Landslide® DRA Nodal Commands

(**Note**: This is an extract from the 3GPP Specification, for your ease of reference.)

S6a/S6d-interface Commands

SendAuthInfoReq

- Purpose: MME or SGSN sends a 3GPP-Authentication-Information request (Command-Code=318) to HSS for requesting user authentication information.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
    - NumVectors – Used for specifying a number of authentication vectors will be requested. A configured value must be in between 1 and 5. When included, this number will override a pre-configured number of authentication vector specified in the S6a/S6a tab.
- Message Content: A request contains subscriber IDs, a pre-selected authentication type and a pre-selected number of requested authentication vectors.
- Alternate Content: N/A

SendAuthInfoAns

- Purpose: HSS sends a successful 3GPP-Authentication-Information answer (Command-Code=318, Result-Code=2001) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a number of requested authentication data.
- Alternate Content: N/A

SendAuthInfoAnsErr

- Purpose: HSS sends an error 3GPP-Authentication-Information answer (Command-Code=318, Result-Code=3004) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: an optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendUpdateLocReq

- Purpose: MME or SGSN sends a 3GPP-Update-Location request (Command-Code=316) to HSS for updating user location.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
    - ULRFlags – 32 bits unsigned integer and it is used for specifying a content of a ULR-Flags AVP. This flag, when included, will be sent along with a request instead of an internal default value. Definition of a ULRFlags is listed in the sub-clause 7.3.7 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	Name	Description
0	Single-Registration-Indication	This bit, when set, indicates that the HSS shall send Cancel Location to the SGSN. An SGSN shall not set this bit when sending ULR.
1	S6a/S6d-Indicator	This bit, when set, indicates that the ULR message is sent on the S6a interface, i.e. the source node is an MME (or a combined MME/SGSN to which the UE is attached via E- UTRAN). This bit, when cleared, indicates that the ULR message is sent on the S6d interface, i.e. the source node is an SGSN (or a combined MME/SGSN to which the UE is attached via UTRAN or GERAN).
2	Skip Subscriber Data	This bit, when set, indicates that the HSS may skip subscription data in ULA. If the subscription data has changed in the HSS after the last successful update of the MME/SGSN, the HSS shall ignore this bit and send the updated subscription data. If the HSS effectively skips the sending of subscription data, the GPRS-Subscription- Data-Indicator flag can be ignored.
3	GPRS-Subscription-Data-Indicator	This bit, when set, indicates that the HSS shall include in the ULA command the GPRS subscription data, if available in the HSS; it shall be included in the GPRS- Subscription-Data AVP inside the Subscription-Data AVP (see 7.3.2). Otherwise, the HSS shall not include the GPRS- Subscription-Data AVP in the response, unless the Update Location Request is received over the S6d interface and there is no APN configuration profile stored for the subscriber, or when the subscription data is returned by a Pre-Rel-8 HSS (via an IWF). A standalone MME shall not set this bit when sending a ULR.
4	Node-Type-Indicator	This bit, when set, indicates that the requesting node is a combined MME/SGSN. This bit, when cleared, indicates that the requesting node is a single MME or SGSN; in this case, if the S6a/S6d- Indicator is set, the HSS may skip the check of those supported features only applicable to the SGSN, and consequently skip the download of the SMS related subscription data to a standalone MME.
5	Initial-Attach-Indicator	This bit, when set, indicates that the HSS shall send Cancel Location to the MME or SGSN if there is the MME or SGSN registration.
6	PS-LCS-Not-Supported-By-UE	This bit, when set, indicates to the HSS that the UE does not support neither UE Based nor UE Assisted positioning methods for Packet Switched Location Services. The MME shall set this bit on the basis of the UE capability information. The SGSN shall set this bit on the basis of the UE capability information and the access technology supported by the SGSN.
Bits not defined in this table shall be cleared by the sending MME or SGSN and discarded by the receiving HSS.		

