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S. De Cnodder  
Alcatel  
N. Jonnala  
M. Chiba  
Cisco Systems, Inc.  
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**Dynamic Authorization Server 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 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 [[RFC2618bis](#)] and [[RFC2620bis](#)], respectively.

-- RFC Ed.: references [DYN SERV], [[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 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:

[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.





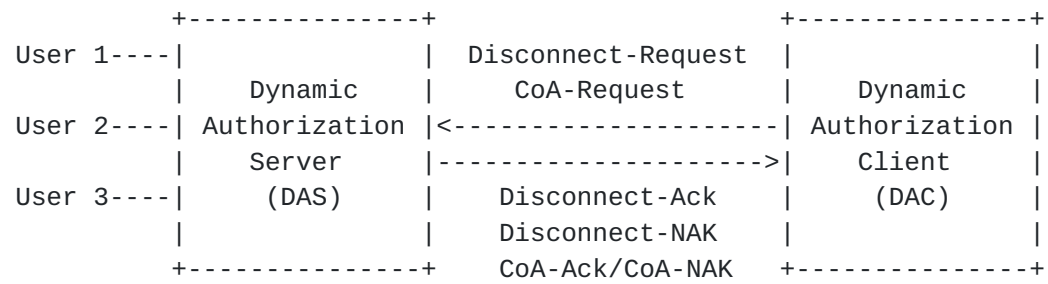


Figure 1: Mapping of clients and servers.

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

1. Four scalar objects, and
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,
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 "200603220000Z" -- 22 March 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.



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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 "200603220000Z" -- 22 March 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 }

## 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  
DAS module was last re-initialized."

::= { radiusDynAuthServerScalars 4 }

## 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
}

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 }

## 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. 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
    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 }

-- 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,  
radiusDynAuthServerCounterDiscontinuity,  
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 '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**

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## **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,



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'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



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