**3GPP TSG-CT WG3 Meeting #116e C3-213198**

**E-Meeting, 19th – 28th May 2021 (Revision of C3-21xxxx)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.061** | **CR** | **0539** | **rev** |  | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Reporting UE local IP to Diameter DN-AAA server | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | CT3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17, 5GS\_Ph1-CT, SAES-St3-intwk | | | | |  | ***Date:*** | | | 2021-04-28 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | When the UE is in WLAN access, the UE local IP address, UE UDP source port number or TCP source port number can be reported from ePDG to PGW via S2b interface. The UE local IP address and port number have been included in Gx, Gy interface and PGW CDR, while these information is still missing in the SGi interface Diameter message, PGW or PGW-C cannot report UE local IP information to the DN-AAA server. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding 3GPP AVP for the UE local IP address and port number in Diameter messages. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Missing the UE local IP information when the UE is accessing via WLAN, cannot report UE local IP for authentication and/or authorization by ther DN-AAA server, DN AAA server also cannot handle user location based policy control, charging and/or accounting statistics for the UE with WLAN access.. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 16a.4.1, 16a.4.3, 16a.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

**Additional discussion(if needed):**

**Proposed changes:**

\*\*\* 1st Change \*\*\*

### 16a.4.1 AAR Command

The AAR command, defined in Diameter NASREQ (IETF RFC 4005 [67]), is indicated by the Command-Code field set to 265 and the ‘R’ bit set in the Command Flags field. It may be sent by the GGSN to a Diameter server, during Primary PDP Context activation only, in order to request user authentication and authorization. In the case of P-GW, the AAR may be sent upon reception of an initial access request (e.g. Create Session Request or Proxy Binding Update) message for a given APN to request user authentication and authorization.

The relevant AVPs that are of use for the Gi/Sgi interface are detailed in the ABNF description below. Other valid AVPs for this command are not used for Gi/Sgi purposes and should be ignored by the receiver or processed according to the relevant specifications.

The bold marked AVPs in the message format indicate optional AVPs for Gi/Sgi, or modified existing AVPs. For Sgi, some of the optional 3GPP vendor-specific AVPs listed in the message format below are not applicable. See table 9a in subclause 16a.5 to see the list of vendor-specific AVPs that are applicable to the GGSN and the P-GW.

Message Format:

<AA-Request> ::= < Diameter Header: 265, REQ, PXY >

< Session-Id >

{ Auth-Application-Id }

{ Origin-Host }

{ Origin-Realm }

{ Destination-Realm }

{ Auth-Request-Type }

[ Destination-Host ]

[ NAS-Port ]

[ NAS-Port-Id ]

[ NAS-Port-Type ]

[ Origin-State-Id ]

[ Port-Limit ]

[ User-Name ]

[ User-Password ]

[ Service-Type ]

[ Authorization-Lifetime ]

[ Auth-Grace-Period ]

[ Auth-Session-State ]

[ Callback-Number ]

[ Called-Station-Id ]

[ Calling-Station-Id ]

[ Originating-Line-Info ]

[ Connect-Info ]

[ CHAP-Auth ]

[ CHAP-Challenge ]

\* [ Framed-Compression ]

[ Framed-Interface-Id ]

[ Framed-IP-Address ]

\* [ Framed-IPv6-Prefix ]

\* [ Delegated-IPv6-Prefix ]

[ Framed-IP-Netmask ]

[ Framed-MTU ]

[ Framed-Protocol ]

\* [ Login-IP-Host ]

\* [ Login-IPv6-Host ]

[ Login-LAT-Group ]

[ Login-LAT-Node ]

[ Login-LAT-Port ]

[ Login-LAT-Service ]

\* [ Tunneling ]

\* [ Proxy-Info ]

\* [ Route-Record ]

