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Dynamic Authorization Client MIB
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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 Remote Authentication Dial In User Service (RADIUS) [[RFC2865](#)] Dynamic Authorization Client (DAC) 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 Client MIB complements the managed objects used for managing RADIUS authentication and accounting servers as described in [[RFC2619bis](#)] and [[RFC2621bis](#)], respectively.

-- RFC Ed.: references [[DYNSEVER](#)], [[RFC2619bis](#)], [[RFC2621bis](#)] should
-- be replaced by references to the corresponding RFC.

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. [[DYNSERV](#)] defines the Dynamic Authorization Server MIB and the relationship with other MIB modules. This MIB module for the Dynamic Authorization Client contains the following:

1. Two scalar objects, and
2. One Dynamic Authorization Server table. This table contains one row for each DAS that the DAC shares a secret with.

[4.](#) RADIUS Dynamic Authorization Client MIB Definitions

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

```
IMPORTS
```

```
    MODULE-IDENTITY, OBJECT-TYPE,  
    Counter32, Gauge32, Integer32,  
    mib-2, TimeTicks      FROM SNMPv2-SMI          -- [RFC2578]  
    SnmpAdminString      FROM SNMP-FRAMEWORK-MIB -- [RFC3411]  
    InetAddressType, InetAddress,  
    InetPortNumber      FROM INET-ADDRESS-MIB    -- [RFC4001]  
    MODULE-COMPLIANCE,  
    OBJECT-GROUP        FROM SNMPv2-CONF;        -- [RFC2580]
```

```
radiusDynAuthClientMIB MODULE-IDENTITY
```

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DESCRIPTION

"The MIB module for entities implementing the client side of the Dynamic Authorization Extensions to Remote Authentication Dial In User Service (RADIUS) protocol.

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Copyright (C) The Internet Society (2006). Initial version as published in RFC yyyy; for full legal notices see the RFC itself."

-- RFC Ed.: replace yyyy with actual RFC number & remove this note

REVISION "200606060000Z" -- 6 June 2006

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.

radiusDynAuthClientMIBObjects OBJECT IDENTIFIER ::=
    { radiusDynAuthClientMIB 1 }

radiusDynAuthClientScalars    OBJECT IDENTIFIER ::=
    { radiusDynAuthClientMIBObjects 1 }

radiusDynAuthClientDisconInvalidServerAddresses OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of Disconnect-Ack and Disconnect-NAK packets
        received from unknown addresses. This counter may
        experience a discontinuity when the DAC module
        (re)starts as indicated by the value of
        radiusDynAuthClientCounterDiscontinuity."
    ::= { radiusDynAuthClientScalars 1 }

radiusDynAuthClientCoAInvalidServerAddresses OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of CoA-Ack and CoA-NAK packets received from
        unknown addresses. Disconnect-NAK packets received from
        unknown addresses. This counter may experience a
        discontinuity when the DAC module (re)starts as
        indicated by the value of
        radiusDynAuthClientCounterDiscontinuity."
    ::= { radiusDynAuthClientScalars 2 }

radiusDynAuthServerTable OBJECT-TYPE
    SYNTAX SEQUENCE OF RadiusDynAuthServerEntry
    MAX-ACCESS not-accessible
    STATUS current
    DESCRIPTION
        "The (conceptual) table listing the RADIUS Dynamic

```



```

        secret."
 ::= { radiusDynAuthClientMIBObjects 2 }

radiusDynAuthServerEntry OBJECT-TYPE
    SYNTAX      RadiusDynAuthServerEntry
    MAX-ACCESS  not-accessible
    STATUS      current
    DESCRIPTION
        "An entry (conceptual row) representing one Dynamic
         Authorization Server with which the client shares a
         secret."
    INDEX       { radiusDynAuthServerIndex }
 ::= { radiusDynAuthServerTable 1 }