- Message Content: A request contains subscriber information.
- Alternate Content: N/A

SendUpdateLocAns

- Purpose: HSS sends a successful 3GPP-Authentication-Information answer (Command-Code=318, Result-Code=2001) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: The following optional parameters are allowed:
    - ULAFlags – 32 bits unsigned integer and it is used for specifying a content of ULA-Flags AVP. This flag, when included, will be sent along with an answer; otherwise, no ULA- Flags AVP will be sent. Definition of a ULAFlags is listed in the sub-clause 7.3.8 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	Name	Description
0	Separation Indication	This bit, when set, indicates that the HSS stores SGSN number and MME number in separate memory. A Rel-8 HSS shall set the bit. An IWF interworking with a pre Rel-8 HSS/HLR shall clear the bit.
Bits not defined in this table shall be cleared by the sending HSS and discarded by the receiving MME or SGSN.		

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a number of requested authentication data.
- Alternate Content: N/A

SendUpdateLocAnsErr

- Purpose: HSS sends an error 3GPP-Update-Location answer (Command-Code=316, Result-Code=3004) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: an optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendInsSubsDataReq

- Purpose: HSS sends a 3GPP-Insert-Subscriber-Data request (Command-Code=319) to MME or SGSN for updating/adding user subscription.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: The following optional parameters are allowed:
    - IDRFlags – 32 bits unsigned integer and it is used for specifying a content of IDR-Flags AVP. This flag, when included, will be sent with a request; otherwise, no IDR-Flags AVP will be sent. Definition of a IDRFlags is listed in the sub-clause 7.3.103 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	name	Description
0	UE Reachability Request	This bit when set shall indicate to the MME or the SGSN that the HSS is awaiting a Notification of UE Reachability.
1	T-ADS Data Request	This bit, when set, shall indicate to the MME or SGSN that the HSS requests the support status of "IMS Voice over PS Sessions", and the RAT Type and timestamp of the last radio contact with the UE.
2	EPS User State Request	This bit when set shall indicate to the MME or the SGSN that the HSS requests the MME or the SGSN user state
3	EPS Location Information Request	This bit when set shall indicate to the MME or the SGSN that the HSS requests the MME or SGSN Location Information
4	Current Location Request	This bit when set shall indicate that the request for MME or the SGSN location Information is for the current location
Note: Bits not defined in this table shall be cleared by the sending HSS and discarded by the receiving MME.		

- Message Content: A request contains preconfigured subscriber's subscription data.
- Alternate Content: N/A

SendInsSubsDataAns

- Purpose: MME or SGSN sends a successful 3GPP-Insert-Subscriber-Data answer (Command-Code=319, Result-Code=2001) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - IDAFlags – 32 bits unsigned integer and it is used for specifying a content of IDA-Flags AVP. This flag, when included, will be sent along with an answer; otherwise, no IDA- Flags AVP will be sent. Definition of a IDAFlags is listed in the sub-clause 7.3.47 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	Name	Description
0	Network Node area restricted	This bit, when set, shall indicate that the complete Network Node area (SGSN area) is restricted due to regional subscription.
Note: Bits not defined in this table shall be cleared by the sending SGSN and discarded by the receiving HSS.		

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendInsSubsDataAnsErr

- Purpose: MME or SGSN sends an error 3GPP-Insert-Subscriber-Data answer (Command-Code=319, Result-Code=3004) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendDelSubsDataReq

- Purpose: HSS sends a 3GPP-Delete-Subscriber-Data request (Command-Code=320) to MME or SGSN for removing user subscription.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: The following optional parameters are allowed:
    - DSRFlags – 32 bits unsigned integer and it is used for specifying a content of DSR-Flags AVP. This flag, when included, will be sent along with a request instead of an internal default value. Definition of a DSRFlags is listed in the sub-clause 7.3.25 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	Name	Description
0	Regional Subscription Withdrawal	This bit, when set, indicates that Regional Subscription shall be deleted from the subscriber data.
1	Complete APN Configuration Profile Withdrawal	This bit, when set, indicates that all EPS APN configuration data for the subscriber shall be deleted from the subscriber data. This flag only applies to the S6d interface.
2	Subscribed Charging Characteristics Withdrawal	This bit, when set, indicates that the Subscribed Charging Characteristics have been deleted from the subscription data.
3	PDN subscription contexts Withdrawal	This bit, when set, indicates that the PDN subscription contexts whose identifier is included in the Context-Identifier AVP shall be deleted. (Note 1)
4	STN-SR	This bit, when set, indicates that the Session Transfer Number for SRVCC shall be deleted from the subscriber data.
5	Complete PDP context list Withdrawal	This bit, when set, indicates that all PDP contexts for the subscriber shall be deleted from the subscriber data.
6	PDP contexts Withdrawal	This bit, when set, indicates that the PDP contexts whose identifier is included in the Context-Identifier AVP shall be deleted. (Note 2)
7	Roaming Restricted due to unsupported feature	This bit, when set, indicates that the roaming restriction shall be deleted from the subscriber data in the MME or SGSN.
8	Trace Data Withdrawal	This bit, when set, indicates that the Trace Data shall be deleted from the subscriber data.
9	CSG Deleted	This bit, when set, indicates that the CSG-Subscription- Data shall be deleted from the MME or SGSN.
10	APN-OI-Replacement	This bit, when set, indicates that the UE level APN-OI-Replacement shall be deleted from the subscriber data.
11	GMLC List Withdrawal	This bit, when set, indicates that the subscriber's LCS GMLC List shall be deleted from the MME or SGSN.
12	LCS Withdrawal	This bit, when set, indicates that the LCS service whose code is included in the SS-Code AVP shall be deleted from the MME or SGSN.
13	SMS Withdrawal	This bit, when set, indicates that the SMS service whose code is included in the SS-Code AVP or TS-Code AVP shall be deleted from the SGSN.
Note 1: If the Complete APN Configuration Profile Withdrawal bit is set, this bit should not be set. Note 2: If the Complete PDP context list Withdrawal bit is set, this bit should not be set. Note 3: Bits not defined in this table shall be cleared by the sending HSS and discarded by the receiving MME or SGSN. Note 4: Bits 3 and 6 are excluding alternatives and shall not both be set.		

- Message Content: A request contains subscriber IDs.
- Alternate Content: N/A

SendDelSubsDataAns

- Purpose: MME or SGSN sends a successful 3GPP-Delete-Subscriber-Data answer (Command-Code=320, Result-Code=2001) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
    - DSAFlags – 32 bits unsigned integer and it is used for specifying a content of DSA-Flags AVP. This flag, when included, will be sent along with an answer; otherwise, no DSA- Flags AVP will be sent. Definition of a DSAFlags is listed in the sub-clause 7.3.26 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	Name	Description
0	Network Node area restricted	This bit, when set, shall indicate that the complete Network Node area (SGSN area) is restricted due to regional subscription.
Note: Bits not defined in this table shall be cleared by the sending SGSN and discarded by the receiving HSS.		

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendDelSubsDataAnsErr

- Purpose: MME or SGSN sends an error 3GPP-Delete-Subscriber-Data answer (Command-Code=320, Result-Code=3004) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendPurgeUeReq

- Purpose: MME or SGSN sends 3GPP-Purge-UE request (Command-Code=321) to HSS for indicating a subscriber is no longer served by MME or SGSN.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: N/A
- Message Content: A request contains subscriber IDs.
- Alternate Content: N/A

SendPurgeUeAns

- Purpose: HSS sends a successful 3GPP-Purge-UE answer (Command-Code=321, Result-Code=2001) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: The following optional parameters are allowed:
    - PUAFlags – 32 bits unsigned integer and it is used for specifying a content of PUA-Flags AVP. This flag, when included, will be sent along with an answer; otherwise, no PUA- Flags AVP will be sent. Definition of a DSAFlags is listed in the sub-clause 7.3.48 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	name	Description
0	Freeze M-TMSI	This bit, when set, shall indicate to the MME that the M- TMSI needs to be frozen, i.e. shall not be immediately re- used.
1	Freeze P-TMSI	This bit, when set, shall indicate to the SGSN that the P- TMSI needs to be frozen, i.e. shall not be immediately re- used.
Note: Bits not defined in this table shall be cleared by the sending HSS and discarded by the receiving MME or SGSN.		

