# RADIUS Dictionaries and Attribute Definitions

This chapter presents information on RADIUS dictionary types and attribute definitions.


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# RADIUS Dictionaries

This section presents information on RADIUS dictionary types.

## Dictionary Types

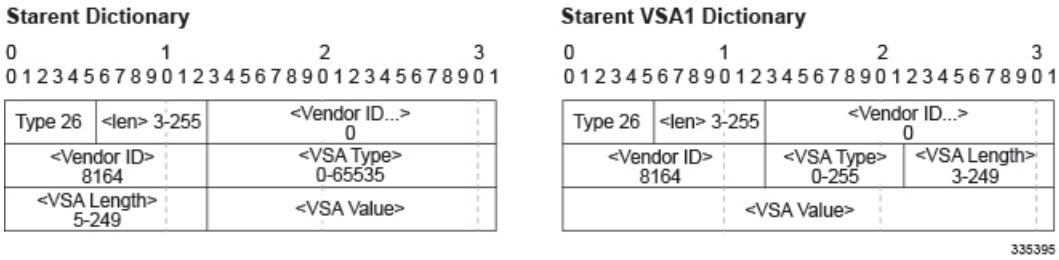
The CLI command to specify the RADIUS dictionary is:

**`radius dictionary [ 3gpp | 3gpp2 | 3gpp2-835 | custom`** *`XX`* **`| standard | starent | starent-835 | starent-vsa1 | starent-vsa1-835 ]`**

| Keyword | Description |
|---|---|
| **custom***XX* | These dictionaries can be customized. Customization information can be obtained by contacting your local service representative.<br>*XX* is the integer value of the custom dictionary.<br>**Note** RADIUS dictionary custom23 should be used in conjunction with Enhanced Charging Service (ECS). |
| **standard** | This dictionary consists only of the attributes specified in RFC 2865, RFC 2866, and RFC 2869. It also supports 3GPP release 4 and 3GPP Release 5 - extended QoS format. |
| **3gpp** | This dictionary consists not only of all of the attributes in the standard dictionary, but also all of the attributes specified in 3GPP 32.015. |

| Keyword | Description |
|---|---|
| **3gpp2** | This dictionary consists of all of the attributes in the standard dictionary, and all of the attributes specified in IS-835-A. |
| **3gpp2-835** | This dictionary consists of all of the attributes in the standard dictionary, and all of the attributes specified in IS-835. |
| **starent-vsa1** | This dictionary consists of the 3GPP2 dictionary, and includes the vendor-specific attributes (VSAs) as well. The VSAs in this dictionary support a one-byte wide VSA Type field in order to support certain RADIUS applications. The one-byte limit allows support for only 256 VSAs (0 - 255) as shown in the following figure. This is the default dictionary.<br>**Note** In 12.0 and later releases, no new RADIUS/Diameter attributes can be added to the **starent-vsa1** dictionary. If there are any new attributes to be added, these can be added to the **starent** dictionary. |
| **starent-vsa1-835** | This dictionary consists of the 3GPP2-835 dictionary, and includes the vendor-specific attributes (VSAs) as well. The VSAs in this dictionary support a one-byte wide VSA Type field in order to support certain RADIUS applications. The one-byte limit allows support for only 256 VSAs (0 - 255) as shown in the following figure. |
| **starent** | This dictionary consists of all of the attributes in the starent-vsa1 dictionary and incorporates additional VSAs by using a two-byte VSA Type field as shown in the following figure. This dictionary is the master-set of all of the attributes in all of the dictionaries supported by the system. |
| **starent-835** | This dictionary consists of all of the attributes in the starent-vsa1-835 dictionary and incorporates additional VSAs by using a two-byte VSA Type field. This dictionary is the master-set of all of the attributes in all of the -835 dictionaries supported by the system. |

*Figure 1: Difference in VSA Value Lengths per Dictionary*




**Note** Customer-specific attributes are not documented in this reference. For information on customer-specific attributes, contact your Cisco account representative.

**Note** The length documented for each attribute is the length of the attribute's Value field (data portion) and not length of the attribute (Type + Length + Value fields).

# RADIUS Attribute Notes

This section contains notes that apply to groups of attributes that have been included in support of specific features and/or functionality.

## RFC 2868 Tunneling Attributes

Tunnel attributes may be tagged, which means the leading byte in the value field may be used to group attributes together. This is used to return a number of different tunnel configurations that are available to the subscriber. The tagged group with the highest tunnel preference (the lowest value of the Tunnel-Preference attribute) has precedence over other tunnel configurations.

Tags can be a value from 1 through 31. Any value outside of this range for the leading byte means the attribute is not tagged, and the leading byte is then interpreted as part of the attribute value. Integer attributes that are tagged are three bytes in length (the leading byte is ignored), but are four bytes in length when not tagged (the leading byte is incorporated).

If Tunnel attributes appear more than once in the RADIUS Accept-Accept but are not tagged, then the system treats the attributes as having an implicit tag. The first instance of the attribute has a tag value of 32, the second instance has a tag value of 33, etc.

# RADIUS AVP Definitions

This section presents RADIUS attribute definitions.

**Important** RADIUS attributes received by the system from the RADIUS server always take precedence over local-subscriber attributes and parameters configured on the system.

# 3GPP2-835-Release-Indicator

3GPP2 835 Standard Release Indicator, reason/cause for session release.

**Syntax** Enumerated Integer. Supports the following value(s):

- Unknown = 0
- PPP-Timeout = 1
- Handoff = 2
- PPP-Termination = 3
- Mobile-IP-Registration-Failure = 4
- Active-To-Dormant = 5

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 24

# 3GPP2-Acct-Session-Time

The total amount of time spent in the Active state, in seconds. This attribute has the same type as Acct-Session-Time, and thus conforms to IS-835.

**Syntax** Unsigned Integer

**Length** 4

**Type** 46

**Vendor ID** N/A

**VSA Type** N/A

# 3GPP2-Active-Time-Corrected

3GPP2 Active session time value.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 49

# 3GPP2-Active-Time

The total period of time spent in the Active state, in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 49

# 3GPP2-Airlink-Record-Type

This attribute indicates the most recent type of Airlink Record to be received for this subscriber's connection.

**Syntax** Enumerated Integer. Supports the following value(s):

- Connection-Setup = 1
- Active-Start = 2
- Active-Stop = 3
- SDB = 4 BCMCS-Connection-Setup = 5
- BCMCS-Active-Start = 6
- BCMCS-Active-Stop = 7

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 40

# 3GPP2-Airlink-Sequence-Number

This represents the sequence number of an Airlink Record and is incremented (modulo 256) by the PCF for each Airlink Record. The sequence number is unique for a given RP Session ID, PCF ID, and MSID.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 42

# 3GPP2-Air-QOS

This attribute identifies airlink QOS associated with the user data. The least significant 4 bits hold the QOS priority as defined in C.S0001-A in the subscriber profile.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 39

# 3GPP2-Allowed-Diffserv

This attribute specifies if the user is able to mark packets with AF and/or EF. The Max Class specifies that the user may mark packets with a Class Selector Code Point that is less then or equal to Max Class.

**Type** 26

**Vendor ID** 5535

**VSA Type** 73

**Syntax** Compound. Contains the following sub-attribute(s).

## Flags

Allowed DSCP flag.

**Syntax** Enumerated Integer. Supports the following value(s):

- Allow_AF_EF_Exp = 0xE000
- Allow_AF_EF = 0xC000
- Allow_AF_Exp = 0xA000
- Allow_EF_Exp = 0x6000
- Allow_AF = 0x8000
- Allow_EF = 0x4000
- Allow_Exp = 0x2000
- Allow_None = 0x0

**Length** 2

**Type** 1

## Max-Class

Allowed max dscp.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0x0
- AF11 = 0x2800
- AF12 = 0x3000
- AF13 = 0x3800
- AF21 = 0x4800
- AF22 = 0x5000
- AF23 = 0x5800
- AF31 = 0x6800
- AF32 = 0x7000
- AF33 = 0x7800
- AF41 = 0x8800
- AF42 = 0x9000
- AF43 = 0x9800
- EF = 0xb800
- Class1 = 0x2000
- Class2 = 0x4000
- Class3 = 0x6000
- Class4 = 0x8000
- Class5 = 0xa000
- Class6 = 0xc000
- Class7 = 0xe000

**Length** 2

**Type** 2

## RT-Marking

Allowed max dscp rev. tun.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0x0
- AF11 = 0x2800
- AF12 = 0x3000
- AF13 = 0x3800
- AF21 = 0x4800

- AF22 = 0x5000
- AF23 = 0x5800
- AF31 = 0x6800
- AF32 = 0x7000
- AF33 = 0x7800
- AF41 = 0x8800
- AF42 = 0x9000
- AF43 = 0x9800
- EF = 0xb800
- Class1 = 0x2000
- Class2 = 0x4000
- Class3 = 0x6000
- Class4 = 0x8000
- Class5 = 0xa000
- Class6 = 0xc000
- Class7 = 0xe000

**Length** 2

**Type** 3

# 3GPP2-Allowed-Persistent-TFTs

3GPP2 Allowed Persistent Traffic Flow Templates.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 89

# 3GPP2-Alternate-Billing-ID

This attribute is currently not supported.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 35

# 3GPP2-Always-On

This attribute, when set to Active, indicates that the subscriber's session should be kept up regardless of the idle time as long as the subscriber is reachable. Reachability is ascertained using LCP keepalive messages.

**Syntax** Enumerated Integer. Supports the following value(s):

- Inactive = 0
- Active = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 78

# 3GPP2-Auth-Flow-Profile-Id

This compound attribute is a list of flow profile IDs.

**Type** 26

**Vendor ID** 5535

**VSA Type** 131

**Syntax** Compound. Contains the following sub-attribute(s).

## Profile-Id-Forward

This attribute specifies a list of Forward Flow Profile IDs that the user is allowed to specify/request in a QoS Sub Blob.

**Syntax** Unsigned Integer

**Length** 2

**Type** 1

## Profile-Id-Reverse

This attribute specifies a list of Reverse Flow Profile IDs that the user is allowed to specify/request in a QoS Sub Blob.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## Profile-Id-Bi-Direction

This attribute specifies the list of Bi-Direction Flow Profile IDs that the user is allowed to specify/request in a QoS Sub Blob.

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

# 3GPP2-Bad-PPP-Frame-Count

The total number of PPP frames from the MS dropped by the PDSN due to uncorrectable errors.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 25

# 3GPP2-BCMCS-Auth-Parameters

This is a grouped attribute with Authentication signature, Sequence number, and timestamp required to validate each flow in a BCMCS flow registration request. Each flow is validated using the procedure described in 3GPP2 standard C.S0054-0_v1.0. This information is configured on a per subscriber basis.

**Type** 26

**Vendor ID** 5535

**VSA Type** 99

**Syntax** Compound. Contains the following sub-attribute(s).

## BAK-Sequence-Number

BAK-Sequence-Number

**Syntax** Opaque Value

**Length** 1

**Type** 1

## Timestamp

Timestamp

**Syntax** Opaque Value

**Length** 33

**Type** 2

## Auth-Signature

Auth-Signature

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

# 3GPP2-BCMCS-BSN-Session-Info

This is a grouped attribute containing information about the established flows. This includes the multicast address, port, compression status of the flow, and the content server address.

**Type** 26

**Vendor ID** 5535

**VSA Type** 103

**Syntax** Compound. Contains the following sub-attribute(s).

## Flow-Id

This attribute specifies the Granted QoS parameters received from the RAN for the flow identified by FLOW_ID.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## Mcast-IP-Addr

Mcast-IP-Addr

**Syntax** IPv4 Address

**Length** 4

**Type** 2

## Mcast-Port

Mcast-Port

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

## Header-Compression-Algorithm

Header-Compression-Algorithm

**Syntax** Enumerated Integer. Supports the following value(s):

- No_header_compression = 0
- ROHC_U_Mode = 1

**Length** 2

**Type** 4

## CID-Type-Attribute

CID-Type-Attribute

**Syntax** Unsigned Integer

**Length** 1

**Type** 5

## MAX-CID

MAX-CID

**Syntax** Unsigned Integer

**Length** 2

**Type** 6

## Compression-Profile

Compression-Profile

**Syntax** Unsigned Integer

**Length** 2

**Type** 7

## MAX-Header-Size

MAX-Header-Size

**Syntax** Unsigned Integer

**Length** 2

**Type** 8

## MRRU

MRRU

**Syntax** Unsigned Integer

**Length** 2

**Type** 9

### Content-Server-Source-IP-Address

Content-Server-Source-IP-Address

**Syntax** IPv4 Address

**Length** 4

**Type** 10

### Content-Server-Source-IPv6-Address

Content-Server-Source-IPv6-Address

**Syntax** Opaque Value

**Length** 16

**Type** 11

## 3GPP2-BCMCS-Capability

This attribute defines the specific BCMCS protocol revision the PDSN supports.

**Type** 26

**Vendor ID** 5535

**VSA Type** 101

**Syntax** Compound. Contains the following sub-attribute(s).

### BCMCS-Protocol-Revision

BCMCS-Protocol-Revision

**Syntax** Enumerated Integer. Supports the following value(s):

- Release_0 = 1

**Length** 2

**Type** 1

## 3GPP2-BCMCS-Common-Session-Info

This compound attribute specifies the program start time, end time, and the allowed registration time on a per flow basis.

**Type** 26

**Vendor ID** 5535

**VSA Type** 102

**Syntax** Compound. Contains the following sub-attribute(s).

## Flow-ID

Flow-ID

**Syntax** Opaque Value

**Length** 2-4

**Type** 1

## Program-Start-Time

Program-Start-Time

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

## Program-End-Time

Program-End-Time

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Program-Allowed-Registration-Time

Program-Allowed-Registration-Time

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Auth-Required-Flag

Auth-Required-Flag

**Syntax** Enumerated Integer. Supports the following value(s):

- Authorization_not_required = 0
- Authorization_required = 1

**Length** 2

**Type** 5

# 3GPP2-BCMCS-Flow-ID

This attribute specifies the BCMCS Flow ID.

**Syntax** Opaque Value

**Length** 2-4

**Type** 26

**Vendor ID** 5535

**VSA Type** 100

# 3GPP2-BCMCS-Flow-Transmit-Time

The total BCMCS flow transmission time in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 107

# 3GPP2-BCMCS-Mcast-IP-Addr

This attribute contains the multicast IP address of the BCMCS flow as it would appear in the source or destination field of an IP header.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 109

# 3GPP2-BCMCS-Mcast-Port

The multicast port for the BCMCS flow.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 5535

**VSA Type** 110

# 3GPP2-BCMCS-Reason-Code

This attribute specifies the reason to send the RADIUS Access-Accept message.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 5535

**VSA Type** 105

# 3GPP2-BCMCS-RN-Session-Info

This is a grouped attribute which contains the encryption mechanism, BAK (Broadcast access key), BAK_ID, BAK expire time and authorization required flag. This attribute specifies the session information that needs to be known only by the RN.

**Type** 26

**Vendor ID** 5535

**VSA Type** 104

**Syntax** Compound. Contains the following sub-attribute(s).

## Flow-ID

Flow-ID

**Syntax** Opaque Value

**Length** 2-4

**Type** 1

## BCMCS-Encryption-Mechanism-Attribute

BCMCS-Encryption-Mechanism-Attribute

**Syntax** Enumerated Integer. Supports the following value(s):

- High_layer_encryption_in_CS = 0
- Link_layer_encryption_in_RN = 1

**Length** 2

**Type** 2

## BCMCS-BAK-ID-Attribute

BCMCS-BAK-ID-Attribute

**Syntax** Unsigned Integer

**Length** 1

**Type** 3

## BCMCS-BAK

BCMCS-BAK

**Syntax** Opaque Value

**Length** 16

**Type** 4

## BCMCS-BAK-Expire-Time

BCMCS-BAK-Expire-Time

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

## BCMCS-Session-Bandwidth-attribute

BCMCS-Session-Bandwidth-attribute

**Syntax** Unsigned Integer

**Length** 2

**Type** 6

# 3GPP2-Beginning-Session

3GPP2 Beginning Session will be TRUE or FALSE depending on if this is a new session.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 51

# 3GPP2-BSID

The base station ID.

**Syntax** Opaque Value

**Length** 6-12

**Type** 26

**Vendor ID** 5535

**VSA Type** 10

# 3GPP2-Carrier-ID

A 5 or 6-byte identifier of the visited PDSN comprising of a 3 byte Mobile Country Code (MCC) followed by a 2 or 3 byte Mobile Network Code (MNC) of the visited carrier. This value is configured locally in the visited carrier's PDSN.

**Syntax** Opaque Value

**Length** 5-6

**Type** 26

**Vendor ID** 5535

**VSA Type** 142

# 3GPP2-Comp-Tunnel-Indicator

This attribute indicates the invocation of a compulsory tunnel established on behalf of the MS for providing private network and/or ISP access during a single packet data connection. Normal PPP sessions will show No Tunnel. L2TP, IPinIP, and IP-GRE tunnels will show Non-Secure-Tunnel. IPSEC support will show Secure-Tunnel.

**Syntax** Enumerated Integer. Supports the following value(s):

- No-Tunnel = 0
- Non-Secure-Tunnel = 1
- Secure-Tunnel = 2

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 23

# 3GPP2-Container

A compound attribute that encapsulates the User Data Record for an Airlink Event.

**Type** 26

**Vendor ID** 8164

**VSA Type** 240

**Syntax** Compound. Contains the following sub-attribute(s). enum16 reason { Tarrif-Boundary = 1, Parameter-Change = 2, Handoff = 3, Active-To-Dormant = 4 } uint32 timestamp attribute ThreeGPP2-BSID attribute ThreeGPP2-MEID attribute ThreeGPP2-FEID reason Parameter-Change { attribute ThreeGPP2-User-Zone attribute ThreeGPP2-Forward-Mux-Option attribute ThreeGPP2-Reverse-Mux-Option attribute ThreeGPP2-Service-Option attribute ThreeGPP2-Fwd-Pdch-Rc attribute ThreeGPP2-Fwd-Dcch-Mux-Option attribute ThreeGPP2-Rev-Dcch-Mux-Option attribute ThreeGPP2-Air-QOS } reason Handoff { attribute NAS-IP-Address attribute ThreeGPP2-Serving-PCF } attribute Acct-Output-Octets attribute Acct-Input-Octets attribute ThreeGPP2-Bad-PPP-Frame-Count attribute ThreeGPP2-Active-Time attribute ThreeGPP2-Number-Active-Transitions attribute ThreeGPP2-SDB-Input-Octets attribute

ThreeGPP2-SDB-Output-Octets attribute ThreeGPP2-Num-SDB-Input attribute ThreeGPP2-Num-SDB-Output attribute ThreeGPP2-Num-Bytes-Received-Total attribute ThreeGPP2-MIP-Signaling-Octet-Count-Input attribute ThreeGPP2-MIP-Signaling-Octet-Count-Output attribute ThreeGPP2-Last-Activity attribute Starent-Acct-PPP-Unfr-data-In-Oct attribute Starent-Acct-PPP-Unfr-data-Out-Oct }

**Type** 26

**Vendor ID** 5535

**VSA Type** 6

# 3GPP2-Correlation-Id-Long

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 5535

**VSA Type** 44

# 3GPP2-Correlation-Id-Old

Custom-11 style correlation ID.

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 5535

**VSA Type** 40

# 3GPP2-Correlation-Id

This attribute contains an ID that correlates all accounting sessions authorized for this NAI by this access request.

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 5535

**VSA Type** 44

# 3GPP2-DCCH-Frame-Size

Specifies the DCCH frame size.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- 5ms = 1
- 20ms = 2

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 50

# 3GPP2-Diff-Service-Class-Option

This is the DSCP (Differentiated Service Code Point) value as defined in the 3GPP2 standard. The DSCP values are assigned for different classes of traffic so that each traffic class can be given different priorities (QoS).

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 5

# 3GPP2-Disconnect-Reason

This attribute indicates the reason for disconnecting the user. This attribute may be present in the RADIUS Disconnect-request Message from Home RADIUS server to the PDSN.

**Syntax** Enumerated Integer. Supports the following value(s):

- MS_Mobility_Detection = 1;

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 96

# 3GPP2-DNS-Server-IP-Address

DNS server IP address. Used in custom dictionary.

**Type** 26

**Vendor ID** 5535

**VSA Type** 117

**Syntax** Compound. Contains the following sub-attribute(s).

### Primary-DNS-Server-IP

IP address of the primary DNS server.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

### Secondary-DNS-Server-IP

IP address of the secondary DNS server.

**Syntax** IPv4 Address

**Length** 4

**Type** 2

### Flag

M bit set to 1 indicates to the PDSN that primary and secondary IP addresses provided by the Home RADIUS server should override the primary and secondary IP addresses provided also by the visited RADIUS server.

**Syntax** Unsigned Integer

**Length** 1

**Type** 3

### Entity-Type

Network Entity inserted in the DNS server ID address. Currently the following types are defined. HAAA = 1, VAAA = 1.

**Syntax** Unsigned Integer

**Length** 1

**Type** 4

## 3GPP2-DNS-Server-IPV6-Addr

DNS server IPv6 address.

**Type** 26

**Vendor ID** 5535

**VSA Type** 214

**Syntax** Compound. Contains the following sub-attribute(s).

### Primary-DNS-Server-IPV6

Primary DNS server IPv6 address.

**Syntax** Opaque Value

**Length** 16

**Type** 1

## Secondary-DNS-Server-IPV6

Secondary IPv6 DNS server IP address.

**Syntax** Opaque Value

**Length** 16

**Type** 2

## Flag-IPV6

M bit set to 1 indicates to the PDSN that Primary and Secondary IPv6 addresses provided by the Home RADIUS server should override the Primary and Secondary IPv6 addresses provided also by the visited RADIUS server.

**Syntax** Unsigned Integer

**Length** 1

**Type** 3

## Entity-Type-IPV6

Network Entity that inserted in the DNS server ID address. Either HAAA = 1, VAAA = 1.

**Syntax** Unsigned Integer

**Length** 1

**Type** 4

# 3GPP2-DNS-Update-Required

This attribute indicates whether the HA needs to send the DNS update to the DNS server.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 75

# 3GPP2-ESN

This attribute contains the Electronic Serial Number (ESN) of the Mobile Station.

**Syntax** Opaque Value

**Length** 1-15

**Type** 26

**Vendor ID** 5535

**VSA Type** 52

# 3GPP2-FA-Address

This attribute indicates if compulsory tunneling is to be employed on behalf of a subscriber. Usually compulsory tunneling is employed when a subscriber cannot initiate a tunnel itself, usually because the subscriber's device does not support tunneling. Contains an IP address as it would appear in the IP header.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 79

# 3GPP2-FEID

This attribute specifies the FEID value.

**Syntax** Opaque Value

**Length** 0-16

**Type** 26

**Vendor ID** 5535

**VSA Type** 216

# 3GPP2-Flow-Id

This attribute specifies the 3GPP2-Flow-Id-parameter.

**Type** 26

**Vendor ID** 5535

**VSA Type** 144

**Syntax** Compound. Contains the following sub-attribute(s).

## Direction

Direction of the PDF.

**Syntax** Enumerated Integer. Supports the following value(s):

- Forward = 0
- Reverse = 1

- Both = 2

**Length** 2

**Type** 1

## Flow-Id

This attribute specifies the Granted QoS parameters received from the RAN for the flow identified by FLOW_ID.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

# 3GPP2-Flow-Status

This attribute specifies the 3GPP2 Flow Status.

**Syntax** Enumerated Integer. Supports the following value(s):

- Active = 0
- Inactive = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 145

# 3GPP2-Forward-Fundamental-Rate

As defined in "Wireless IP Network Standard - 3GPP2.P.S0001-A-1".

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 14

# 3GPP2-Forward-Fundamental-RC

The format and structure of the RADIUS channel in the forward direction. A set of forward transmission formats that are characterized by data rates, modulation characterized, and spreading rates.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 20

# 3GPP2-Forward-Mux-Option

Forward direction multiplexer option.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 12

# 3GPP2-Forward-Traffic-Type

Specifies the forward traffic type.

**Syntax** Enumerated Integer. Supports the following value(s):

- Primary = 0
- Secondary = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 17

# 3GPP2-Fundamental-Frame-Size

This attribute indicates the fundamental frame size. The fundamental channel has the choice of 5 or 20 ms size. The 5 ms frame size allows fast response for short signaling messages (short frame can be decoded quickly). However, depending on configuration, the fundamental may not be present.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- 5ms = 1
- 20ms = 2

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 19

# 3GPP2-Fwd-Dcch-Mux-Option

This attribute specifies Forward DCCH Mux option.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 84

# 3GPP2-Fwd-Dcch-Rc

This attribute specifies Radio Configuration of the Forward Packet Data Channel.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 86

# 3GPP2-Fwd-Pdch-Rc

This attribute specifies Radio Configuration of the Forward Packet Data Channel.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 83

# 3GPP2-GMT-Timezone-Offset

GMT-Time-Zone-Offset is 4-octet string that is interpreted as a 4-byte signed integer that indicates the current offset in seconds from GMT at the visited carrier's PDSN. The offset should be adjusted to reflect standard time or daylight saving time.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 143

# 3GPP2-Granted-QoS

This attribute specifies the 3GPP2-Granted-QoS-Parameter.

**Type** 26

**Vendor ID** 5535

**VSA Type** 132

**Syntax** Compound. Contains the following sub-attribute(s).

## Direction

Direction of the PDF.

**Syntax** Enumerated Integer. Supports the following value(s):

- Forward = 0
- Reverse = 1
- Both = 2

**Length** 2

**Type** 1

## Flow-Id

This attribute specifies the Granted QoS parameters received from the RAN for the flow identified by FLOW_ID.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## Attribute-Set-Id

This attribute specifies the Granted QoS parameters received from the RAN for flow verbose or non-verbose.

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

## Flow-Profile-Id

This attribute specifies the Granted QoS parameters received from the RAN for the flow profile ID.

**Syntax** Unsigned Integer

**Length** 2

**Type** 4

## Traffic-Class

This attribute specifies the Granted QoS parameters received from the RAN for the flow traffic class.

**Syntax** Enumerated Integer. Supports the following value(s):

- Unknown = 0
- Conversational = 1
- Streaming = 2
- Interactive = 3
- Background = 4

**Length** 2

**Type** 5

## Peak-Rate

This attribute specifies the Granted QoS parameters received from the RAN for the flow Peak Rate.

**Syntax** Unsigned Integer

**Length** 2

**Type** 6

## Bucket-Rate

This attribute specifies the Granted QoS parameters received from the RAN for the flow Bucket Rate.

**Syntax** Unsigned Integer

**Length** 2

**Type** 7

## Token-Rate

This attribute specifies the Granted QoS parameters received from the RAN for the flow Token Rate.

**Syntax** Unsigned Integer

**Length** 2

**Type** 8

## Max-Latency

This attribute specifies the Granted QoS parameters received from the RAN for the flow Max Latency.

**Syntax** Unsigned Integer

**Length** 2

**Type** 9

### Max-IP-Packet-Loss-Rate

This attribute specifies the Granted QoS parameters received from the RAN for the flow Packet Loss Rate.

**Syntax** Unsigned Integer

**Length** 2

**Type** 10

### Packet-Size

This attribute specifies the Granted QoS parameters received from the RAN for the flow Packet Size.

**Syntax** Unsigned Integer

**Length** 2

**Type** 11

### Delay-Var-Sensitive

This attribute specifies the Granted QoS parameters received from the RAN for the flow Delay Var Sensitive.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Specified = 0
- Sensitive = 1

**Length** 2

**Type** 12

## 3GPP2-IKE-Secret-Request

This attribute indicates if the IKE secret for the FA/HA pair is to be returned for the subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 1

## 3GPP2-IKE-Secret

This attribute contains the FA/HA shared secret for the IKE protocol. This attribute is salt-encrypted.

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 5535

**VSA Type** 3

# 3GPP2-IKE-Secret-Unencrypted

IKE Secret key from RADIUS server in Access-Accept message

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 5535

**VSA Type** 3

# 3GPP2-IMSI

This is the calling Station-ID attribute. IMSI value of the mobile is being filled in. This is sent when Custom11 dictionary is selected.

**Syntax** Opaque Value

**Length** 1-253

**Type** 26

**Vendor ID** 5535

**VSA Type** 1

# 3GPP2-Interconnect-IP

This attribute is currently not supported.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 37

# 3GPP2-Interconnect-QOS

This attribute is currently not supported.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 38

# 3GPP2-Inter-User-Priority

This attribute specifies the 3GPP2-Inter-User-Priority.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 139

# 3GPP2-IP-QOS

This attribute defines the differentiated Services code points associated with the user data.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- CS1 = 8
- AF11 = 10
- AF12 = 12
- AF13 = 14
- CS2 = 16
- AF21 = 18
- AF22 = 20
- AF23 = 22
- CS3 = 24
- AF31 = 26
- AF32 = 28
- AF33 = 30
- CS4 = 32
- AF41 = 34
- AF42 = 36
- AF43 = 38
- CS5 = 40
- EF = 46

- CS6 = 48
- CS7 = 56

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 36

# 3GPP2-IP-Services-Authorized

This attribute specifies the type of IP services (IPv4/CMIPv4/IPv6/CMIPv6/PMIPv4/PMIPv6..etc) authorized.

**Syntax** Enumerated Integer. Supports the following value(s):

- SIP4 = 1
- SIP6 = 2
- MIP4 = 4
- MIP6 = 8
- IP4_PMIP4 = 16
- IP6_PMIP4 = 32
- IP4_PMIP6 = 64
- IP6_PMIP6 = 128

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 185

# 3GPP2-IP-Technology

This attribute identifies whether we are using Simple IP, Mobile IP, or another technology.

**Syntax** Enumerated Integer. Supports the following value(s):

- Simple-IP = 1
- Mobile-IP = 2

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 22

# 3GPP2-KeyID

This attribute contains the opaque IKE Key Identifier for the FA/HA shared IKE secret. The first eight bytes is the network-order FA IP address in hexadecimal characters. The next eight bytes is the network-order HA IP address in hexadecimal characters. The final four bytes is a timestamp in network order, indicating when the key was created, and is the number of seconds since January 1, 1970, UTC.

**Syntax** Opaque Value

**Length** 20

**Type** 26

**Vendor ID** 5535

**VSA Type** 8

# 3GPP2-Last-Activity

This attribute contains timestamp of the last user activity. This attribute is same as the 3GPP2-Last-User-Activity-Time standard attribute.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 80

# 3GPP2-Max-Auth-Aggr-Bw-BET

This attribute contains the maximum authorized aggregate bandwidth for Best Effort Traffic.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 130

# 3GPP2-Max-Per-Fl-Pri-ForTheUser

The maximum per flow priority for the user.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 133

# 3GPP2-MEID

Mobile Equipment Identifier (MEID) uniquely identifies the mobile equipment.

**Syntax** Opaque Value

**Length** 0-14

**Type** 26

**Vendor ID** 5535

**VSA Type** 116

# 3GPP2-MIP6-Authenticator

The MN-AAA authenticator obtained from the MN-AAA authentication mobility option in the BU.

**Syntax** Opaque Value

**Length** 12

**Type** 26

**Vendor ID** 5535

**VSA Type** 134

# 3GPP2-MIP6-CoA

MIPv6 CoA received in binding update.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 5535

**VSA Type** 119

# 3GPP2-MIP6-HA

MIPv6 Home Agent address received in binding update.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 5535

**VSA Type** 118

# 3GPP2-MIP6-HoA-Not-Authorized

Value of 1 indicates to the HA that the HoA is not authorized to be used by HA.

**Syntax** Enumerated Integer. Supports the following value(s):

- UnAuthorized = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 120

# 3GPP2-MIP6-HoA

MIPv6 HoA received in binding update.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 5535

**VSA Type** 141

# 3GPP2-MIP6-Home-Address

Carries the assigned Home Address during MIP6 bootstrapping.

**Syntax** Opaque Value

**Length** 18

**Type** 26

**Vendor ID** 5535

**VSA Type** 129

# 3GPP2-MIP6-Home-Agent

Carries the assigned MIPv6 Home Agent address received during MIPv6 bootstrapping.

**Syntax** Opaque Value

**Length** 18

**Type** 26

**Vendor ID** 5535

**VSA Type** 140

# 3GPP2-MIP6-Home-Link-Prefix

Carries the assigned Home Link Prefix during MIP6 bootstrapping.

