

Network Working Group  
Internet-Draft  
Expires: December 17, 2006

S. De Cnodder  
Alcatel  
N. Jonnala  
M. Chiba  
Cisco Systems, Inc.  
June 15, 2006

Dynamic Authorization Server MIB  
draft-ietf-radext-dynauth-server-mib-06.txt

Status of this Memo

By submitting this Internet-Draft, each author represents that any applicable patent or other IPR claims of which he or she is aware have been or will be disclosed, and any of which he or she becomes aware will be disclosed, in accordance with [Section 6 of BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF), its areas, and its working groups. Note that other groups may also distribute working documents as Internet-Drafts.

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

The list of current Internet-Drafts can be accessed at <http://www.ietf.org/ietf/lid-abstracts.txt>.

The list of Internet-Draft Shadow Directories can be accessed at <http://www.ietf.org/shadow.html>.

This Internet-Draft will expire on December 17, 2006.

Copyright Notice

Copyright (C) The Internet Society (2006).

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 Server (DAS) functions that support the dynamic authorization extensions as defined in [RFC 3576](#).

## Table of Contents

<a href="#">1.</a>	Introduction . . . . .	<a href="#">3</a>
<a href="#">1.1.</a>	Requirements notation . . . . .	<a href="#">3</a>
<a href="#">1.2.</a>	Terminology . . . . .	<a href="#">3</a>
<a href="#">2.</a>	The Internet-Standard Management Framework . . . . .	<a href="#">4</a>
<a href="#">3.</a>	Overview . . . . .	<a href="#">5</a>
<a href="#">4.</a>	RADIUS Dynamic Authorization Server MIB Definitions . . . . .	<a href="#">7</a>
<a href="#">5.</a>	Security Considerations . . . . .	<a href="#">22</a>
<a href="#">6.</a>	IANA considerations . . . . .	<a href="#">23</a>
<a href="#">7.</a>	Acknowledgements . . . . .	<a href="#">24</a>
<a href="#">8.</a>	References . . . . .	<a href="#">25</a>
<a href="#">8.1.</a>	Normative References . . . . .	<a href="#">25</a>
<a href="#">8.2.</a>	Informative References . . . . .	<a href="#">25</a>
	Authors' Addresses . . . . .	<a href="#">27</a>
	Intellectual Property and Copyright Statements . . . . .	<a href="#">28</a>

## 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 [[RFC2618bis](#)] and [[RFC2620bis](#)], respectively.

-- RFC Ed.: references [[DYNCLNT](#)], [[RFC2618bis](#)], [[RFC2619bis](#)],  
-- [[RFC2620bis](#)], and [[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. 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 DASSs. 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:

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

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

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

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

[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, any one MIB can be implemented without implementing any of the other MIBs, i.e. the MIBs have no dependencies on each other. A typical case would be for a device to implement the MIBs RADIUS authentication server, RADIUS accounting server and RADIUS Dynamic Authorization Client. A RADIUS proxy might implement any, all or a subset of the MIBs listed above and the MIB as defined in this document.

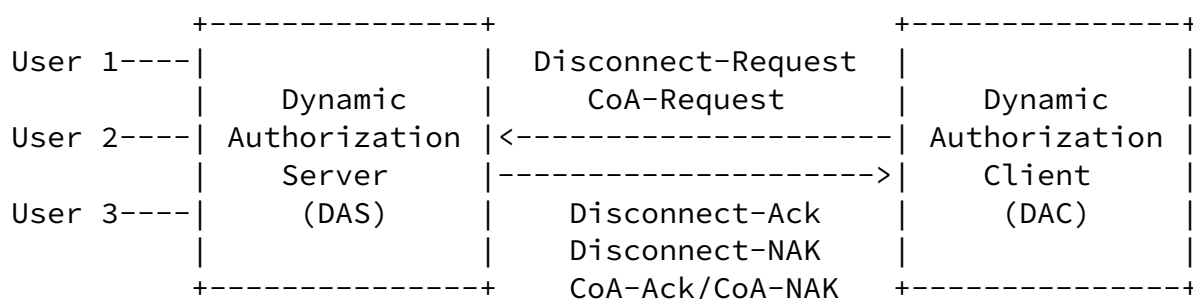


Figure 1: Mapping of clients and servers.