RadiusDynAuthServerEntry ::= SEQUENCE {
    radiusDynAuthServerIndex          Integer32,
    radiusDynAuthServerAddressType    InetAddressType,
    radiusDynAuthServerAddress        InetAddress,
    radiusDynAuthServerClientPortNumber  InetPortNumber,
    radiusDynAuthServerID             SnmpAdminString,
    radiusDynAuthClientRoundTripTime   TimeTicks,
    radiusDynAuthClientDisconRequests  Counter32,
    radiusDynAuthClientDisconAuthOnlyRequests  Counter32,
    radiusDynAuthClientDisconRetransmissions  Counter32,
    radiusDynAuthClientDisconAcks       Counter32,
    radiusDynAuthClientDisconNaks       Counter32,
    radiusDynAuthClientDisconNakAuthOnlyRequest  Counter32,
    radiusDynAuthClientDisconNakSessNoContext  Counter32,
    radiusDynAuthClientMalformedDisconResponses  Counter32,
    radiusDynAuthClientDisconBadAuthenticators  Counter32,
    radiusDynAuthClientDisconPendingRequests  Gauge32,
    radiusDynAuthClientDisconTimeouts  Counter32,
    radiusDynAuthClientDisconPacketsDropped  Counter32,
    radiusDynAuthClientCoARequests      Counter32,
    radiusDynAuthClientCoAAuthOnlyRequest  Counter32,
    radiusDynAuthClientCoARetranmissions  Counter32,
    radiusDynAuthClientCoAAcks          Counter32,
    radiusDynAuthClientCoANaks          Counter32,
    radiusDynAuthClientCoANakAuthOnlyRequest  Counter32,
    radiusDynAuthClientCoANakSessNoContext  Counter32,
    radiusDynAuthClientMalformedCoAResponses  Counter32,
    radiusDynAuthClientCoABadAuthenticators  Counter32,
    radiusDynAuthClientCoAPendingRequests  Gauge32,
    radiusDynAuthClientCoATimeouts      Counter32,
    radiusDynAuthClientCoAPacketsDropped  Counter32,
    radiusDynAuthClientUnknownTypes     Counter32,
    radiusDynAuthClientCounterDiscontinuity  TimeTicks
}

```

}

radiusDynAuthServerIndex OBJECT-TYPE

SYNTAX Integer32 (1..2147483647)

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A number uniquely identifying each RADIUS Dynamic Authorization Server with which this Dynamic Authorization Client communicates. This number is allocated by the agent implementing this MIB module, and is unique in this context."

::= { radiusDynAuthServerEntry 1 }

radiusDynAuthServerAddressType OBJECT-TYPE

SYNTAX InetAddressType

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The type of IP address of the RADIUS Dynamic Authorization Server referred to in this table entry."

::= { radiusDynAuthServerEntry 2 }

radiusDynAuthServerAddress OBJECT-TYPE

SYNTAX InetAddress

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The IP address value of the RADIUS Dynamic Authorization Server referred to in this table entry using the version neutral IP address format. The type of this address is determined by the value of the radiusDynAuthServerAddressType object."

::= { radiusDynAuthServerEntry 3 }

radiusDynAuthServerClientPortNumber OBJECT-TYPE

SYNTAX InetPortNumber (1..65535)

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The UDP destination port that the RADIUS Dynamic Authorization Client is using to send requests to this server. The value zero is invalid."

::= { radiusDynAuthServerEntry 4 }

radiusDynAuthServerID OBJECT-TYPE

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SYNTAX SnmpAdminString
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The NAS-Identifier of the RADIUS Dynamic Authorization
Server referred to in this table entry. This is not
necessarily the same as sysName in MIB II."
REFERENCE
"[RFC 2865, Section 5.32](#), NAS-Identifier."
 ::= { radiusDynAuthServerEntry 5 }

radiusDynAuthClientRoundTripTime OBJECT-TYPE

SYNTAX TimeTicks
UNITS "hundredths of a second"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The time interval (in hundredths of a second) between
the most recent Disconnect or CoA request and the
reception of the corresponding Disconnect or CoA reply.
A value of zero is returned in case no reply has been
received yet from this server."
 ::= { radiusDynAuthServerEntry 6 }

radiusDynAuthClientDisconRequests OBJECT-TYPE

SYNTAX Counter32
UNITS "requests"
MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS Disconnect-Requests sent
to this Dynamic Authorization Server. This also
includes the RADIUS Disconnect-Requests that have a
Service-Type attribute with value 'Authorize Only'.
Disconnect-NAK packets received from unknown addresses.
This counter may experience a discontinuity when the
DAC module (re)starts as indicated by the value of
radiusDynAuthClientCounterDiscontinuity."
REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 7 }

radiusDynAuthClientDisconAuthOnlyRequests OBJECT-TYPE

SYNTAX Counter32
UNITS "requests"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