**[ 3GPP-IMSI]**

**[ External-Identifier]**

**[ 3GPP-Charging-ID ]**

**[ 3GPP-PDP-Type ]**

**[ 3GPP-CG-Address ]**

**[ 3GPP-GPRS-Negotiated-QoS-Profile ]**

**[ 3GPP-SGSN-Address ]**

**[ 3GPP-GGSN-Address ]**

**[ 3GPP-IMSI-MCC-MNC ]**

**[ 3GPP-GGSN-MCC-MNC ]**

**[ 3GPP-NSAPI ]**

**[ 3GPP-Selection-Mode ]**

**[ 3GPP-Charging-Characteristics ]**

**[ 3GPP-CG-IPv6-Address ]**

**[ 3GPP-SGSN-IPv6-Address ]**

**[ 3GPP-GGSN-IPv6-Address ]**

**[ 3GPP-SGSN-MCC-MNC ]**

**[** 3GPP-User-Location-Info **]**

**[ 3GPP-RAT-Type ]**

**[ 3GPP-CAMEL-Charging-Info ]**

**[ 3GPP-Negotiated-DSCP ]**

**[ 3GPP-Allocate-IP-Type ]**

**[ TWAN-Identifier ]**

**[ 3GPP-UE-Local-IP-Address ]**

**[ 3GPP-UE-Source-Port ]**

\* [ AVP ]

\*\*\* 2nd Change \*\*\*

### 16a.4.3 ACR Command

The ACR command, defined in IETF RFC 6733 (Diameter Base) [111], is indicated by the Command-Code field set to 271 and the ‘R’ bit set in the Command Flags field. It is sent by the GGSN/P-GW to the Diameter server to report accounting information for a certain IP-CAN bearer (e.g. PDP context) or an IP-CAN session of a certain user.

The relevant AVPs that are of use for the Gi/Sgi interface are detailed in the ABNF description below. Other valid AVPs for this command are not used for Gi/Sgi purposes and should be ignored by the receiver or processed according to the relevant specifications.

The bold marked AVPs in the message format indicate optional AVPs for Gi/Sgi, or modified existing AVPs. For Sgi, some of the optional 3GPP vendor-specific AVPs listed in the message format below are not applicable. See table 9a in subclause 16a.5 to see the ones that are applicable.

Message Format:

<AC-Request> ::= < Diameter Header: 271, REQ, PXY >

< Session-Id >

{ Origin-Host }

{ Origin-Realm }

{ Destination-Realm }

{ Accounting-Record-Type }

{ Accounting-Record-Number }

[ Acct-Application-Id ]

[ User-Name ]

[ Origin-State-Id ]

[ Destination-Host ]

[ Event-Timestamp ]

[ Acct-Delay-Time ]

[ NAS-Identifier ]

[ NAS-IP-Address ]

[ NAS-IPv6-Address ]

[ NAS-Port ]

[ NAS-Port-Id ]

[ NAS-Port-Type ]

\* [ Class ]

[ Service-Type ]

[ Accounting-Input-Octets ]

[ Accounting-Input-Packets ]

[ Accounting-Output-Octets ]

[ Accounting-Output-Packets ]

[ Acct-Authentic ]

[ Accounting-Auth-Method ]

[ Acct-Session-Time ]

[ Acct-Tunnel-Connection ]

[ Acct-Tunnel-Packets-Lost ]

[ Callback-Id ]

[ Callback-Number ]

[ Called-Station-Id ]

[ Calling-Station-Id ]

\* [ Connection-Info ]

[ Originating-Line-Info ]

[ Authorization-Lifetime ]

[ Session-Timeout ]

[ Idle-Timeout ]

[ Port-Limit ]

[ Accounting-Realtime-Required ]

[ Acct-Interim-Interval ]

\* [ Filter-Id ]

\* [ NAS-Filter-Rule ]

\* [ Qos-Filter-Rule ]

[ Framed-Compression ]

[ Framed-Interface-Id ]

[ Framed-IP-Address ]

[ Framed-IP-Netmask ]

\* [ Framed-IPv6-Prefix ]

[ Framed-IPv6-Pool ]

\* [ Framed-IPv6-Route ]

\* [ Delegated-IPv6-Prefix ]

[ Framed-IPX-Network ]

[ Framed-MTU ]

[ Framed-Pool ]

[ Framed-Protocol ]

\* [ Framed-Route ]

[ Framed-Routing ]

\* [ Login-IP-Host ]

\* [ Login-IPv6-Host ]

[ Login-LAT-Group ]

[ Login-LAT-Node ]

[ Login-LAT-Port ]

[ Login-LAT-Service ]

[ Login-Service ]

[ Login-TCP-Port ]

\* [ Tunneling ]

\* [ Proxy-Info ]

\* [ Route-Record ]