**Syntax** Opaque Value

**Length** 2-18

**Type** 26

**Vendor ID** 5535

**VSA Type** 128

# 3GPP2-MIP6-MAC-Mobility-Data

The hashed Mobility Data from the HA to the Home RADIUS server so that the Home RADIUS server can validate the MN-AAA authenticator.

**Syntax** Opaque Value

**Length** 20

**Type** 26

**Vendor ID** 5535

**VSA Type** 138

# 3GPP2-MIP6-Mesg-ID

Value of Message ID from Mobility message replay protection option in Binding Update.

**Syntax** Opaque Value

**Length** 8

**Type** 26

**Vendor ID** 5535

**VSA Type** 123

# 3GPP2-MIP6-Session-Key

This VSA carries the Integrity Key (IK) in its encrypted form, from the Home RADIUS server to the HA.

**Syntax** Opaque Value

**Length** 16-64

**Type** 26

**Vendor ID** 5535

**VSA Type** 121

# 3GPP2-MIP-HA-Address

The IP address of the MIP Home Agent.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 7

# 3GPP2-MIP-Lifetime

This VSA should be included in the RADIUS Access-Request message from the HA to the Home RADIUS/PPS if the HA is PrePaid capable. It may be included in the RADIUS Access-Accept message from the Home RADIUS/PPS to HA, in which case, the HA should include the received value in the MIP RRP sent to the PDSN.

**Type** 26

**Vendor ID** 5535

**VSA Type** 92

**Syntax** Compound. Contains the following sub-attribute(s).

## RRQ-Lifetime

Should be included in the initial RADIUS Access-Request message and subsequent on-line RADIUS Access-Request if duration based PrePaid is provided for the session. It contains the MIP RRQ integer value lifetime received in the MIP RRQ message. In the RADIUS Access-Accept message, it contains the MIP RRQ integer value lifetime that should be used in the MIP RRP.

**Syntax** Unsigned Integer

**Length** 4

**Type** 1

## Used-Lifetime

Should be included in the RADIUS Access-Request message at re-registration and updated RRQ (new CoA) if duration based PrePaid is provided for the session, it contains the used MIP RRQ lifetime value from an existing MIP session with the same NAI and Home Address.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

# 3GPP2-MIP-Rev-Tunnel-Required

Indicates to the PDSN if MIP Reverse Tunneling is required.

**Syntax** Enumerated Integer. Supports the following value(s):

- NotRequired = 0
- Required = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 4

# 3GPP2-MIP-Sig-Octet-Count-In

The total number of octets in registration requests and solicitations sent by the mobile.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 46

# 3GPP2-MIP-Sig-Octet-Count-Out

The total number of octets in registration replies and agent advertisements, sent to the mobile.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 47

# 3GPP2-MN-AAA-Removal-Indication

This attribute, when set to "Not Required", indicates that the system, when acting as a Mobile-IP Foreign Agent, should remove the MN-FA challenge and the MN-AAA Authentication Extensions, when present, from the RRQ before relaying the RRQ to the Mobile-IP Home Agent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Allowed = 0
- Not-Required = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 81

# 3GPP2-MN-HA-Shared-Key-No-Enc

This attribute contains the MN-HA shared key in plain format.

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 5535

**VSA Type** 58

# 3GPP2-MN-HA-Shared-Key

A shared key for MN-HA authentication. The MN-HA shared key is encrypted using a method based on MD5.

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 5535

**VSA Type** 58

# 3GPP2-MN-HA-SPI

The SPI for the MN-HA authentication shared key.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 57

# 3GPP2-Mobile-Term-Orig-Ind

Tells whether the call is mobile originated (Call initiated from mobile side) or mobile terminated (Call initiated from external towards mobile).

**Syntax** Enumerated Integer. Supports the following value(s):

- Mobile-Originated = 0
- Mobile-Terminated = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 45

# 3GPP2-Number-Active-Transitions

This attribute counts the total number of non-active to active transitions by the user.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 30

# 3GPP2-Num-Bytes-Received-Total

This attribute counts all bytes received in the reverse direction by the HDLC layer in the PDSN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 43

# 3GPP2-Num-SDB-Input

This attribute counts the total number of Short Data Burst transactions to the user.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 33

# 3GPP2-Num-SDB-Output

This attribute counts the total number of Short Data Burst transactions from the user.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 34

# 3GPP2-PMIP-Capability

This attribute specifies the AGW's PMIP capability.

**Syntax** Enumerated Integer. Supports the following value(s):

- PMIPv4_ONLY = 1
- PMIPv6_ONLY = 2
- PMIPv4_PMIPv6 = 3

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 193

# 3GPP2-PMIP-IPv4Session-Info

This attribute specifies PMIP information for IPv4 session.

**Type** 26

**Vendor ID** 5535

**VSA Type** 194

**Syntax** Compound. Contains the following sub-attribute(s).

**Length** 0-160

## VAAA-IPv4Session-HA-Addr

An IPv4 address or IPv6 Address of the local HA assigned by the AGW/VAAA for AT's IPv4 Address assignment.

**Syntax** Opaque Value

**Length** 0-16

**Type** 1

## HAAA-IPv4Session-HA-Addr

An IPv4 address or IPv6 Address of the home or local HA assigned by the HAAA for AT's IPv4 Address assignment.

**Syntax** Opaque Value

**Length** 0-16

**Type** 2

## PMN-HA-KEY

PMN-HA-KEY

**Syntax** Opaque Value

**Length** 0-32

**Type** 3

## PMN-HA-SPI

PMN-HA-SPI

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## VAAA-IPv4Session-LMA-Addr

An IPv4 address or IPv6 Address of the local LMA assigned by the AGW/VAAA for AT's IPv4 Address assignment

**Syntax** Opaque Value

**Length** 0-16

**Type** 5

## HAAA-IPv4Session-LMA-Addr

An IPv4 address or IPv6 Address of the home or local LMA assigned by the HAAA for AT's IPv4 Address assignment.

**Syntax** Opaque Value

**Length** 0-16

**Type** 6

## PMN-LMA-KEY

PMN-LMA-KEY

**Syntax** Opaque Value

**Length** 0-32

**Type** 7

## PMN-LMA-SPI

PMN-LMA-SPI

**Syntax** Unsigned Integer

**Length** 4

**Type** 8

# 3GPP2-PMIP-IPv6Session-Info

This attribute specifies the PMIP information for IPv6 session.

**Type** 26

**Vendor ID** 5535

**VSA Type** 195

**Syntax** Compound. Contains the following sub-attribute(s).

**Length** 0-160

## VAAA-IPv6Session-HA-Addr

VAAA-IPv6Session-HA-Addr

**Syntax** Opaque Value

**Length** 0-16

**Type** 1

## HAAA-IPv6Session-HA-Addr

HAAA-IPv6Session-HA-Addr

**Syntax** Opaque Value

**Length** 0-16

**Type** 2

## PMN-HA-KEY

PMN-HA-KEY

**Syntax** Opaque Value

**Length** 0-32

**Type** 3

## PMN-HA-SPI

PMN-HA-SPI

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## VAAA-IPv6Session-LMA-Addr

An IPv4 address or IPv6 Address of the local LMA assigned by the AGW/VAAA for AT's IPv6 Address assignment.

**Syntax** Opaque Value

**Length** 0-16

**Type** 5

## HAAA-IPv6Session-LMA-Addr

An IPv4 address or IPv6 Address of the home or local LMA assigned by the HAAA for AT's IPv6 Address assignment.

**Syntax** Opaque Value

**Length** 0-16

**Type** 6

### PMN-LMA-KEY

PMN-LMA-KEY

**Syntax** Opaque Value

**Length** 0-32

**Type** 7

### PMN-LMA-SPI

PMN-LMA-SPI

**Syntax** Unsigned Integer

**Length** 4

**Type** 8

## 3GPP2-PMIP-NAI

This attribute specifies the PMIP NAI provided by AAA.

**Syntax** Opaque Value

**Length** 1-128

**Type** 26

**Vendor ID** 5535

**VSA Type** 192

## 3GPP2-Pre-Paid-Accounting-Quota

This attribute specifies the characteristics for PrePaid accounting of the volume and/or duration of a packet data session. It should be present in all on-line RADIUS Access-Request and on-line RADIUS Access-Accept messages and may be included in other RADIUS Access-Accept messages. Non-used Sub-Types by the PPC and PPS should be omitted.

**Type** 26

**Vendor ID** 5535

**VSA Type** 90

**Syntax** Compound. Contains the following sub-attribute(s).

### Quota-Identifier

It is generated by the PPS together with the allocation of new quota.

**Syntax** Unsigned Integer

**Length** 4

**Type** 1

## Volume-Quota

Indicates the volume in octets excluding control data.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

## Volume-Quota-Overflow

The optional Volume-Quota-Overflow Sub-Type is used to indicate how many times the VolumeQuota counter has wrapped around 2^32 over the course of the service being provided.

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

## Volume-Threshold

Is generated by the PPS and indicates the volume (in octets) that be consumed before a new quota should be requested.

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Volume-Threshold-Overflow

The optional Volume-Threshold-Overflow Sub-Type is used to indicate how many times the VolumeThreshold counter has wrapped around 2^32 over the course of the service being provided.

**Syntax** Unsigned Integer

**Length** 2

**Type** 5

## Duration-Quota

3GPP2 PrePaid Duration Quota. This is optionally present if duration-based charging is used. In RADIUS Access-Accept message, it indicates the duration (in seconds) allocated for the session by the PPS. In an on-line RADIUS Access-Accept message, it indicates the total duration (in seconds) since the start of the accounting session related to the QuotaID of the PPAQ in which it occurs.

**Syntax** Unsigned Integer

**Length** 4

**Type** 6

## Duration-Threshold

3GPP2 PrePaid Duration Quota Threshold. This is optionally present if Duration-Quota is present in a RADIUS Access-Accept message. It is generated by the PPS and indicates the duration (in seconds) that should be consumed before a new quota should be requested. This threshold should not be larger than the Duration-Quota.

**Syntax** Unsigned Integer

**Length** 4

**Type** 7

## Update-Reason

Reason for initiating online quota update operation. This should be present in the Authorize-Only RADIUS Access-Request message. It indicates the reason for initiating the on-line quota update operation. Update reasons 6, 7, 8, and 9 indicate that the associated resources are released at the client side, and that therefore the PPS should not allocate a new quota in the RADIUS Access-Accept message.

**Syntax** Enumerated Integer. Supports the following value(s):

- Pre-Initialization = 1
- Initial-Request = 2
- Threshold-Reached = 3
- Quota-Reached = 4
- Remote-Forced-Disconnect = 5
- Client-Service-Termination = 6
- Main-SI-Released = 7
- Service-Instance-Not-Established = 8
- Tariff-Switch-Update = 9
- Incorrect-Quota-Type-Received = 10
- Poorly-Formed-Quota-Attribute = 11

**Length** 2

**Type** 8

## Pre-Paid-Server

PrePaid server IP address. This optional subtype indicates the address IPv4 of the serving PPS. If present, the Home RADIUS server uses this address to route the message to the serving PPS. The attribute may be sent by the Home RADIUS server. Multiple instances of this subtype may be present in a single PPAQ. If present in the incoming RADIUS Access-Accept message, the ASNGW should send this attribute back without modifying it in the subsequent RADIUS Access-Request message.

**Syntax** IPv4 Address

**Length** 4

**Type** 9

# 3GPP2-Pre-Paid-Acct-Capability

This attribute specifies the capability for PrePaid accounting for a packet data session. It contains the possible capabilities of the PrePaid client and the selected (by the PrePaid server) capability for the session. The absence of this VSA indicates that the client is not capable of PrePaid Accounting and the session should not use PrePaid accounting.

**Type** 26

**Vendor ID** 5535

**VSA Type** 91

**Syntax** Compound. Contains the following sub-attribute(s).

## Available-In-Client

The optional Available-In-Client subtype, generated by the PPC, indicates the metering capabilities of the NAS and is be bitmap encoded.

**Syntax** Enumerated Integer. Supports the following value(s):

- Supported_None = 0
- Supported_Volume = 1
- Supported_Duration = 2
- Supported_Volume_And_Duration = 3
- Supported_Tariff_Switch = 64
- Supported_Volume_And_Duration_And_Tariff_Switch = 67

**Length** 4

**Type** 1

## Selected-For-Session

The optional Selected-For-Session Sub-Type, generated by the PrePaid server, indicates the PrePaid Accounting capability to be used for a given session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Usage_None = 0
- Usage_Volume = 1
- Usage_Duration = 2
- Usage_Volume_And_Duration = 3

**Length** 4

**Type** 2

# 3GPP2-Pre-Paid-TariffSwitch

3GPP2-Pre-Paid-TariffSwitch

**Type** 26

**Vendor ID** 5535

**VSA Type** 98

**Syntax** Compound. Contains the following sub-attribute(s).

## Quota-Identifier

It is generated by the PPS together with the allocation of new quota.

**Syntax** Unsigned Integer

**Length** 4

**Type** 1

## Volume-Used-After-Tariff-Switch

Volume quota used after tariff switch happened.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

## Volume-Used-ATS-Overflow

Indicates how many times the VUATS counter has wrapped around 2^32 over the course of the service being provided.

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

## Tariff-Switch-Interval

Tariff switch interval in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Time-Interval-After-Tariff-Switch-Update

Duration after TSI where an on-line RADIUS Access-Request is sent by PrePaid client to report VUATS before the next TS condition is triggered

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

# 3GPP2-QoS-Service-Opt-Profile

The attribute specifies the unauthorized packet data service options, the maximum number of simultaneous service instances of the given service option number and the total maximum number of simultaneous service instances.

**Syntax** Opaque Value

**Length** 8-247

**Type** 26

**Vendor ID** 5535

**VSA Type** 74

# 3GPP2-Release-Indicator-custom9

3GPP2 Release Indicator for custom9, reason/cause for session release.

**Syntax** Enumerated Integer. Supports the following value(s):

- Unknown = 0
- PPP-Timeout = 1
- Handoff = 2
- PPP-Termination = 3
- Mobile-IP-Registration-Failure = 4
- PPP-Renegotiation = 5
- MIP-Registration-Revocation = 6
- VolumeQuota-Reached = 8
- DurationQuota-Reached = 9
- Incompatible-Prepaid = 10

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 24

# 3GPP2-Release-Indicator-Old

3GPP2 old Standard Release Indicator, reason/cause for session release.

**Syntax** Enumerated Integer. Supports the following value(s):

- Unknown = 0
- PPP-Timeout = 1
- Handoff = 2
- PPP-Protocol-Failure = 3
- PPP-Abnormal-Release = 4
- PPP-Termination = 5
- Mobile-IP-Registration-Failure = 6
- Active-To-Dormant = 7

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 24

# 3GPP2-Release-Indicator-Prepaid

**Syntax** Enumerated Integer. Supports the following value(s):

- TOPUP = 0
- AOC = 1
- OHHOLD = 2
- Session_Term_or_OFFLINE = 3
- CATALOG = 4
- BLOCK = 5
- Volume-Quota-Reached = 8
- Duration-Quota-Reached = 9

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 24

# 3GPP2-Release-Indicator

This attribute specifies reasons for sending a stop record. The enumeration of this attribute conforms to IS-835-1.

**Syntax** Enumerated Integer. Supports the following value(s):

- Unknown = 0
- PPP-Timeout = 1
- Handoff = 2
- PPP-Termination = 3
- Mobile-IP-Registration-Failure = 4
- Abnormal-Terminations = 5
- Termation-Dueto-Resource-Mgmt = 6
- Service-Instance-Released = 7
- VolumeQuota-Reached = 8
- DurationQuota-Reached = 9
- Incompatible-Prepaid = 10
- Airlink-Parameter-Change = 11
- TOD-Timer-Expiry = 12
- Active-To-Dormant = 13
- Flow-Deactivated = 15
- PPP-Renegotiation = 1001
- MIP-Lifetime-Expired = 1002
- A11-Lifetime-Expired = 1003
- MIP-Remote-Dereg = 1004
- Tarrif-Boundary = 1006
- PPP-Renegotiation-Handoff = 1007
- MIP-Registration-Revocation = 1008

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 24

# 3GPP2-Remote-Addr-Table-Idx-Old

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 71

# 3GPP2-Remote-Addr-Table-Index

This attribute contains the Remote Address Table Index used to generate remote address accounting records. Supported range is 1-65535. Only one 3GPP2-Remote-Addr-Table-Index can be associated with a session.

**Type** 26

**Vendor ID** 5535

**VSA Type** 71

**Syntax** Compound. Contains the following sub-attribute(s).

## Table-Index

Table-Index

**Syntax** Unsigned Integer

**Length** 2

**Type** 1

## Qualifier

Qualifier

**Syntax** Enumerated Integer. Supports the following value(s):

- Exempt-From-Prepaid = 1
- Summarize-Octet-Count = 2
- Both = 3

**Length** 2

**Type** 2

# 3GPP2-Remote-IPv4-Address

This attribute allows the HA or PDSN to identify any IP address to be used for remote address-based accounting for the user. Up to 20 instances of the attribute are supported in the access response.

**Type** 26

**Vendor ID** 5535

**VSA Type** 59

**Syntax** Compound. Contains the following sub-attribute(s).

## Address

This attribute contains an IPv4 address to be used for remote address based accounting for the user. The address is used in conjunction with the Netmask subattribute to define the range of addresses to be monitored.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

## Netmask

This attribute contains an IPv4 address mask that defines the set of remote addresses to be used for remote address based accounting.

**Syntax** IPv4 Address

**Length** 4

**Type** 2

## Qualifier

Qualifier

**Syntax** Enumerated Integer. Supports the following value(s):

- Exempt-From-Prepaid = 1
- Summarize-Octet-Count = 2
- Both = 3

**Length** 2

**Type** 3

# 3GPP2-Remote-IPv4-Addr-Octets

This attribute allows the HA or PDSN to identify any IP address to be used for remote address based accounting for the user. Up to 10 instances of the attribute are supported.

**Type** 26

**Vendor ID** 5535

**VSA Type** 72

**Syntax** Compound. Contains the following sub-attribute(s).

## Address

This attribute contains an IPv4 address to be used for remote address based accounting for the user. The address is used in conjunction with the Netmask subattribute to define the range of addresses to be monitored.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

## Netmask

This attribute contains an IPv4 address mask that defines the set of remote addresses to be used for remote address based accounting.

**Syntax** IPv4 Address

**Length** 4

**Type** 2

## Octets-Out

Indicates how many bytes have been sent to the remote address specification (corresponds to forward traffic direction).

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Octets-In

Indicates how many bytes have been received from the remote address specification (corresponds to reverse traffic direction).

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Table-Index

Table-Index

**Syntax** Unsigned Integer

**Length** 2

**Type** 5

## Octets-Overflow-Out

Indicates how many times the forward octet overflow counter has wrapped around 2^32 over the course of the service being provided.

**Syntax** Unsigned Integer

**Length** 2

**Type** 6

## Octets-Overflow-In

Indicates how many times the reverse octets overflow counter has wrapped around 2^32 over the course of the service being provided.

**Syntax** Unsigned Integer

**Length** 2

**Type** 7

# 3GPP2-Rev-Dcch-Mux-Option

This attribute specifies Reverse DCCH Mux option.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 85

# 3GPP2-Rev-Dcch-Rc

This attribute specifies the Radio Configuration of the Reverse Packet Data Channel.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 87

# 3GPP2-Reverse-Fundamental-Rate

As defined in "Wireless IP Network Standard - 3GPP2.P.S0001-A-1".

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 15

# 3GPP2-Reverse-Fundamental-RC

The format and structure of the RADIUS channel in the reverse direction. A set of forward transmission formats that are characterized by data rates, modulation characterized, and spreading rates.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 21

# 3GPP2-Reverse-Mux-Option

Forward direction multiplexer option.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 13

# 3GPP2-Reverse-Traffic-Type

Specifies the reverse traffic type.

**Syntax** Enumerated Integer. Supports the following value(s):

- Primary = 0
- Secondary = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 18

# 3GPP2-Rev-Pdch-Rc

This attribute specifies the 3GPP2-Rev-Pdch-Rc.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 114

# 3GPP2-RP-Session-ID

This represents the GRE key selected by the PCF that identifies the A10 traffic for a user session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 41

# 3GPP2-Rsvp-Signal-In-Count

This attribute specifies the RSVP signaling octets sent by the MS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 162

# 3GPP2-Rsvp-Signal-In-Packets

This attribute specifies the Number of RSVP signaling packets sent by the MS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 164

# 3GPP2-Rsvp-Signal-Out-Count

This attribute specifies the RSVP signaling octets sent to the MS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 163

# 3GPP2-Rsvp-Signal-Out-Packets

This attribute specifies the Number of RSVP signaling packets sent to the MS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 165

# 3GPP2-SDB-Input-Octets

This attribute counts the total number of octets sent to the user via Short Data Bursts.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 31

# 3GPP2-SDB-Output-Octets

This attribute counts the total number of octets sent by the user via Short Data Bursts.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 32

# 3GPP2-Security-Level

This attribute indicates the type of security that the home network mandates on the visited network.

**Syntax** Enumerated Integer. Supports the following value(s):

- IPSec = 3
- None = 4

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 2

# 3GPP2-Service-Option-Profile

This attribute specifies the authorized packet data service options, the maximum number of simultaneous service instances of the given service option number (n), and the total maximum number of simultaneous service instances. This attribute may appear in a RADIUS Access-Accept message.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 74

# 3GPP2-Service-Option

This attribute indicates the service option used for CDMA air interface.

**Syntax** Enumerated Integer. Supports the following value(s):

- HSPD = 0x21
- HRPD = 0x3b
- LLAROHC = 0x3d
- HRPD-AUX = 0x40
- HRPD-AUX-IP = 0x43
- eHRPD = 0x252
- LTE = 0x253
- UTRAN = 0x254
- GERAN = 0x255 WIFI = 0x806c

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 16

# 3GPP2-Service-Reference-ID

Specifies the reference ID of the service instance as received in the A11 Registration Request. If the service instance is the main service instance, the main SI Indicator Sub-Type should be included.

**Type** 26

**Vendor ID** 5535

**VSA Type** 94

**Syntax** Compound. Contains the following sub-attribute(s).

## SR-ID

The SR_ID value received in the A11 Registration-Request message.

**Syntax** Unsigned Integer

**Length** 2

**Type** 1

## Main-SI-Indicator

Only included for the main service instance.

**Syntax** Enumerated Integer. Supports the following value(s):

- Main-SI = 1

**Length** 2

**Type** 2

# 3GPP2-Serving-PCF

IP address of the serving PCF.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 9

# 3GPP2-Session-Continue

This attribute when set to True means it is not the end of a session, and an Accounting Stop is immediately followed by an Account Start Record. False means end of a session.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 48

# 3GPP2-Session-Term-Capability

This attribute should be included in a RADIUS Access-request message to the Home RADIUS server and should contain the value 3 to indicate that the PDSN and HA support both Dynamic authorization with RADIUS and Registration Revocation for Mobile IPv4. The attribute should also be included in the RADIUS Access-Accept message and should contain the preferred resource management mechanism by the home network, which should be used for the session and may include values 1 to 3.

**Syntax** Enumerated Integer. Supports the following value(s):

- Only_Dynamic_Auth_Extn_to_Radius = 0x00000001
- Only_Reg_Revocation_in_MIP = 0x00000002

- Both_Dynamic_Auth_And_Reg_Revocation_in_MIP = 0x00000003

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 88

# 3GPP2-S-Key

This attribute contains the HA IKE key in encrypted format.

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 5535

**VSA Type** 54

# 3GPP2-S-Lifetime

This attribute contains the lifetime of the 'S' secret parameter used to make the IKE pre-shared secret. indicating the time in seconds since January 1, 1970 00:00 UTC. Note that this is equivalent to the UNIX operating system expression of time.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 56

# 3GPP2-S-Request

This attribute indicates whether the HA requests a shared secret 'S'.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 55

# 3GPP2-Subnet

This attribute specifies the subnet information of the HRPD RAN.

**Type** 26

**Vendor ID** 5535

**VSA Type** 108

**Syntax** Compound. Contains the following sub-attribute(s).

## Rev-A-Subnet

This attribute specifies the subnet information of the HRPD RAN.

**Syntax** Opaque Value

**Length** 1-19

**Type** 1

## Rev-A-Sector-Id

This attribute specifies the Sector ID information of the HRPD RAN.

**Syntax** Opaque Value

**Length** 1-18

**Type** 2

# 3GPP2-S-Unencrypted

This attribute contains the HA IKE key in plain format.

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 5535

**VSA Type** 54

# 3GPP2-User-Zone

This attribute describes the Tiered Services user zone. The least significant 16 bits are the user zone ID, the next significant 15 bits are the user zone system ID, and the most significant bit is zero.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 11

# 3GPP-Allocate-IPType

This attribute indicates whether the Access-Request is sent for user authentication only and/or for allocation of IPv4 and/or IPv6 address.

**Syntax** Enumerated Integer. Supports the following value(s):

- none = 0
- ipv4 = 1
- ipv6 = 2
- ipv4-or-ipv6 = 3

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 27

# 3GPP-CAMEL-Charging-Info

This attribute contains the received CAMEL charging information. CAMEL charging information is applicable to GGSN.

**Syntax** Opaque Value

**Length** 1-255

**Type** 26

**Vendor ID** 10415

**VSA Type** 24

# 3GPP-CG-Address

This attribute identifies the charging gateway address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 4

# 3GPP-Charging-Id

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 2

# 3GPP-Chrg-Char

This attribute contains the charging characteristics for this PDP Context received in the Create PDP Context Request Message (only available in R99 and later releases).

**Syntax** Opaque Value

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 13

# 3GPP-GGSN-Address

This attribute contains IPv4 address of the GGSN.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 7

# 3GPP-GGSN-IPv6-Address

For GGSN, it represents the GGSN IPv6 address that is used by the GTP control plane for thecontext establishment. For P-GW, it represents the P-GW IPv6 address that is used on S5/S8, S2a, S2b, or S2c control plane for the IP-CAN session establishment.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 10415

**VSA Type** 16

# 3GPP-GGSN-Mcc-Mnc

This attribute contains the MCC-MNC of the network the GGSN belongs to.

**Syntax** Opaque Value

**Length** 1-6

**Type** 26

**Vendor ID** 10415

**VSA Type** 9

# 3GPP-IMEISV

This attribute identifies the International Mobile Equipment Identity and Software Version (IMEISV) number received from the mobile node (MN). It is sent in RADIUS authentication and accounting messages by GGSN.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 10415

**VSA Type** 20

# 3GPP-IMSI-Mcc-Mnc

This attribute contains the MCC and MNC extracted from the user's IMSI (first 5 or 6 digits, as applicable from the presented IMSI).

**Syntax** Opaque Value

**Length** 1-6

**Type** 26

**Vendor ID** 10415

**VSA Type** 8

# 3GPP-IMSI

This attribute contains the IMSI identifying the mobile unit.

**Syntax** Opaque Value

**Length** 1-15

**Type** 26

**Vendor ID** 10415

**VSA Type** 1

# 3GPP-IPv6-DNS-Servers

This attribute contains list of IPv6 DNS server addresses.

**Syntax** Opaque Value

**Length** 16-240

**Type** 26

**Vendor ID** 10415

**VSA Type** 17

# 3GPP-MS-TimeZone

This attribute indicates the offset between universal time and local time in steps of 15 minutes of where the MS currently resides.

**Syntax** Opaque Value

**Length** 2

**Type** 26

**Vendor ID** 10415

**VSA Type** 23

# 3GPP-Negotiated-DSCP

This attribute is used to mark IP packets of PDP context on the Gi interface.

**Syntax** Unsigned Integer

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 26

# 3GPP-Negotiated-QoS-Profile

This attribute specifies the QoS profile to be used for the subscriber.

**Syntax** ThreeGPP-Negotiated-QoS-Profile

**Type** 26

**Vendor ID** 10415

**VSA Type** 5

# 3GPP-NSAPI

This attribute specifies the value of the NSAPI of the PDP context that the RADIUS message is related to. It is encoded as its hexadecimal representation, using 1 UTF-8 encoded digit.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 10

# 3GPP-Packet-Filter

This compound attribute specifies the Packet Filter used for the PDP context.

**Length** 65

**Type** 26

**Vendor ID** 10415

**VSA Type** 25

**Syntax** Compound. Contains the following sub-attribute(s).

## Identifier

Identifier of the packet filter.

**Syntax** Unsigned integer

**Length** 1

**Type** 1

## Eval-Precedence

Evaluation precedence of the packet filter.

**Syntax** Unsigned integer

**Length** 1

**Type** 2

## Length

Length of the packet filter.

**Syntax** Unsigned integer

**Length** 1

**Type** 3

## Direction

Direction of the packet filter.

**Syntax** Unsigned integer

**Length** 1

**Type** 4

## IPv4-Address-Type

This is a compound attribute specifying the IPv4 source address and netmask if the direction is downlink, or destination address and netmask if the direction is downlink, or destination address and netmask if the direction is uplink.

**Length** 8

**Type** 5

**Syntax** Contains the following two sub-attribute(s):

### Address

This attribute contains source address if direction value is set to Downlink, and destination address if direction value is set to Uplink.

**Syntax** IPv4 address

**Length** 4

**Type** 1

### Netmask

This attribute contains netmask of the IPv4 address.

**Syntax** IPv4 address

**Length** 4

**Type** 2

## IPv6-Address-Type

This is a compound attribute specifying the IPv6 source address and netmask if the direction is Downlink, or Destination Address and Netmask if the direction is Downlink, or Destination Address and Netmask if the direction is Uplink.

**Length** 32

**Type** 6

**Syntax** Contains the following two sub-attribute(s):

### Address

This attribute contains source address if direction value is set to Downlink, and destination address if direction value is set to Uplink.

**Syntax** Opaque value

**Length** 16

**Type** 1

### Netmask

This attribute contains the Netmask of the IPv6 address.

**Syntax** Opaque value

**Length** 16

**Type** 2

## Protocol-Identifier-Or-Next-Header

Specifies the IPv4 Protocol Identifier or IPv6 Next Header.

**Syntax** Unsigned integer

**Length** 1

**Type** 7

## Destination-Port

Specifies the Destination Port number of the packet filter.

**Syntax** An integer in network byte order

**Length** 2

**Type** 8

## Destination-Port-Range

This is a compound attribute and specifies the destination port range.

**Length** 4

**Type** 9

**Syntax** Contains the following two sub-attribute(s):

### Lower

Specifies the lower range of the destination port of the packet filter.

**Syntax** Unsigned integer

**Length** 2

**Type** 1

### Higher

Specifies the higher range of the destination port of the packet filter.

**Syntax** Unsigned integer

**Length** 2

**Type** 2

## Source-Port

Specifies the source port number of the packet filter.

**Syntax** Unsigned integer

**Length** 2

**Type** 10

## Source-Port-Range

Specifies the source port range.

**Length** 4

**Type** 11

**Syntax** Contains the following two sub-attribute(s):

### Lower

Specifies lower range of the source port of the packet filter.

**Syntax** Unsigned integer

**Length** 2

**Type** 1

### Higher

Specifies the higher range of the source port of the packet filter.

**Syntax** Unsigned integer

**Length** 2

**Type** 2

## Security-Parameter-Index

Specifies the IPSec Security Parameter Index(IPv6).

**Syntax** Unsigned integer

**Length** 4

**Type** 12

## Type-Of-Service

This is a compound attribute and specifies the Type of Service/ Traffic Class.

**Length** 2

**Type** 13

**Syntax** Contains the following two sub-attribute(s):

### Value

Specifies the Type of Service/Traffic Class Value.

**Syntax** Unsigned integer

**Length** 1

**Type** 1

### Mask

Specifies the Type of Service/Traffic Class Mask.

**Syntax** Unsigned integer

**Length** 1

**Type** 2

## Flow-Label

Specifies the IPv6 Flow Label.

**Syntax** Opaque value

**Length** 3

**Type** 14

# 3GPP-PDP-Type

This attribute identifies the PDP Context type.

**Syntax** Enumerated Integer. Supports the following value(s):

- ipv4 = 0
- ppp = 1
- ipv6 = 2
- ipv4-or-ipv6 = 3
- non-ip = 4

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 3

# 3GPP-RAT-Type

This attribute indicates which Radio Access Technology is currently serving the UE.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 21

# 3GPP-Selection-Mode

This attribute contains the selection mode for this PDP Context received in the Create PDP Context Request message as an UTF-8 encoded character.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 12

# 3GPP-Session-Stop-Ind

The presence of this attribute indicates to the AAA server that the last PDP context of a session is released and that the PDP session has been terminated.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 11

# 3GPP-SGSN-Address

This attribute contains IPv4 address of the SGSN.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 6

# 3GPP-SGSN-IPv6-Address

For GGSN, it represents the SGSN IPv6 address that is used by the GTP control plane for the handling of control messages. For P-GW, it represents the IPv6 address of the S-GW, trusted non-3GPP IP access or ePDG that is used on S5/S8, S2a, or S2b for the handling of control messages. The address may beused to identify the PLMN to which the user is attached.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 10415

**VSA Type** 15

# 3GPP-SGSN-Mcc-Mnc

For GPRS the MCC and the MNC of the SGSN.