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"The number of RADIUS Disconnect-Requests that include a Service-Type attribute with value 'Authorize Only' sent to this Dynamic Authorization Server. Disconnect-NAK packets received from unknown addresses. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 8 }

radiusDynAuthClientDisconRetransmissions OBJECT-TYPE

SYNTAX Counter32
UNITS "retransmissions"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"The number of RADIUS Disconnect-request packets retransmitted to this RADIUS Dynamic Authorization Server. Disconnect-NAK packets received from unknown addresses. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 9 }

radiusDynAuthClientDisconAcks OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The number of RADIUS Disconnect-ACK packets received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 10 }

radiusDynAuthClientDisconNaks OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"The number of RADIUS Disconnect-NAK packets received from this Dynamic Authorization Server. This includes the RADIUS Disconnect-NAK packets received with a Service-Type attribute with value 'Authorize Only' and the RADIUS Disconnect-NAK packets received no session context was found. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 11 }

radiusDynAuthClientDisconNakAuthOnlyRequest OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current
DESCRIPTION

"The number of RADIUS Disconnect-NAK packets that include a Service-Type attribute with value 'Authorize Only' received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of

radiusDynAuthClientCounterDiscontinuity."
REFERENCE
"RFC 3576, Section 2.1, Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 12 }

radiusDynAuthClientDisconNakSessNoContext OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The number of RADIUS Disconnect-NAK packets received from this Dynamic Authorization Server because no session context was found, i.e. it includes an Error-Cause attribute with value 503 ('Session Context Not Found'). This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"RFC 3576, Section 2.1, Disconnect Messages (DM)."
 ::= { radiusDynAuthServerEntry 13 }

radiusDynAuthClientMalformedDisconResponses OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current

DESCRIPTION

"The number of malformed RADIUS Disconnect-Ack and Disconnect-NAK packets received from this Dynamic Authorization Server. Bad authenticators and unknown types are not included as malformed Disconnect-Ack and Disconnect-NAK packets. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"RFC 3576, Section 2.1, Disconnect Messages (DM), and
Section 2.3, Packet Format."
 ::= { radiusDynAuthServerEntry 14 }

radiusDynAuthClientDisconBadAuthenticators OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS Disconnect-Ack and Disconnect-NAK packets which contained invalid Authenticator field received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM), and [Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 15 }

radiusDynAuthClientDisconPendingRequests OBJECT-TYPE

SYNTAX Gauge32

UNITS "requests"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS Disconnect-request packets destined for this server that have not yet timed out or received a response. This variable is incremented when an Disconnect-Request is sent and decremented due to receipt of an Disconnect-Ack, Disconnect-NAK or a timeout or a retransmission."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."

::= { radiusDynAuthServerEntry 16 }

radiusDynAuthClientDisconTimeouts OBJECT-TYPE

SYNTAX Counter32

UNITS "timeouts"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of Disconnect request timeouts to this

server. After a timeout the client may retry to the same 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 Disconnect-Request as well as a timeout. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM)."

::= { radiusDynAuthServerEntry 17 }

radiusDynAuthClientDisconPacketsDropped OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of incoming Disconnect-Ack and Disconnect-NAK packets from this Dynamic Authorization Server silently discarded by the client application for some reason other than malformed, bad authenticators or unknown types. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.1](#), Disconnect Messages (DM), and [Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 18 }

radiusDynAuthClientCoARequests OBJECT-TYPE

SYNTAX Counter32

UNITS "requests"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-Requests sent to this Dynamic Authorization Server. This also includes the CoA requests that have a Service-Type attribute with value 'Authorize Only'. This counter may

experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 19 }