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

1. Three scalar objects, and

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

De Cnodder, et al. Expires December 17, 2006 [Page 6]

---

Internet-Draft Dynamic Authorization Server MIB June 2006

#### 4. RADIUS Dynamic Authorization Server MIB Definitions

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

IMPORTS

MODULE-IDENTITY, OBJECT-TYPE,  
Counter32, Integer32, mib-2,  
TimeTicks 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 "200606060000Z" -- 6 June 2006  
ORGANIZATION "IETF RADEXT Working Group"  
CONTACT-INFO

" Stefaan De Cnodder  
Alcatel  
Francis Wellesplein 1  
B-2018 Antwerp  
Belgium

Phone: +32 3 240 85 15  
EMail: stefaan.de\_cnodder@alcatel.be

Nagi Reddy Jonnala  
Cisco Systems, Inc.  
Divyasree Chambers, B Wing,  
O'Shaugnessy Road,  
Bangalore-560027, India.

Phone: +91 94487 60828  
EMail: njonnala@cisco.com

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 to Remote Authentication Dial In User Service (RADIUS) protocol.



```

        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.

radiusDynAuthServerMIBObjects OBJECT IDENTIFIER ::=
    { radiusDynAuthServerMIB 1 }

radiusDynAuthServerScalars    OBJECT IDENTIFIER ::=
    { radiusDynAuthServerMIBObjects 1 }

radiusDynAuthServerDisconInvalidClientAddresses OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of Disconnect-Request packets received from
        unknown addresses. This counter may experience a
        discontinuity when the DAS module (re)starts as
        indicated by the value of
        radiusDynAuthServerCounterDiscontinuity."
    ::= { radiusDynAuthServerScalars 1 }

radiusDynAuthServerCoAInvalidClientAddresses OBJECT-TYPE
    SYNTAX Counter32
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The number of CoA-Request packets received from unknown
        addresses. This counter may experience a discontinuity
        when the DAS module (re)starts as indicated by the value
        of radiusDynAuthServerCounterDiscontinuity."
    ::= { radiusDynAuthServerScalars 2 }

radiusDynAuthServerIdentifier OBJECT-TYPE
    SYNTAX SnmpAdminString
    MAX-ACCESS read-only
    STATUS current
    DESCRIPTION
        "The NAS-Identifier of the RADIUS Dynamic Authorization
        Server. This is not necessarily the same as sysName in
        MIB II."

```

## REFERENCE

"[RFC 2865, Section 5.32](#), NAS-Identifier."

::= { radiusDynAuthServerScalars 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."

::= { radiusDynAuthServerMIBObjects 2 }

## 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,
radiusDynAuthServerCounterDiscontinuity	TimeTicks

}

## 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, using the version neutral IP address format. The type of this address is determined by the value of the radiusDynAuthClientAddressType object."

::= { 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 also includes the RADIUS Disconnect-Requests that have a Service-Type attribute with value 'Authorize Only'. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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 that include a Service-Type attribute with value 'Authorize Only' received from this Dynamic Authorization Client. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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 that this Dynamic Authorization Server has no knowledge of the number of user sessions that are affected by a single request, for each such Disconnect-Request, it will count as a single affected user session only. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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 also includes the CoA requests that have a Service-Type attribute

with value 'Authorize Only'. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."



#### 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 that include a Service-Type attribute with value 'Authorize Only' received from this Dynamic Authorization Client. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

#### 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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

#### 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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

## 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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

## 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 that include a Service-Type attribute with value 'Authorize Only' sent to this Dynamic Authorization Client. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

## REFERENCE

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

::= { radiusDynAuthClientEntry 20 }

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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 by a single request, for each such CoA-Request, it will count as a single affected user session only. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a

discontinuity when the DAS module (re)starts as indicated by the value of  
 radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of  
 radiusDynAuthServerCounterDiscontinuity."

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. This counter may experience a discontinuity when the DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

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

De Cnodder, et al.

Expires December 17, 2006

[Page 18]

---

Internet-Draft

Dynamic Authorization Server MIB

June 2006

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 DAS module (re)starts as indicated by the value of radiusDynAuthServerCounterDiscontinuity."

REFERENCE

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

::= { radiusDynAuthClientEntry 26 }

radiusDynAuthServerCounterDiscontinuity 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 DAS module within the managed entity."

::= { radiusDynAuthClientEntry 27 }

-- 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. Implementation
        of this module is for entities that support IPv4 and/or
        IPv6."
    MODULE    -- this module
    MANDATORY-GROUPS { radiusDynAuthServerMIBGroup }

    OBJECT            radiusDynAuthClientAddressType
    SYNTAX             InetAddressType { ipv4(1), ipv6(2) }
    DESCRIPTION
        "An implementation is only required to support IPv4 and

```

globally unique IPv6 addresses."