**Syntax** Opaque Value

**Length** 1-6

**Type** 26

**Vendor ID** 10415

**VSA Type** 18

## 3GPP-Teardown-Indicator

If this value is set to 1 in disconnect-request, the whole correlated sessions would be disconnected.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 10415

**VSA Type** 19

## 3GPP-User-Location-Info

GTP user location information attribute for the subscriber session.

**Syntax** Opaque Value

**Length** 1-37

**Type** 26

**Vendor ID** 10415

**VSA Type** 22

## AAA-Session-ID

A unique per realm identifier assigned to WiMAX session by the Home network during network entry.

**Syntax** String

**Length** 1-246

**Type** 26

**Vendor ID** 24757

**VSA Type** 4

## Access-IN-Subs

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 224

# Acct-Authentic

This attribute is included in Accounting-Request packets to indicate how the session was authenticated (RADIUS or locally).

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- RADIUS = 1
- Local = 2
- Remote = 3
- Diameter = 4

**Length** 4

**Type** 45

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Delay-Time

This attribute indicates how many seconds the chassis has been trying to send this record for. The standard behavior is that this attribute will be visible in the Accounting Request message only if it has a non-zero value.

**Syntax** Unsigned Integer

**Length** 4

**Type** 41

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Input-Gigawords

This attribute indicates how many times the Acct-Input-Octets attribute has wrapped within its 32-bit field length. In effect, the number of octets received is a 64-bit integer, with this attribute representing the high 32 bits, and the Acct-Input-Octets attribute representing the low 32 bits. This attribute is not included unless it has a non-zero value.

**Syntax** Unsigned Integer

**Length** 4

**Type** 52

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Input-Octets

This attribute indicates how many octets have been received in the PPP session. Since the value field is 32 bits, it is possible that the number of octets will exceed the 32-bit field length. If this happens, this attribute will "wrap" back to 0. Each time the "wrap" occurs, the Acct-Input-Gigawords attribute will be incremented. In effect, the number of octets received is a 64-bit integer, with the Acct-Input-Gigawords attribute representing the high 32 bits, and this attribute representing the low 32 bits.

**Syntax** Unsigned Integer

**Length** 4

**Type** 42

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Input-Packets

This attribute indicates how many PPP packets have been received during the session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 47

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Interim-Interval

This attribute indicates the time (in seconds) between updates to session counters (log file on RADIUS or AAA event log) during the session. Note that the setting for this attribute always takes precedence over interim interval settings configured on the system.

**Syntax** Unsigned Integer

**Length** 4

**Type** 85

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Link-Count

**Syntax** Unsigned Integer

**Length** 4

**Type** 51

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Multi-Session-Id

This attribute is a unique Accounting ID to make it easy to link together multiple related sessions in a log file. Each session linked together would have a unique Acct-Session-Id but the same Acct-Multi-Session-Id. It is strongly recommended that the Acct-Multi-Session-Id contain UTF-8 encoded characters.

**Syntax** String

**Length** 1-253

**Type** 50

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Output-Gigawords

This attribute indicates how many times the Acct-Output-Octets attribute has wrapped within its 32-bit field length. In effect, the number of octets received is a 64-bit integer, with this attribute representing the high 32 bits, and the Acct-Output-Octets attribute representing the low 32 bits. This attribute is not included unless it has a non-zero value.

**Syntax** Unsigned Integer

**Length** 4

**Type** 53

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Output-Octets

This attribute indicates how many octets have been sent in the PPP session. Since the value field is 32 bits, it is possible that the number of octets will exceed the 32-bit field length. If this happens, this attribute will "wrap" back to 0. Each time the "wrap" occurs, the Acct-Output-Gigawords attribute will be incremented. In effect, the number of octets received is a 64-bit integer, with the Acct-Output-Gigawords attribute representing the high 32 bits, and this attribute representing the low 32 bits.

**Syntax** Unsigned Integer

**Length** 4

**Type** 43

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Output-Packets

This attribute indicates how many PPP packets have been sent during the session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 48

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Session-Id-Long

This attribute contains long format account session ID. This is supported only for custom2 dictionary.

**Syntax** String

**Length** 1-253

**Type** 44

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Session-Id

This attribute is a session ID. Combined with the identification of the chassis (NAS-IP-Address or NAS-Identifier), this uniquely describes a session. For a given chassis, there will never be another session (even across boots) with this same session ID. The Acct-Session-ID attribute is sent on both Gx and Gy messages.

**Syntax** String

**Length** 1-253

**Type** 44

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Session-Time

This attribute indicates the duration of the session in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 46

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Status-Type

This attribute indicates the event for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Start = 1

- Stop = 2
- Interim-Update = 3
- Accounting-On = 7
- Accounting-Off = 8
- Tunnel-Start = 9
- Tunnel-Stop = 10
- Tunnel-Reject = 11
- Tunnel-Link-Start = 12
- Tunnel-Link-Stop = 13
- Tunnel-Link-Reject = 14
- Failed = 15

**Length** 4

**Type** 40

**Vendor ID** N/A

**VSA Type** N/A

# Acct-Termination-Cause

This attribute indicates why the session was terminated.

**Syntax** Enumerated Integer. Supports the following value(s):

- User_Request = 1
- Lost_Carrier = 2
- Lost_Service = 3
- Idle_Timeout = 4
- Session_Timeout = 5
- Admin_Reset = 6
- Admin_Reboot = 7
- Port_Error = 8
- NAS_Error = 9
- NAS_Request = 10
- NAS_Reboot = 11
- Port_Unneeded = 12
- Port_Preempted = 13

- Port_Suspended = 14
- Service_Unavailable = 15
- Callback = 16
- User_Error = 17
- Host_Request = 18
- Supplicant_Restart = 19
- Reauthentication_Failure = 20
- Port_Reinitialized = 21
- Port_Administratively_Disabled = 22
- Inter-PDSN-Handoff = 99
- Long-Duration-Timeout = 1001
- Invalid-Source-Address = 1002
- Duplicate-IMSI = 1003
- Interim-Update = 1004
- Hotlining-Status-Change = 1005

**Length** 4

**Type** 49

**Vendor ID** N/A

**VSA Type** N/A

# BU-CoA-Ipv6

The IPv6 address extracted from the Careof Address field in the BU and sent in Access Request from HA for WiMAX call.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 24757

**VSA Type** 51

# Callback-Id

This attribute contains the name of the place to be called, to be interpreted by NAS.

**Syntax** Opaque Value

**Length** 1-253

**Type** 20

**Vendor ID** N/A

**VSA Type** N/A

# Called-Station-ID

For PDSN, the value of this attribute is a single zero byte for custom6/7/8 dictionaries. For other dictionaries, this attribute will not be present for PDSN calls.

**Syntax** Opaque Value

**Length** 1-128

**Type** 30

**Vendor ID** N/A

**VSA Type** N/A

# Calling-Station-Id

This attribute indicates the Mobile Station Identifier in PDSN, and MSISDN in GGSN.

**Syntax** Opaque Value

**Length** 1-253

**Type** 31

**Vendor ID** N/A

**VSA Type** N/A

# Calling-Subscriber-Type

Opaque one byte value received from customer RADIUS server in Access Request. Used in custom dictionary.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 5535

**VSA Type** 218

# CHAP-Challenge

This attribute contains the CHAP Challenge that was sent by the chassis to the other end of the PPP link, when CHAP authentication is being used.

**Syntax** Opaque Value

**Length** 1-253

**Type** 60

**Vendor ID** N/A

**VSA Type** N/A

# CHAP-Password

This attribute contains the CHAP ID and the CHAP Response when CHAP authentication is used.

**Syntax** Opaque Value

**Length** 17

**Type** 3

**Vendor ID** N/A

**VSA Type** N/A

# Charging-Id

Same as 3GPP-Charging-ID standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** Unsigned Integer

**Length** 4

**Type** 225

**Vendor ID** N/A

**VSA Type** N/A

# Class

This attribute may be sent by the RADIUS server to the chassis in an Access-Accept packet. The chassis will include this attribute in all subsequent Accounting-Request messages sent to the RADIUS Accounting server for this user's session. This attribute is included to support the RADIUS protocol and should not be human-interpreted.

**Syntax** Opaque Value

**Length** 1-253

**Type** 25

**Vendor ID** N/A

**VSA Type** N/A

# CS-AVPair

This is a Cisco Vendor Specific Attribute. This attribute may contain any string required for Web Authorization feature for SaMOG.

**Syntax** String

**Length** 1-249

**Type** 26

**Vendor ID** 9

**VSA Type** 1

## CS-Prepaid-Quota

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 9

**VSA Type** 253

## CS-Prepaid-Time-Quota

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 9

**VSA Type** 102

## CS-Prepaid-Volume-Quota

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 9

**VSA Type** 101

## CS-Service-Name

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 9

**VSA Type** 251

# CUI

Chargeable User Identity (CUI) is a unique temporary handle to the user responsible for paying bill. Set to NULL in Initial Access Request and set to value sent by AAA in subsequent messages.

**Syntax** Opaque Value

**Length** 1-253

**Type** 89

**Vendor ID** N/A

**VSA Type** N/A

# custom54-Dial-Number

**Syntax** String

**Length** 1-252

**Type** 227

**Vendor ID** N/A

**VSA Type** N/A

# custom54-IPX-Alias

**Syntax** Unsigned Integer

**Length** 4

**Type** 224

**Vendor ID** N/A

**VSA Type** N/A

# custom54-Metric

**Syntax** Unsigned Integer

**Length** 4

**Type** 225

**Vendor ID** N/A

**VSA Type** N/A

# custom54-PRI-Number-Type

**Syntax** Unsigned Integer

**Length** 4

**Type** 226

**Vendor ID** N/A

**VSA Type** N/A

## custom54-Route-IP

**Syntax** Unsigned Integer

**Length** 4

**Type** 228

**Vendor ID** N/A

**VSA Type** N/A

## custom54-Session-Svr-Key

**Syntax** String

**Length** 1-32

**Type** 151

**Vendor ID** N/A

**VSA Type** N/A

## Custom-Prepaid-Ind

**Syntax** Unsigned Integer

**Length** 1

**Type** 226

**Vendor ID** N/A

**VSA Type** N/A

## Delegated-IPv6-Prefix

For IPv6 subscriber sessions IPSG receives deligated IPv6 prefix or framed IPv6 prefix value from Accounting Start message and assigns that IPv6 prefix to the subscriber.

**Syntax** Opaque Value

**Length** 2-18

**Type** 123

**Vendor ID** N/A

**VSA Type** N/A

# DHCPMSG-Server-IP

The IPv4 address of the DHCP server.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 43

# DHCP-RK-Key-ID

An integer uniquely identifying the DHCP-RK within the scope of a single DHCP server.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 41

# DHCP-RK-Lifetime

Lifetime of the DHCP-RK and derived keys.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 42

# DHCP-RK

DHCP-RK is a 160-bit randomly generated for every DHCP server, the DHCP Key is derived from this.

**Syntax** Opaque Value

**Length** 1-250

**Type** 26

**Vendor ID** 24757

**VSA Type** 40

# Digest-AKA-Auts

This attribute holds the auts parameter that is used in the Digest AKA calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 118

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Algorithm

This parameter holds the algorithm parameter that influences the HTTP Digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 111

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Auth-Param

This attribute is a placeholder for future extensions.

**Syntax** Opaque Value

**Length** 0-253

**Type** 117

**Vendor ID** N/A

**VSA Type** N/A

# Digest-CNonce

This attribute holds the client nonce that is used in the digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 113

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Domain

This attribute consists of single URI that defines a protection space component.

**Syntax** Opaque Value

**Length** 0-256

**Type** 119

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Entity-Body-Hash

This attribute holds the hexadecimal representation of H(entity-body). This hash is required when quality of protection is set to "auth-int".

**Syntax** Opaque Value

**Length** 0-253

**Type** 112

**Vendor ID** N/A

**VSA Type** N/A

# Digest-HA1

This attribute contains the hexadecimal representation on H(A1) as described in RFC 2617.

**Syntax** Opaque Value

**Length** 0-253

**Type** 121

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Method

This attribute holds the method value to be used in the HTTP digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 108

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Nextnonce

This attribute holds a nonce to be used in the HTTP digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 107

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Nonce-Count

This attribute holds the nonce count parameter that is used to detect replay attacks.

**Syntax** Opaque Value

**Length** 0-253

**Type** 114

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Nonce

**Syntax** Opaque Value

**Length** 0-253

**Type** 105

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Opaque

This attribute holds the opaque parameter that is passed to the SIP client.

**Syntax** Opaque Value

**Length** 0-253

**Type** 116

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Qop

This attribute holds the quality of protection parameter that influences the HTTP digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 110

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Realm

This attribute describes a protection space component of the RADIUS server.

**Syntax** Opaque Value

**Length** 0-253

**Type** 104

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Response-Auth

This enables the RADIUS server to prove possession of the password.

**Syntax** Opaque Value

**Length** 0-253

**Type** 106

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Response

**Syntax** Opaque Value

**Length** 0-256

**Type** 103

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Stale

This attribute is sent by RADIUS server in order to notify the RADIUS client whether it has accepted a nonce.

**Syntax** Opaque Value

**Length** 0-253

**Type** 120

**Vendor ID** N/A

**VSA Type** N/A

# Digest-URI

This attribute is used to transport the contents of the URI of the SIP request.

**Syntax** Opaque Value

**Length** 0-253

**Type** 109

**Vendor ID** N/A

**VSA Type** N/A

# Digest-Username

This attribute holds the user name used in the HTTP Digest calculation.

**Syntax** Opaque Value

**Length** 0-253

**Type** 115

**Vendor ID** N/A

**VSA Type** N/A

# DNS

IPv4/IPv6 address of the DNS server to be conveyed to the MS via DHCP.

**Syntax** Opaque Value

**Length** 4-16

**Type** 26

**Vendor ID** 24757

**VSA Type** 52

# Draft5-Digest-Response

**Syntax** Opaque Value

**Length** 0-253

**Type** 102

**Vendor ID** N/A

**VSA Type** N/A

# DSCP_IP_Address

radius_attribute_DSCP_IP_Address

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 245

# EAP-Message

The EAP exchanged transported over RADIUS.

**Syntax** Opaque Value

**Length** 0-253

**Type** 79

**Vendor ID** N/A

**VSA Type** N/A

# Error-Cause

It is possible that the NAS cannot honor Disconnect-Request or CoA-Request messages for some reason. The Error-Cause Attribute provides more detail on the cause of the problem. It may be included within Disconnect-ACK, Disconnect-NAK, and CoA-NAK messages.

**Syntax** Enumerated Integer. Supports the following value(s):

- Residual-Session-Context-Remove = 201
- Inavlid-EAP-Packet = 202
- Unsupported-Attribute = 401
- Missing-Attribute = 402
- NAS-Identification-Mismatch = 403
- Invalid-Request = 404
- Unsupported-Service = 405
- Unsupported-Extension = 406
- Administratively-Prohibited = 501
- Request-Not-Routable = 502
- Session-Context-Not-Found = 503
- Session-Context-Not-Removable = 504
- Other-Proxy-Processing-Error = 505
- Resources-Unavailable = 506
- Request-Initiated = 507
- Session-Context-Not-Removable-Dormant = 599

**Length** 4

**Type** 101

**Vendor ID** N/A

**VSA Type** N/A

# Event-Timestamp

This attribute is a timestamp of when the event being logged occurred, indicating the time in seconds since January 1, 1970 00:00 UTC. Note that this is equivalent to the UNIX operating system expression of time.

**Syntax** Unsigned Integer

**Length** 4

**Type** 55

**Vendor ID** N/A

**VSA Type** N/A

# FA-RK-KEY

This attribute contains the encrypted FA-RK-KEY. The FA-RK determined during EAP authentication by the RADIUS server and passed on to the NAS upon successful EAP authentication. It is used by the NAS to generate MN-FA keys.

**Syntax** Opaque Value

**Length** 1-244

**Type** 26

**Vendor ID** 24757

**VSA Type** 14

# FA-RK-SPI

SPI used for the FA-RK associated with FA-RK Key for generating MN-FA key for WiMAX call

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 61

# Filter-Id

This attribute identifies the IP access-list/filter by name.

**Syntax** String

**Length** 1-253

**Type** 11

**Vendor ID** N/A

**VSA Type** N/A

# Framed-Compression

This attribute indicates the compression protocol to be used.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- VJ_TCP_IP_header_compression = 1
- IPX_header_compression = 2
- Stac_LZS_compressions = 3

**Length** 4

**Type** 13

**Vendor ID** N/A

**VSA Type** N/A

# Framed-Interface-Id

This attribute contains the value of IPv6 Interface ID.

**Syntax** Opaque Value

**Length** 8

**Type** 96

**Vendor ID** N/A

**VSA Type** N/A

# Framed-IP-Address

This attribute indicates the IP address to be configured for the user.

**Syntax** IPv4 Address

**Length** 4

**Type** 8

**Vendor ID** N/A

**VSA Type** N/A

# Framed-IP-Netmask

This attribute indicates the IP netmask to be configured for the session when the PPP connection is to a router servicing a network.

**Syntax** IPv4 Address

**Length** 4

**Type** 9

**Vendor ID** N/A

**VSA Type** N/A

# Framed-IPv6-Pool

This attribute contains the IPv6 pool name.

**Syntax** String

**Length** 1-253

**Type** 100

**Vendor ID** N/A

**VSA Type** N/A

# Framed-IPv6-Prefix

This attribute contains IPv6 prefix.

**Syntax** Opaque Value

**Length** 2-18

**Type** 97

**Vendor ID** N/A

**VSA Type** N/A

# Framed-MTU

This attribute indicates the Maximum Transmission Unit that was configured for the PPP session.

**Syntax** Integer

**Length** 4

**Type** 12

**Vendor ID** N/A

**VSA Type** N/A

# Framed-Pool

This standard attribute indicates the name of the IP pool from which an IP address should be allocated to the subscriber. Also, see SN-IP-Pool-Name, which is a vendor-specific attribute accomplishing the same.

**Syntax** String

**Length** 1-253

**Type** 88

**Vendor ID** N/A

**VSA Type** N/A

# Framed-Protocol

This attribute describes the framed protocol that the user is granted to use (Access-Accept), when Service-Type = Framed. Note that PPP is the only framed protocol supported.

**Syntax** Enumerated Integer. Supports the following value(s):

- PPP = 1
- SLIP = 2
- ARAP = 3
- Gandalf_proprietary___ = 4
- Xylogics_proprietary_IPX_SLIP = 5
- X_75_Synchronous = 6
- GPRS_PDP_Context = 7

**Length** 4

**Type** 7

**Vendor ID** N/A

**VSA Type** N/A

# Framed-Route

This attribute specifies the subnet route to be installed in GGSN for the mobile router.

**Syntax** Opaque Value

**Length** 1-64

**Type** 22

**Vendor ID** N/A

**VSA Type** N/A

# Geographical-Location

This attribute contains the information of geographical location as reported by HNB.

**Syntax** Opaque Value

**Length** 10

**Type** 26

**Vendor ID** 9

**VSA Type** 114

# GGSN-GTP-IP-Address

Same as 3GPP-GGSN-Address standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** IPv4 Address

**Length** 4

**Type** 230

**Vendor ID** N/A

**VSA Type** N/A

# GGSN-IP-Address

**Syntax** IPv4 Address

**Length** 4

**Type** 227

**Vendor ID** N/A

**VSA Type** N/A

# GMT-Time-Zone-Offset

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 3

# HA-IP-MIP4

IPv4 address of the HA.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 6

# HA-IP-MIP6

IPv6 address of the HA for CMIP4.

**Syntax** Opaque Value

**Length** 4-16

**Type** 26

**Vendor ID** 24757

**VSA Type** 7

# HA-RK-KEY

The HA-RK-KEY determined during EAP authentication by the RADIUS server and passed to the NAS upon successful EAP authentication. It is used by the NAS to generate FA-HA keys.

**Syntax** Opaque Value

**Length** 1-244

**Type** 26

**Vendor ID** 24757

**VSA Type** 15

# HA-RK-Lifetime

Lifetime of the HA-RK and derived keys.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 17

# HA-RK-SPI

The SPI associated with the HA-RK for generating MN-HA key for WiMAX call.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 16

# hLMA-IPv6-PMIP6

MIPv6 Home Agent address received in binding update.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 24757

**VSA Type** 127

# HNB-Internet-Information

This attribute contains public IP address (either IPv4 or IPv6 address) of HNB assigned through the broadband connection.

**Syntax** Opaque Value

**Length** 4-16

**Type** 26

**Vendor ID** 9

**VSA Type** 115

# HNB-Parameters

This attribute contains PLMN ID, LAC, RAC, SAC, and Cell ID of the HNB as reported to HNB-GW in RADIUS Access-Request during authentication.

**Syntax** Opaque Value

**Length** 12

**Type** 26

**Vendor ID** 9

**VSA Type** 112

# Hotline-Indicator

This attribute in a RADIUS Accounting-Request message indicates to back-office systems (billing audit systems) that the session has been hot lined.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 24757

**VSA Type** 24

# Hotline-Profile-ID

A unique identifier of a hotline profile to be applied to the session.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 24757

**VSA Type** 53

# Hotline-Session-Timer

The time period, in seconds, the session can remain hotlined.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 56

# HTTP-Redirection-Rule

An HTTP redirection rule.

**Syntax** Opaque Value

**Length** 1-246

**Type** 26

**Vendor ID** 24757

**VSA Type** 54

# Idle-Timeout

This attribute sets the maximum idle session time, in seconds. A session is idle when there is no IP traffic on the link. After the connection has been idle for the indicated amount of time, the chassis will tear down the session.

**Syntax** Integer

**Length** 4

**Type** 28

**Vendor ID** N/A

**VSA Type** N/A

# IMSI-MCC-MNC

Same as 3GPP-IMSI-Mcc-Mnc standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** Opaque Value

**Length** 1-6

**Type** 226

**Vendor ID** N/A

**VSA Type** N/A

# IMSI

Same as 3GPP-IMSI standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** Opaque Value

**Length** 1-15

**Type** 224

**Vendor ID** N/A

**VSA Type** N/A

# IN-Packet-Period

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 246

# IN-Time-Period

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 247

# IP-Redirection-Rule

This attribute is used to specify which packet flow to redirect and where to redirect it.

**Syntax** Opaque Value

**Length** 1-246

**Type** 26

**Vendor ID** 24757

**VSA Type** 55

# KTF_VSA1

radius_attribute_KTF_VSA1

**Syntax** Opaque Value

**Length** 0-24

**Type** 26

**Vendor ID** 5535

**VSA Type** 249

# KTF_VSA2

radius_attribute_KTF_VSA2

**Syntax** Opaque Value

**Length** 0-24

**Type** 26

**Vendor ID** 5535

**VSA Type** 255

# Macro-Coverage-Information

This attribute contains the marco coverage information as reported by HNB which could be a GERAN or UTRAN cell information.

**Syntax** Opaque Value

**Length** 8-11

**Type** 26

**Vendor ID** 9

**VSA Type** 113

# MN-HA-MIP4-KEY

MN-HA key for SPI value in the Access request if present.

**Syntax** Opaque Value

**Length** 1-244

**Type** 26

**Vendor ID** 24757

**VSA Type** 10

# MN-HA-MIP4-SPI

SPI associated with the MN-HA-MIP4 key. This attribute needs to be sent in the Access Request to fetch the corresponding MN-HA keys.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 11

# MN-HA-MIP6-KEY

Used to calculate AUTH for MIP6 BU during PMIP6 on ASN and to validate and compute AUTH for MIP6 Binding Answer on HA.

**Syntax** Opaque Value

**Length** 1-244

**Type** 26

**Vendor ID** 24757

**VSA Type** 12

# MN-HA-MIP6-SPI

SPI associated with the MN-HA-MIP6-KEY.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 13

# MSISDN

MSIDSN of the call. Used in custom dictionary.

**Syntax** String

**Length** 1-256

**Type** 26

**Vendor ID** 5535

**VSA Type** 222

# MSK

The Master Session Key determined during EAP authentication by the RADIUS server and passed to the NAS upon successful EAP authentication.

**Syntax** Opaque Value

**Length** 1-246

**Type** 26

**Vendor ID** 24757

**VSA Type** 5

# NAS-Filter-Rule

Indicates filter rules to be applied for the user.

**Syntax** Opaque Value

**Length** 1-246

**Type** 92

**Vendor ID** N/A

**VSA Type** N/A

# NAS-Identifier

This attribute identifies the NAS generating the record.

**Syntax** String

**Length** 1-253

**Type** 32

**Vendor ID** N/A

**VSA Type** N/A

# NAS-IP-Address

This attribute identifies the serving NAS.

**Syntax** IPv4 Address

**Length** 4

**Type** 4

**Vendor ID** N/A

**VSA Type** N/A

# NAS-Port

This attribute describes the resource number assigned to the user session. It is guaranteed to be unique at a particular instance in time for a particular chassis.

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

**Vendor ID** N/A

**VSA Type** N/A

# NAS-Port-Type

This attribute indicates the physical layer that the session is using.

**Syntax** Enumerated Integer. Supports the following value(s):

- Async = 0
- Sync = 1
- ISDN_Sync = 2
- ISDN_Async_V_120 = 3
- ISDN_Async_V_110 = 4
- Virtual = 5
- PIAFS = 6
- HDLC_Clear_Channel = 7
- X_25 = 8
- X_75 = 9
- G_3_Fax = 10
- SDSL_Symmetric_DSL = 11
- ADSL_CAP = 12
- ADSL_DMT = 13
- IDSL = 14
- Ethernet = 15
- xDSL = 16
- Cable = 17
- Wireless_Other = 18
- Wireless_IEEE_802_11 = 19

- Token_Ring = 20
- FDDI = 21
- Wireless_CDMA2000 = 22
- Wireless_UMTS = 23
- HRPD = 24
- IAPP = 25
- FTTP = 26
- Wireless_IEEE_802_16 = 27
- Wireless_IEEE_802_20 = 28
- Wireless_IEEE_802_22 = 29
- Wireless_XGP = 36
- Wireless_DHCP = 41

**Length** 4

**Type** 61

**Vendor ID** N/A

**VSA Type** N/A

# Paging-Grid-Id

**Syntax** Opaque Value

**Length** 12

**Type** 26

**Vendor ID** 9

**VSA Type** 119

# PMIP6-RK-KEY

The PMIP6-RK-KEY sent by the RADIUS Server to the ASN and hCSN LMA for PMIP6. It is used to calculate the individual LMA-MAG key being the base for PBU and PBA messages protection through mobility authentication options.

**Syntax** Opaque Value

**Length** 1-251

**Type** 26

**Vendor ID** 24757

**VSA Type** 131

# PMIP6-RK-SPI

The SPI associated with the PMIP6-RK-KEY.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 132

# PMIP6-Service-Info

Indicates which PMIPv6 features are supported and enabled on ASN/LMA.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 24757

**VSA Type** 126

# PMIP-Authenticated-Nwk-Id

The real user identifier returned by hAAA after successful authentication.

**Syntax** Opaque Value

**Length** 1-246

**Type** 26

**Vendor ID** 24757

**VSA Type** 78

# Prepaid-Ind

**Syntax** Opaque Value

**Length** 4

**Type** 226

**Vendor ID** N/A

**VSA Type** N/A

# Presence

This attribute is used to indicate the availablility of Location based service on HNB.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 9

**VSA Type** 118

# Price-Plan

Opaque 1 byte value received from customer RADIUS server in Access Request. Used in custom dictionary.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 196

# Primary-DNS-Server

Same as SN1-Primary-DNS-Server standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** IPv4 Address

**Length** 4

**Type** 135

**Vendor ID** N/A

**VSA Type** N/A

# Prohibit-Payload-Compression1

Flag to prohibit SGSN from compressing user data on per APN basis.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Allowed = 0
- Prohibited = 1

**Length** 2

**Vendor ID** 8164

**VSA Type** 237

# Prohibit-Payload-Compression

Flag to prohibit SGSN from compressing user data on per APN basis.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Allowed = 0
- Prohibited = 1

**Length** 2

**Vendor ID** 8164

**VSA Type** 237

# Reject-Cause

This attribute indicates the cause for sending Access-Reject.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 9

**VSA Type** 116

# Reply-Message

This attribute indicates the text to be displayed to a user upon completion of authentication, whether successful or not.

**Syntax** String

**Length** 1-253

**Type** 18

**Vendor ID** N/A

**VSA Type** N/A

# RRQ-HA-IP

**Syntax** Opaque Value

**Length** 4-16

**Type** 26

**Vendor ID** 24757

**VSA Type** 18

# RRQ-MN-HA-KEY

MN-HA key computed using RRQ-HA-IP if sent in Access request.

**Syntax** Opaque Value

**Length** 1-244

**Type** 26

**Vendor ID** 24757

**VSA Type** 19

# Secondary-DNS-Server

Same as SN1-Secondary-DNS-Server standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** IPv4 Address

**Length** 4

**Type** 136

**Vendor ID** N/A

**VSA Type** N/A

# Selection-Mode

Same as 3GPP-Selection-Mode standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** Opaque Value

**Length** 1

**Type** 229

**Vendor ID** N/A

**VSA Type** N/A

# Service-Selection

This attribute specifies the service network of UE (APN name).

**Syntax** Opaque Value

**Length** 1-253

**Type** 146

**Vendor ID** N/A

**VSA Type** N/A

# Service-Type

This attribute identifies the service that the user is attempting to use (Access-Request), or is granted to use (Access-Accept).

**Syntax** Enumerated Integer. Supports the following value(s):

- Login = 1

- Framed = 2
- Callback_Login = 3
- Callback_Framed = 4
- Outbound = 5
- Administrative = 6
- NAS_Prompt = 7
- Authenticate_Only = 8
- Callback_NAS_Prompt = 9
- Call_Check = 10
- Callback_Administrative = 11
- Voice = 12
- Fax = 13
- Modem_Relay = 14
- IAPP_Register = 15
- IAPP_AP_Check = 16
- Authorize_Only = 17
- Inspector = 19650516
- Security_Admin = 19660618

**Length** 4

**Type** 6

**Vendor ID** N/A

**VSA Type** N/A

# Session-Timeout

This attribute sets the maximum session time in seconds. After this session time expires the chassis will tear down the session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 27

**Vendor ID** N/A

**VSA Type** N/A

# SGSN-IP-Address

Same as 3GPP-SGSN-Address standard attribute; non-standard behavior for use in custom dictionary.

**Syntax** IPv4 Address

**Length** 4

**Type** 228

**Vendor ID** N/A

**VSA Type** N/A

# SIP-AOR

This attribute identifies the URI, the use of which must be authenticated and authorized.

**Syntax** Opaque Value

**Length** 0-253

**Type** 122

**Vendor ID** N/A

**VSA Type** N/A

# SN1-Access-link-IP-Frag

This attribute specifies what to do when data received for the subscriber on the Access link that needs to be fragmented and the DF bit is either set or unset. The default is Normal.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- DF-Ignore = 1
- DF-Fragment-ICMP-Notify = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 63

# SN1-Acct-Input-Giga-Dropped

This attribute contains the number of input gigawords dropped if the number of input bytes is greater than 2^32 - 1.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 230

# SN1-Acct-Input-Octets-Dropped

This attribute contains the number of input bytes dropped.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 228

# SN1-Acct-Input-Packets-Dropped

This attribute contains the number of input packets dropped.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 226

# SN1-Acct-Output-Giga-Dropped

This attribute contains the number of output gigawords dropped if the number of output bytes is greater than 2^32 - 1.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 231

# SN1-Acct-Output-Octets-Dropped

This attribute contains the number of output bytes dropped.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 229

# SN1-Acct-Output-Packets-Dropped

This attribute contains the number of output packets dropped.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 227

# SN1-Admin-Expiry

This attribute contains the date/time the administrative user account expires. It is an integer value specifying the number of seconds since the UNIX epoch at which time the account will expire.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 72

# SN1-Admin-Permission

This attribute indicates the services allowed to be delivered to the administrative user. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- CLI = 1
- FTP = 2
- CLI-FTP = 3
- Intercept = 4
- CLI-Intercept = 5
- CLI-Intercept-FTP = 7
- ECS = 8
- CLI-ECS = 9
- CLI-FTP-ECS = 11
- CLI-Intercept-ECS = 13

- CLI-Intercept-FTP-ECS = 15 NoCons = 16
- CLI-NoCons = 17
- FTP-NoCons = 18
- CLI-FTP-NoCons = 19
- Intercept-NoCons = 20
- CLI-Intercept-NoCons = 21
- CLI-Intercept-FTP-NoCons = 23
- ECS-NoCons = 24
- CLI-ECS-NoCons = 25
- CLI-FTP-ECS-NoCons = 27
- CLI-Intercept-ECS-NoCons = 29
- CLI-Intercept-FTP-ECS-NoCons = 31

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 21

# SN1-Assigned-VLAN-ID

The VLAN ID assigned to the subscriber.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 152

# SN1-Call-Id

Internal system generated call ID number for the session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 251

# SN1-Cause-For-Rec-Closing

This attribute contains a reason for the release of the CDR.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 139

# SN1-CFPolicy-ID

This attribute contains the Content Filtering policy ID.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 220

# SN1-Change-Condition

This attribute defines the reason for closing the container.