radiusDynAuthClientCoAAuthOnlyRequest OBJECT-TYPE

SYNTAX Counter32

UNITS "requests"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-requests that include a Service-Type attribute with value 'Authorize Only' sent to this Dynamic Authorization Client. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 20 }

radiusDynAuthClientCoARetransmissions OBJECT-TYPE

SYNTAX Counter32

UNITS "retransmissions"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-request packets retransmitted to this RADIUS Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 21 }

radiusDynAuthClientCoAAcks OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only
STATUS current
DESCRIPTION
"The number of RADIUS CoA-ACK packets received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE
"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 22 }

radiusDynAuthClientCoANaks OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current

DESCRIPTION
"The number of RADIUS CoA-NAK packets received from this Dynamic Authorization Server. This includes the RADIUS CoA-NAK packets received with a Service-Type attribute with value 'Authorize Only' and the RADIUS CoA-NAK packets received because no session context was found. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE
"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 23 }

radiusDynAuthClientCoANakAuthOnlyRequest OBJECT-TYPE

SYNTAX Counter32
UNITS "replies"
MAX-ACCESS read-only
STATUS current

DESCRIPTION
"The number of RADIUS CoA-NAK packets that include a Service-Type attribute with value 'Authorize Only' received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE
"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 24 }

radiusDynAuthClientCoANakSessNoContext OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-NAK packets received from this Dynamic Authorization Server because no session context was found, i.e. it includes an Error-Cause attribute with value 503 ('Session Context Not Found'). This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 25 }

radiusDynAuthClientMalformedCoAResponses OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of malformed RADIUS CoA-Ack and CoA-NAK packets received from this Dynamic Authorization Server. Bad authenticators and unknown types are not included as malformed CoA-Ack and CoA-NAK packets. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA), and [Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 26 }

radiusDynAuthClientCoABadAuthenticators OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-Ack and CoA-NAK packets which contained invalid Authenticator field received from this Dynamic Authorization Server. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

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REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA), and [Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 27 }

radiusDynAuthClientCoAPendingRequests OBJECT-TYPE

SYNTAX Gauge32

UNITS "requests"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of RADIUS CoA-request packets destined for this server that have not yet timed out or received a response. This variable is incremented when an CoA-Request is sent and decremented due to receipt of a CoA-Ack, CoA-NAK or a timeout or a retransmission."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 28 }

radiusDynAuthClientCoATimeouts OBJECT-TYPE

SYNTAX Counter32

UNITS "timeouts"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of CoA request timeouts to this server. After a timeout the client may retry to the same 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 CoA-Request as well as a timeout. This counter may experience a

discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA)."

::= { radiusDynAuthServerEntry 29 }

radiusDynAuthClientCoAPacketsDropped OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of incoming CoA-Ack and CoA-NAK from this

Dynamic Authorization Server silently discarded by the client application for some reason other than malformed, bad authenticators or unknown types. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.2](#), Change-of-Authorization Messages (CoA), and [Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 30 }

radiusDynAuthClientUnknownTypes OBJECT-TYPE

SYNTAX Counter32

UNITS "replies"

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"The number of incoming packets of unknown types which were received on the Dynamic Authorization port. This counter may experience a discontinuity when the DAC module (re)starts as indicated by the value of radiusDynAuthClientCounterDiscontinuity."

REFERENCE

"[RFC 3576, Section 2.3](#), Packet Format."

::= { radiusDynAuthServerEntry 31 }