```

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

```

```

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,  
radiusDynAuthServerCounterDiscontinuity  
}

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 'Authorize 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.

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

The authors would also like to acknowledge the following people for their comments on this document: Bernard Aboba, Alan DeKok, David Nelson, Anjaneyulu Pata, Dan Romascanu, Juergen Schoenwaelder, Greg Weber, Bert Wijnen and Glen Zorn.

## [8.](#) References

### [8.1.](#) Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 2119](#), March 1997.
- [RFC2578] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M., and S. Waldbusser, "Structure of Management Information Version 2 (SMIv2)", STD 58, [RFC 2578](#), April 1999.
- [RFC2579] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M., and S. Waldbusser, "Textual Conventions for SMIv2", STD 58, [RFC 2579](#), April 1999.
- [RFC2580] McCloghrie, K., Perkins, D., Schoenwaelder, J., Case, J., Rose, M., and S. Waldbusser, "Conformance Statements for SMIv2", STD 58, [RFC 2580](#), April 1999.
- [RFC3411] Harrington, D., Presuhn, R., and B. Wijnen, "An Architecture for Describing Simple Network Management Protocol (SNMP) Management Frameworks", STD 62, [RFC 3411](#), December 2002.
- [RFC3576] Chiba, M., Dommety, G., Eklund, M., Mitton, D., and B. Aboba, "Dynamic Authorization Extensions to Remote Authentication Dial In User Service (RADIUS)", [RFC 3576](#), July 2003.
- [RFC4001] Daniele, M. and et al., "Textual Conventions for Internet Network Addresses", [RFC 4001](#), February 2005.

### [8.2.](#) Informative References

[DYNCLNT] De Cnodder, S., Jonnala, N., and M. Chiba, "RADIUS Dynamic Authorization Client MIB", [draft-ietf-radext-dynauth-client-mib-05.txt](#), work in progress, December 2005.

[RFC2618bis] Nelson, D., "RADIUS Auth Client MIB (IPv6)", [draft-ietf-radext-rfc2618bis-01.txt](#) work in progress, October 2005.

[RFC2619bis] Nelson, D., "RADIUS Auth Server MIB (IPv6)", [draft-ietf-radext-rfc2619bis-01.txt](#) work in progress,

De Cnodder, et al. Expires December 17, 2006 [Page 25]

---

Internet-Draft Dynamic Authorization Server MIB June 2006

October 2005.

[RFC2620bis] Nelson, D., "RADIUS Acct Client MIB (IPv6)", [draft-ietf-radext-rfc2620bis-01.txt](#) work in progress, October 2005.

[RFC2621bis] Nelson, D., "RADIUS Acct Server MIB (IPv6)", [draft-ietf-radext-rfc2621bis-01.txt](#) work in progress, October 2005.

[RFC2865] Rigney, C., Willens, S., Rubens, A., and W. Simpson, "Remote Authentication Dial In User Service (RADIUS)", [RFC 2865](#), June 2000.

[RFC3410] Case, J., Mundy, R., Partain, D., and B. Stewart, "Introduction and Applicability Statements for Internet-Standard Management Framework", [RFC 3410](#), December 2002.

#### Authors' Addresses

Stefaan De Cnodder  
Alcatel  
Francis Wellesplein 1  
B-2018 Antwerp  
Belgium

Phone: +32 3 240 85 15  
Email: stefaan.de\_cnodder@alcatel.be

Nagi Reddy Jonnala  
Cisco Systems, Inc.  
Divyasree Chambers, B Wing, O'Shaughnessy Road  
Bangalore-560027, India

Phone: +91 94487 60828  
Email: njonnala@cisco.com

Murtaza Chiba  
Cisco Systems, Inc.  
170 West Tasman Dr.  
San Jose CA, 95134

Phone: +1 408 525 7198  
Email: mchiba@cisco.com

De Cnodder, et al. Expires December 17, 2006 [Page 27]

---

Internet-Draft Dynamic Authorization Server MIB June 2006

#### Intellectual Property Statement

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in [BCP 78](#) and [BCP 79](#).

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of

such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at [ietf-ipr@ietf.org](mailto:ietf-ipr@ietf.org).

#### Disclaimer of Validity

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

#### Copyright Statement

Copyright (C) The Internet Society (2006). This document is subject to the rights, licenses and restrictions contained in [BCP 78](#), and except as set forth therein, the authors retain all their rights.

#### Acknowledgment

Funding for the RFC Editor function is currently provided by the Internet Society.