**Syntax** Enumerated Integer. Supports the following value(s):

- QOSCHANGE = 0
- TARIFFTIMECHANGE = 1
- SGSNCHANGE = 500

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 140

# SN1-Charging-VPN-Name

Charging VPN Name.

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 8164

**VSA Type** 137

# SN1-Chrg-Char-Selection-Mode

This attribute contains the charging characteristics type that the GSNs applied to the CDR.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 138

# SN1-Data-Tunnel-Ignore-DF-Bit

This attribute specifies if the PDSN/FA or HA should ignore the DF bit in the IPv4 header when encapsulating the IPv4 packet in MIP, and therefore fragmenting the resulting tunneled packet if necessary. The default is not to ignore the DF bit.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 49

# SN1-DHCP-Lease-Expiry-Policy

This attribute specifies whether to renew or disconnect on expiry of IP address lease time.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- auto-renew = 0
- disconnect = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 157

# SN1-Disconnect-Reason

This attribute contains the reason the user was disconnected from service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Defined = 0
- Admin-Disconnect = 1
- Remote-Disconnect = 2
- Local-Disconnect = 3
- Disc-No-Resource = 4
- Disc-Excd-Service-Limit = 5
- PPP-LCP-Neg-Failed = 6
- PPP-LCP-No-Response = 7
- PPP-LCP-Loopback = 8
- PPP-LCP-Max-Retry = 9
- PPP-Echo-Failed = 10
- PPP-Auth-Failed = 11
- PPP-Auth-Failed-No-AAA-Resp = 12
- PPP-Auth-No-Response = 13
- PPP-Auth-Max-Retry = 14
- Invalid-AAA-Attr = 15
- Failed-User-Filter = 16
- Failed-Provide-Service = 17
- Invalid-IP-Address-AAA = 18
- Invalid-IP-Pool-AAA = 19
- PPP-IPCP-Neg-Failed = 20
- PPP-IPCP-No-Response = 21
- PPP-IPCP-Max-Retry = 22
- PPP-No-Rem-IP-Address = 23
- Inactivity-Timeout = 24
- Session-Timeout = 25
- Max-Data-Excd = 26
- Invalid-IP-Source-Address = 27
- MSID-Auth-Failed = 28
- MSID-Auth-Failed-No-AAA-Resp = 29
- A11-Max-Retry = 30

- A11-Lifetime-Expired = 31
- A11-Message-Integrity-Failure = 32
- PPP-lcp-remote-disc = 33
- Session-setup-timeout = 34
- PPP-keepalive-failure = 35
- Flow-add-failed = 36
- Call-type-detection-failed = 37
- Wrong-ipcp-params = 38
- MIP-remote-dereg = 39
- MIP-lifetime-expiry = 40
- MIP-proto-error = 41
- MIP-auth-failure = 42
- MIP-reg-timeout = 43
- Invalid-dest-context = 44
- Source-context-removed = 45
- Destination-context-removed = 46
- Req-service-addr-unavailable = 47
- Demux-mgr-failed = 48
- Internal-error = 49
- AAA-context-removed = 50
- invalid-service-type = 51
- mip-relay-req-failed = 52
- mip-rcvd-relay-failure = 53
- ppp-restart-inter-pdsn-handoff = 54
- gre-key-mismatch = 55
- invalid_tunnel_context = 56
- no_peer_lns_address = 57
- failed_tunnel_connect = 58
- l2tp-tunnel-disconnect-remote = 59
- l2tp-tunnel-timeout = 60
- l2tp-protocol-error-remote = 61
- l2tp-protocol-error-local = 62

- l2tp-auth-failed-remote = 63
- l2tp-auth-failed-local = 64
- l2tp-try-another-lns-from-remote = 65
- l2tp-no-resource-local = 66
- l2tp-no-resource-remote = 67
- l2tp-tunnel-disconnect-local = 68
- l2tp-admin-disconnect_remote = 69
- l2tpmgr-reached-max-capacity = 70
- MIP-reg-revocation = 71
- path-failure = 72
- dhcp-relay-ip-validation-failed = 73
- gtp-unknown-pdp-addr-or-pdp-type = 74
- gtp-all-dynamic-pdp-addr-occupied = 75
- gtp-no-memory-is-available = 76
- dhcp-relay-static-ip-addr-not-allowed = 77
- dhcp-no-ip-addr-allocated = 78
- dhcp-ip-addr-allocation-tmr-exp = 79
- dhcp-ip-validation-failed = 80
- dhcp-static-addr-not-allowed = 81
- dhcp-ip-addr-not-available-at-present = 82
- dhcp-lease-expired = 83
- lpool-ip-validation-failed = 84
- lpool-static-ip-addr-not-allowed = 85
- static-ip-validation-failed = 86
- static-ip-addr-not-present = 87
- static-ip-addr-not-allowed = 88
- radius-ip-validation-failed = 89
- radius-ip-addr-not-provided = 90
- invalid-ip-addr-from-sgsn = 91
- no-more-sessions-in-aaa = 92
- ggsn-aaa-auth-req-failed = 93
- conflict-in-ip-addr-assignment = 94

- apn-removed = 95
- credits-used-bytes-in = 96
- credits-used-bytes-out = 97
- credits-used-bytes-total = 98
- prepaid-failed = 99
- l2tp-ipsec-tunnel-failure = 100
- l2tp-ipsec-tunnel-disconnected = 101
- mip-ipsec-sa-inactive = 102
- Long-Duration-Timeout = 103
- proxy-mip-registration-failure = 104
- proxy-mip-binding-update = 105
- proxy-mip-inter-pdsn-handoff-require-ip-address = 106
- proxy-mip-inter-pdsn-handoff-mismatched-address = 107
- Local-purge = 108
- failed-update-handoff = 109
- closed_rp-handoff-complete = 110
- closed_rp-duplicate-session = 111
- closed_rp-handoff-session-not-found = 112
- closed_rp-handoff-failed = 113
- pcf-monitor-keep-alive-failed = 114
- call-internal-reject = 115
- call-restarted = 116
- a11-mn-ha-auth-failure = 117
- a11-badly-formed = 118
- a11-t-bit-not-set = 119
- a11-unsupported-vendor-id = 120
- a11-mismatched-id = 121
- mipha-dup-home-addr-req = 122
- mipha-dup-imsi-session = 123
- ha-unreachable = 124
- IPSP-addr-in-use = 125
- mipfa-dup-home-addr-req = 126

- mipha-ip-pool-busyout = 127
- inter-pdsn-handoff = 128
- active-to-dormant = 129
- ppp-renegotiation = 130
- active-start-param-change = 131
- tarrif-boundary = 132
- a11-disconnect-no-active-stop = 133
- nw-reachability-failed-reject = 134
- nw-reachability-failed-redirect = 135
- container-max-exceeded = 136
- static-addr-not-allowed-in-apn = 137
- static-addr-required-by-radius = 138
- static-addr-not-allowed-by-radius = 139
- mip-registration-dropped = 140
- counter-rollover = 141
- constructed-nai-auth-fail = 142
- inter-pdsn-service-optimize-handoff-disabled = 143
- gre-key-collision = 144
- inter-pdsn-service-optimize-handoff-triggered = 145
- intra-pdsn-handoff-triggered = 146
- delayed-abort-timer-expired = 147
- Admin-AAA-disconnect = 148
- Admin-AAA-disconnect-handoff = 149
- PPP-IPV6CP-Neg-Failed = 150
- PPP-IPV6CP-No-Response = 151
- PPP-IPV6CP-Max-Retry = 152
- PPP-Restart-Invalid-source-IPV4-address = 153
- a11-disconnect-handoff-no-active-stop = 154
- call-restarted-inter-pdsn-handoff = 155
- call-restarted-ppp-termination = 156
- mipfa-resource-conflict = 157
- failed-auth-with-charging-svc = 158

- mipha-dup-imsi-session-purge = 159
- mipha-rev-pending-newcall = 160
- volume-quota-reached = 161
- duration-quota-reached = 162
- gtp-user-authentication-failed = 163
- MIP-reg-revocation-no-lcp-term = 164
- MIP-private-ip-no-rev-tunnel = 165
- Invalid-Prepaid-AAA-attr-in-auth-response = 166
- mipha-prepaid-reset-dynamic-newcall = 167
- gre-flow-control-timeout = 168
- mip-paaa-bc-query-not-found = 169
- mipha-dynamic-ip-addr-not-available = 170
- a11-mismatched-id-on-handoff = 171
- a11-badly-formed-on-handoff = 172
- a11-unsupported-vendor-id-on-handoff = 173
- a11-t-bit-not-set-on-handoff = 174
- MIP-reg-revocation-i-bit-on = 175
- A11-RRQ-Deny-Max-Count = 176
- Dormant-Transition-During-Session-Setup = 177
- PPP-Rem-Reneg-Disc-Always-Cfg = 178
- PPP-Rem-Reneg-Disc-NAI-MSID-Mismatch = 179
- mipha-subscriber-ipsec-tunnel-down = 180
- mipha-subscriber-ipsec-tunnel-failed = 181
- mipha-subscriber-ipsecmgr-death = 182
- flow-is-deactivated = 183
- ecsv2-license-exceeded = 184
- IPSG-Auth-Failed = 185
- driver-initiated = 186
- ims-authorization-failed = 187
- service-instance-released = 188
- flow-released = 189
- ppp-renego-no-ha-addr = 190

- intra-pdsn-handoff = 191
- overload-disconnect = 192
- css-service-not-found = 193
- Auth-Failed = 194
- dhcp-client-sent-release = 195
- dhcp-client-sent-nak = 196
- msid-dhcp-chaddr-mismatch = 197
- link-broken = 198
- prog-end-timeout = 199
- qos-update-wait-timeout = 200
- css-synch-cause = 201
- Gtp-context-replacement = 202
- PDIF-Auth-failed = 203
- l2tp-unknown-apn = 204
- ms-unexpected-network-reentry = 205
- r6-invalid-nai = 206
- eap-max-retry-reached = 207
- vbm-hoa-session-disconnected = 208
- vbm-voa-session-disconnected = 209
- in-acl-disconnect-on-violation = 210
- eap-msk-lifetime-expiry = 211
- eap-msk-lifetime-too-low = 212
- mipfa-inter-tech-handoff = 213
- r6-max-retry-reached = 214
- r6-nwexit-recd = 215
- r6-dereg-req-recd = 216
- r6-remote-failure = 217
- r6r4-protocol-errors = 218
- wimax-qos-invalid-aaa-attr = 219
- npu-gre-flows-not-available = 220
- r4-max-retry-reached = 221
- r4-nwexit-recd = 222

- r4-dereg-req-recd = 223
- r4-remote-failure = 224
- ims-authorization-revoked = 225
- ims-authorization-released = 226
- ims-auth-decision-invalid = 227
- mac-addr-validation-failed = 228
- excessive-wimax-pd-flows-cfgd = 229
- sgsn-canc-loc-sub = 230
- sgsn-canc-loc-upd = 231
- sgsn-mnr-exp = 232
- sgsn-ident-fail = 233
- sgsn-sec-fail = 234
- sgsn-auth-fail = 235
- sgsn-glu-fail = 236
- sgsn-imp-det = 237
- sgsn-smgr-purge = 238
- sgsn-subs-handed-to-peer = 239
- sgsn-dns-fail-inter-rau = 240
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- sgsn-hlr-not-found-for-imsi = 242
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- sgsn-opr-policy-fail = 244
- sgsn-duplicate-context = 245
- hss-profile-update-failed = 246
- sgsn-no-pdp-activated = 247
- asnpc-idle-mode-timeout = 248
- asnpc-idle-mode-exit = 249
- asnpc-idle-mode-auth-failed = 250
- asngw-invalid-qos-configuration = 251
- sgsn-dsd-allgprswithdrawn = 252
- r6-pmk-key-change-failure = 253
- sgsn-illegal-me = 254

- sess-termination-timeout = 255
- sgsn-sai-fail = 256
- sgsn-rnc-removal = 257
- sgsn-rai-removal = 258
- sgsn-init-deact = 259
- ggsn-init-deact = 260
- hlr-init-deact = 261
- ms-init-deact = 262
- sgsn-detach-init-deact = 263
- sgsn-rab-rel-init-deact = 264
- sgsn-iu-rel-init-deact = 265
- sgsn-gtpu-path-failure = 266
- sgsn-gtpc-path-failure = 267
- sgsn-local-handoff-init-deact = 268
- sgsn-remote-handoff-init-deact = 269
- sgsn-gtp-no-resource = 270
- sgsn-rnc-no-resource = 271
- sgsn-odb-init-deact = 272
- sgsn-invalid-ti = 273
- sgsn-actv-rejected-due-to-rnc = 274
- sgsn-apn-restrict-vio = 275
- sgsn-actv-rejected-by-sgsn = 276
- sgsn-abnormal-deact = 277
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- sgsn-err-ind = 279
- asngw-non-anchor-prohibited = 280
- asngw-im-entry-prohibited = 281
- session-idle-mode-entry-timeout = 282
- session-idle-mode-exit-timeout = 283
- asnpc-ms-power-down-nwexit = 284
- asnpc-r4-nwexit-recd = 285
- sgsn-iu-rel-before-call-est = 286

- ikev2-subscriber-ipsecmgr-death = 287
- All-dynamic-pool-addr-occupied = 288
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**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 3

# SN1-DNS-Proxy-Intercept-List

DNS proxy list.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 214

# SN1-DNS-Proxy-Use-Subscr-Addr

This attribute is used to convey whether to use the subscriber's address as the source address for DNS Proxy.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 25

# SN1-Dynamic-Addr-Alloc-Ind-Flag

This attribute indicates that the PDP address has been dramatically allocated for that particular PDP context. This field is missing if the address is static (e.g., part of the PDP context subscription). Dynamic address allocation might be relevant for charging (e.g., the duration of PDP context as one resource offered and possibly owned by the network operator).

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 141

# SN1-Ecs-Data-Volume

Compound attribute indicating downlink and uplink octet usage for a PDP context per rating group.

**Type** 26

**Vendor ID** 8164

**VSA Type** 176

**Syntax** Compound. Contains the following sub-attribute(s).

## Rating-Group-ID

Rating-Group-ID for which the WiMAX PPAQ is allocated or reported.

**Syntax** Unsigned Integer

**Length** 4

**Type** 11

## GPRS-Uplink

Uplink octet usage for a PDP context per rating group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

## GPRS-Downlink

Downlink octet usage for a PDP context per rating group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

# SN1-Enable-QoS-Renegotiation

This attribute configures the enabling of dynamic QoS renegotiation.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0

- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 144

# SN1-Ext-Inline-Srvr-Context

This attribute configures the context name in which the External In-line server resides. The value is an ASCII string naming the In-line Server Context.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 41

# SN1-Ext-Inline-Srvr-Down-Addr

This attribute configures the IP address of the Downstream External In-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 56

# SN1-Ext-Inline-Srvr-Down-VLAN

This attribute configures the IP address of the downstream external in-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 59

# SN1-Ext-Inline-Srvr-Preference

This attribute configures the preference for the tagged group of External In-line Servers. This attribute is required, although it doesn't actually assign a preference right now. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 57

# SN1-Ext-Inline-Srvr-Up-Addr

This attribute configures the IP address of the Upstream External In-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 55

# SN1-Ext-Inline-Srvr-Up-VLAN

This attribute configures the VLAN tag to be applied to Upstream packets and forwarded to the External In-line server. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 58

# SN1-Firewall-Enabled

Firewall for subscriber enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 198

# SN1-FMC-Location

MAC address and CDMA location information.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 171

# SN1-GGSN-MIP-Required

This attribute specifies if MIP is required for the GGSN subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 68

# SN1-Gratuitous-ARP-Aggressive

This attribute specifies whether to generate a gratuitous ARP message whenever a MIP handoff or re-registration occurs. A non-zero of this attribute also configures the mode of operation when sending the gratuitous ARP, although only one mode (Aggressive) is supported at this time.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 54

# SN1-GTP-Version

This attribute contains the version of GTP the subscriber is using.

**Syntax** Enumerated Integer. Supports the following value(s):

- GTP_VERSION_0 = 0
- GTP_VERSION_1 = 1
- GTP_VERSION_2 = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 62

# SN1-HA-Send-DNS-Address

This attribute specifies if the HA should send the DNS address in the Mobile IP RRP message. The default is not to send the DSN Address.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 47

# SN1-Home-Behavior

This attribute specifies the configuration for the behavior bits settings for a home subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 119

# SN1-Home-Profile

This attribute specifies the configuration for the profile bits settings for a home subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 109

# SN1-Home-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for home subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 106

# SN1-Ignore-Unknown-HA-Addr-Err

Value of 1 enables HA to ignore unknown HA address error for incoming RRQ.

**Type** 26

**Syntax** Unsigned Integer

**Length** 1

**Vendor ID** 8164

**VSA Type** 160

# SN1-IMS-AM-Address

IMS application manager address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 167

# SN1-IMS-AM-Domain-Name

IMS application manager domain name.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 168

# SN1-IMSI

This is the IMSI that identifies the mobile subscriber.

**Syntax** Opaque Value

**Length** 1-8

**Type** 26

**Vendor ID** 8164

**VSA Type** 252

# SN1-Inactivity-Time

This attribute contains the inactivity time duration for a subscriber session under long time duration timer configuration.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 232

# SN1-Interim-Event

**Syntax** Enumerated Integer. Supports the following value(s):

- QoS-Change = 1
- RAT-Change = 2

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 241

# SN1-Internal-SM-Index

GGSN charging service. For internal use.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 122

# SN1-IP-Alloc-Method

This attribute specifies the method for allocating an IP address. This feature only applies to the GGSN Service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Alloc_Local_Pool = 0
- Alloc_Dhcp_Client = 1
- Alloc_Radius = 2
- Alloc_No_Alloc = 3
- Alloc_Static_Alloc = 4
- Alloc_Dhcp_Relay = 5

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 53

# SN1-IP-Filter-In

This attribute is deprecated. To select an IP access list that is already defined in the destination context, use the IETF standard Filter-Id attribute. The filter ID is used to identify the IP access list by name.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 10

# SN1-IP-Filter-Out

This attribute is deprecated. To select an IP access list that is already defined in the destination context, use the IETF standard Filter-Id attribute. The filter ID is used to identify the IP access list by name.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 11

# SN1-IP-Header-Compression

Specifies the IP header compression method to use.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- VJ = 1
- ROHC = 2
- VJ_ROHC = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 150

# SN1-IP-Hide-Service-Address

This attribute prevents the IP address bound to a call service from responding to ping and IMCP error packets.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 60

# SN1-IP-In-ACL

This attribute contains a definition for one Input IP Access Control List, which is used to filter the IP packets coming from the user. Note that more than one of these attributes can be included, in which case they are processed in the order in which they appear in the RADIUS Access-Accept.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 17

# SN1-IP-In-Plcy-Grp

This attribute specifies the name of the policy group config applied in the uplink direction.

**Syntax** String

**Length** 1-15

**Type** 26

**Vendor ID** 8164

**VSA Type** 193

# SN1-IP-Out-ACL

This attribute contains a definition for one Output IP Access Control List, which is used to filter the IP packets sent to the user. Note that more than one of these attributes can be included, in which case they are processed in the order in which they appear in the RADIUS Access-Accept.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 18

# SN1-IP-Out-Plcy-Grp

This attribute specifies the name of the policy group config applied in the downlink direction.

**Syntax** String

**Length** 1-15

**Type** 26

**Vendor ID** 8164

**VSA Type** 194

# SN1-IP-Pool-Name

This attribute contains the name of the IP pool, configured on the chassis, from which an IP address should be chosen for the user.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 8

# SN1-IP-Source-Validation

This attribute indicates if the source IP address should be validated before forwarding the IP packet.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 14

# SN1-IP-Source-Violate-No-Acct

This attribute excludes the Source Violated IP packets and byte counts when reporting the Octet and Packet count in an accounting message.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 196

# SN1-IP-Src-Valid-Drop-Limit

Maximum number of packet drops entertained before disconnecting the session for source violated packets for the session

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 110

# SN1-IPv6-DNS-Proxy

IPV6 DNS Proxy Enabled or Disabled Setting for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 126

# SN1-IPv6-Egress-Filtering

This attribute enables egress filtering to make sure that packets being sent to the mobile device have an interface ID that matches that of the mobile device. This feature is meant to protect the Mobile from receiving unwanted packets from the Internet.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 103

# SN1-IPv6-Min-Link-MTU

SN1-IPv6-Min-Link-MTU

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 136

# SN1-IPv6-num-rtr-advt

This attribute contains the IPv6 number of Initial Router Advertisements. Default value is 3.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 97

# SN1-IPv6-Primary-DNS

This attribute specifies a Primary DNS server address that the Router Advertisement message sent by the PDSN will include.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 8164

**VSA Type** 101

# SN1-IPv6-rtr-advt-interval

This attribute contains the IPv6 Initial Router Advertisement Interval, specified in milliseconds. The default value is 3000.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 96

# SN1-IPv6-Secondary-DNS

This attribute specifies a Secondary DNS server address that the Router Advertisement message sent by the PDSN will include.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 8164

**VSA Type** 102

# SN1-IPv6-Sec-Pool

This attribute contains the IPv6 secondary pool name.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 124

# SN1-IPv6-Sec-Prefix

IPv6 Secondary Pool name prefix.

**Syntax** Opaque Value

**Length** 2-18

**Type** 26

**Vendor ID** 8164

**VSA Type** 125

# SN1-L3-to-L2-Tun-Addr-Policy

This attribute specifies the address allocation policy.

**Syntax** Enumerated Integer. Supports the following value(s):

- no-local-alloc-validate = 0
- local-alloc = 1
- local-alloc-validate = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 43

# SN1-LI-Dest-Address

This attribute specifies the Authorized Destination-IP/Port to which LI packets could be forwarded.

**Type** 26

**Vendor ID** 8164

**VSA Type** 240

**Syntax** Compound. Contains the following sub-attribute(s).

**Length** 0-16

## SN1-LI-Dest-IP

This attribute specifies the authorized Destination IP to which LI packets could be forwarded.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

### SN1-LI-Dest-Port

This attribute specifies the authorized Destination Port to which LI packets could be forwarded.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## SN1-Local-IP-Address

This attribute contains the IP address of the local interface on the chassis for the user's session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 13

## SN1-Long-Duration-Action

This attribute specifies the action to take place when the long duration timeout expires for a subscriber session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Detection = 1
- Disconnection = 2
- Dormant-Only-Disconnection = 3
- Dormant-Only-Detection = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 45

## SN1-Long-Duration-Notification

Long Duration Notification.

**Syntax** Enumerated Integer. Supports the following value(s):

- Suppress = 0
- Send = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 253

# SN1-Long-Duration-Timeout

This attribute is used to detect and if necessary disconnect sessions connected to the PDSN. This attribute configures the time period before either alerting the administrator or disconnecting the subscriber.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 44

# SN1-Mediation-Acct-Rsp-Action

When this attribute is set to None, there is no action taken while waiting for a response for the accounting start message from the Mediation Accounting server. When this attribute is set to No-Early-PDUs the system buffers all packets from the user (uplink) until a response for the accounting start message is received from the Mediation Accounting server. When set to Delay_GTP_Response, the system does not send a GTP create PDP response to the GGSN until a response for the accounting start message is received from the Mediation Accounting server. If the attribute is not present in Access-Accept message or if the attribute value is invalid, the value "None" is assumed.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- No_Early_PDUs = 1
- Delay_GTP_Response = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 105

# SN1-Mediation-Enabled

This attribute indicates whether the Mediation Accounting configuration is enabled or disabled for GGSN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 123

# SN1-Mediation-No-Interims

This attribute is used to disable or enable Mediation Interim Accounting Records for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 146

# SN1-Mediation-VPN-Name

This attribute specifies the Mediation Context name for the session.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 104

# SN1-Min-Compress-Size

This attribute contains the minimum size (in octets) a data packet can have in order to be compressed.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 23

# SN1-MIP-AAA-Assign-Addr

This attribute specifies if the PDSN/FA will allow AAA to assign the home address. The default is to not allow AAA to assign the home address.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0

- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 50

# SN1-MIP-ANCID

Accounting correlation ID created by IPGW, received by VBM and HBM.

**Syntax** Opaque Value

**Length** 12

**Type** 26

**Vendor ID** 8164

**VSA Type** 166

# SN1-MIP-Dual-Anchor

Enable/disable dual-anchor service for a subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 165

# SN1-MIP-HA-Assignment-Table

MIP-HA Assignment Table name. When this is received in an Access-Accept message, the system uses this local table to get the HA Address.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 154

# SN1-MIP-Match-AAA-Assign-Addr

This attribute specifies if the PDSN/FA will enforce that a non-zero AAA-specified home address must match the home address present in the MIP RRQ from the mobile node, and disconnect the subscriber session if a match is not present. The default is not to force the addresses to match.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 51

# SN1-MIP-MIN-Reg-Lifetime-Realm

This attribute configures the minimum MIP registration lifetime for a subscriber/realm.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 12

# SN1-MIP-Reg-Lifetime-Realm

Configure the maximum MIP registration lifetime for a subscriber/realm.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 175

# SN1-MIP-Send-Ancid

AAA attribute to enable/disable sending ANCID from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 163

# SN1-MIP-Send-Correlation-Info

This attribute enables/disables sending of correlation-id from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Starent = 1
- NVSE_CUstom1 = 2
- NVSE_Custom2 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 188

# SN1-MIP-Send-Imsi

Attribute to enable/disable sending IMSI from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Starent = 1
- NVSE_Custom1 = 2
- NVSE_Custom2 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 164

# SN1-MIP-Send-Term-Verification

This attribute specifies whether the PDSN/FA should send the Terminal Verification Normal Vendor/Organization Specific Extension (NVSE) in the Mobile IP RRQ message to the HA. The default is not to send the Terminal Verification NVSE.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Custom1 = 1
- NVSE_Custom2 = 2
- NVSE_Starent = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 48

# SN1-MN-HA-Hash-Algorithm

This attribute contains the hash algorithm to use for MN-HA authentication.

**Syntax** Enumerated Integer. Supports the following value(s):

- MD5 = 1
- MD5-RFC2002 = 2
- HMAC-MD5 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 99

# SN1-MN-HA-Timestamp-Tolerance

This attribute contains the duration of timestamp tolerance, in seconds, to use for MN-HA authentication.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 30

# SN1-MS-ISDN

SN1-MS-ISDN.

**Syntax** Opaque Value

**Length** 1-9

**Type** 26

**Vendor ID** 8164

**VSA Type** 248

# SN1-NAI-Construction-Domain

This attribute specifies the domain name to use when constructing the NAI.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 37

# SN1-NAT-Bind-Record

This attribute contains the NAT Binding Record.

**Type** 26

**Vendor ID** 8164

**VSA Type** 216

**Syntax** Compound. Contains the following sub-attribute(s).

## NAT-IP-Address

NAT IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

## NAT-Port-Block-Start

Start port of the port chunk

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## NAT-Port-Block-End

End port of the port chunk.

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

### Alloc-Flag

Port chunk status. Accepted Values are 0(De-Allocated) and 1(Allocated).

**Syntax** Unsigned Integer

**Length** 1

**Type** 4

### Correlation-Id

Correlation ID.

**Syntax** String

**Length** 1-253

**Type** 5

### Loading-Factor

Indicates maximum number of users per NAT IP address.

**Syntax** Unsigned Integer

**Length** 2

**Type** 6

### Binding-Timer

Port chunk hold timer.

**Syntax** Unsigned Integer

**Length** 4

**Type** 7

## SN1-NAT-Info-Record

NAT-Record-Info.

**Type** 26

**Vendor ID** 8164

**VSA Type** 246

**Syntax** Compound. Contains the following sub-attribute(s).

### Framed-IP-Address

Framed IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 1

## NAT-IP-Address

NAT IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 2

## NAT-Port-Block-Start

Start port of the port chunk

**Syntax** Unsigned Integer

**Length** 2

**Type** 3

## NAT-Port-Block-End

End port of the port chunk.

**Syntax** Unsigned Integer

**Length** 2

**Type** 4

## Acct-Session-Id

Accounting Session ID.

**Syntax** String

**Length** 1-17

**Type** 5

## User-Name

User name.

**Syntax** String

**Length** 1-128

**Type** 6

## Correlation-Id

Correlation ID.

**Syntax** String

**Length** 1-17

**Type** 7

### Calling-Station-Id

This attribute indicates the MSISDN/Calling station ID.

**Syntax** String

**Length** 1-16

**Type** 8

### 3GPP-Charging-Id

This attribute specifies the 3GPP Charging Identifier.

**Syntax** Unsigned Integer

**Length** 4

**Type** 9

## SN1-NAT-IP-Address-Old

Public IP address used for the call

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 0

## SN1-NAT-IP-Address

This attribute includes the NAT (public) IP address used for the call.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 217

## SN1-NAT-Port

This attribute specifies the port used along with NAT-IP for N:1 case.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 8164

**VSA Type** 179

# SN1-NPU-Qos-Priority

This attribute configures Inter-Subscriber priority Queueing based on class of service offered. Gold has highest priority and Best_effort lowest priority. From DSCP, means the priority queueing will be done based on the DSCP marking the incoming subscriber packet carries.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best_Effort = 0
- Bronze = 1
- Silver = 2
- Gold = 3
- From_DSCP = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 98

# SN1-Ntk-Initiated-Ctx-Ind-Flag

This attribute indicates that the PDP context is network initiated. The attribute is missing for a mobile activated PDP context.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 142

# SN1-Ntk-Session-Disconnect-Flag

SN1-Ntk-Session-Disconnect-Flag.

**Syntax** Enumerated Integer. Supports the following value(s):

- Session-Disconnect = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 143

# SN1-Nw-Reachability-Server-Name

This attribute specifies the name of a network reachability server (defined in the destination context of the subscriber) that must respond as reachable, or the user is be redirected.

**Syntax** String

**Length** 1-16

**Type** 26

**Vendor ID** 8164

**VSA Type** 65

# SN1-Overload-Disc-Connect-Time

Provides the connect time for a session. When this time expires, the session may become a candidate for disconnection.

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 233

# SN1-Overload-Disc-Inact-Time

Provides inactivity time for a session after which it may become candidate for disconnection.

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 234

# SN1-Overload-Disconnect

Enables/disables the overload-disconnect feature (if 1) and disables if 0

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 235

# SN1-PDIF-MIP-Release-TIA

PDIF mobile IP release TIA.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 172

# SN1-PDIF-MIP-Required

PDIF mobile IP required.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 170

# SN1-PDIF-MIP-Simple-IP-Fallback

PDIF mobile IP simple IP fallback.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 173

# SN1-PDSN-Correlation-Id

Correlation ID received from PDSN to HA.

**Syntax** Opaque Value

**Length** 8

**Type** 26

**Vendor ID** 8164

**VSA Type** 189

# SN1-PDSN-Handoff-Req-IP-Addr

This attribute specifies if the PDSN should reject and terminate the subscriber session when the proposed address in IPCP by the mobile does not match the existing address in the PDSN. The default (Disabled) is not to reject these sessions.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 46

# SN1-PDSN-NAS-Id

NAS Identifier received from PDSN to HA.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 190

# SN1-PDSN-NAS-IP-Address

NAS IP address received from PDSN to HA.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 191

# SN1-Permit-User-Mcast-PDUs

Specifies whether or not to let the subscriber discard multicast PDUs.