**[ 3GPP-IMSI]**

**[ External-Identifier]**

**[ 3GPP-Charging-ID ]**

**[ 3GPP-PDP-Type ]**

**[ 3GPP-CG-Address ]**

**[ 3GPP-GPRS-Negotiated-QoS-Profile ]**

**[ 3GPP-SGSN-Address ]**

**[ 3GPP-GGSN-Address ]**

**[ 3GPP-IMSI-MCC-MNC ]**

**[ 3GPP-GGSN-MCC-MNC ]**

**[ 3GPP-NSAPI ]**

**[ 3GPP-Selection-Mode ]**

**[ 3GPP-Charging-Characteristics ]**

**[ 3GPP-CG-IPv6-Address ]**

**[ 3GPP-SGSN-IPv6-Address ]**

**[ 3GPP-GGSN-IPv6-Address ]**

**[ 3GPP-SGSN-MCC-MNC ]**

**[ 3GPP-IMEISV ]**

**[ 3GPP-RAT-Type ]**

**[ 3GPP-User-Location-Info ]**

**[ 3GPP-MS-Time-Zone ]**

**[ 3GPP-CAMEL-Charging-Info ]**

**[ 3GPP-Packet-Filter ]**

**[ 3GPP-Negotiated-DSCP ]**

**[ TWAN-Identifier ]**

**[ 3GPP-User-Location-Info-Time ]**

**\* [ 3GPP-Secondary-RAT-Usage ]**

**[ 3GPP-UE-Local-IP-Address ]**

**[ 3GPP-UE-Source-Port ]**

\* [ AVP ]

\*\*\* 3rd Change \*\*\*

## 16a.5 Gi/Sgi specific AVPs

The following table lists the Gi/Sgi specific Diameter AVPs. The Vendor-Id header of all Gi/Sgi specific AVPs defined in the present specification shall be set to 3GPP (10415).

Table 9a: Gi/Sgi specific AVPs

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | AVP Flag rules | | | |  | |
| Attribute Name | AVP Code | Section defined | Value Type | Must | May | Should not | Must not | May Encr. | Applicable Reference Points |
| 3GPP-IMSI | 1 | 16.4.7  (see Note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Charging-Id | 2 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-PDP-Type | 3 | 16.4.7  (see Note) | Enumerated | V | P |  | M | Y | Gi, Sgi |
| 3GPP-CG-Address | 4 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-GPRS-Negotiated-QoS-Profile | 5 | 16.4.7  (see Note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-SGSN-Address | 6 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-GGSN-Address | 7 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-IMSI-MCC-MNC | 8 | 16.4.7 (see note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-GGSN-MCC-MNC | 9 | 16.4.7 (see note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-NSAPI | 10 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Selection-Mode | 12 | 16.4.7 (see note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Charging-Characteristics | 13 | 16.4.7 (see note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-CG-IPv6-Address | 14 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-SGSN-IPv6-Address | 15 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-GGSN-IPv6-Address | 16 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-IPv6-DNS-Servers | 17 | 16.4.7 (see note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-SGSN-MCC-MNC | 18 | 16.4.7 (see note) | UTF8String | V | P |  | M | Y | Gi, Sgi |
| 3GPP-IMEISV | 20 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-RAT-Type | 21 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-User-Location-Info | 22 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-MS-TimeZone | 23 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-CAMEL-Charging-Info | 24 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi |
| 3GPP-Packet-Filter | 25 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Negotiated-DSCP | 26 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Allocate-IP-Type | 27 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| TWAN-Identifier | 29 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Sgi |
| 3GPP-User-Location-Info-Time | 30 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Gi, Sgi |
| 3GPP-Secondary-RAT-Usage | 31 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Sgi |
| 3GPP-UE-Local-IP-Address | 32 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Sgi |
| 3GPP-UE-Source-Port | 33 | 16.4.7  (see Note) | OctetString | V | P |  | M | Y | Sgi |
| NOTE: The use of Radius VSA as a Diameter vendor AVP is described in Diameter NASREQ (IETF RFC 4005 [67]) and the P flag may be set. | | | | | | | | | |

The information represented by some of the Sgi AVPs may not be available to the P-GW depending on the UE’s radio access and the S5/S8 protocol type (GTP or PMIP). For example, the P-GW will be aware of the User Location Info (e.g. TAI) if the user is in LTE access and GTP based S5/S8 is used. However, such information is not passed to the P-GW when PMIP based S5/S8 is utilised. In such scenarios, if an Sgi specific AVP is configured in the P-GW to be transferred to the Diameter AAA server, but the information in the P-GW is not up to date or not available; the P-GW shall not send the corresponding AVP, unless otherwise stated in the AVP definitions in subclause 16.4.7.2.

\*\*\* End of Changes \*\*\*