.3, Packet Format."
        ::= { radiusDynAuthClientEntry 24 }

   radiusDynAuthServCoAPacketsDropped OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of incoming CoA packets from this
               Dynamic Authorization Client silently discarded
               by the server application for some reason other than
               malformed, bad authenticators or unknown types."
        REFERENCE
              "RFC 3576, Section 2.2, Change-of-Authorization
               Messages (CoA), and Section 2.3, Packet Format."
        ::= { radiusDynAuthClientEntry 25 }

   radiusDynAuthServUnknownTypes OBJECT-TYPE
        SYNTAX     Counter32
        UNITS      "requests"
        MAX-ACCESS read-only
        STATUS     current
        DESCRIPTION
              "The number of incoming packets of unknown types
               which were received on the Dynamic Authorization port."
        REFERENCE
              "RFC 3576, Section 2.3, Packet Format."
        ::= { radiusDynAuthClientEntry 26 }

   -- conformance information

   radiusDynAuthServerMIBConformance
        OBJECT IDENTIFIER ::= { radiusDynAuthServerMIB 2 }
   radiusDynAuthServerMIBCompliances
        OBJECT IDENTIFIER ::= { radiusDynAuthServerMIBConformance 1 }
   radiusDynAuthServerMIBGroups
        OBJECT IDENTIFIER ::= { radiusDynAuthServerMIBConformance 2 }

   -- compliance statements

   radiusAuthServerMIBCompliance MODULE-COMPLIANCE
        STATUS  current
        DESCRIPTION
              "The compliance statement for entities implementing
               the RADIUS Dynamic Authorization Server."
        MODULE  -- this module
```

```
        MANDATORY-GROUPS { radiusDynAuthServerMIBGroup }

        GROUP             radiusDynAuthServerAuthOnlyGroup
        DESCRIPTION
              "Only required for Dynamic Authorization Clients that
               are supporting Service-Type attributes with value
               'Authorize-Only'."


        GROUP             radiusDynAuthServerNoSessGroup
        DESCRIPTION
              "This group is not required in case the Dynamic
               Authorization Server can not easily determine whether
               a session exists or not (e.g., in case of a RADIUS
               proxy)."

        ::= { radiusDynAuthServerMIBCompliances 1 }

   -- units of conformance

   radiusDynAuthServerMIBGroup OBJECT-GROUP
          OBJECTS { radiusDynAuthServerDisconInvalidClientAddresses,
                    radiusDynAuthServerCoAInvalidClientAddresses,
                    radiusDynAuthServerIdentifier,
                    radiusDynAuthClientAddressType,
                    radiusDynAuthClientAddress,
                    radiusDynAuthServDisconRequests,
                    radiusDynAuthServDupDisconRequests,
                    radiusDynAuthServDisconAcks,
                    radiusDynAuthServDisconNaks,
                    radiusDynAuthServDisconUserSessRemoved,
                    radiusDynAuthServMalformedDisconRequests,
                    radiusDynAuthServDisconBadAuthenticators,
                    radiusDynAuthServDisconPacketsDropped,
                    radiusDynAuthServCoARequests,
                    radiusDynAuthServDupCoARequests,
                    radiusDynAuthServCoAAcks,
                    radiusDynAuthServCoANaks,
                    radiusDynAuthServCoAUserSessChanged,
                    radiusDynAuthServMalformedCoARequests,
                    radiusDynAuthServCoABadAuthenticators,
                    radiusDynAuthServCoAPacketsDropped,
                    radiusDynAuthServUnknownTypes
                  }
          STATUS  current
          DESCRIPTION
                "The collection of objects providing management of
                 a RADIUS Dynamic Authorization Server."
```

```
        ::= { radiusDynAuthServerMIBGroups 1 }

   radiusDynAuthServerAuthOnlyGroup OBJECT-GROUP
          OBJECTS { radiusDynAuthServDisconAuthOnlyRequests,
                    radiusDynAuthServDisconNakAuthOnlyRequests,
                    radiusDynAuthServCoAAuthOnlyRequests,
                    radiusDynAuthServCoANakAuthOnlyRequests
                  }
          STATUS  current
          DESCRIPTION
                "The collection of objects supporting the RADIUS
                 messages including Service-Type attribute with
                 value 'Autorize Only'."
          ::= { radiusDynAuthServerMIBGroups 2 }

   radiusDynAuthServerNoSessGroup OBJECT-GROUP
          OBJECTS { radiusDynAuthServDisconNakSessNoContext,
                    radiusDynAuthServCoANakSessNoContext
                  }
          STATUS  current
          DESCRIPTION
                "The collection of objects supporting the RADIUS
                 messages that are referring to non existing sessions."
          ::= { radiusDynAuthServerMIBGroups 3 }



   END
```

5. Security Considerations

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

Some of the readable objects in this MIB module (i.e., objects with a MAX-ACCESS other than not-accessible) may be considered sensitive or vulnerable in some network environments. It is thus important to control even GET and/or NOTIFY access to these objects and possibly to even encrypt the values of these objects when sending them over the network via SNMP. These are the tables and objects and their sensitivity/vulnerability:

radiusDynAuthClientAddress and radiusDynAuthClientAddressType

These can be used to determine the address of the DAC with which the DAS is communicating. This information could be useful in mounting an attack on the DAC.

radiusDynAuthServerIdentifier

This can be used to determine the Identifier of the DAS. This information could be useful in impersonating the DAS.

The other readable objects are not really considered as being sensitive or vulnerable. These objects are:

radiusDynAuthServerDisconInvalidClientAddresses,
radiusDynAuthServerCoAInvalidClientAddresses,
radiusDynAuthServDisconRequests,
radiusDynAuthServDisconAuthOnlyRequests,
radiusDynAuthServDupDisconRequests,
radiusDynAuthServDisconAcks,
radiusDynAuthServDisconNaks,
radiusDynAuthServDisconNakAuthOnlyRequests,
radiusDynAuthServDisconNakSessNoContext,
radiusDynAuthServDisconUserSessRemoved,
radiusDynAuthServMalformedDisconRequests,
radiusDynAuthServDisconBadAuthenticators,
radiusDynAuthServDisconPacketsDropped,
radiusDynAuthServCoARequests,
radiusDynAuthServCoAAuthOnlyRequests,
radiusDynAuthServDupCoARequests,
radiusDynAuthServCoAAcks,
radiusDynAuthServCoANaks,
radiusDynAuthServCoANakAuthOnlyRequests,
radiusDynAuthServCoANakSessNoContext,
radiusDynAuthServCoAUserSessChanged,
radiusDynAuthServMalformedCoARequests,
radiusDynAuthServCoABadAuthenticators,
radiusDynAuthServCoAPacketsDropped, and
radiusDynAuthServUnknownTypes.

SNMP versions prior to SNMPv3 did not include adequate security. Even if the network itself is secure (for example by using IPSec), even then, 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 module.

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.

6. IANA considerations

IANA is requested to assign an OID xxx under mib-2.

7. Acknowledgements

This document reuses some of the work done in earlier RADIUS MIB specifications [RFC2618] and [RFC2620].

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