**Syntax** Enumerated Integer. Supports the following value(s):

- disabled = 0

- enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 134

# SN1-PPP-Accept-Peer-v6lfid

This attribute indicates the acceptance of the interface ID provided by peer during PPP IPv6CP if the ID is valid. The default is disabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 95

# SN1-PPP-Always-On-Vse

SN1-PPP-Always-On-Vse.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 130

# SN1-PPP-Data-Compression-Mode

This attribute indicates the PPP data compression mode to use for the PPP session when PPP data compression is used.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Stateless = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 19

# SN1-PPP-Data-Compression

This attribute indicates the PPP data compression algorithm to use for the PPP session. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Stac-LZS = 1
- MPPC = 2
- Deflate = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 9

# SN1-PPP-Keepalive

This attribute indicates the interval for the PPP keepalive, in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 16

# SN1-PPP-NW-Layer-IPv4

This attribute indicates the PPP IPCP negotiation for IPv4. The default is enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1
- Passive = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 92

# SN1-PPP-NW-Layer-IPv6

This attribute indicates the PPP IPv6CP negotiation for IPv6. The default is enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1
- Passive = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 93

# SN1-PPP-Outbound-Password

This attribute indicates the password to be used when the user side of the PPP connection requires authentication.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 15

# SN1-PPP-Outbound-Username

This attribute indicates the username to be used when the user side of the PPP connection requires authentication.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 61

# SN1-PPP-Progress-Code

This attribute provides information about the "state" of the PPP connection, when the connection was terminated.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Defined = 0
- Call-Lcp-Down = 10
- Call-Disconnecting = 20
- Call-Ppp-Renegotiating = 30
- Call-Arrived = 40
- Call-Pdg-Tcp-Connecting = 45
- Call-Pdg-Ssl-Connecting = 46
- Call-Lcp-Up = 50
- Call-Authenticating = 60
- Call-Bcmcs-Authenticating = 70
- Call-Authenticated = 80
- Call-Tunnel-Connecting = 85
- Call-Ipcp-Up = 90
- Call-Imsa-Authorizing = 95
- Call-Imsa-Authorized = 97
- Call-MBMS-UE-Authorizing = 98
- Call-MBMS-Bearer-Authorizing = 99
- Call-Simple-IP-Connected = 100
- Call-Mobile-IP-Connected = 110
- Call-Tunnel-Connected = 115
- Call-Pdp-Type-IP-Connected = 120
- Call-Pdp-Type-IPv6-Connected = 125
- Call-Pdp-Type-PPP-Connected = 130
- Call-GTP-Connecting = 131
- Call-GTP-Connected = 132
- Call-Proxy-Mobile-IP-Connected = 140
- Call-Pdg-Ssl-Connected = 141
- Call-Pdg-Connected = 142
- Call-Ipsg-Connected = 145
- Call-Bcmcs-Connected = 150
- Call-MBMS-UE-Connected = 155

- Call-MBMS-Bearer-Connected = 156
- Call-Pending-Addr-From-DHCP = 160
- Call-Got-Addr-From-DHCP = 170
- Call-HA-IPSEC-Tunnel-Connecting = 180
- Call-HA-IPSEC-Connected = 190
- Call-ASN-Non-Anchor-Connected = 200
- Call-ASNPC-Connected = 210 Call-Mobile-IPv6-Connected = 220
- Call-PMIPv6-Connected = 221
- Call-PHSPC-Connected = 230
- Call-GTP-IPv4-Connected = 235
- Call-GTP-IPv6-Connected = 236
- Call-GTP-IPv4-IPv6-Connected = 237
- Call-SGW-Connected = 245
- Call-MME-Attached = 246
- Call-Auth-Only-Connected = 247

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 4

# SN1-PPP-Reneg-Disc

PPP remote reneg disconnect policy.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Never = 0
- Always = 1
- NAI_Prefix_MSID_Mismatch = 2

**Length** 4

**Vendor ID** 8164

**VSA Type** 187

# SN1-Prepaid-Compressed-Count

This attribute indicates if a Pre-paid subscriber's byte usage should be counted on the basis of compressed or uncompressed byte data over the subscriber's PPP connection to the system. If not present, the default is to count uncompressed byte data.

**Syntax** Enumerated Integer. Supports the following value(s):

- Uncompressed = 0
- Compressed = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 31

# SN1-Prepaid-Final-Duration-Alg

For prepaid, final duration is calculated based on the algorithm specified by the value of this attribute.

**Syntax** Enumerated Integer. Supports the following value(s):

- current_time = 0
- last-user-layer3-activity-time = 1
- last-airlink-activity-time = 2
- last-airlink-activity-time-last-reported = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 135

# SN1-Prepaid-Inbound-Octets

In an Access-Accept, this indicates how many additional inbound (bytes delivered to the subscriber) byte credits should be granted to the subscriber. In an Accounting- Request, this indicates how many total inbound byte credits have been granted to the subscriber. When this attribute is not present in the Access-Accept, then pre-paid usage checking is disabled on an inbound octet basis.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 32

# SN1-Prepaid-Outbound-Octets

SN1-Prepaid-Outbound-Octets.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 33

# SN1-Prepaid-Preference

This attribute specifies whether prepaid is volume based or duration based.

**Syntax** Enumerated Integer. Supports the following value(s):

- prepaid_duration = 0
- prepaid_volume = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 129

# SN1-Prepaid-Profile

Do not do prepaid, regardless of the Rulebase configuration.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Use-Rulebase-Config = 0
- Prohibit = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 155

# SN1-Prepaid-Timeout

This attribute indicates how much time may elapse before a new request for more pre-paid credits is issued. If the specified time has elapsed since the prior grant of credits was received from the RADIUS server, then a new request for credits is issued. This attribute is primarily used to periodically update the subscriber of new credits issued since the subscriber was connected. Note that credit requests will still be made on behalf of the subscriber when the subscriber drops down to the low watermark of credits (or zero if there is no low

watermark). The presence or absence of this attribute does not affect that mechanism in any way. However, this timer is re-set whenever any grant of credits is received on behalf of the subscriber, regardless of why the grant of credits was requested.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 35

# SN1-Prepaid

Prepaid.

**Syntax** Enumerated Integer. Supports the following value(s):

- no_prepaid = 0
- custom_prepaid = 1
- standard_prepaid = 2
- wimax_prepaid = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 128

# SN1-Prepaid-Total-Octets

In an Access-Accept, this attribute indicates how many additional byte credits (combining both inbound and outbound counts) should be granted to the subscriber. In an Accounting-Request, this indicates how many total bytes credits (combined inbound and outbound) have been granted to the subscriber. When this attribute is not present in the Access-Accept, then pre-paid usage checking is disabled on a combined inbound and outbound octet-count basis.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 34

# SN1-Prepaid-Watermark

This attribute Indicates the percentage of remaining granted credits that will trigger a new request to grant credits from the RADIUS server. For example, if 1GB of credits was granted to a user, and the value of

SN-Prepaid-Watermark was 10, then when 100 MB of credits are remaining (900 MB have been used) to the subscriber, a new request for any new byte credits is issued on behalf of the subscriber. Note that when calculating the pre-paid low watermark, the total credits granted for the subscriber's entire session is used.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 36

# SN1-Primary-DCCA-Peer

This attribute indicates the name of the primary DCCA peer and primary DCCA realm.

**Syntax** String

**Length** 1-192

**Type** 26

**Vendor ID** 8164

**VSA Type** 223

# SN1-Primary-DNS-Server

This attribute indicates the IP address of the primary DNS server that should be used for the session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 5

# SN1-Primary-NBNS-Server

Primary NBNS Server IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 148

# SN1-Proxy-MIP

This attribute specifies if the PDSN/FA will perform compulsory Proxy-MIP tunneling for a Simple-IP PDSN subscriber. This feature is licensed. The default is not to perform compulsory Proxy-MIP.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 52

# SN1-QoS-Background-Class

This attribute defines the QOS Background Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 91

# SN1-QoS-Class-Background-PHB

SN1-QoS-Class-Background-PHB

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30

- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 113

# SN1-QoS-Class-Converstional-PHB

SN1-QoS-Class-Converstional-PHB.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 111

# SN1-QoS-Class-Interactive-1-PHB

SN1-QoS-Class-Interactive-1-PHB

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 114

# SN1-QoS-Class-Interactive-2-PHB

SN1-QoS-Class-Interactive-2-PHB

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18

- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 115

# SN1-QoS-Class-Interactive-3-PHB

SN1-QoS-Class-Interactive-3-PHB

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 116

# SN1-QoS-Class-Streaming-PHB

SN1-QoS-Class-Streaming-PHB

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 10415

**VSA Type** 112

# SN1-QoS-Conversation-Class

This attribute defines the QOS Conversation Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 86

# SN1-QoS-Interactive1-Class

This attribute defines the QOS Interactive Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 88

# SN1-QoS-Interactive2-Class

This attribute defines the QOS Interactive2 Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 89

# SN1-QoS-Interactive3-Class

This attribute defines the QOS Interactive3 Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 90

# SN1-QoS-Negotiated

Negotiated QoS for GGSN sessions.

**Syntax** Opaque Value

**Length** 4-28

**Type** 26

**Vendor ID** 8164

**VSA Type** 147

# SN1-QoS-Renegotiation-Timeout

This attribute configures the timeout duration of dampening time for dynamic QoS renegotiation.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 145

# SN1-QoS-Streaming-Class

This attribute defines the QOS Streaming Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 87

# SN1-QoS-Tp-Dnlk

This attribute enables/disables Traffic Policing/Shaping in downlink direction.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Policing = 1
- Shaping = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 73

# SN1-QoS-Tp-Uplk

This attribute enables/disables Traffic Policing/Shaping in uplink direction.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Policing = 1
- Shaping = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 79

# SN1-QoS-Traffic-Policy

This compound attribute simplifies sending QoS values for Traffic Class, Direction, Burst-Size, Committed-Data-Rate, Peak-Data-Rate, Exceed-Action, and Violate-Action from the RADIUS server. When the SN1-QoS-Traffic-Policy attribute is sent along with the Acct-Session-ID attribute, the system matches the particular PtDP context, and applies the new policy and retains the policy with the subscriber profile for future use. The next time the system sends a CoA request with a new policy and a different Acct-Session-ID for the same subscriber, the previously received policy is also applied to the matching PDP context along with the new policy.

**Type** 26

**Vendor ID** 8164

**VSA Type** 177

**Syntax** Compound. Contains the following sub-attribute(s).

## Direction

Direction of the PDF.

**Syntax** Unsigned Integer

**Length** 1

**Type** 1

## Class

Traffic class.

**Syntax** Unsigned Integer

**Length** 1

**Type** 2

## Burst-Size

Peak burst size.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Committed-Data-Rate

Committed data rate.

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Peak-Data-Rate

Peak data rate.

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

## Exceed-Action

Action to take on packets that exceed the Committed-Data-Rate but do not violate the Peak-Data-Rate.

**Syntax** Unsigned Integer

**Length** 1

**Type** 6

## Violate-Action

Violate action.

**Syntax** Unsigned Integer

**Length** 1

**Type** 7

## Auto-Readjust-Enabled

Auto-readjust enabled.

**Syntax** Unsigned Integer

**Length** 1

**Type** 8

## Auto-Readjust-Duration

Auto-readjust duration.

**Syntax** Unsigned Integer

**Length** 4

**Type** 9

## Qci

Available only in 11.0 and later releases. QOS QCI accepted values are 1 (qci 1), 2 (qci 2), 3 (qci 3), 4 (qci 4), 5 (qci 5), 6 (qci 6), 7 (qci 7), 8 (qci 8), 9 (qci 9).

**Syntax** Unsigned Integer

**Length** 1

**Type** 10

# SN1-Rad-APN-Name

This attributes specifies the RADIUS returned APN name.

**Type** 26

**Syntax** Opaque Value

**Length** 1-64

**Vendor ID** 8164

**VSA Type** 162

# SN1-Radius-Returned-Username

This attribute is used to prefer RADIUS returned user name over constructed username in the accounting messages.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 236

# SN1-Re-CHAP-Interval

The Periodic CHAP authentication interval for PPP, in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 7

# SN1-Roaming-Behavior

This attribute specifies the configuration for the behavior bits settings for a roaming subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 121

# SN1-Roaming-Profile

This attribute specifies the configuration for the profile bits settings for a roaming subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 118

# SN1-Roaming-Status

This attribute specifies if the user is in roaming network for HA/LNS calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- HOME = 0
- ROAMING = 1

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 244

# SN1-Roaming-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for roaming subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 108

# SN1-ROHC-Direction

Specifies in which direction to apply Robust Header Compression (ROHC).

**Syntax** Enumerated Integer. Supports the following value(s):

- Any = 0
- Uplink = 1
- Downlink = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 153

# SN1-ROHC-Flow-Marking-Mode

Configure ROHC compression for marked flows only.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 195

# SN1-ROHC-Mode

Sets the mode of operation for Robust Header Compression for IP.

**Syntax** Enumerated Integer. Supports the following value(s):

- Reliable = 0
- Optimistic = 1
- Unidirectional = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 151

# SN1-ROHC-Profile-Name

Specifies the ROHC profile name to use for the subscriber.

**Type** 26

**Syntax** String

**Length** 1-64

**Vendor ID** 8164

**VSA Type** 238

# SN1-Routing-Area-Id

For GGSN calls this indicates the Routing Area ID of the subscriber.

**Syntax** Opaque Value

**Length** 3

**Type** 26

**Vendor ID** 8164

**VSA Type** 249

# SN1-Rulebase

When the session is active charging enabled, Rulebase name will specify one of the pre configured ECSv2 rulebases in active charging subsystem.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 250

# SN1-Secondary-DCCA-Peer

This attribute indicates the name of the Secondary DCCA peer and Secondary DCCA realm.

**Syntax** String

**Length** 1-192

**Type** 26

**Vendor ID** 8164

**VSA Type** 224

# SN1-Secondary-DNS-Server

This attribute indicates the IP address of the secondary DNS server that should be used for the session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 6

# SN1-Secondary-NBNS-Server

Secondary NBNS Server IP Address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 149

# SN1-Service-Address

Used to send the bind IP address of the service in RADIUS messages.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 169

# SN1-Service-Type

This attribute signifies the type that the user is accessing.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- PDSN = 1
- Management = 2
- HA = 3
- GGSN = 4
- LNS = 5

- IPSG = 6
- CSCF = 7
- ASNGW = 8
- PDIF = 9
- STANDALONE_FA = 10
- SGSN = 11
- PHSGW = 12
- EPDG = 13
- MIPV6HA = 14
- PGW = 15
- SGW = 16
- FNG = 17
- MSEG = 18
- HNBGW = 19
- BNG = 20
- WSG = 21
- SAMOG = 22

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 24

# SN1-Simultaneous-SIP-MIP

This attribute indicates if a PDSN Subscriber can simultaneously be given Simple IP and Mobile IP service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 22

# SN1-Subs-Acc-Flow-Traffic-Valid

This attribute indicates the subscriber account flow traffic is valid.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 225

# SN1-Subscriber-Accounting

This attribute specifically enables or disables subscriber accounting. Note that if enabled, subscriber accounting still needs to be enabled in the subscriber's AAA context for accounting to be performed.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Radius = 1
- GTPP = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 64

# SN1-Subscriber-Acct-Interim

This attribute specifies if accounting INTERIM messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context (along with a specific INTERIM interval), if accounting INTERIM messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 70

# SN1-Subscriber-Acct-Mode

SN1-Subscriber-Acct-Mode

**Syntax** Enumerated Integer. Supports the following value(s):

- flow-based-auxilliary = 0
- flow-based-all = 1
- flow-based-none = 2
- session-based = 3
- main-a10-only = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 192

# SN1-Subscriber-Acct-Rsp-Action

When this attribute is set to None, there is no action taken while waiting for a response for the accounting start message from the RADIUS server. When this attribute is set to No-Early-PDUs the system buffers all packets from the user (uplink) until a response for the accounting start message is received from the RADIUS server. When set to Delay_GTP_Response, the system does not send a GTP create response to the GGSN until a response for the accounting start message is received from the RADIUS server.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- No_Early_PDUs = 1
- Delay_GTP_Response = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 100

# SN1-Subscriber-Acct-Start

This attribute specifies if accounting START messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context, if accounting START messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0

- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 69

# SN1-Subscriber-Acct-Stop

This attribute specifies if accounting STOP messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context, if accounting STOP messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 71

# SN1-Subscriber-Class

Customer-requested attribute for supporting specific behavior for their subscriber billing.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal_Subscriber = 0
- Ting_100 = 1
- Ting_500 = 2
- Ting_Buddy = 3
- Ting_Star = 4
- Ting_Nolimit_SMS = 5
- Kids_Locator = 6
- Ting_2000 = 7
- Handicapped_Welfare = 8
- Reserved = 9

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 219

# SN1-Subscriber-Dormant-Activity

This attribute specifies whether to treat dormant packets routed to the mobile as activity for idle timeout purposes. The default is Enabled. Disabled means dormant packets routed to the mobile are not treated as activity for idle timeout purposes.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 66

# SN1-Subscriber-IP-Hdr-Neg-Mode

This attribute specifies whether to wait for (detect) IP header compression to be requested by the mobile before responding, or not to wait (force). Force is the default.

**Syntax** Enumerated Integer. Supports the following value(s):

- Force = 0
- Detect = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 67

# SN1-Subscriber-IP-TOS-Copy

This attribute enables copying of TOS bits from outer IP headers into inner tunneled IP headers. The default is Both.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Access-Tunnel = 1
- Data-Tunnel = 2
- Both = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 85

# SN1-Subscriber-Nexthop-Address

This attribute specifies the nexthop gateway address to be returned by AAA on a per subscriber basis.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 127

# SN1-Subscriber-No-Interims

This is a GGSN specific attribute. When set to 0 (disabled) interim accounting is generated. When set to 1 (enabled) interim accounting generation is disabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 133

# SN1-Subscriber-Permission

This attribute indicates the services allowed to be delivered to the subscriber. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Simple-IP = 1
- Mobile-IP = 2
- Simple-IP-Mobile-IP = 3
- HA-Mobile-IP = 4
- Simple-IP-HA-Mobile-IP = 5

- Mobile-IP-HA-Mobile-IP = 6
- SIP-MIP-HA-MIP = 7
- GGSN-PDP-TYPE-IP = 0x08
- GGSN-PDP-TYPE-PPP = 0x10
- Network-Mobility = 0x20
- FA-HA-NEMO = 0x26
- Pmipv6-interception = 0x40
- HA-Mobile-Pmipv6 = 0x44
- FA-HA-Mobile-Pmipv6 = 0x46
- All = 0x7F

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 20

# SN1-Subscriber-Template-Name

RADIUS returned subscriber template.

**Type** 26

**Syntax** String

**Length** 1-127

**Vendor ID** 8164

**VSA Type** 158

# SN1-Subs-IMSA-Service-Name

IMS Authorization Service name.

**Type** 26

**Syntax** String

**Length** 1-128

**Vendor ID** 8164

**VSA Type** 159

# SN1-Subs-VJ-Slotid-Cmp-Neg-Mode

Enable/Disable slotid compression in either direction when using VJ compression.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Receive = 1
- Transmit = 2
- Both = 3

**Length** 4

**Vendor ID** 8164

**VSA Type** 221

# SN1-Tp-Dnlk-Burst-Size

This attribute specifies the Traffic Policing downlink burst size in bytes.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 76

# SN1-Tp-Dnlk-Committed-Data-Rate

This attribute specifies the Traffic Policing downlink committed data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 74

# SN1-Tp-Dnlk-Exceed-Action

This attribute specifies the action to take on Traffic Policing downlink packets that exceed the committed-data-rate but do not violate the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3

- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 77

# SN1-Tp-Dnlk-Peak-Data-Rate

This attribute specifies the Traffic Policing downlink peak data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 75

# SN1-Tp-Dnlk-Violate-Action

This attribute specifies the action to take on Traffic Policing downlink packets that exceed both the committed-data-rate and the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 78

# SN1-Tp-Uplk-Burst-Size

This attribute specifies the Traffic Policing uplink burst size in bytes.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 82

# SN1-Tp-Uplk-Committed-Data-Rate

This attribute specifies the Traffic Policing uplink committed data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 80

# SN1-Tp-Uplk-Exceed-Action

This attribute specifies the action to take on Traffic Policing uplink packets that exceed the committed-data-rate but do not violate the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 83

# SN1-Tp-Uplk-Peak-Data-Rate

This attribute specifies the Traffic Policing uplink peak data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 81

# SN1-Tp-Uplk-Violate-Action

This attribute specifies the action to take on Traffic Policing uplink packets that exceed both the committed-data-rate and the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 84

# SN1-Traffic-Group

This attribute is used to assign a tag to an FA or a group of FAs, so that traffic policy can be enforced based on the tag value.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 8164

**VSA Type** 161

# SN1-Transparent-Data

This attribute is used by RADIUS to provide Global Title information for the GGSN to use in CDRs and Quota Auth.

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 247

# SN1-Tun-Addr-Policy

Describes IP address validation policy for non L2TP tunneled calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- no-local-alloc-validate = 0
- local-alloc = 1
- local-alloc-validate = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 156

# SN1-Tunnel-Gn

Used to enable/disable Gn interface from PDG/TTG to GGSN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 174

# SN1-Tunnel-ISAKMP-Crypto-Map

This attribute specifies the system-defined crypto map to use for the subscriber's Mobile-IP connection, when IPSec is used to protect the Mobile-IP connection. This attribute is salt-encrypted.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 38

# SN1-Tunnel-ISAKMP-Secret

This attribute specifies the secret to use for IKE.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 39

# SN1-Tunnel-Load-Balancing

Specifies the load-balancing algorithm to use when tunneling is employed.

**Syntax** Enumerated Integer. Supports the following value(s):

- random = 1
- balanced = 2
- prioritized = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 27

# SN1-Tunnel-Password

This attribute contains a secret for tunneling usage. Currently this is only used for L2TP. It is recommended that if your RADIUS server supports salt-encryption of attributes, that you use the Tunnel-Password attribute instead.

**Syntax** Opaque Value

**Length** 1-240

**Type** 26

**Vendor ID** 8164

**VSA Type** 26

# SN1-Unclassify-List-Name

SN1-Unclassify-List-Name.

**Syntax** String

**Length** 1-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 132

# SN1-Virtual-APN-Name

This attribute indicates the virtual APN name.

**Syntax** Opaque Value

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 94

# SN1-Visiting-Behavior

This attribute specifies the configuration for the behavior bits settings for a visiting subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 120

# SN1-Visiting-Profile

This attribute specifies the configuration for the profile bits settings for a visiting subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 117

# SN1-Visiting-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for visiting subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 107

# SN1-Voice-Push-List-Name

SN1-Voice-Push-List-Name.

**Syntax** String

**Length** 1-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 131

# SN1-VPN-ID

This attribute indicates the Destination VPN of the user, specified by a 32-bit identifier.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1

# SN1-VPN-Name

This attribute indicates the name of the user's destination VPN.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 2

# SN1-VRF-Name

This attribute specifies the IP VRF context to distinguish the RADIUS accounting feeds per enterprise.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 242

# SNA1-PPP-Unfr-data-In-Gig

This attribute contains the total number of PPP gigawords without framing sent for the subscriber's session. When combined with the attribute SNA-PPP-Unfr-data-In-Oct, a 64-bit value can be formed which is the total number of PPP octets without framing send for the subscriber's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 202

# SNA1-PPP-Unfr-data-In-Oct

This attribute contains the total number of PPP octets without framing sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 200

# SNA1-PPP-Unfr-data-Out-Gig

This attribute contains the total number of PPP octets without framing received for the user's session. When combined with the attribute SNA-PPP-Unfr-data-In-Oct, a 64-bit value can be formed which is the total number of PPP octets without framing received for the subscriber's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 203

# SNA1-PPP-Unfr-data-Out-Oct

This attribute contains the total number of PPP octets without framing received for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 201

# SN-Access-link-IP-Frag

This attribute specifies what to do when data received for the subscriber on the Access link that needs to be fragmented and the DF bit is either set or unset. The default is Normal.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- DF-Ignore = 1
- DF-Fragment-ICMP-Notify = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 63

# SN-Acct-Input-Giga-Dropped

This attribute contains the number of input gigawords dropped if the number of input bytes is greater than 2^32 - 1.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 230

# SN-Acct-Input-Octets-Dropped

This attribute indicates how many octets received have been dropped in the PPP session. Since the value field is 32 bits, it is possible that the number of octets will exceed the 32-bit field length. If this happens, this attribute will "wrap" back to 0. Each time the "wrap" occurs, the SN-Acct-Input-Giga-Dropped attribute will be incremented.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 228

# SN-Acct-Input-Packets-Dropped

This attribute indicates how many PPP packets received have been dropped during the session.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 226

# SN-Acct-Output-Giga-Dropped

This attribute contains the number of output gigawords dropped if the number of output bytes is greater than 2^32 - 1.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 231

# SN-Acct-Output-Octets-Dropped

This attribute indicates how many octets have been dropped in the PPP session. Since the value field is 32 bits, it is possible that the number of octets will exceed the 32-bit field length. If this happens, this attribute will "wrap" back to 0. Each time the "wrap" occurs, the SN-Acct-Output-Giga-Dropped attribute will be incremented.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 229

# SN-Acct-Output-Packets-Dropped

This attribute indicates how many output PPP packets have been dropped during the session.

**Type** 26

**Syntax** Unsigned Integer

**Length** 4

**Vendor ID** 8164

**VSA Type** 227

# SN-Acs-Credit-Control-Group

This attribute contains the Diameter Credit Control Group name. It is used to send the Credit Control Group name from APN config to the ACS module.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 301

# SN-Admin-Expiry

This attribute contains the date/time the administrative user account expires. It is an integer value specifying the number of seconds since the UNIX epoch at which time the account will expire.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 72

# SN-Admin-Permission

This attribute indicates the services allowed to be delivered to the administrative user. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- CLI = 1
- FTP = 2
- CLI-FTP = 3
- Intercept = 4
- CLI-Intercept = 5
- CLI-Intercept-FTP = 7
- ECS = 8
- CLI-ECS = 9
- CLI-FTP-ECS = 11
- CLI-Intercept-ECS = 13
- CLI-Intercept-FTP-ECS = 15 NoCons = 16
- CLI-NoCons = 17
- FTP-NoCons = 18
- CLI-FTP-NoCons = 19

- Intercept-NoCons = 20
- CLI-Intercept-NoCons = 21
- CLI-Intercept-FTP-NoCons = 23
- ECS-NoCons = 24
- CLI-ECS-NoCons = 25
- CLI-FTP-ECS-NoCons = 27
- CLI-Intercept-ECS-NoCons = 29
- CLI-Intercept-FTP-ECS-NoCons = 31

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 21

# SNA-Input-Gigawords

This attribute contains the total number of input gigawords.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 206

# SNA-Input-Octets

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 204

# SN-ANID

This attribute contains the Access Network ID.

**Syntax** Opaque Value

**Length** 10

**Type** 26

**Vendor ID** 5535

**VSA Type** 178

# SNA-Output-Gigawords

This attribute contains the total number of output gigawords.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 207

# SNA-Output-Octets

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 205

# SNA-PPP-Bad-Addr

This attribute contains the total number of frames received with bad address field in the HDLC header field, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1011

# SNA-PPP-Bad-Ctrl

This attribute contains the total number of frames received with bad control field in the HDLC header field, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1012

# SNA-PPP-Bad-FCS

This attribute contains the number of frames received, for the user's PPP session, with bad FCS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1014

# SNA-PPP-Ctrl-Input-Octets

This attribute contains the number of PPP Control Octets received for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1001

# SNA-PPP-Ctrl-Input-Packets

This attribute contains the number of PPP Control packets received for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1003

# SNA-PPP-Ctrl-Output-Octets

This attribute contains the number of PPP Control Octets sent to the user during the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1002

# SNA-PPP-Ctrl-Output-Packets

This attribute contains the number of PPP Control packets sent to the user during the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1004

# SNA-PPP-Discards-Input

This attribute contains the number of PPP input frames that were discarded during the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1007

# SNA-PPP-Discards-Output

This attribute contains the number of PPP output frames that were discarded during the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1008

# SNA-PPP-Echo-Req-Input

This attribute contains the number of LCP echo packets received, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1015

# SNA-PPP-Echo-Req-Output

This attribute contains the number of LCP echo packets sent, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1016

# SNA-PPP-Echo-Rsp-Input

This attribute contains the number of LCP echo response packets received, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1017

# SNA-PPP-Echo-Rsp-Output

This attribute contains the number of LCP echo response packets sent, for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1018

# SNA-PPP-Errors-Input

This attribute contains the number of PPP input de-framing errors for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1009

# SNA-PPP-Errors-Output

This attribute contains the number of PPP output framing errors for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1010

# SNA-PPP-Framed-Input-Octets

This attribute contains the number of PPP octets received (without framing overhead) for the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1005

# SNA-PPP-Framed-Output-Octets

This attribute contains the number of PPP octets sent (without framing overhead) to the user during the user's PPP session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1006

# SNA-PPP-Packet-Too-Long

This attribute contains the total number of frames received, for the user's PPP session, that exceeds the MTU of the interface.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1013

# SNA-PPP-Unfr-data-In-Gig

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 202

# SNA-PPP-Unfr-data-In-Oct

This attribute contains the total number of PPP octets without framing sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 200

# SNA-PPP-Unfr-data-Out-Gig

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 203

# SNA-PPP-Unfr-data-Out-Oct

This attribute contains the total number of PPP octets without framing received for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 201

# SNA-RPRAK-Rcvd-Acc-Ack

This attribute contains the total number of A11 registration ACK accepted for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1028

# SNA-RPRAK-Rcvd-Mis-ID

This attribute contains the total number of A11 registration ACK messages received with ID-mismatch for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1030

# SNA-RPRAK-Rcvd-Msg-Auth-Fail

This attribute contains the total number of message auth failures for A11 registration ACK messages for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1029

# SNA-RPRAK-Rcvd-Total

This attribute contains the total number of A11 registration ACK received for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1027

# SNA-RP-Reg-Reply-Sent-Acc-Dereg

This attribute contains the number of Accept A11 registration replies sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1033

# SNA-RP-Reg-Reply-Sent-Acc-Reg

This attribute contains the number of Accept A11 registration replies sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1032

# SNA-RP-Reg-Reply-Sent-Bad-Req

This attribute contains the number of A11 registration replies sent for bad requests for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1034

# SNA-RP-Reg-Reply-Sent-Denied

This attribute contains the number of denied A11 registration replies sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1035

# SNA-RP-Reg-Reply-Sent-Mis-ID

This attribute contains the number of A11 registration replies sent for mismatched ID for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1036

# SNA-RP-Reg-Reply-Sent-Send-Err

This attribute contains the number of A11 registration replies sent with send errors for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1037

# SNA-RP-Reg-Reply-Sent-Total

This attribute contains the total number A11 registration replies sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1031

# SNA-RP-Reg-Upd-Re-Sent

This attribute contains the total number of A11 registration update re-sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1039

# SNA-RP-Reg-Upd-Send-Err

This attribute contains the total number of A11 registration update send errors for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1040

# SNA-RP-Reg-Upd-Sent

This attribute contains the total number of A11 registration update sent for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1038

# SNA-RPRRQ-Rcvd-Acc-Dereg

This attribute contains the number of A11 De-registration Requests accepted for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1021

# SNA-RPRRQ-Rcvd-Acc-Reg

This attribute contains the number of A11 Registration Requests accepted for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1020

# SNA-RPRRQ-Rcvd-Badly-Formed

This attribute contains the number of badly formed A11 registration requests received for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1024

# SNA-RPRRQ-Rcvd-Mis-ID

This attribute contains the number of A11 registration requests received with ID-mismatch for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1023

# SNA-RPRRQ-Rcvd-Msg-Auth-Fail

This attribute contains the number of message authentication failures for A11 registration requests for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1022

# SNA-RPRRQ-Rcvd-T-Bit-Not-Set

This attribute contains the number of A11 registration requests received with T-Bit not set for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1026

# SNA-RPRRQ-Rcvd-Total

This attribute contains the number of A11 Registration Requests received for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1019

# SNA-RPRRQ-Rcvd-VID-Unsupported

This attribute contains the number of A11 registration requests received with an unsupported Vendor ID for the user's session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1025

# SN-Assigned-VLAN-ID

This attribute contains the Assigned VLAN ID.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 152

# SN-Authorised-Qos

This attribute contains the authorized QoS.