```
radiusDynAuthClientCounterDiscontinuity OBJECT-TYPE
    SYNTAX TimeTicks
    UNITS "hundredths of a second"
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The time (in hundredths of a second) since the
         last counter discontinuity. A discontinuity may
         be the result of a reinitialization of the DAC
         module within the managed entity."
    ::= { radiusDynAuthServerEntry 32 }
```

```
-- conformance information
```

```
radiusDynAuthClientMIBConformance
    OBJECT IDENTIFIER ::= { radiusDynAuthClientMIB 2 }
radiusDynAuthClientMIBCompliances
    OBJECT IDENTIFIER ::= { radiusDynAuthClientMIBConformance 1 }
radiusDynAuthClientMIBGroups
    OBJECT IDENTIFIER ::= { radiusDynAuthClientMIBConformance 2 }
```

```
-- compliance statements
```

```
radiusDynAuthClientMIBCompliance MODULE-COMPLIANCE
    STATUS current
    DESCRIPTION
        "The compliance statement for entities implementing
         the RADIUS Dynamic Authorization Client. Implementation
         of this module is for entities that support IPv4 and/or
         IPv6."
    MODULE -- this module
    MANDATORY-GROUPS { radiusDynAuthClientMIBGroup }

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

    OBJECT          radiusDynAuthServerAddress
```

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

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

GROUP radiusDynAuthClientNoSessGroup
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)."

::= { radiusDynAuthClientMIBCompliances 1 }

-- units of conformance

radiusDynAuthClientMIBGroup OBJECT-GROUP
 OBJECTS { radiusDynAuthClientDisconInvalidServerAddresses,
 radiusDynAuthClientCoAInvalidServerAddresses,
 radiusDynAuthServerAddressType,
 radiusDynAuthServerAddress,

radiusDynAuthServerClientPortNumber,
radiusDynAuthServerID,
radiusDynAuthClientRoundTripTime,
radiusDynAuthClientDisconRequests,
radiusDynAuthClientDisconRetransmissions,
radiusDynAuthClientDisconAcks,
radiusDynAuthClientDisconNaks,
radiusDynAuthClientMalformedDisconResponses,
radiusDynAuthClientDisconBadAuthenticators,
radiusDynAuthClientDisconPendingRequests,
radiusDynAuthClientDisconTimeouts,
radiusDynAuthClientDisconPacketsDropped,

```

        radiusDynAuthClientCoARequests,
        radiusDynAuthClientCoARe transmissions,
        radiusDynAuthClientCoAAcks,
        radiusDynAuthClientCoANaks,
        radiusDynAuthClientMalformedCoAResponses,
        radiusDynAuthClientCoABadAuthenticators,
        radiusDynAuthClientCoAPendingRequests,
        radiusDynAuthClientCoATimeouts,
        radiusDynAuthClientCoAPacketsDropped,
        radiusDynAuthClientUnknownTypes,
        radiusDynAuthClientCounterDiscontinuity
    }
    STATUS current
    DESCRIPTION
        "The collection of objects providing management of
        a RADIUS Dynamic Authorization Client."
    ::= { radiusDynAuthClientMIBGroups 1 }

radiusDynAuthClientAuthOnlyGroup OBJECT-GROUP
    OBJECTS { radiusDynAuthClientDisconAuthOnlyRequests,
        radiusDynAuthClientDisconNakAuthOnlyRequest,
        radiusDynAuthClientCoAAuthOnlyRequest,
        radiusDynAuthClientCoANakAuthOnlyRequest
    }
    STATUS current
    DESCRIPTION
        "The collection of objects supporting the RADIUS
        messages including Service-Type attribute with
        value 'Authorize Only'."
    ::= { radiusDynAuthClientMIBGroups 2 }

radiusDynAuthClientNoSessGroup OBJECT-GROUP
    OBJECTS { radiusDynAuthClientDisconNakSessNoContext,
        radiusDynAuthClientCoANakSessNoContext
    }
    STATUS current

```

DESCRIPTION

```

        "The collection of objects supporting the RADIUS
        messages that are referring to non existing sessions."
    ::= { radiusDynAuthClientMIBGroups 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:

radiusDynAuthServerAddress and radiusDynAuthServerAddressType

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

radiusDynAuthServerID

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

radiusDynAuthServerClientPortNumber

This can be used to determine the destination port number to which the DAC is sending. This information could be useful in mounting an attack on the DAS.

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 under mib-2.

[7.](#) Acknowledgements

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