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS)
- Alternate Content: N/A

SendPurgeUeAnsErr

- Purpose: HSS sends an error 3GPP-Purge-UE answer (Command-Code=321, Result-Code=3004) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCancelLocReq

- Purpose: HSS sends a 3GPP-Cancel-Location request (Command-Code=317) to MME or SGSN for removing subscriber from MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: The following optional parameters are allowed:
  - CancellationType – Used for specifying a cancellation-type. A configured value must be in between 0 and 4. This value, when included, will be sent along with a request instead of a default "SUBSCRIPTION_WITHDRAWAL" value. Definition of a Cancellation-Type AVP is listed in the sub-clause 7.3.24 of the 3GPP TS 29.272 specification and is also briefly listed below:

The Cancellation-Type AVP is of type Enumerated and indicates the type of cancellation. The following values are defined:

MME_UPDATE_PROCEDURE (0)

This value is used when the Cancel Location is sent to the previous MME due to a received Update Location message from a new MME.

SGSN_UPDATE_PROCEDURE (1)

This value is used when the Cancel Location is sent to the previous SGSN due to a received Update Location message from a new SGSN.

SUBSCRIPTION_WITHDRAWAL (2)

This value is used when the Cancel Location is sent to the current MME or SGSN due to withdrawal of the user's subscription by the HSS operator.

UPDATE_PROCEDURE_IWF (3)

This value is used by an IWF when interworking with a pre-Rel-8 HSS.

INITIAL_ATTACH_PROCEDURE (4)

This value is used when the Cancel Location is sent to the MME or SGSN due to a received Update Location message during initial attach procedure from an SGSN or MME respectively.

- Message Content: A request contains subscriber IDs.
- Alternate Content: N/A

SendCancelLocAns

- Purpose: MME or SGSN sends a successful 3GPP-Cancel-Location answer (Command-Code=317, Result-Code=2001) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendCancelLocAnsErr

- Purpose: MME or SGSN sends an error 3GPP-Cancel-Location answer (Command-Code=317, Result-Code=3004) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendResetReq

- Purpose: HSS sends a Reset request (Command-Code=322) to MME or SGSN for indicating it has restarted and any previous information about MME or SGSN may have been lost.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: N/A
- Message Content:
- Alternate Content: N/A

SendResetAns

- Purpose: MME or SGSN sends a successful Reset answer (Command-Code=322, Result-Code=2001) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendResetAnsError

- Purpose: MME or SGSN sends an error Reset answer (Command-Code=322, Result-Code=3004) to HSS.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).

- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendNotifyReq

- Purpose: MME or SGSN sends a Notify request (Command-Code=323) to HSS for indication some events/conditions have occurred.
- Sender: MME, SGSN
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - NORFlags – 32 bits unsigned integer and it is used for specifying a content of a NOR- Flags AVP. This flag, when included, will be sent along with a request; otherwise, no NOR-Flag AVP will be sent. Definition of a NORFlags is listed in the sub-clause 7.3.49 of the 3GPP TS 29.272 specification and is also briefly listed below:

Bit	name	Description
0	Single-Registration-Indication	This bit, when set, indicates that the HSS shall send Cancel Location to the SGSN. An SGSN shall not set this bit when sending NOR.
1	SGSN area restricted	This bit, when set, shall indicate that the complete SGSN area is restricted due to regional subscription.
2	Ready for SM	This bit, when set, shall indicate that the UE is present or the UE has memory capacity available to receive one or more short messages.
3	UE Reachable from MME	This bit, when set, shall indicate that the UE has become reachable again from MME.
4	Reserved	The use of this bit is deprecated. This bit shall be discarded by the receiving HSS.
5	UE Reachable from SGSN	This bit, when set, shall indicate that the UE has become reachable again from SGSN.
Note:	Bits not defined in this table shall be cleared by the sending MME or SGSN and discarded by the receiving HSS.	