**Syntax** Authorised-Qos

**Type** 26

**Vendor ID** 8164

**VSA Type** 266

# SN-Bandwidth-Policy

This attribute contains the Traffic Policy value.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 300

# SN-Call-Id

This attribute contains the Call ID.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 251

# SN-Cause-Code

This attribute includes the termination cause code value from IMS node.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal_End_Of_Session = 0
- Successful_Transaction = 1
- End_Of_Subscriber_Dialog = 2
- 3XX_Redirection = 3
- 4XX_Request_Failure = 4
- 5XX_Server_Failure = 5
- 6XX_Global_Failure = 6
- Unspecified_Error = 7
- Unsuccessful_Session_Setup = 8
- Internal_Error = 9

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 267

# SN-Cause-For-Rec-Closing

This attribute contains the GGSN Specific Record Closing Reason Value.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 139

# SN-CBB-Policy

This attribute contains the CBB policy name.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 302

# SN-CF-Call-International

This attribute contains enable/disable config for CF call restriction and dialing permission for international calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 293

# SN-CF-Call-Local

This attribute contains enable/disable config for CF call restriction and dialing permission for local calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 291

# SN-CF-Call-LongDistance

This attribute contains enable/disable config for CF call restriction and dialing permission for long distance calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 292

# SN-CF-Call-Premium

This attribute contains enable/disable config for CF call restriction and dialing permission for premium calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 294

# SN-CF-Call-RoamingInternatnl

This attribute contains enable/disable config for CSCF call restriction and dialing permission - Roaming International call.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 298

# SN-CF-Call-Transfer

This attribute contains enable/disable config for CSCF call feature - call transfer.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 285

# SN-CF-Call-Waiting

This attribute contains enable/disable config for CSCF call feature - call waiting.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 284

# SN-CF-Cld-Display-Blocked

This attribute contains enable/disable config for CSCF call feature - caller ID display blocked.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 283

# SN-CF-Cld-Display

This attribute contains enable/disable config for CSCF call feature - caller ID display.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 282

# SN-CF-Follow-Me

This attribute contains URIs for CSCF call feature - follow me.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 281

## SN-CF-Forward-Busy-Line

This attribute contains URI for CSCF call feature - forward busy line.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 279

## SN-CF-Forward-No-Answer

This attribute contains URI for CSCF call feature - forward no answer.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 278

## SN-CF-Forward-Not-Regd

This attribute contains URI for CSCF call feature - forward not registered.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 280

## SN-CF-Forward-Unconditional

This attribute contains URI for CSCF call feature - forward unconditional.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 277

# SN-CFPolicy-ID

This attribute contains the Content Filtering Policy ID.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 220

# SN-Change-Condition

The change condition that triggered this record for a GGSN session.

**Syntax** Enumerated Integer. Supports the following value(s):

- QOSCHANGE = 0
- TARIFFTIMECHANGE = 1
- SGSNCHANGE = 500

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 140

# SN-Charging-VPN-Name

The Charging Context Name for GGSN sessions.

**Syntax** String

**Length** 1-252

**Type** 26

**Vendor ID** 8164

**VSA Type** 137

# SN-Chrg-Char-Selection-Mode

SN-Chrg-Char-Selection-Mode

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 138

# SN-Congestion-Mgmt-Policy

This attribute specifies the Congestion Management Policy.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 315

# SN-Content-Disposition

This attribute indicates how the SIP message body or a message body part is to be interpreted.

**Syntax** String

**Length** 0-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 272

# SN-Content-Length

This attribute contains size of the SIP message body.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 271

# SN-Content-Type

This attribute contains the media type of the SIP message body.

**Syntax** String

**Length** 0-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 270

# SN-CR-International-Cid

Carrier ID for routing international calls.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 295

# SN-CR-LongDistance-Cid

Carrier ID for routing long distance calls.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 296

# SN-CSCF-App-Server-Info

This is a compound attribute and contains information about application servers.

**Type** 26

**Vendor ID** 8164

**VSA Type** 275

**Syntax** Compound. Contains the following sub-attribute(s).

## App-Server

Holds URL of the application server.

**Syntax** String

**Length** 1-128

**Type** 1

## AS-Called-Party-Address

Holds the called party addresses determined by the application server.

**Syntax** String

**Length** 1-128

**Type** 2

# SN-CSCF-Rf-SDP-Media-Components

This is a compound attribute for IMS SDP media components.

**Type** 26

**Vendor ID** 8164

**VSA Type** 273

**Syntax** Compound. Contains the following sub-attribute(s).

## Media-Name

Name of the media as available in the SDP data.

**Syntax** String

**Length** 0-128

**Type** 1

## Media-Description

Holds the attributes of the media as available in the SDP data.

**Syntax** SDP-Media-Description

**Type** 2

## Authorised-QoS

Holds the 3GPP Authorised QoS string.

**Syntax** String

**Length** 0-128

**Type** 3

## 3GPP-Charging-Id

This attribute specifies the 3GPP Charging Identifier.

**Syntax** String

**Length** 0-253

**Type** 4

## Access-Network-Charging-Identifier-Value

Holds the access network charging identifier value.

**Syntax** Opaque Value

**Length** 1-256

**Type** 5

# SN-Cscf-Subscriber-Ip-Address

This attribute contains the IP address of subscriber, used for early IMS authentication procedures.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 287

# SN-Customer-ID

This attribute contains the internal Customer-ID.

**Syntax** Opaque Value

**Length** 1-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 325

# SN-Data-Tunnel-Ignore-DF-Bit

This attribute specifies if the PDSN/FA or HA should ignore the DF bit in the IPv4 header when encapsulating the IPv4 packet in MIP, and therefore fragmenting the resulting tunneled packet if necessary. The default is not to ignore the DF bit.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 49

# SN-DHCP-Lease-Expiry-Policy

This attribute specifies whether to renew or disconnect on expiry of IP address lease time.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- auto-renew = 0
- disconnect = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 157

# SN-DHCP-Options

Specific information to be sent from the DHCP server to the client.

**Syntax** Opaque Value

**Length** 1-245

**Type** 26

**Vendor ID** 8164

**VSA Type** 309

# SN-Direction

ROHC protocol control that specifies in which direction to enable Robust Header Compression (ROHC).

**Syntax** Enumerated Integer. Supports the following value(s):

- Any = 0
- Uplink = 1
- Downlink = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 153

# SN-Disconnect-Reason

This attribute indicates the reason the user was disconnected from service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Defined = 0
- Admin-Disconnect = 1
- Remote-Disconnect = 2
- Local-Disconnect = 3
- Disc-No-Resource = 4
- Disc-Excd-Service-Limit = 5
- PPP-LCP-Neg-Failed = 6

- PPP-LCP-No-Response = 7
- PPP-LCP-Loopback = 8
- PPP-LCP-Max-Retry = 9
- PPP-Echo-Failed = 10
- PPP-Auth-Failed = 11
- PPP-Auth-Failed-No-AAA-Resp = 12
- PPP-Auth-No-Response = 13
- PPP-Auth-Max-Retry = 14
- Invalid-AAA-Attr = 15
- Failed-User-Filter = 16
- Failed-Provide-Service = 17
- Invalid-IP-Address-AAA = 18
- Invalid-IP-Pool-AAA = 19
- PPP-IPCP-Neg-Failed = 20
- PPP-IPCP-No-Response = 21
- PPP-IPCP-Max-Retry = 22
- PPP-No-Rem-IP-Address = 23
- Inactivity-Timeout = 24
- Session-Timeout = 25
- Max-Data-Excd = 26
- Invalid-IP-Source-Address = 27
- MSID-Auth-Failed = 28
- MSID-Auth-Failed-No-AAA-Resp = 29
- A11-Max-Retry = 30
- A11-Lifetime-Expired = 31
- A11-Message-Integrity-Failure = 32
- PPP-lcp-remote-disc = 33
- Session-setup-timeout = 34
- PPP-keepalive-failure = 35
- Flow-add-failed = 36
- Call-type-detection-failed = 37
- Wrong-ipcp-params = 38

- MIP-remote-dereg = 39
- MIP-lifetime-expiry = 40
- MIP-proto-error = 41
- MIP-auth-failure = 42
- MIP-reg-timeout = 43
- Invalid-dest-context = 44
- Source-context-removed = 45
- Destination-context-removed = 46
- Req-service-addr-unavailable = 47
- Demux-mgr-failed = 48
- Internal-error = 49
- AAA-context-removed = 50
- invalid-service-type = 51
- mip-relay-req-failed = 52
- mip-rcvd-relay-failure = 53
- ppp-restart-inter-pdsn-handoff = 54
- gre-key-mismatch = 55
- invalid_tunnel_context = 56
- no_peer_lns_address = 57
- failed_tunnel_connect = 58
- l2tp-tunnel-disconnect-remote = 59
- l2tp-tunnel-timeout = 60
- l2tp-protocol-error-remote = 61
- l2tp-protocol-error-local = 62
- l2tp-auth-failed-remote = 63
- l2tp-auth-failed-local = 64
- l2tp-try-another-lns-from-remote = 65
- l2tp-no-resource-local = 66
- l2tp-no-resource-remote = 67
- l2tp-tunnel-disconnect-local = 68
- l2tp-admin-disconnect_remote = 69
- l2tpmgr-reached-max-capacity = 70

- MIP-reg-revocation = 71
- path-failure = 72
- dhcp-relay-ip-validation-failed = 73
- gtp-unknown-pdp-addr-or-pdp-type = 74
- gtp-all-dynamic-pdp-addr-occupied = 75
- gtp-no-memory-is-available = 76
- dhcp-relay-static-ip-addr-not-allowed = 77
- dhcp-no-ip-addr-allocated = 78
- dhcp-ip-addr-allocation-tmr-exp = 79
- dhcp-ip-validation-failed = 80
- dhcp-static-addr-not-allowed = 81
- dhcp-ip-addr-not-available-at-present = 82
- dhcp-lease-expired = 83
- lpool-ip-validation-failed = 84
- lpool-static-ip-addr-not-allowed = 85
- static-ip-validation-failed = 86
- static-ip-addr-not-present = 87
- static-ip-addr-not-allowed = 88
- radius-ip-validation-failed = 89
- radius-ip-addr-not-provided = 90
- invalid-ip-addr-from-sgsn = 91
- no-more-sessions-in-aaa = 92
- ggsn-aaa-auth-req-failed = 93
- conflict-in-ip-addr-assignment = 94
- apn-removed = 95
- credits-used-bytes-in = 96
- credits-used-bytes-out = 97
- credits-used-bytes-total = 98
- prepaid-failed = 99
- l2tp-ipsec-tunnel-failure = 100
- l2tp-ipsec-tunnel-disconnected = 101
- mip-ipsec-sa-inactive = 102

- Long-Duration-Timeout = 103
- proxy-mip-registration-failure = 104
- proxy-mip-binding-update = 105
- proxy-mip-inter-pdsn-handoff-require-ip-address = 106
- proxy-mip-inter-pdsn-handoff-mismatched-address = 107
- Local-purge = 108
- failed-update-handoff = 109
- closed_rp-handoff-complete = 110
- closed_rp-duplicate-session = 111
- closed_rp-handoff-session-not-found = 112
- closed_rp-handoff-failed = 113
- pcf-monitor-keep-alive-failed = 114
- call-internal-reject = 115
- call-restarted = 116
- a11-mn-ha-auth-failure = 117
- a11-badly-formed = 118
- a11-t-bit-not-set = 119
- a11-unsupported-vendor-id = 120
- a11-mismatched-id = 121
- mipha-dup-home-addr-req = 122
- mipha-dup-imsi-session = 123
- ha-unreachable = 124
- IPSP-addr-in-use = 125
- mipfa-dup-home-addr-req = 126
- mipha-ip-pool-busyout = 127
- inter-pdsn-handoff = 128
- active-to-dormant = 129
- ppp-renegotiation = 130
- active-start-param-change = 131
- tarrif-boundary = 132
- a11-disconnect-no-active-stop = 133
- nw-reachability-failed-reject = 134

- nw-reachability-failed-redirect = 135
- container-max-exceeded = 136
- static-addr-not-allowed-in-apn = 137
- static-addr-required-by-radius = 138
- static-addr-not-allowed-by-radius = 139
- mip-registration-dropped = 140
- counter-rollover = 141
- constructed-nai-auth-fail = 142
- inter-pdsn-service-optimize-handoff-disabled = 143
- gre-key-collision = 144
- inter-pdsn-service-optimize-handoff-triggered = 145
- intra-pdsn-handoff-triggered = 146
- delayed-abort-timer-expired = 147
- Admin-AAA-disconnect = 148
- Admin-AAA-disconnect-handoff = 149
- PPP-IPV6CP-Neg-Failed = 150
- PPP-IPV6CP-No-Response = 151
- PPP-IPV6CP-Max-Retry = 152
- PPP-Restart-Invalid-source-IPV4-address = 153
- a11-disconnect-handoff-no-active-stop = 154
- call-restarted-inter-pdsn-handoff = 155
- call-restarted-ppp-termination = 156
- mipfa-resource-conflict = 157
- failed-auth-with-charging-svc = 158
- mipha-dup-imsi-session-purge = 159
- mipha-rev-pending-newcall = 160
- volume-quota-reached = 161
- duration-quota-reached = 162
- gtp-user-authentication-failed = 163
- MIP-reg-revocation-no-lcp-term = 164
- MIP-private-ip-no-rev-tunnel = 165
- Invalid-Prepaid-AAA-attr-in-auth-response = 166

- mipha-prepaid-reset-dynamic-newcall = 167
- gre-flow-control-timeout = 168
- mip-paaa-bc-query-not-found = 169
- mipha-dynamic-ip-addr-not-available = 170
- a11-mismatched-id-on-handoff = 171
- a11-badly-formed-on-handoff = 172
- a11-unsupported-vendor-id-on-handoff = 173
- a11-t-bit-not-set-on-handoff = 174
- MIP-reg-revocation-i-bit-on = 175
- A11-RRQ-Deny-Max-Count = 176
- Dormant-Transition-During-Session-Setup = 177
- PPP-Rem-Reneg-Disc-Always-Cfg = 178
- PPP-Rem-Reneg-Disc-NAI-MSID-Mismatch = 179
- mipha-subscriber-ipsec-tunnel-down = 180
- mipha-subscriber-ipsec-tunnel-failed = 181
- mipha-subscriber-ipsecmgr-death = 182
- flow-is-deactivated = 183
- ecsv2-license-exceeded = 184
- IPSG-Auth-Failed = 185
- driver-initiated = 186
- ims-authorization-failed = 187
- service-instance-released = 188
- flow-released = 189
- ppp-renego-no-ha-addr = 190
- intra-pdsn-handoff = 191
- overload-disconnect = 192
- css-service-not-found = 193
- Auth-Failed = 194
- dhcp-client-sent-release = 195
- dhcp-client-sent-nak = 196
- msid-dhcp-chaddr-mismatch = 197
- link-broken = 198

- prog-end-timeout = 199
- qos-update-wait-timeout = 200
- css-synch-cause = 201
- Gtp-context-replacement = 202
- PDIF-Auth-failed = 203
- l2tp-unknown-apn = 204
- ms-unexpected-network-reentry = 205
- r6-invalid-nai = 206
- eap-max-retry-reached = 207
- vbm-hoa-session-disconnected = 208
- vbm-voa-session-disconnected = 209
- in-acl-disconnect-on-violation = 210
- eap-msk-lifetime-expiry = 211
- eap-msk-lifetime-too-low = 212
- mipfa-inter-tech-handoff = 213
- r6-max-retry-reached = 214
- r6-nwexit-recd = 215
- r6-dereg-req-recd = 216
- r6-remote-failure = 217
- r6r4-protocol-errors = 218
- wimax-qos-invalid-aaa-attr = 219
- npu-gre-flows-not-available = 220
- r4-max-retry-reached = 221
- r4-nwexit-recd = 222
- r4-dereg-req-recd = 223
- r4-remote-failure = 224
- ims-authorization-revoked = 225
- ims-authorization-released = 226
- ims-auth-decision-invalid = 227
- mac-addr-validation-failed = 228
- excessive-wimax-pd-flows-cfgd = 229
- sgsn-canc-loc-sub = 230

- sgsn-canc-loc-upd = 231
- sgsn-mnr-exp = 232
- sgsn-ident-fail = 233
- sgsn-sec-fail = 234
- sgsn-auth-fail = 235
- sgsn-glu-fail = 236
- sgsn-imp-det = 237
- sgsn-smgr-purge = 238
- sgsn-subs-handed-to-peer = 239
- sgsn-dns-fail-inter-rau = 240
- sgsn-cont-rsp-fail = 241
- sgsn-hlr-not-found-for-imsi = 242
- sgsn-ms-init-det = 243
- sgsn-opr-policy-fail = 244
- sgsn-duplicate-context = 245
- hss-profile-update-failed = 246
- sgsn-no-pdp-activated = 247
- asnpc-idle-mode-timeout = 248
- asnpc-idle-mode-exit = 249
- asnpc-idle-mode-auth-failed = 250
- asngw-invalid-qos-configuration = 251
- sgsn-dsd-allgprswithdrawn = 252
- r6-pmk-key-change-failure = 253
- sgsn-illegal-me = 254
- sess-termination-timeout = 255
- sgsn-sai-fail = 256
- sgsn-rnc-removal = 257
- sgsn-rai-removal = 258
- sgsn-init-deact = 259
- ggsn-init-deact = 260
- hlr-init-deact = 261
- ms-init-deact = 262

- sgsn-detach-init-deact = 263
- sgsn-rab-rel-init-deact = 264
- sgsn-iu-rel-init-deact = 265
- sgsn-gtpu-path-failure = 266
- sgsn-gtpc-path-failure = 267
- sgsn-local-handoff-init-deact = 268
- sgsn-remote-handoff-init-deact = 269
- sgsn-gtp-no-resource = 270
- sgsn-rnc-no-resource = 271
- sgsn-odb-init-deact = 272
- sgsn-invalid-ti = 273
- sgsn-actv-rejected-due-to-rnc = 274
- sgsn-apn-restrict-vio = 275
- sgsn-actv-rejected-by-sgsn = 276
- sgsn-abnormal-deact = 277
- sgsn-actv-rejected-by-ggsn = 278
- sgsn-err-ind = 279
- asngw-non-anchor-prohibited = 280
- asngw-im-entry-prohibited = 281
- session-idle-mode-entry-timeout = 282
- session-idle-mode-exit-timeout = 283
- asnpc-ms-power-down-nwexit = 284
- asnpc-r4-nwexit-recd = 285
- sgsn-iu-rel-before-call-est = 286
- ikev2-subscriber-ipsecmgr-death = 287
- All-dynamic-pool-addr-occupied = 288
- mip6ha-ip-addr-not-available = 289
- bs-monitor-keep-alive-failed = 290
- sgsn-att-in-reg-state = 291
- sgsn-inbound-srns-in-reg-state = 292
- dt-ggsn-tun-reestablish-failed = 293
- sgsn-unknown-pdp = 294

- sgsn-pdp-auth-failure = 295
- sgsn-duplicate-pdp-context = 296
- sgsn-no-rsp-from-ggsn = 297
- sgsn-failure-rsp-from-ggsn = 298
- sgsn-apn-unknown = 299
- sgsn-pdp-status-mismatch = 300
- sgsn-attach-on-attch-init-abort = 301
- sgsn-iu-rel-in-israu-init-abort = 302
- sgsn-smgr-init-abort = 303
- sgsn-mm-ctx-cleanup-init-abort = 304
- sgsn-unknown-abort = 305
- sgsn-guard-timeout-abort = 306
- vpn-bounce-dhcpip-validate-req = 307
- mipv6-id-mismatch = 308
- aaa-session-id-not-found = 309
- x1-max-retry-reached = 310
- x1-nwexit-recd = 311
- x1-dereg-req-recd = 312
- x1-remote-failure = 313
- x1x2-protocol-errors = 314
- x2-max-retry-reached = 315
- x2-nwexit-recd = 316
- x2-dereg-req-recd = 317
- x2-remote-failure = 318
- x1-pmk-key-change-failure = 319
- sa-rekeying-failure = 320
- sess-sleep-mode-entry-timeout = 321
- phsgw-non-anchor-prohibited = 322
- asnpc-pc-relocation-failed = 323
- asnpc-pc-relocation = 324
- auth_policy_mismatch = 325
- sa-lifetime-expiry = 326

- asnpc-del-ms-entry-recd = 327
- phspc-sleep-mode-timeout = 328
- phspc-sleep-mode-exit = 329
- phspc-sleep-mode-auth-failed = 330
- phspc-ms-power-down-nwexit = 331
- phspc-x2-nwexit-recd = 332
- invalid-nat-config = 333
- asngw-tid-entry-not-found = 334
- No-NAT-IP-Address = 335
- excessive-phs-pd-flows-cfgd = 336
- phsgw-invalid-qos-configuration = 337
- Interim-Update = 338
- sgsn-attach-abrt-rad-lost = 339
- sgsn-inbnd-irau-abrt-rad-lost = 340
- ike-keepalive-failed = 341
- sgsn-attach-abrt-ms-suspend = 342
- sgsn-inbnd-irau-abrt-ms-suspend = 343
- duplicate-session-detected = 344
- sgsn-xid-response-failure = 345
- sgsn-nse-cleanup = 346
- sgsn-gtp-req-failure = 347
- sgsn-imsi-mismatch = 348
- sgsn-bvc-blocked = 349
- sgsn-attach-on-inbound-irau = 350
- sgsn-attach-on-outbound-irau = 351
- sgsn-incorrect-state = 352
- sgsn-t3350-expiry = 353
- sgsn-page-timer-expiry = 354
- phsgw-tid-entry-not-found = 355
- phspc-del-ms-entry-recd = 356
- sgsn-pdp-local-purge = 357
- phs-invalid-nai = 358

- session-sleep-mode-exit-timeout = 359
- sgsn-offload-phase2 = 360
- phs-thirdparty-auth-fail = 361
- remote-error-notify = 362
- no-response = 363
- PDG-Auth-failed = 364
- mme-s1AP-send-failed = 365
- mme-egtpc-connection-failed = 366
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- sgsn-isr-addl-ptmsi-rai = 503
- sgsn-sgw-dbr-cause-isr-deact = 504
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- smp-fp-itc-bw-oper-failure = 672
- smp-fp-strm-chrg-oper-failure = 673
- vpp-next-hop-failure = 674
- graceful-cleanup-up-audit-fail = 675
- sx-max-trans-threshold-reached = 676

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 3

# SN-DNS-Proxy-Intercept-List

This attribute is used to specify the list name which contains the rules to intercept and redirect DNS requires received from mobile. This attribute can be configured using either local subscriber template or returned from Access-Accept.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 214

# SN-DNS-Proxy-Use-Subscr-Addr

This attribute is used to convey whether to use the subscriber's address as the source address for DNS Proxy.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 25

# SN-Dynamic-Addr-Alloc-Ind-Flag

This attribute indicates whether the IP address is allocated statically or dynamically from SGW perspective.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 141

# SN-Ecs-Data-Volume

Compound attribute indicating downlink and uplink octet usage for a PDP context per rating group.

**Type** 26

**Vendor ID** 8164

**VSA Type** 176

**Syntax** Compound. Contains the following sub-attribute(s).

### Rating-Group-Id

Rating Group Id in a PDP context.

**Syntax** Unsigned Integer

**Length** 4

**Type** 1

### GPRS-Uplink

Uplink octet usage for a PDP context per rating group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

### GPRS-Downlink

Downlink octet usage for a PDP context per rating group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## SN-Enable-QoS-Renegotiation

This attribute configures the enabling of dynamic QoS renegotiation.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 144

## SN-Event

This attribute contains the type of SIP event for which the accounting-request message is generated.

**Syntax** String

**Length** 0-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 255

# SN-Ext-Inline-Srvr-Context

This attribute configures the context name in which the External In-line server resides.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 41

# SN-Ext-Inline-Srvr-Down-Addr

This attribute configures the IP address of the Downstream External In-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 56

# SN-Ext-Inline-Srvr-Down-VLAN

This attribute configures the IP address of the Downstream External In-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 59

# SN-Ext-Inline-Srvr-Preference

This attribute configures the preference for the tagged group of External In-line Servers. This attribute is required, although it doesn't actually assign a preference right now. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 57

# SN-Ext-Inline-Srvr-Up-Addr

This attribute configures the IP address of the Upstream External In-line server to forward VLAN-tagged packets to. It can be tagged, in which case it is treated as part of an external in-line server group

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 55

# SN-Ext-Inline-Srvr-Up-VLAN

This attribute configures the VLAN tag to be applied to Upstream packets and forwarded to the External In-line server. It can be tagged, in which case it is treated as part of an external in-line server group.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 58

# SN-Fast-Reauth-Username

Fast re-authentication user name.

**Syntax** Opaque Value

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 304

# SN-Firewall-Enabled

Firewall for subscriber enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 198

# SN-Firewall-Policy

This attribute contains the firewall policy name.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 239

# SN-FMC-Location

This attribute contains the MAC address and CDMA location information.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 171

# SN-GGSN-Address

The control plane IP address of the GGSN that handles one or more media component(s) of an IMS session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 264

# SN-GGSN-MIP-Required

This attribute specifies if MIP is required for the GGSN subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 68

# SN-Gratuitous-ARP-Aggressive

This attribute specifies whether to generate a gratuitous ARP message whenever a MIP handoff or re-registration occurs. A non-zero of this attribute also configures the mode of operation when sending the gratuitous ARP, although only one mode (Aggressive) is supported at this time.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 54

# SN-GTP-Version

This attribute indicates the version of GTP the subscriber is using.

**Syntax** Enumerated Integer. Supports the following value(s):

- GTP_VERSION_0 = 0
- GTP_VERSION_1 = 1
- GTP_VERSION_2 = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 62

# SN-Handoff-Indicator

This attribute indicates whether the Accounting Interim is sent because of the interim or not.

**Syntax** Enumerated Integer. Supports the following value(s):

- Active-Handoff = 0
- Location-Update = 1

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 310

# SN-HA-Send-DNS-Address

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 47

# SN-Home-Behavior

This attribute specifies the configuration for the behavior bits settings for a home subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 119

# SN-Home-Profile

This attribute specifies the configuration for the profile bits settings for a home subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 109

# SN-Home-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for home subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 106

# SN-Ignore-Unknown-HA-Addr-Error

**Type** 26

**Syntax** Unsigned Integer

**Length** 1

**Vendor ID** 8164

**VSA Type** 160

# SN-IMS-AM-Address

IMS application manager address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 167

# SN-IMS-AM-Domain-Name

IMS application manager domain name.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 168

# SN-IMS-Charging-Identifier

This attribute holds the IMS Charging Identifier (ICID) as generated by an IMS node for a SIP session.

**Syntax** String

**Length** 0-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 260

# SN-IMSI

SN-IMSI

**Syntax** Opaque Value

**Length** 1-8

**Type** 26

**Vendor ID** 8164

**VSA Type** 252

# SN-Inactivity-Time

This attribute contains the inactivity time duration for a subscriber session under long time duration timer configuration.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 232

# SN-Internal-SM-Index

SN-Internal-SM-Index

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 122

# SN-IP-Alloc-Method

This attribute specifies the method for allocating an IP address. This feature only applies to the GGSN service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Alloc_Local_Pool = 0
- Alloc_Dhcp_Client = 1
- Alloc_Radius = 2
- Alloc_No_Alloc = 3
- Alloc_Static_Alloc = 4
- Alloc_Dhcp_Relay = 5

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 53

# SN-IP-Filter-In

This attribute specifies the IP input filter rules to determine whether the traffic should undergo DPI processing.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 10

# SN-IP-Filter-Out

This attribute specifies the IP output filter rules to determine whether the traffic should undergo DPI processing.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 11

# SN-IP-Header-Compression

Specifies the IP header compression method to use.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- VJ = 1
- ROHC = 2
- VJ_ROHC = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 150

# SN-IP-Hide-Service-Address

This attribute prevents subscribers from using traceroute to discover the public domain network addresses configured on HA and other services on the system.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 60

# SN-IP-In-ACL

This attribute contains a definition for one Input IP Access Control List, which is used to filter the IP packets coming from the user. Note that more than one of these attributes can be included, in which case they are processed in the order in which they appear in the RADIUS Access-Accept.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 17

# SN-IP-In-Plcy-Grp

This attribute specifies the name of the policy group configuration applied in the uplink direction.

**Syntax** String

**Length** 1-15

**Type** 26

**Vendor ID** 8164

**VSA Type** 193

# SN-IP-Out-ACL

This attribute contains a definition for one Output IP Access Control List, which is used to filter the IP packets sent to the user. Note that more than one of these attributes can be included, in which case they are processed in the order in which they appear in the RADIUS Access-Accept.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 18

# SN-IP-Out-Plcy-Grp

This attribute specifies the name of the policy group configuration applied in the downlink direction.

**Syntax** String

**Length** 1-15

**Type** 26

**Vendor ID** 8164

**VSA Type** 194

# SN-IP-Pool-Name

This vendor-specific attribute indicates the name of the IP pool from which an IP address should be allocated to the subscriber. Also, see Framed-Pool, which is the standard attribute accomplishing the same.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 8

# SN-IP-Source-Validation

This attribute indicates if the source IP address should be validated before forwarding the IP packet.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0

- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 14

# SN-IP-Source-Violate-No-Acct

This attribute excludes the Source Violated IP packets and byte counts when reporting the Octet and Packet count in an accounting message.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 196

# SN-IP-Src-Validation-Drop-Limit

Maximum number of packet drops entertained before disconnecting the session for source violated packets for the session.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 110

# SN-IPv6-Alloc-Method

This attribute specifies the method for allocating an IPv6 address. This feature only applies to the GGSN service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Alloc_Local_Pool = 0
- Alloc_Dhcp_Client = 1
- Alloc_No_Alloc = 2
- Alloc_Static_Alloc = 3

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 314

# SN-IPv6-DNS-Proxy

IPV6 DNS proxy enabled or disabled setting for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 126

# SN-IPv6-Egress-Filtering

This attribute enables egress filtering to make sure that packets being sent to the mobile device have an interface ID that matches that of the mobile device. This feature is meant to protect the Mobile from receiving unwanted packets from the Internet.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 103

# SN-IPv6-Min-Link-MTU

IPV6 MTU size.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 136

# SN-IPv6-num-rtr-advt

This attribute indicates the IPv6 number of Initial Router Advertisements. The default value is 3.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 97

# SN-IPv6-Primary-DNS

This attribute specifies a Primary DNS server address that the Router Advertisement message sent by the PDSN will include.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 8164

**VSA Type** 101

# SN-IPv6-rtr-advt-interval

This attribute indicates the IPv6 Initial Router Advertisement Interval specified in milliseconds. The default value is 3000.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 96

# SN-IPv6-Secondary-DNS

This attribute specifies a Secondary DNS server address that the Router Advertisement message sent by the PDSN will include.

**Syntax** Opaque Value

**Length** 16

**Type** 26

**Vendor ID** 8164

**VSA Type** 102

# SN-IPv6-Sec-Pool

IPv6 secondary pool names.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 124

# SN-IPv6-Sec-Prefix

IPv6 secondary pool name prefix.

**Syntax** Opaque Value

**Length** 2-18

**Type** 26

**Vendor ID** 8164

**VSA Type** 125

# SN-ISC-Template-Name

This attribute contains name of the CSCF ISC template to be used for a subscriber.

**Syntax** String

**Length** 0-255

**Type** 26

**Vendor ID** 8164

**VSA Type** 276

# SN-Is-Unregistered-Subscriber

This attribute specifies if a subscriber is registered or not.

**Syntax** String

**Length** 0-256

**Type** 26

**Vendor ID** 8164

**VSA Type** 269

# SN-L3-to-L2-Tun-Addr-Policy

This attribute specifies the address allocation policy.

**Syntax** Enumerated Integer. Supports the following value(s):

- no-local-alloc-validate = 0
- local-alloc = 1
- local-alloc-validate = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 43

# SN-LBO-Acct-IN-Octets

This attribute indicates the number of Local Breakout accounting input octets sent by UE directly to the internet. This attribute is sent in the Acct-Interim/Acct-Stop message to AAA server.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 323

# SN-LBO-Acct-IN-Pkts

This attribute indicates the number of Local Breakout accounting input packets sent by UE directly to the internet. This attribute is sent in the Acct-Interim/Acct-Stop message to AAA server.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 321

# SN-LBO-Acct-Out-Octets

This attribute indicates the number of Local Breakout accounting output octets received by UE directly from the internet. This attribute is sent in the Acct-Interim/Acct-Stop message to AAA server..

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 324

# SN-LBO-Acct-Out-Pkts

This attribute indicates the number of Local Breakout accounting output packets received by UE directly from the internet. This attribute is sent in the Acct-Interim/Acct-Stop message to AAA server.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 322

# SN-Local-IP-Address

This attribute indicates the IP address of the local interface on the chassis for the user's session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 13

# SN-Long-Duration-Action

This attribute specifies the action to take place when the long duration timeout expires for a subscriber session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Detection = 1
- Disconnection = 2
- Dormant-Only-Disconnection = 3
- Dormant-Only-Detection = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 45

# SN-Long-Duration-Notification

SN-Long-Duration-Notification.

**Syntax** Enumerated Integer. Supports the following value(s):

- Suppress = 0

- Send = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 253

# SN-Long-Duration-Timeout

This attribute is used to detect and if necessary disconnect sessions connected to the PDSN. This attribute configures the time period, in seconds, before either alerting the administrator or disconnecting the subscriber.

**Syntax** Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 44

# SN-Max-Sec-Contexts-Per-Subs

Maximum secondary PDP contexts per subscriber.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 8164

**VSA Type** 290

# SN-Mediation-Acct-Rsp-Action

When this attribute is set to None, there is no action taken while waiting for a response for the accounting start message from the Mediation Accounting server. When this attribute is set to No-Early-PDUs the system buffers all packets from the user (uplink) until a response for the accounting start message is received from the Mediation Accounting server. When set to Delay_GTP_Response, the system does not send a GTP create PDP response to the GGSN until a response for the accounting start message is received from the Mediation Accounting server. If the attribute is not present in Access-Accept message or if the attribute value is invalid, the value "None" is assumed.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- No_Early_PDUs = 1
- Delay_GTP_Response = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 105

# SN-Mediation-Enabled

This attribute indicates whether the Mediation Accounting configuration is enabled or disabled for GGSN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 123

# SN-Mediation-No-Interims

This attribute is used to disable or enable Mediation Interim Accounting Records for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 146

# SN-Mediation-VPN-Name

This attribute specifies the Mediation Context name for the session.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 104

# SN-Min-Compress-Size

This attribute specifies the minimum size (in octets) a data packet can have in order to be compressed.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 23

# SN-MIP-AAA-Assign-Addr

This attribute specifies if the PDSN/FA will allow AAA to assign the home address. The default is to not allow AAA to assign the home address.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 50

# SN-MIP-ANCID

Accounting correlation ID created by IPGW, received by VBM and HBM.

**Syntax** Opaque Value

**Length** 12

**Type** 26

**Vendor ID** 8164

**VSA Type** 166

# SN-MIP-Dual-Anchor

Enable/disable dual-anchor service for a subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 165

# SN-MIP-HA-Assignment-Table

MIP-HA Assignment Table name. When this is received in an Access-Accept message, the system uses this local table to get the HA Address.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 154

# SN-MIP-Match-AAA-Assign-Addr

This attribute specifies if the PDSN/FA will enforce that a non-zero AAA-specified home address must match the home address present in the MIP RRQ from the mobile node, and disconnect the subscriber session if a match is not present. The default is not to force the addresses to match.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 51

# SN-MIP-MIN-Reg-Lifetime-Realm

This attribute configures the minimum MIP registration lifetime for a subscriber/realm.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 12

# SN-MIP-Reg-Lifetime-Realm

This attribute configures the maximum MIP registration lifetime for a subscriber/realm.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 175

# SN-MIP-Send-Ancid

This attribute enables/disables sending ANCID from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 163

# SN-MIP-Send-Correlation-Info

This attribute enables/disables sending of correlation-id from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Starent = 1
- NVSE_CUstom1 = 2
- NVSE_Custom2 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 188

# SN-MIP-Send-Host-Config

This attribute is used to enable/disable Host Config Extension in MIP RRQ.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0

- Enabled = 1

**Length** 1

**Vendor ID** 8164

**VSA Type** 311

# SN-MIP-Send-Imsi

AAA attribute to enable/disable sending IMSI from FA to HA in MIP RRQ.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Starent = 1
- NVSE_Custom1 = 2
- NVSE_Custom2 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 164

# SN-MIP-Send-Term-Verification

This attribute specifies whether the PDSN/FA should send the Terminal Verification Normal Vendor/Organization Specific Extension (NVSE) in the Mobile IP RRQ message to the HA. The default is not to send the Terminal Verification NVSE.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- NVSE_Custom1 = 1
- NVSE_Custom2 = 2
- NVSE_Starent = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 48

# SN-MN-HA-Hash-Algorithm

This attribute contains the hash algorithm to use for MN-HA authentication.

**Syntax** Enumerated Integer. Supports the following value(s):

- MD5 = 1
- MD5-RFC2002 = 2
- HMAC-MD5 = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 99

# SN-MN-HA-Timestamp-Tolerance

This attribute indicates the duration of timestamp tolerance, in seconds, to use for MN-HA authentication.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 30

# SN-Mode

Robust Header Compression (ROHC) Mode. Reliable mode means each ROHC control needs to be Acknowledged. Optimistic mode is a modified version to reduce the number of control messages and bandwidth consumption. Unidirectional assumes a one way link without any Feedback from the decompressor.

**Syntax** Enumerated Integer. Supports the following value(s):

- Reliable = 0
- Optimistic = 1
- Unidirectional = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 151

# SN-MS-ISDN

SN-MS-ISDN.

**Syntax** Opaque Value

**Length** 1-9

**Type** 26

**Vendor ID** 8164

**VSA Type** 248

# SN-NAI-Construction-Domain

This attribute specifies the domain name to use when constructing the NAI.

**Syntax** String

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 37

# SN-NAT-IP-Address

This attribute includes the NAT (public) IP address used for the call.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 297

# SN-Node-Functionality

This attribute includes the functionality identifier of the IMS node where the cause code was generated.

**Syntax** Enumerated Integer. Supports the following value(s):

- S-CSCF = 0
- P-CSCF = 1
- I-CSCF = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 268

# SN-NPU-Qos-Priority

This attribute configures inter-subscriber priority queueing based on class of service offered. Gold has the highest priority and Best_effort the lowest priority. From_DSCP means the priority queueing will be done based on the DSCP marking that the incoming subscriber packet carries.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best_Effort = 0
- Bronze = 1
- Silver = 2
- Gold = 3
- From_DSCP = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 98

# SN-Ntk-Initiated-Ctx-Ind-Flag

Indicates whether the GGSN call is a network initiated PDP Context.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 142

# SN-Ntk-Session-Disconnect-Flag

SN-Ntk-Session-Disconnect-Flag.

**Syntax** Enumerated Integer. Supports the following value(s):

- Session-Disconnect = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 143

# SN-Nw-Reachability-Server-Name

This attribute specifies the name of the Network Reachability Detection Server.

**Syntax** String

**Length** 1-16

**Type** 26

**Vendor ID** 8164

**VSA Type** 65

# SN-Originating-IOI

This attribute holds the Inter Operator Identifier for the originating network in the home network of the originating end user.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 261

# SN-Overload-Disc-Connect-Time

This attribute provides inactivity time for session to become candidate for disconnection during overload.

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 233

# SN-Overload-Disc-Inact-Time

This attribute provides inactivity time for session to become candidate for disconnection during overload.

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 234

# SN-Overload-Disconnect

This attribute enables (if one) and disables the overload-disconnect feature for a subscriber.

**Syntax** Uint32

**Type** 26

**Vendor ID** 8164

**VSA Type** 235

# SN-PDG-TTG-Required

TTG mode of operation Required for PDG.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 299

# SN-PDIF-MIP-Release-TIA

PDIF mobile IP release TIA.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 172

# SN-PDIF-MIP-Required

PDIF mobile IP required.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 170

# SN-PDIF-MIP-Simple-IP-Fallback

PDIF mobile IP simple IP fallback.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 173

# SN-PDSN-Correlation-Id

Correlation ID received from PDSN to HA.

**Syntax** Opaque Value

**Length** 8

**Type** 26

**Vendor ID** 8164

**VSA Type** 189

# SN-PDSN-Handoff-Req-IP-Addr

This attribute specifies if the PDSN should reject and terminate the subscriber session when the proposed address in IPCP by the mobile does not match the existing address in the PDSN. The default (Disabled) is not to reject these sessions.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 46

# SN-PDSN-NAS-Id

NAS Identifier received from PDSN to HA

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 190

# SN-PDSN-NAS-IP-Address

NAS IP address received from PDSN to HA.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 191

# SN-Permit-User-Mcast-PDUs

Specifies whether or not to let the subscriber discard multicast PDUs.

**Syntax** Enumerated Integer. Supports the following value(s):

- disabled = 0
- enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 134

# SN-PPP-Accept-Peer-v6Ifid

This attribute indicates the acceptance of the interface ID provided by peer during PPP IPv6CP if the ID is valid. The default is disabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 95

# SN-PPP-Always-On-Vse

SN-PPP-Always-On-Vse.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 130

# SN-PPP-Data-Compression-Mode

This attribute indicates the PPP data compression mode to use for the PPP session when PPP data compression is used.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Stateless = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 19

# SN-PPP-Data-Compression

This attribute indicates the PPP data compression algorithm to use for the PPP session. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Stac-LZS = 1
- MPPC = 2
- Deflate = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 9

# SN-PPP-Keepalive

This attribute indicates the interval for the PPP keepalive, in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 16

# SN-PPP-NW-Layer-IPv4

This attribute indicates the PPP IPCP negotiation for IPv4. The default is enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1
- Passive = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 92

# SN-PPP-NW-Layer-IPv6

This attribute indicates the PPP IPv6CP negotiation for IPv6. The default is enabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1
- Passive = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 93

# SN-PPP-Outbound-Password

This attribute indicates the password to be used when the user side of the PPP connection requires authentication.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 15

# SN-PPP-Outbound-Username

This attribute indicates the username to be used when the user side of the PPP connection requires authentication.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 61

# SN-PPP-Progress-Code

This attribute provides information about the "state" of the PPP connection, when the connection was terminated.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Defined = 0
- Call-Lcp-Down = 10
- Call-Disconnecting = 20
- Call-Ppp-Renegotiating = 30
- Call-Arrived = 40
- Call-Pdg-Tcp-Connecting = 45
- Call-Pdg-Ssl-Connecting = 46
- Call-Lcp-Up = 50
- Call-Authenticating = 60
- Call-Bcmcs-Authenticating = 70
- Call-Authenticated = 80
- Call-Tunnel-Connecting = 85
- Call-Ipcp-Up = 90
- Call-Imsa-Authorizing = 95
- Call-Imsa-Authorized = 97
- Call-MBMS-UE-Authorizing = 98

- Call-MBMS-Bearer-Authorizing = 99
- Call-Simple-IP-Connected = 100
- Call-Mobile-IP-Connected = 110
- Call-Tunnel-Connected = 115
- Call-Pdp-Type-IP-Connected = 120
- Call-Pdp-Type-IPv6-Connected = 125
- Call-Pdp-Type-PPP-Connected = 130
- Call-GTP-Connecting = 131
- Call-GTP-Connected = 132
- Call-Proxy-Mobile-IP-Connected = 140
- Call-Pdg-Ssl-Connected = 141
- Call-Pdg-Connected = 142
- Call-Ipsg-Connected = 145
- Call-Bcmcs-Connected = 150
- Call-MBMS-UE-Connected = 155
- Call-MBMS-Bearer-Connected = 156
- Call-Pending-Addr-From-DHCP = 160
- Call-Got-Addr-From-DHCP = 170
- Call-HA-IPSEC-Tunnel-Connecting = 180
- Call-HA-IPSEC-Connected = 190
- Call-ASN-Non-Anchor-Connected = 200
- Call-ASNPC-Connected = 210 Call-Mobile-IPv6-Connected = 220
- Call-PMIPv6-Connected = 221
- Call-PHSPC-Connected = 230
- Call-GTP-IPv4-Connected = 235
- Call-GTP-IPv6-Connected = 236
- Call-GTP-IPv4-IPv6-Connected = 237
- Call-SGW-Connected = 245
- Call-MME-Attached = 246
- Call-Auth-Only-Connected = 247

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 4

# SN-PPP-Reneg-Disc

PPP remote reneg disconnect policy

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Never = 0
- Always = 1
- NAI_Prefix_MSID_Mismatch = 2

**Length** 4

**Vendor ID** 8164

**VSA Type** 187

# SN-Prepaid-Compressed-Count

This attribute indicates if a Pre-paid subscriber's byte usage should be counted on the basis of compressed or uncompressed byte data over the subscriber's PPP connection to the system. If not present, the default is to count uncompressed byte data.

**Syntax** Enumerated Integer. Supports the following value(s):

- Uncompressed = 0
- Compressed = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 31

# SN-Prepaid-Final-Duration-Alg

For prepaid, final duration is calculated based on the algorithm specified by the value of this attribute.

**Syntax** Enumerated Integer. Supports the following value(s):

- current_time = 0
- last-user-layer3-activity-time = 1
- last-airlink-activity-time = 2
- last-airlink-activity-time-last-reported = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 135

# SN-Prepaid-Inbound-Octets

In an Access-Accept, this indicates how many additional inbound (bytes delivered to the subscriber) byte credits should be granted to the subscriber. In an Accounting- Request, this indicates how many total inbound byte credits have been granted to the subscriber. When this attribute is not present in the Access-Accept, then pre-paid usage checking is disabled on an inbound octet basis.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 32

# SN-Prepaid-Outbound-Octets

SN-Prepaid-Outbound-Octets

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 33

# SN-Prepaid-Preference

This attribute specifies whether prepaid is volume based or duration based.

**Syntax** Enumerated Integer. Supports the following value(s):

- prepaid_duration = 0
- prepaid_volume = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 129

# SN-Prepaid-Timeout

This attribute indicates how much time may elapse before a new request for more pre-paid credits is issued. If the specified time has elapsed since the prior grant of credits was received from the RADIUS server, then a new request for credits is issued. This attribute is primarily used to periodically update the subscriber of new credits issued since the subscriber was connected. Note that credit requests will still be made on behalf of the subscriber when the subscriber drops down to the low watermark of credits (or zero if there is no low watermark). The presence or absence of this attribute does not affect that mechanism in any way. However, this timer is re-set whenever any grant of credits is received on behalf of the subscriber, regardless of why the grant of credits was requested.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 35

# SN-Prepaid

Prepaid

**Syntax** Enumerated Integer. Supports the following value(s):

- no_prepaid = 0
- custom_prepaid = 1
- standard_prepaid = 2
- wimax_prepaid = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 128

# SN-Prepaid-Total-Octets

In an Access-Accept, this attribute indicates how many additional byte credits (combining both inbound and outbound counts) should be granted to the subscriber. In an Accounting- Request, this indicates how many total bytes credits (combined inbound and outbound) have been granted to the subscriber. When this attribute is not present in the Access-Accept, then pre-paid usage checking is disabled on a combined inbound and outbound octet-count basis.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 34

# SN-Prepaid-Watermark

This attribute Indicates the percentage of remaining granted credits that will trigger a new request to grant credits from the RADIUS server. For example, if 1GB of credits was granted to a user, and the value of SN-Prepaid-Watermark was 10, then when 100 MB of credits are remaining (900 MB have been used) to the subscriber, a new request for any new byte credits is issued on behalf of the subscriber. Note that when calculating the pre-paid low watermark, the total credits granted for the subscriber's entire session is used.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 36

# SN-Primary-DCCA-Peer

This attribute indicates the name of the primary DCCA peer and primary DCCA realm.

**Syntax** String

**Length** 1-192

**Type** 26

**Vendor ID** 8164

**VSA Type** 223

# SN-Primary-DNS-Server

This attribute indicates the IP address of the primary DNS server that should be used for the session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 5

# SN-Primary-NBNS-Server

Primary NBNS Server IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 148

# SN-Proxy-MIP

This attribute specifies if the PDSN/FA will perform compulsory Proxy-MIP tunneling for a Simple-IP PDSN subscriber. This feature is licensed. The default is not to perform compulsory Proxy-MIP.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 52

# SN-Pseudonym-Username

This attribute contains the pseudonym user name generated by AAA server.

**Syntax** Opaque Value

**Length** 1-256

**Type** 26

**Vendor ID** 8164

**VSA Type** 305

# SN-QoS-Background-Class

This attribute defines the QOS Background Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 91

# SN-QoS-Class-Background-PHB

Quality of Service DSCP classification value.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0

- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 113

# SN-QoS-Class-Conversational-PHB

Quality of Service DSCP classification value.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28

- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 111

# SN-QoS-Class-Interactive-1-PHB

Interactive-1 class PHB value.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 114

# SN-QoS-Class-Interactive-2-PHB

Interactive-2 class PHB.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 115

# SN-QoS-Class-Interactive-3-PHB

Interactive-3 class PHB.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18

- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 116

# SN-QoS-Class-Streaming-PHB

Quality of Service DSCP classification value.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- Pass-Through = 1
- AF11 = 10
- AF12 = 12
- AF13 = 14
- AF21 = 18
- AF22 = 20
- AF23 = 22
- AF31 = 26
- AF32 = 28
- AF33 = 30
- AF41 = 34
- AF42 = 36
- AF43 = 38
- EF = 46

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 112

# SN-QoS-Conversation-Class

This attribute defines the QOS Conversation Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 86

# SN-QOS-HLR-Profile

QoS with Allocation Retention bit. QoS structured as per 29.002.

**Syntax** QoS-HLR-Profile

**Type** 26

**Vendor ID** 8164

**VSA Type** 303

# SN-QoS-Interactive1-Class

This attribute defines the QOS Interactive TrafficClass.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 88

# SN-QoS-Interactive2-Class

This attribute defines the QOS Interactive2 Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 89

# SN-QoS-Interactive3-Class

This attribute defines the QOS Interactive3 Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 90

# SN-QoS-Negotiated

Negotiated QoS for GGSN sessions.

**Syntax** Opaque Value

**Length** 4-28

**Type** 26

**Vendor ID** 8164

**VSA Type** 147

# SN-QoS-Renegotiation-Timeout

This attribute configures the timeout duration of dampening time for dynamic QoS renegotiation.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 145

# SN-QoS-Streaming-Class

This attribute defines the QOS Streaming Traffic Class.

**Syntax** Opaque Value

**Length** 28

**Type** 26

**Vendor ID** 8164

**VSA Type** 87

# SN-QoS-Tp-Dnlk

This attribute enables/disables Traffic Policing/Shaping in downlink direction.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Policing = 1
- Shaping = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 73

# SN-QoS-Tp-Uplk

This attribute enables/disables Traffic Policing/Shaping in uplink direction.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Policing = 1
- Shaping = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 79

# SN-QoS-Traffic-Policy

This compound attribute simplifies sending QoS values for Traffic Class, Direction, Burst-Size, Committed-Data-Rate, Peak-Data-Rate, Exceed-Action, and Violate-Action from the RADIUS server. When the SN-QoS-Traffic-Policy attribute is sent along with Acct-Session-ID attribute, the system matches the particular PDP context, and applies the new policy and retains the policy with the subscriber profile for future use. The next time the system sends a CoA request with a new policy and a different Acct-Session-ID for the same subscriber, the previously received policy is also applied to the matching PDP context along with the new policy.

**Type** 26

**Vendor ID** 8164

**VSA Type** 177

**Syntax** Compound. Contains the following sub-attribute(s).

## Direction

Direction of the PDF.

**Syntax** Unsigned Integer

**Length** 1

**Type** 1

## Class

Traffic class.

**Syntax** Unsigned Integer

**Length** 1

**Type** 2

## Burst-Size

Peak burst size.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Committed-Data-Rate

Committed data rate.

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Peak-Data-Rate

Peak data rate.

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

## Exceed-Action

Action to take on packets that exceed the Committed-Data-Rate but do not violate the Peak-Data-Rate.

**Syntax** Unsigned Integer

**Length** 1

**Type** 6

### Violate-Action

Violate action.

**Syntax** Unsigned Integer

**Length** 1

**Type** 7

### Auto-Readjust-Enabled

Auto-readjust enabled.

**Syntax** Unsigned Integer

**Length** 1

**Type** 8

### Auto-Readjust-Duration

Auto-readjust duration.

**Syntax** Unsigned Integer

**Length** 4

**Type** 9

### Qci

Available only in 11.0 and later releases. QOS QCI accepted values are 1 (qci 1), 2 (qci 2), 3 (qci 3), 4 (qci 4), 5 (qci 5), 6 (qci 6), 7 (qci 7), 8 (qci 8), 9 (qci 9).

**Syntax** Unsigned Integer

**Length** 1

**Type** 10

## SN-Rad-APN-Name

This attributes specifies the RADIUS returned APN name.

**Type** 26

**Syntax** Opaque Value

**Length** 1-64

**Vendor ID** 8164

**VSA Type** 162

## SN-Radius-Returned-Username

This attribute is used to prefer RADIUS returned user name over constructed user name in the accounting messages.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 236

# SN-Re-CHAP-Interval

The Periodic CHAP authentication interval for PPP, in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 7

# SN-Roaming-Behavior

This attribute specifies the configuration for the behavior bits settings for a roaming subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 121

# SN-Roaming-Profile

This attribute specifies the configuration for the profile bits settings for a roaming subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 118

# SN-Roaming-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for roaming subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 108

# SN-ROHC-Flow-Marking-Mode

Configure ROHC compression for marked flows only.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 195

# SN-ROHC-Profile-Name

Specifies the ROHC profile to use for the subscriber.

**Type** 26

**Syntax** String

**Length** 1-64

**Vendor ID** 8164

**VSA Type** 238

# SN-Role-Of-Node

This attribute denotes the role of the CSCF.

**Syntax** Enumerated Integer. Supports the following value(s):

- Originating_Role = 0

- Terminating_Role = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 256

# SN-Routing-Area-Id

For GGSN calls this indicates the Routing Area ID of the subscriber.

**Syntax** Opaque Value

**Length** 3

**Type** 26

**Vendor ID** 8164

**VSA Type** 249

# SN-Rulebase

When the session is active charging enabled, Rulebase name will specify one of the pre-configured ECSv2 rulebases in active charging subsystem.

**Syntax** String

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 250

# SN-SDP-Session-Description

This attribute contains the Session portion of the SDP data exchanged between the User Agents in the SIP transaction.

**Syntax** SDP-Session-Description

**Type** 26

**Vendor ID** 8164

**VSA Type** 263

# SN-Sec-IP-Pool-Name

This attribute contains the secondary IP pool name.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 265

# SN-Secondary-DCCA-Peer

This attribute indicates the name of the Secondary DCCA peer and Secondary DCCA realm.

**Syntax** String

**Length** 1-192

**Type** 26

**Vendor ID** 8164

**VSA Type** 224

# SN-Secondary-DNS-Server

This attribute indicates the IP address of the secondary DNS server that should be used for the session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 6

# SN-Secondary-NBNS-Server

Secondary NBNS server IP address.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 149

# SN-Service-Address

Used to send bind IP address of the service in RADIUS messages.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 169

# SN-Service-Type

This attribute indicates the service type that the user is accessing.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- PDSN = 1
- Management = 2
- HA = 3
- GGSN = 4
- LNS = 5
- IPSG = 6
- CSCF = 7
- ASNGW = 8
- PDIF = 9
- STANDALONE_FA = 10
- SGSN = 11
- PHSGW = 12
- EPDG = 13
- MIPV6HA = 14
- PGW = 15
- SGW = 16
- FNG = 17
- MSEG = 18
- HNBGW = 19
- BNG = 20
- WSG = 21
- SAMOG = 22

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 24

# SN-Session-Id

This attribute contains Call-ID of the SIP session.

**Syntax** String

**Length** 0-160

**Type** 26

**Vendor ID** 8164

**VSA Type** 257

# SN-Simultaneous-SIP-MIP

This attribute indicates if a PDSN Subscriber can simultaneously be given Simple IP and Mobile IP service.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 22

# SN-SIP-Method

This attribute identifies the SIP-method for which acct request is sent.

**Syntax** String

**Length** 0-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 254

# SN-SIP-Request-Time-Stamp

This attribute specifies the time of initial SIP request.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 258

# SN-SIP-Response-Time-Stamp

This attribute specifies the time of response to initial SIP request.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 259

# SN-Software-Version

Specifies the software version. Includes the major version number, minor version number, and build number.

**Type** 26

**Syntax** String

**Length** 1-32

**Vendor ID** 8164

**VSA Type** 288

# SN-Subs-Acc-Flow-Traffic-Valid

Specifies the subscriber account flow traffic is valid.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- Disable = 0
- Enable = 1

**Length** 4

**Vendor ID** 8164

**VSA Type** 225

# SN-Subscriber-Accounting

This attribute specifically enables or disables subscriber accounting. Note that if enabled, subscriber accounting still needs to be enabled in the subscriber's AAA context for accounting to be performed.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Radius = 1

- GTPP = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 64

# SN-Subscriber-Acct-Interim

This attribute specifies if accounting INTERIM messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context (along with a specific INTERIM interval), if accounting INTERIM messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 70

# SN-Subscriber-Acct-Mode

Specifies the subscriber accounting mode.

**Syntax** Enumerated Integer. Supports the following value(s):

- flow-based-auxilliary = 0
- flow-based-all = 1
- flow-based-none = 2
- session-based = 3
- main-a10-only = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 192

# SN-Subscriber-Acct-Rsp-Action

When this attribute is set to None, there is no action taken while waiting for a response for the accounting start message from the RADIUS server. When this attribute is set to No-Early-PDUs the system buffers all

packets from the user (uplink) until a response for the accounting start message is received from the RADIUS server. When set to Delay_GTP_Response, the system does not send a GTP create response to the GGSN until a response for the accounting start message is received from the RADIUS server.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- No_Early_PDUs = 1
- Delay_GTP_Response = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 100

# SN-Subscriber-Acct-Start

This attribute specifies if accounting START messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context, if accounting START messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 69

# SN-Subscriber-Acct-Stop

This attribute specifies if accounting STOP messages are enabled for the subscriber. Note that accounting must also be globally enabled for the subscriber (SN-Subscriber-Accounting), and enabled for the subscriber's AAA context, if accounting STOP messages are to be sent.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal = 0
- Suppress = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 71

# SN-Subscriber-Class

Customer-specific attribute to support specific subscriber billing behavior.

**Syntax** Enumerated Integer. Supports the following value(s):

- Normal_Subscriber = 0
- Ting_100 = 1
- Ting_500 = 2
- Ting_Buddy = 3
- Ting_Star = 4
- Ting_Nolimit_SMS = 5
- Kids_Locator = 6
- Ting_2000 = 7
- Handicapped_Welfare = 8
- Reserved = 9

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 219

# SN-Subscriber-Dormant-Activity

This attribute specifies whether to treat dormant packets routed to the mobile as activity for idle timeout purposes. The default is Enabled. Disabled means dormant packets routed to the mobile is not treated as activity for idle timeout purposes.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 66

# SN-Subscriber-IP-Hdr-Neg-Mode

This attribute specifies whether to wait (detect) for IP header compression to be requested by the mobile before responding, or not to wait (force). Force is the default.

**Syntax** Enumerated Integer. Supports the following value(s):

- Force = 0
- Detect = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 67

# SN-Subscriber-IP-TOS-Copy

This attribute controls the copying of the IP TOS octet value from IPv4 datagrams to the IP header in tunnel encapsulation.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Access-Tunnel = 1
- Data-Tunnel = 2
- Both = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 85

# SN-Subscriber-Nexthop-Address

This attribute specifies the nexthop gateway address to be returned by AAA on a per subscriber basis.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 127

# SN-Subscriber-No-Interims

This is a GGSN specific attribute. When set to 0 (disabled) interim accounting is generated. When set to 1 (enabled) interim accounting generation is disabled.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0

- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 133

# SN-Subscriber-Permission

This attribute indicates the services allowed to be delivered to the subscriber. The attribute value is a bit field, and many algorithms can be specified to indicate that one of these may be chosen by the user.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Simple-IP = 1
- Mobile-IP = 2
- Simple-IP-Mobile-IP = 3
- HA-Mobile-IP = 4
- Simple-IP-HA-Mobile-IP = 5
- Mobile-IP-HA-Mobile-IP = 6
- SIP-MIP-HA-MIP = 7
- GGSN-PDP-TYPE-IP = 0x08
- GGSN-PDP-TYPE-PPP = 0x10
- Network-Mobility = 0x20
- FA-HA-NEMO = 0x26
- Pmipv6-interception = 0x40
- HA-Mobile-Pmipv6 = 0x44
- FA-HA-Mobile-Pmipv6 = 0x46
- All = 0x7F

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 20

# SN-Subscriber-Template-Name

RADIUS returned subscriber template.

**Type** 26

**Syntax** String

**Length** 1-127

**Vendor ID** 8164

**VSA Type** 158

# SN-Subs-IMSA-Service-Name

IMS authorization service name.

**Type** 26

**Syntax** String

**Length** 1-128

**Vendor ID** 8164

**VSA Type** 159

# SN-Subs-VJ-Slotid-Cmp-Neg-Mode

Enable/Disable slot ID compression in either direction when using VJ compression.

**Type** 26

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0
- Receive = 1
- Transmit = 2
- Both = 3

**Length** 4

**Vendor ID** 8164

**VSA Type** 221

# SN-Terminating-IOI

This attribute holds the Inter Operator Identifier for the originating network in the home network of the terminating end user.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 262

# SN-Tp-Dnlk-Burst-Size

This attribute specifies the Traffic Policing downlink burst size in bytes.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 76

# SN-Tp-Dnlk-Committed-Data-Rate

This attribute specifies the Traffic Policing downlink committed data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 74

# SN-Tp-Dnlk-Exceed-Action

This attribute specifies the action to take on Traffic Policing downlink packets that exceed the committed-data-rate but do not violate the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 77

# SN-Tp-Dnlk-Peak-Data-Rate

This attribute specifies the Traffic Policing downlink peak data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 75

# SN-Tp-Dnlk-Violate-Action

This attribute specifies the action to take on Traffic Policing downlink packets that exceed both the committed-data-rate and the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 78

# SN-TPO-Policy

This attribute contains the TPO policy name.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 308

# SN-Tp-Uplk-Burst-Size

This attribute specifies the Traffic Policing uplink burst size in bytes.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 82

# SN-Tp-Uplk-Committed-Data-Rate

This attribute specifies the Traffic Policing uplink committed data rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 80

# SN-Tp-Uplk-Exceed-Action

This attribute specifies the action to take on Traffic Policing uplink packets that exceed the committed-data-rate but do not violate the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 83

# SN-Tp-Uplk-Peak-Data-Rate

This attribute specifies the Traffic Policing Uplink Peak Data Rate in bps.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 81

# SN-Tp-Uplk-Violate-Action

This attribute specifies the action to take on Traffic Policing uplink packets that exceed both the committed-data-rate and the peak-data-rate.

**Syntax** Enumerated Integer. Supports the following value(s):

- Transmit = 0
- Drop = 1
- Lower-IP-Precedence = 2
- Buffer = 3
- Transmit-On-Buffer-Full = 4

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 84

# SN-Traffic-Group

This attribute is used to assign a tag to an FA or a group of FAs, so that traffic policy can be enforced based on the tag value.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 8164

**VSA Type** 161

# SN-TrafficSelector-Class

The ipsec traffic selector class.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 307

# SN-Transparent-Data

This attribute is used by RADIUS to provide Global Title information for the GGSN to use in CDRs and Quota Auth.

**Syntax** Opaque Value

**Length** 1-247

**Type** 26

**Vendor ID** 8164

**VSA Type** 247

# SN-Tun-Addr-Policy

Describes IP address validation policy for non L2TP tunneled calls.

**Syntax** Enumerated Integer. Supports the following value(s):

- no-local-alloc-validate = 0
- local-alloc = 1
- local-alloc-validate = 2

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 156

# SN-Tunnel-Gn

Used to enable/disable Gn interface from PDG/TTG to GGSN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 174

# SN-Tunnel-ISAKMP-Crypto-Map

This attribute specifies the system-defined crypto map to use for the subscriber's Mobile-IP connection, when IPSec is used to protect the Mobile-IP connection. This attribute is salt-encrypted.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 38

# SN-Tunnel-ISAKMP-Secret

This attribute specifies the secret to use for IKE.

**Syntax** String

**Length** 1-128

**Type** 26

**Vendor ID** 8164

**VSA Type** 39

# SN-Tunnel-Load-Balancing

This attribute specifies the load-balancing algorithm to use when tunneling is employed.

**Syntax** Enumerated Integer. Supports the following value(s):

- random = 1
- balanced = 2
- prioritized = 3

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 27

# SN-Tunnel-Password

This attribute contains a secret for tunneling usage. Currently this is only used for L2TP. It is recommended that you use the Tunnel-Password attribute if your RADIUS server supports salt-encryption of attributes.

**Syntax** Opaque Value

**Length** 1-240

**Type** 26

**Vendor ID** 8164

**VSA Type** 26

# SN-Unclassify-List-Name

Unclassify List Name.

**Syntax** String

**Length** 1-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 132

# SN-User-Privilege

This attribute specifies the user privilege.

**Syntax** Enumerated Integer. Supports the following value(s):

- Administrative = 6
- NAS_Prompt = 7
- Inspector = 19650516
- Security_Admin = 19660618

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 313

# SN-Virtual-APN-Name

This attribute contains the virtual APN name.

**Syntax** Opaque Value

**Length** 1-64

**Type** 26

**Vendor ID** 8164

**VSA Type** 94

# SN-Visiting-Behavior

This attribute specifies the configuration for the behavior bits settings for a visiting subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 120

# SN-Visiting-Profile

This attribute specifies the configuration for the profile bits settings for a visiting subscriber in an APN.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 117

# SN-Visiting-Sub-Use-GGSN

This attribute configures GGSN to accept GGSN's charging characteristics for visiting subscribers defined for the APN.

**Syntax** Enumerated Integer. Supports the following value(s):

- Deny = 0
- Accept = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 107

# SN-Voice-Push-List-Name

SN-Voice-Push-List-Name.

**Syntax** String

**Length** 1-32

**Type** 26

**Vendor ID** 8164

**VSA Type** 131

# SN-VPN-ID

This attribute contains the Destination VPN of the user, specified by a 32-bit identifier.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 1

# SN-VPN-Name

This attribute contains the name of the user's Destination VPN.

**Syntax** String

**Length** 1-253

**Type** 26

**Vendor ID** 8164

**VSA Type** 2

# SN-VRF-Name

This attribute specifies the IP VRF context to distinguish the RADIUS accounting feeds per enterprise.

**Syntax** String

**Length** 1-63

**Type** 26

**Vendor ID** 8164

**VSA Type** 242

# SN-WiMAX-Auth-Only

Specifies whether the call is established for Authentication Mode Only.

**Syntax** Enumerated Integer. Supports the following value(s):

- Disabled = 0
- Enabled = 1

**Length** 1

**Type** 26

**Vendor ID** 8164

**VSA Type** 306

# SN-WLAN-AP-Identifier

This attribute contains the access point identifier for WLAN UE. This attribute comprises LAC and CI digits separated by an underscore. This AP identifier may include Access point MAC address or MAC/SSID. This attribute is received in Acct-Start / Acct-Interim message from WLC.

**Syntax** Opaque Value

**Length** 1-48

**Type** 26

**Vendor ID** 8164

**VSA Type** 319

# SN-WLAN-UE-Identifier

This attribute contains the identifier for WLAN UE, i.e. device's MAC address in Calling-Station-Id attribute format according to RFC 3580 (MAC address in ASCII format (upper case only), with octet values separated by a "-"). Example: "00-10-A4-23-19-C0". This attribute is received in Acct-Start / Acct-Interim message from WLC.

**Syntax** Opaque Value

**Length** 1-17

**Type** 26

**Vendor ID** 8164

**VSA Type** 320

# SN-WSG-MIP-Release-TIA

WSG Mobile IP Release TIA

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 317

# SN-WSG-MIP-Required

This attribute indicates whether or not the WSG Mobile IP is required.

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 316

# SN-WSG-MIP-Simple-IP-Fallback

WSG Mobile IP Simple IP Fallback

**Syntax** Enumerated Integer. Supports the following value(s):

- No = 0
- Yes = 1

**Length** 4

**Type** 26

**Vendor ID** 8164

**VSA Type** 318

# Terminal-Capability

Opaque one byte value received from customer RADIUS server in Access Request. Used in custom dictionary.

**Syntax** Opaque Value

**Length** 1

**Type** 26

**Vendor ID** 5535

**VSA Type** 219

# Termination-Action

Indicates what action the NAS should take when the service is completed. AAAMgr passes this attribute to SessMgr only for ASN-GW calls. The combination of Session-Timeout and Termination-Action attributes received in Access-Accept or Access-Challenge determines how NAS should interpret it.

**Syntax** Enumerated Integer. Supports the following value(s):

- Default = 0
- RADIUS-Request = 1

**Length** 4

**Type** 29

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Assignment-ID

This attribute indicates the tunnel to which the session is to be assigned.

**Syntax** Opaque Value

**Length** 1-252

**Type** 82

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Client-Auth-ID

This attribute contains the name of the client for the purposes of tunnel authentication.

**Syntax** Opaque Value

**Length** 1-252

**Type** 90

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Client-Endpoint

This attribute is an identifier of the Tunnel client. When Tunnel-Medium-Type = IPv4, then this attribute is in the form of an IP address string in "dotted-decimal" notation.

**Syntax** Opaque Value

**Length** 1-250

**Type** 66

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Medium-Type

This attribute indicates the protocol medium over which the tunneling protocol runs. It is used to describe the format of the attributes Tunnel-Client-Endpoint and Tunnel-Server-Endpoint.

**Syntax** Enumerated Integer. Supports the following value(s):

- IPv4 = 1
- IPv6 = 2
- NSAP = 3
- HDLC = 4
- BBN-1822 = 5
- IEEE-802 = 6
- E-163 = 7
- E-164 = 8

- F-69 = 9
- X-121 = 10
- IPX = 11
- Appletalk = 12
- Decnet-IV = 13
- Banyan-Vines = 14
- E-164-NSAP-Subaddress = 15

**Length** 4

**Type** 65

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Password

This attribute contains a shared secret for the Tunnel connection. It is salt-encrypted.

**Syntax** Opaque Value

**Length** 1-240

**Type** 69

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Preference

This attribute indicates the priority given to the tunnel group. The tunnel group is defined as those tunnel attributes that have the same tag.

**Syntax** Unsigned Integer

**Length** 4

**Type** 83

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Private-Group-ID

This attribute contains the context of the tunnel.

**Syntax** String

**Length** 1-252

**Type** 81

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Server-Auth-ID

This attribute contains the name of the server for the purposes of tunnel authentication.

**Syntax** Opaque Value

**Length** 1-252

**Type** 91

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Server-Endpoint

This attribute is an identifier of the Tunnel server. When Tunnel-Medium-Type = IPv4, then this attribute is in the form of an IP address string in "dotted-decimal" notation.

**Syntax** Opaque Value

**Length** 1-250

**Type** 67

**Vendor ID** N/A

**VSA Type** N/A

# Tunnel-Type

This attribute indicates the type of tunnel used by the subscriber.

**Syntax** Enumerated Integer. Supports the following value(s):

- PPTP = 1
- L2F = 2
- L2TP = 3
- ATMP = 4
- VTP = 5
- AH = 6
- IP-IP = 7
- MIN-IP-IP = 8
- ESP = 9
- GRE = 10
- DVS = 11

- MIP = 12
- VLAN = 13
- GN = 14
- UDP = 15

**Length** 4

**Type** 64

**Vendor ID** N/A

**VSA Type** N/A

# User-Name

This attribute indicates the name of the user to be authenticated. This field can contain a stand-alone user name, or a user name and domain name. The format of this field is variable and configurable on a per-context basis. Separation of user and domain names is delineated by a special character, which can be %, -, @, \, #, and /. The user name may appear before the domain name or after. If this attribute is included in the Access-Accept, then the value of that attribute will be the value of the User-Name attribute in subsequent Accounting-Request messages for that particular session.

**Syntax** Opaque Value

**Length** 1-253

**Type** 1

**Vendor ID** N/A

**VSA Type** N/A

# User-Password

This attribute contains the encrypted password of the user, when simple password authentication is being used.

**Syntax** Opaque Value

**Length** 16-128

**Type** 2

**Vendor ID** N/A

**VSA Type** N/A

# White-List

This attribute contains the list of IMSIs which are allowed to access through an HNB.

**Syntax** Opaque Value

**Length** 3-251

**Type** 26

**Vendor ID** 9

**VSA Type** 117

# WiMAX-Acct-Input-Packets-Giga

Number of packets incremented each time Acct-Input-Packets(47) overflows.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 48

# WiMAX-Acct-Output-Packets-Giga

Number of packets incremented each time Acct-Output-Packets(48) overflows.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 49

# WiMAX-Active-Time

The period of time the session was NOT in idle state.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 39

# WiMAX-Beginning-Of-Session

This attribute indicates whether the session is new or a continuation of previous flow.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 22

# WiMAX-BS-ID

Uniquely identifies an NAP and a base station within that NAP. The first three octets representing the NAP operator identifier, and the next three the Base Station ID.

**Syntax** Opaque Value

**Length** 6-12

**Type** 26

**Vendor ID** 24757

**VSA Type** 46

# WiMAX-Capability

This compound attribute identifies the supported WiMAX capabilities.

**Type** 26

**Vendor ID** 24757

**VSA Type** 1

**Syntax** Compound. Contains the following sub-attribute(s).

## WiMAX-Release

Specifies WiMAX release of the sender.

**Syntax** String

**Length** 4

**Type** 1

## Accounting-Capabilities

Describes accounting capabilities supported for the session.

**Syntax** Enumerated Integer. Supports the following value(s):

- None = 0x00
- IP-Session-Based = 0x01
- Flow-Based = 0x02
- IP-Session-And-Flow-Based = 0x03

**Length** 1

**Type** 2

## Hotlining-Capabilities

Supported hotline capabilities.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Supported = 0x00
- Hotline-Profile-Id = 0x01
- NAS-Filter = 0x02
- HTTP-Redirection = 0x04
- Profile-Id-based-and-HTTP-Redirection-Rule-based = 0x05
- IP-Redirection = 0x08

**Length** 1

**Type** 3

## Idle-Mode-Notification-Capabilities

Describes idle mode notification capabilities.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Supported = 0x00
- Supported = 0x01

**Length** 1

**Type** 4

## ROHC-Support

Describes ROHC capability support for the session

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Supported = 0x00
- Supported = 0x01

**Length** 1

**Type** 11

# WiMAX-Control-Octets-In

Octet counts for incoming Mobile IP, DHCP, ICMP messages for IPv4 and IPv6.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 32

# WiMAX-Control-Octets-Out

Octet counts for outgoing Mobile IP, DHCP, ICMP messages for IPv4 and IPv6.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 34

# WiMAX-Control-Packets-In

Packet counts for incoming Mobile IP, DHCP, ICMP messages for IPv4 and IPv6.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 31

# WiMAX-Control-Packets-Out

Packet counts for outgoing Mobile IP, DHCP, ICMP messages for IPv4 and IPv6.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 33

# WiMAX-Count-Type

Indicates if the record represents compressed counts over-the-air.

**Syntax** Unsigned Integer

**Length** 1

**Type** 26

**Vendor ID** 24757

**VSA Type** 59

# WiMAX-Device-Auth-Indicator

Indicates whether NAS performed device authentication successfully or not.

**Syntax** Unsigned Integer

**Length** 1

**Type** 26

**Vendor ID** 24757

**VSA Type** 2

# WiMAX-Flow-Description

Describes a flow classifier.

**Syntax** String

**Length** 1-240

**Type** 26

**Vendor ID** 24757

**VSA Type** 50

# WiMAX-Home-HNP-PMIP6

The IPv6 Home Network Prefix assigned by the AAA in HCSN to the MS for PMIP6 mobility session.

**Syntax** Opaque Value

**Length** 2-18

**Type** 26

**Vendor ID** 24757

**VSA Type** 133

# WiMAX-Home-IPv4-HoA-PMIP6

The IPv4 Home Address assigned by the CSN to the MS for PMIP6-IPv4 mobility session.

**Syntax** IPv4 Address

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 135

# WiMAX-Idle-Mode-Transition

A flag indicating whether the mobile node is in idle mode or not. When the mobile node enters or exits idle mode, an interim accounting message that includes WiMAX-Idle-Mode-Transition(26/44) attribute is generated instantly. The value of this attribute is 1 when mobile enters idle mode, and 0 when mobile exits idle mode. If accounting mode is flow based, then the asynchronous interim message is generated only for an ISF and not for all the flows in the session. Regular interim accounting if enabled, is not affected by idle mode entry. Also, the regular interim messages will not include WiMAX-Idle-Mode-Transition attribute.

**Syntax** Enumerated Integer. Supports the following value(s):

- Not-Idle = 0x00
- Idle = 0x01

**Length** 1

**Type** 26

**Vendor ID** 24757

**VSA Type** 44

# WiMAX-IP-Technology

Indicates the type of WiMAX session being used.

**Syntax** Enumerated Integer. Supports the following value(s):

- SIP = 1
- PMIP4 = 2
- CMIP4 = 3
- CMIP6 = 4
- Ethernet-CS = 5
- PMIP6 = 6

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 23

# WiMAX-NAP-ID

Uniquely identifies the Network Access Provider.

**Syntax** String

**Length** 3

**Type** 26

**Vendor ID** 24757

**VSA Type** 45

# WiMAX-NSP-ID

Uniquely identifies the Network Service Provider.

**Syntax** Opaque Value

**Length** 3

**Type** 26

**Vendor ID** 24757

**VSA Type** 57

# WiMAX-Packet-Flow-Descriptor

This compound attribute describes a packet flow. A packet flow may describe uni-directional flow and bi-directional flow. The packet flow descriptor may be pre-provisioned. A packet flow descriptor references one or two QoS specifications.

**Type** 26

**Vendor ID** 24757

**VSA Type** 28

**Syntax** Compound. Contains the following sub-attribute(s).

**Length** 4-1400

## PDF-ID

Used to match all records from the same Packet Data Flow.

**Syntax** Unsigned Integer

**Length** 2

**Type** 1

## SDF-ID

Used to match all PDFs from the same Service Data Flow.

**Syntax** Unsigned Integer

**Length** 2

**Type** 2

## Service-Profile-ID

Identifies a pre-configured Flow Descriptor at the NAS.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Direction

Direction of the PDF.

**Syntax** Enumerated Integer. Supports the following value(s):

- Uplink = 1
- Downlink = 2
- Bi-Directional = 3

**Length** 1

**Type** 4

## Activation-Trigger

Specifies the trigger to be used for the activation of Service Flow.

**Syntax** Enumerated Integer. Supports the following value(s):

- Provisioned = 0x01
- Admit = 0x02
- Provisioned-Admit = 0x03
- Activate = 0x04
- Provisioned-Activate = 0x05
- Admit-Activate = 0x06
- Provisioned-Admit-Activate = 0x07 Dynamic = 0x08 Dynamic-Admit = 0x0a Dynamic-Activate = 0x0c Dynamic-Admit-Activate = 0x0e

**Length** 1

**Type** 5

## Transport-Type

Type of transport (IP, Ethernet).

**Syntax** Enumerated Integer. Supports the following value(s):

- IPv4-CS = 1
- IPv6-CS = 2
- Ethernet = 3

**Length** 1

**Type** 6

## Uplink-QoS-ID

Identifier of the QoS Descriptor for Uplink or Bidirection.

**Syntax** Unsigned Integer

**Length** 1

**Type** 7

## Downlink-QoS-ID

Identifier of the QoS Descriptor for Downlink.

**Syntax** Unsigned Integer

**Length** 1

**Type** 8

## Uplink-Classifier

Classifier to match for traffic flowing in Uplink Direction.

**Syntax** String

**Length** 1-240

**Type** 9

## Downlink-Classifier

Classifier to match for traffic flowing in Downlink Direction.

**Syntax** String

**Length** 1-240

**Type** 10

# WiMAX-Packet-Flow-Descriptor-V2

Describes a Unidirectional or Bidirectional Packet Flow Descriptor Version 2. This attribute is also accepted in CoA request message to be used in a currently active subscriber session.

**Length** 4-1400

**Type** 26

**Vendor ID** 24757

**VSA Type** 84

**Syntax** Compound. Contains the following sub-attribute(s).

## PDF-ID

Used to match all records from the same Packet Data Flow.

**Syntax** Unsigned integer

**Length** 2

**Type** 1

## SDF-ID

Used to match all PDFs from the same Service Data Flow.

**Syntax** Unsigned integer

**Length** 2

**Type** 2

## Service-Profile-ID

Identifies a pre-configured Flow Descriptor at the NAS.

**Syntax** Unsigned integer

**Length** 4

**Type** 3

## Direction

Direction of the PDF.

**Syntax** Enumerated integer. Supported values are:

- Uplink = 1
- Downlink = 2
- Bi-Directional = 3

**Length** 1

**Type** 4

## Activation-Trigger

Specifies the trigger to be used for the activation of Service Flow.

**Syntax** Enumerated integer. Supported values are:

- Provisioned = 0x01
- Admit = 0x02
- Activate = 0x04
- Dynamic = 0x08

**Length** 1

**Type** 5

## Transport-Type

Type of transport (IP, Ethernet).

**Syntax** Enumerated integer. Supported values are:

- IPv4-CS = 1
- IPv6-CS = 2
- Ethernet = 3

**Length** 1

**Type** 6

## Uplink-QoS-ID

Identifier of the QoS Descriptor for Uplink or Bidirection.

**Syntax** Unsigned integer

**Length** 1

**Type** 7

## Downlink-QoS-ID

Identifier of the QoS Descriptor for Downlink.

**Syntax** Unsigned integer

**Length** 1

**Type** 8

## WiMAX-Packet-Flow-Classifier

Describes Packet Flow Classifiers.

**Type** 9

**Syntax** Contains the following sub-attributes:

### Classifier-ID

WiMAX Classifier ID.

**Syntax** Unsigned integer

**Length** 1

**Type** 1

### Priority

WiMAX Classifier Priority.

**Syntax** Unsigned integer

**Length** 1

**Type** 2

### Protocol

WiMAX Classifier Protocol, i.e TCP/UDP.

**Syntax** In StarOS 10.0 and earlier: Enumerated integer. Supported values are:

- ICMP = 1
- TCP = 6
- UDP = 17

In StarOS 10.2 and later: Unsigned integer.

**Length** 1

**Type** 3

### Direction

Direction of the PDF.

**Syntax** Enumerated integer. Supported values are:

- Uplink = 1
- Downlink = 2
- Bi-Directional = 3

**Length** 1

**Type** 4

### Source-Specification

Identifies WiMAX classifier rule params for source specification.

**Length** 1

**Type** 5

**Syntax** Contains the following sub-attributes:

#### *IP-Address*

This attribute contains source/destination address.

**Syntax** IPv4 address

**Length** 4

**Type** 1

#### *IP-Address-Range*

WiMAX Packet Classifier IP Address Range.

**Syntax** Opaque value

**Length** 1

**Type** 2

*IP-Address-Mask*

WiMAX Packet Classifier IP Address Mask.

**Syntax** Opaque value

**Length** 5

**Type** 3

*Port*

WiMAX Packet Classifier Port.

**Syntax** Unsigned integer

**Length** 2

**Type** 4

*Port-Range*

WiMAX Packet Classifier Port Range.

**Syntax** Unsigned integer

**Length** 4

**Type** 5

*Inverted*

WiMAX Classifier Inverted.

**Syntax** Enumerated integer. Supported values are:

- FALSE = 0
- TRUE = 1

**Length** 1

**Type** 6

*Assigned*

WiMAX Classifier Assigned.

**Syntax** Enumerated integer. Supported values are:

- Src_Assigned = 1
- Dest_Assigned = 2
- Src_Dest_Assigned = 3

**Length** 1

**Type** 7

### Destination-Specification

Identifies WiMAX classifier rule params for destination specification.

**Syntax** Contains the following sub-attribute(s):

**Type** 6

*IP-Address*

This attribute contains source/destination address.

**Syntax** IPv4 address

**Length** 4

**Type** 1

*IP-Address-Range*

WiMAX Packet Classifier IP Address Range.

**Syntax** Opaque value

**Length** 8

**Type** 2

*IP-Address-Mask*

WiMAX Packet Classifier IP Address Mask.

**Syntax** Opaque value

**Length** 5

**Type** 3

*Port*

WiMAX Packet Classifier Port.

**Syntax** Unsigned integer

**Length** 2

**Type** 4

*Port-Range*

WiMAX Packet Classifier Port Range.

**Syntax** Unsigned integer

**Length** 4

**Type** 5

*Inverted*

WiMAX Classifier Inverted.

**Syntax** Enumerated integer. Supported values are:

- FALSE = 0
- TRUE = 1

**Length** 1

**Type** 6

*Assigned*

WiMAX Classifier Assigned.

**Syntax** Enumerated integer. Supported values are:

- Src_Assigned = 1
- Dest_Assigned = 2
- Src_Dest_Assigned = 3

**Length** 1

**Type** 7

### IP-TOS-DSCP-Range-And-Mask

WiMAX Classifier WiMAX-IP-TOS-DSCP-Range-And-Mask.

**Syntax** Opaque value

**Length** 1-3

**Type** 7

### Action

WiMAX Classifier Action.

**Syntax** Enumerated integer. Supported values are:

- Reserved = 0
- Permit = 1
- Deny = 2

**Length** 1

**Type** 8

### Paging-Preference

WiMAX Paging Preference.

**Syntax** Enumerated integer. Supported values are:

- FALSE = 0
- TRUE = 1

**Length** 1

**Type** 10

# WiMAX-PDF-ID

The value of this attribute matches all records from the same packet data flow. PDFID is assigned by the CSN and remains constant through all handover scenarios.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 24757

**VSA Type** 26

# WiMAX-PPAC

The Prepaid-Accounting-Capability (PPAC) attribute is sent in the Access-Request message by a prepaid capable ASNGW, and is used to describe the prepaid capabilities of the ASNGW. The absence of this attribute indicates that the client is not capable of prepaid accounting and the session should not use prepaid accounting.

**Type** 26

**Vendor ID** 24757

**VSA Type** 35

**Syntax** Compound. Contains the following sub-attribute(s).

## Available-In-Client

The optional Available-In-Client subtype, generated by the PPC, indicates the metering capabilities of the NAS and is be bitmap encoded.

**Syntax** Enumerated Integer. Supports the following value(s):

- Supported_None = 0
- Supported_Volume = 1
- Supported_Duration = 2
- Supported_Volume_And_Duration = 3
- Supported_Tariff_Switch = 64
- Supported_Volume_And_Duration_And_Tariff_Switch = 67

**Length** 4

**Type** 1

# WiMAX-PPAQ

Prepaid Quota, used for charging, report usage, and request quota. This attribute specifies the characteristics for pre-paid accounting of the volume and/or duration of a packet data session. It should be present in all on-line RADIUS Access-Request and on-line RADIUS Access-Accept messages and may be included in other RADIUS Access-Accept messages. In Authorize-Only Access-Request messages, it is used for one-time charging, report usage and the request for further quota. In an Access-Accept message it is used in order to allocate the (initial and subsequent) quotas.

**Type** 26

**Vendor ID** 24757

**VSA Type** 37

**Syntax** Compound. Contains the following sub-attribute(s).

## Quota-Identifier

It is generated by the PPS together with the allocation of new quota.

**Syntax** Opaque Value

**Length** 1-4

**Type** 1

## Volume-Quota

Indicates the volume in octets excluding control data.

**Syntax** Opaque Value

**Length** 4-12

**Type** 2

## Volume-Threshold

Is generated by the PPS and indicates the volume (in octets) that be consumed before a new quota should be requested.

**Syntax** Opaque Value

**Length** 4-12

**Type** 3

## Duration-Quota

3GPP2 PrePaid Duration Quota. This is optionally present if duration-based charging is used. In RADIUS Access-Accept message, it indicates the duration (in seconds) allocated for the session by the PPS. In an on-line RADIUS Access-Accept message, it indicates the total duration (in seconds) since the start of the accounting session related to the QuotaID of the PPAQ in which it occurs.

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

## Duration-Threshold

3GPP2 PrePaid Duration Quota Threshold. This is optionally present if Duration-Quota is present in a RADIUS Access-Accept message. It is generated by the PPS and indicates the duration (in seconds) that should be consumed before a new quota should be requested. This threshold should not be larger than the Duration-Quota.

**Syntax** Unsigned Integer

**Length** 4

**Type** 5

## Update-Reason

Reason for initiating online quota update operation. This should be present in the Authorize-Only RADIUS Access-Request message. It indicates the reason for initiating the on-line quota update operation. Update reasons 6, 7, 8, and 9 indicate that the associated resources are released at the client side, and that therefore the PPS should not allocate a new quota in the RADIUS Access-Accept message.

**Syntax** Enumerated Integer. Supports the following value(s):

- Pre-Initialization = 1
- Initial-Request = 2
- Threshold-Reached = 3
- Quota-Reached = 4
- TITSU-Approaching = 5
- Remote-Forced-Disconnect = 6
- Client-Service-Termination = 7
- Access-Service-Terminated = 8
- Service-Not-Established = 9
- One-Time-Charging = 10

**Length** 1

**Type** 8

## Pre-Paid-Server

PrePaid server IP address. This optional subtype indicates the address IPv4 of the serving PPS. If present, the Home RADIUS server uses this address to route the message to the serving PPS. The attribute may be sent by the Home RADIUS server. Multiple instances of this subtype may be present in a single PPAQ. If present in the incoming RADIUS Access-Accept message, the ASNGW should send this attribute back without modifying it in the subsequent RADIUS Access-Request message.

**Syntax** IPv4 Address

**Length** 4

**Type** 9

### Service-ID

This value is a string that uniquely describes the service instance to which prepaid metering should be applied.

**Syntax** Opaque Value

**Length** 1-246

**Type** 10

### Rating-Group-ID

Rating-Group-ID for which the WiMAX PPAQ is allocated or reported.

**Syntax** Unsigned Integer

**Length** 4

**Type** 11

### Termination-Action

Describes action to take when PPS does not grant additional quota.

**Syntax** Enumerated Integer. Supports the following value(s):

- Reserved = 0
- Terminate = 1
- Request-more-quota = 2
- Redirect/Filter = 3

**Length** 1

**Type** 12

## WiMAX-Prepaid-Indicator

Indicates that this session was associated with a prepaid user (online accounting).

**Syntax** Enumerated Integer. Supports the following value(s):

- Offline = 0
- Online = 1

**Length** 1

**Type** 26

**Vendor ID** 24757

**VSA Type** 25

# WiMAX-Prepaid-Tariff-Switch

Attribute to indicate Tariff-Switch-Interval / Time-Interval-After-Tariff-Switch-Update by the PPS and Volume-Used-After-Tariff-Switch by the PPC.

**Type** 26

**Vendor ID** 24757

**VSA Type** 38

**Syntax** Compound. Contains the following sub-attribute(s).

## Quota-Identifier

It is generated by the PPS together with the allocation of new quota.

**Syntax** Opaque Value

**Length** 1-4

**Type** 1

## Volume-Used-After-Tariff-Switch

Volume quota used after tariff switch happened.

**Syntax** Unsigned Integer

**Length** 4

**Type** 2

## Tariff-Switch-Interval

Tariff switch interval in seconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 3

## Time-Interval-After-Tariff-Switch-Update

Duration after TSI where an on-line RADIUS Access-Request is sent by PrePaid client to report VUATS before the next TS condition is triggered

**Syntax** Unsigned Integer

**Length** 4

**Type** 4

# WiMAX-QoS-Descriptor

This attribute describes over the air QoS parameter that are associated with a flow. The QoS-Descriptor is only valid for the actual RADIUS transaction.

**Type** 26

**Vendor ID** 24757

**VSA Type** 29

**Syntax** Compound. Contains the following sub-attribute(s).

**Length** 6-700

## QoS-ID

Unique ID for the QoS specification in the packet

**Syntax** Unsigned Integer

**Length** 1

**Type** 1

## Global-Service-Class-Name

Specifies global service class name as defined in IEEE802.16e.

**Syntax** String

**Length** 6

**Type** 2

## Service-Class-Name

Specifies service class name as defined in IEEE802.16e.

**Syntax** String

**Length** 2-127

**Type** 3

## Schedule-Type

Specifies the uplink granted scheduling type.

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 2
- nrtPS = 3
- rtPS = 4
- Extended-rtPS = 5
- UGS = 6

**Length** 1

**Type** 4

## Traffic-Priority

Specifies the priority assigned to a service flow.

**Syntax** Unsigned Integer

**Length** 1

**Type** 5

## Maximum-Sustained-Traffic-Rate

Specifies peak information rate of the service in bits/second.

**Syntax** Unsigned Integer

**Length** 4

**Type** 6

## Minimum-Reserved-Traffic-Rate

**Syntax** Unsigned Integer

**Length** 4

**Type** 7

## Maximum-Traffic-Burst

Specifies maximum burst size accommodated for the Service in bytes/second.

**Syntax** Unsigned Integer

**Length** 4

**Type** 8

## Tolerated-Jitter

Specifies maximum delay variation in milliseconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 9

## Maximum-Latency

Specifies maximum latency in milliseconds.

**Syntax** Unsigned Integer

**Length** 4

**Type** 10

## Reduced-Resources-Code

Indicates that requesting entity will accept reduced resources if requested resources are unavailable.

**Syntax** Unsigned Integer

**Length** 1

**Type** 11

## Media-Flow-Type

Specifies the application type, used as a hint in admission decisions.

**Syntax** Enumerated Integer. Supports the following value(s):

- VoIP = 1
- Robust-Browser = 2
- Secure-Browser/VPN = 3
- Streaming-Video-On-Demand = 4
- Streaming-Live-TV = 5
- Music-Photo-Download = 6
- Multi-Player-Gaming = 7
- Location-Based-Services = 8
- Text-Audio-Books-With-Graphics = 9
- Video-Conversation = 10
- Message = 11
- Control = 12
- Data = 13

**Length** 1

**Type** 12

## Unsolicited-Grant-Interval

Specifies nominal interval between successive data grant opportunities for the Service Flow, in milliseconds.

**Syntax** Unsigned Integer

**Length** 2

**Type** 13

## SDU-Size

Specifies the number of bytes in the fixed size SDU.

**Syntax** Unsigned Integer

**Length** 1

**Type** 14

## Unsolicited-Polling-Interval

Specifies maximal nominal interval between successive polling grant opportunities for the Service Flow.

**Syntax** Unsigned Integer

**Length** 2

**Type** 15

## Transmission-Policy

Include options for PDU formation, and for uplink service flows, restrictions on the types of bandwidth request options that may be use.

**Syntax** Unsigned Integer

**Length** 1

**Type** 17

## DSCP

DSCP

**Syntax** Enumerated Integer. Supports the following value(s):

- Best-Effort = 0
- CS1 = 8
- AF11 = 10
- AF12 = 12
- AF13 = 14
- CS2 = 16
- AF21 = 18
- AF22 = 20
- AF23 = 22
- CS3 = 24
- AF31 = 26
- AF32 = 28
- AF33 = 30
- CS4 = 32
- AF41 = 34
- AF42 = 36
- AF43 = 38
- CS5 = 40

- EF = 46
- CS6 = 48
- CS7 = 56

**Length** 4

**Type** 18

# WiMAX-SDF-ID

The value of this attribute matches all records from the same packet data flow. SDFID is assigned by the CSN and remains constant through all handover scenarios.

**Syntax** Unsigned Integer

**Length** 2

**Type** 26

**Vendor ID** 24757

**VSA Type** 27

# WiMAX-Session-Continue

The value of this attribute matches all records from the same packet data flow. SDFID is assigned by the CSN and remains constant through all handover scenarios.

**Syntax** Enumerated Integer. Supports the following value(s):

- False = 0
- True = 1

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 21

# WiMAX-Session-Term-Capability

WiMAX session term capability. This attribute is included in a RADIUS Access-Request message to the RADIUS server and indicates whether or not the NAS supports Dynamic Authorization.

**Syntax** Enumerated Integer. Supports the following value(s):

- Only_Dynamic_Auth_Extn_to_Radius = 0x00000001
- Only_Reg_Revocation_in_MIP = 0x00000002
- Both_Dynamic_Auth_And_Reg_Revocation_in_MIP = 0x00000003

**Length** 4

**Type** 26

**Vendor ID** 24757

**VSA Type** 36

# Win-Call-Id

Customer-specific attribute used in custom dictionary. Contains opaque 1 byte value received from customer RADIUS server in access request.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 205

# Win-Service-Name

Opaque value value received from customer RADIUS server in Access Request. Used in custom dictionary.

**Syntax** String

**Length** 0-256

**Type** 26

**Vendor ID** 5535

**VSA Type** 206

# WSType

Opaque one byte value received from customer RADIUS server in Access Request.

**Syntax** Unsigned Integer

**Length** 4

**Type** 26

**Vendor ID** 5535

**VSA Type** 197

WSType