- Message Content: A request contains subscriber information.
- Alternate Content: N/A

SendNotifyAns

- Purpose: HSS sends a successful Notify answer (Command-Code=323, Result-Code=2001) to MME or SGSN.
- Sender: HSS
- Receiver: MME, SGSN
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a number of requested authentication data.
- Alternate Content: N/A

SendNotifyAnsError

- Purpose: HSS sends an error Notify answer (Command-Code=323, Result-Code=3004) to MME or SGSN.
- Sender: HSS

- Receiver: MME, SGSN
- Parameters: an optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

Gx-interface Commands

SendEstGxSessReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=INITIAL_REQUEST) to PCRF for requesting to establish a Gx diameter session.
- Sender: PCEF
- Receiver: PCRF
- Parameters: The following optional parameters are allowed:
    - DefaultBearerIndex – 32 bits unsigned integer and it is used for specifying a default bearer for which a diameter session will be established. A configured value must be within a range of defined default bearers. If this value is not provided, the first default bearer will be used in a request.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=INITIAL_REQUEST and bearer information of a configured bearer. A new diameter session-id will be generated for the indicated bearer on every time this command is invoked.
- Alternate Contents: N/A

SendEstGxSessAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: The following optional parameters are allowed:
    - PccIpv4RulesetStartIndex – 32 bits unsigned integer and it used for specifying a starting index of configured IPv4 rule-sets. Its usage is specified in the rule-set usage below.
    - PccIpv4RulesetEndIndex – 32 bits unsigned integer and it used for specifying an ending index of configured IPv4 rule-sets. Its usage is specified in the rule-set usage below.
    - PccIpv6RulesetStartIndex – 32 bits unsigned integer and it used for specifying a starting index of configured IPv6 rule-sets. Its usage is specified in the rule-set usage below.
    - PccIpv6RulesetEndIndex – 32 bits unsigned integer and it used for specifying an ending index of configured IPv6 rule-sets. Its usage is specified in the rule-set usage below.
    - PccDsRulesetStartIndex – 32 bits unsigned integer and it used for specifying a starting index of configured DualStack rule-sets. Its usage is specified in the rule-set usage below.
    - PccDsRulesetEndIndex – 32 bits unsigned integer and it used for specifying an ending index of configured IPv4 rule-sets. Its usage is specified in the rule-set usage below.

    Ruleset usage: When rule-sets are specified using starting and ending indexes above, their rule-content will be included in this answer and rule-action will indicate whether the rule- content will be used for install (activate) or remove (deactivate).

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=INITIAL_REQUEST; and, content of rule-sets when starting or ending rule- set indexes are specified.
- Alternate Content: N/A.

SendEstGxSessAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=INITIAL_REQUEST.

- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendTrmGxSessReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=TERMINATE_REQUEST) to PCRF for requesting to terminate a Gx diameter session.
- Sender: PCEF
- Receiver: PCRF
- Parameters: The following optional parameters are allowed:
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: N/A

SendTrmGxSessAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Content: N/A

SendTrmGxSessAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendRelGxSessReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258, Session-Release-Cause=0) to PCEF for requesting to terminate a Gx diameter session.
- Sender: PCRF
- Receiver: PCEF
- Parameters: N/A
- Message Content: A request contains subscriber IDs, session-id, and a default Session-Release- Cause=0 (UNSPECIFIED_REASON).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default Session-Release-Cause in an request.

SendRelGxSessAns

- Purpose: PCEF sends a successful Re-Auth answer (Command-Code=258, Result-Code=2001) to PCRF.
- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendRelGxSessAnsErr

- Purpose: PCEF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF.
- Sender: PCEF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessEstBearerReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session due to a new bearer has just been established.
- Sender: PCEF
- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, bearer-operation=ESTABLISHED, bearer-id, Qci.
- Alternate Contents: N/A

SendModGxSessEstBearerAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the modification of a Gx diameter session due to a new bearer has just been established.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessEstBearerAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the modification of a Gx diameter session due to a new bearer has just been established.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessModBearerReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session due to a bearer has just been modified.
- Sender: PCEF

- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, bearer-operation=MODIFIED, bearer-id, Qci.
- Alternate Contents: N/A

SendModGxSessModBearerAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the modification of a Gx diameter session due to an existing bearer has just been modified.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessModBearerAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the modification of a Gx diameter session due to an existing bearer has just been modified.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessTrmBearerReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session due to a bearer has just been terminated.
- Sender: PCEF
- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, bearer-operation=TERMINATED, bearer-id.
- Alternate Contents: N/A

SendModGxSessTrmBearerAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the modification of a Gx diameter session due to a bearer has just been terminated.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.

- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessTrmBearerAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the modification of a Gx diameter session due to an existing bearer has just been terminated.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessAddPFilterReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session by adding a new packet-filter (requested by UE).
- Sender: PCEF
- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, packet-filter-operation=ADDITION, packet-filter-content.
- Alternate Contents: N/A

SendModGxSessAddPFilterAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the request for adding a new packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessAddPFilterAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the request for adding a new packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessModPFilterReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session by modifying a packet- filter (requested by UE).

- Sender: PCEF
- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, packet-filter-operation=MODIFICATION, packet-filter-content.
- Alternate Contents: N/A

SendModGxSessModPFilterAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the request for modifying a packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessModPFilterAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the request for modifying a packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessDelPFilterReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session by deleting a packet- filter (requested by UE).
- Sender: PCEF
- Receiver: PCRF
- Parameters: A bearer number.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST, packet-filter-operation=DELETION, packet-filter-id.
- Alternate Contents: N/A

SendModGxSessDelPFilterAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF for accepting the request for deleting a packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxSessDelPFilterAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the request for modifying a packet-filter.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessInstallRuleReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258) to PCEF for modifying a Gx diameter session by installing a new rule.
- Sender: PCRF
- Receiver: PCEF
- Parameters: A rule-set number.
- Message Content: A request contains subscriber IDs, addresses, Charging-Rule-Install and content of the specified rule-set.
- Alternate Contents: N/A

SendModGxSessInstallRuleAns

- Purpose: PCEF sends a successful Re-Auth answer (Command-Code=258) to PCRF for accepting the installation of a new rule.
- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModGxSessInstallRuleAnsErr

- Purpose: PCEF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF for rejecting the request for installation of a new rule.
- Sender: PCEF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxSessRemoveRuleReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258) to PCEF for modifying a Gx diameter session by removing a previous installed rule.
- Sender: PCRF
- Receiver: PCEF
- Parameters: A rule-set number.
- Message Content: A request contains subscriber IDs, addresses, Charging-Rule-Remove and a name of the specified rule-set.
- Alternate Contents: N/A

SendModGxSessRemoveRuleAns

- Purpose: PCEF sends a successful Re-Auth answer (Command-Code=258) to PCRF for accepting the removal of an existing rule.

- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModGxSessRemoveRuleAnsErr

- Purpose: PCEF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF for rejecting the request for the removal of a rule.
- Sender: PCEF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCCRIReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=INITIAL_REQUEST) to PCRF.
- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=INITIAL_REQUEST.
- Alternate Contents: N/A

SendCCRIAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: an optional rule-set number.
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=INITIAL_REQUEST.
- Alternate Content: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendCCRIAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=INITIAL_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCCRUReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF.

- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: N/A

SendCCRUAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: N/A.

SendCCRUAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF for rejecting the modification of a Gx diameter session.
- Sender: PCRF
- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCCRTReq

- Purpose: PCEF sends a Credit-Control request (Command-Code=272, CC-Request-Type=TERMINATE_REQUEST) to PCRF for requesting to terminate a Gx diameter session.
- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: N/A

SendCCRTAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Content: N/A

SendCCRTAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF.
- Sender: PCRF

- Receiver: PCEF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendRARReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258) to PCEF.
- Sender: PCRF
- Receiver: PCEF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses.
- Alternate Contents: N/A

SendRAAAns

- Purpose: PCEF sends a successful Re-Auth answer (Command-Code=258) to PCRF.
- Sender: PCEF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendRAAAnsErr

- Purpose: PCEF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF.
- Sender: PCEF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

Af-interface Commands

SendEstRxSessReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for requesting to establish a Rx diameter session.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional service info statusvalue.
- Message Content: A request contains subscriber IDs, addresses, and Media-Component- Description if configured. The message does not contain a Service-Info-Status AVP for implicating the status of the provided service isfinal.
- Alternate Contents: When a service info status value is provided, the provided value is included in a Service-Info-Status AVP for indicating whether the info is final or preliminary.

SendEstRxSessAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265) toAF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendEstRxSessAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendTrmRxSessReq

- Purpose: AF sends a Session-Terminate request (Command-Code=275) to PCRF for requesting to terminate a Rx diameter session.
- Sender: AF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses.
- Alternate Contents: N/A.

SendTrmRxSessAns

- Purpose: PCRF sends a successful Session-Terminate answer (Command-Code=275) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendTrmRxSessAnsErr

- Purpose: PCRF sends an error Session-Terminate answer (Command-Code=275, Result-Code=3004) to AF.

- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendAbortRxSessReq

- Purpose: PCRF sends an Abort-Session request (Command-Code=274) to AF for requesting to abort a Rx diameter session.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional Abort-Cause value.
- Message Content: A request contains subscriber IDs, addresses and a default Abort-Cause=0 (BEARER_RELEASE).
- Alternate Contents: When an Abort-Cause value is provided, the provided value will be used as a replacement for the default cause in a request.

SendAbortRxSessAns

- Purpose: AF sends a successful Abort-Session answer (Command-Code=274, Result-Code=2001) to PCRF.
- Sender: AF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendAbortRxSessAnsErr

- Purpose: AF sends an error Abort-Session answer (Command-Code=274, Result-Code=3004) to PCRF.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for providing modification information.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional service info status value.
- Message Content: A request contains subscriber IDs, addresses, and Media-Component- Description if configured. The message does not contain a Service-Info-Status AVP for implicating the status of the provided service is final.
- Alternate Contents: When a service info status value is provided, the provided value is included in a Service-Info-Status AVP for indicating whether the info is final or preliminary.

SendModRxSessAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessEnableMscReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for enabling both uplink and downlink of provided Media-Sub-Components.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional media-subcomponent number.
- Message Content: A request contains subscriber IDs, addresses, and all configured media-subcomponents configured with Flow-Status=2 (ENABLED)
- Alternate Contents: When an optional media-subcomponent number is provided, only MSC at the given number (not all MSCs) will be included in a request.

SendModRxSessEnableMscAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessEnableMscAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessEnableUplinkMscReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for enabling uplink direction of provided Media-Sub-Components.
- Sender: AF
- Receiver: PCRF

- Parameters: An optional media-subcomponent number.
- Message Content: A request contains subscriber IDs, addresses, and all configured media-subcomponents configured with Flow-Status=0 (ENABLED-UPLINK)
- Alternate Contents: When an optional media-subcomponent number is provided, only MSC at the given number (not all MSCs) will be included in a request.

SendModRxSessEnableUplinkMscAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessEnableUplinkMscAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessEnableDnlinkMscReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for enabling downlink direction of provided Media-Sub-Components.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional media-subcomponent number.
- Message Content: A request contains subscriber IDs, addresses, and all configured media-subcomponents configured with Flow-Status=0 (ENABLED-DOWNLINK)
- Alternate Contents: When an optional media-subcomponent number is provided, only MSC at the given number (not all MSCs) will be included in a request.

SendModRxSessEnableDnlinkMscAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessEnableDnlinkMscAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).

- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessDisableMscReq (*) final/preliminary service info

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for requesting to disable Media-Sub-Components.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional media-subcomponent number.
- Message Content: A request contains subscriber IDs, addresses, and all configured media-subcomponents configured with Flow-Status=3(DISABLED)
- Alternate Contents: When an optional media-subcomponent number is provided, only MSC at the given number (not all MSCs) will be included in a request.

SendModRxSessDisableMscAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessDisableMscAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModRxSessRemoveMscReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF for requesting to remove Media-Sub-Components.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional media-subcomponent number.
- Message Content: A request contains subscriber IDs, addresses, and all configured media-subcomponents configured with Flow-Status=4 (REMOVED)
- Alternate Contents: When an optional media-subcomponent number is provided, only MSC at the given number (not all MSCs) will be included in a request.

SendModRxSessRemoveMscAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265, Result-Code=2001) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModRxSessRemoveMscAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendAARReq

- Purpose: AF sends an AA request (Command-Code=265) to PCRF.
- Sender: AF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses.
- Alternate Contents: N/A.

SendAAAAns

- Purpose: PCRF sends an successful AA answer (Command-Code=265) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendAAAAnsErr

- Purpose: PCRF sends an error AA answer (Command-Code=265, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendSSTReq

- Purpose: AF sends a Session-Terminate request (Command-Code=275) to PCRF for requesting to terminate a Rx diameter session.
- Sender: AF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses.
- Alternate Contents: N/A.

SendSSTAns

- Purpose: PCRF sends a successful Session-Terminate answer (Command-Code=275) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).

- Alternate Contents: N/A.

SendSSTAnsErr

- Purpose: PCRF sends an error Session-Terminate answer (Command-Code=275, Result-Code=3004) to AF.
- Sender: PCRF
- Receiver: AF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendASRReq

- Purpose: PCRF sends an Abort-Session request (Command-Code=274) to AF for requesting to abort a Rx diameter session.
- Sender: PCRF
- Receiver: AF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses and a default Abort-Cause=0 (BEARER_RELEASE).
- Alternate Contents: N/A.

SendASAAns

- Purpose: AF sends a successful Abort-Session answer (Command-Code=274, Result-Code=2001) to PCRF.
- Sender: AF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendASAAnsErr

- Purpose: AF sends an error Abort-Session answer (Command-Code=274, Result-Code=3004) to PCRF.
- Sender: AF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

Gxa/Gxc/Gxb-interface Commands

SendEstGxxSessReq

- Purpose: BBERF sends a Credit-Control request (Command-Code=272, CC-Request-Type=INITIAL_REQUEST) to PCRF for requesting to establish a Gxx diameter session.
- Sender: BBERF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=INITIAL_REQUEST.
- Alternate Contents: N/A

SendEstGxxSessAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to BBERF.
- Sender: PCRF
- Receiver: BBERF
- Parameters: an optional QoS rule-set number.
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=INITIAL_REQUEST.
- Alternate Content: When a rule-set number is provided, PCRF will send the content of the specified QoS rule-set and an additional installing instruction along with the answer.

SendEstGxxSessAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to BBERF.
- Sender: PCRF
- Receiver: BBERF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=INITIAL_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendTrmGxxSessReq

- Purpose: BBERF sends a Credit-Control request (Command-Code=272, CC-Request-Type=TERMINATE_REQUEST) to PCRF for requesting to terminate a Gxx diameter session.
- Sender: BBERF
- Receiver: PCRF
- Parameters: N/A
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: N/A

SendTrmGxxSessAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to BBERF.
- Sender: PCRF
- Receiver: BBERF
- Parameters: N/A

- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Content: N/A

SendTrmGxxSessAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to BBERF.
- Sender: PCRF
- Receiver: BBERF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendRelGxxSessReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258, Session-Release-Cause=0) to BBERF for requesting to terminate a Gxx diameter session.
- Sender: PCRF
- Receiver: BBERF
- Parameters: N/A
- Message Content: A request contains subscriber IDs, session-id, and a default Session-Release- Cause=0 (UNSPECIFIED_REASON).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default Session-Release-Cause in an request.

SendRelGxxSessAns

- Purpose: BBERF sends a successful Re-Auth answer (Command-Code=258, Result-Code=2001) to PCRF.
- Sender: BBERF
- Receiver: PCRF
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS).
- Alternate Content: N/A

SendRelGxxSessAnsErr

- Purpose: BBERF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF.
- Sender: BBERF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY).
- Alternate Content: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxxSessReq

- Purpose: BBERF sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to PCRF for modifying a Gx diameter session.
- Sender: BBERF
- Receiver: PCRF

- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: N/A

SendModGxxSessAns

- Purpose: PCRF sends a successful Credit-Control answer (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to BBERF for accepting the modification of a Gxx diameter session.
- Sender: PCRF
- Receiver: BBERF
- Parameters: An optional QoS rule-set number.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS) and CC-Request-Type=UPDATE_REQUEST.
- Alternate Contents: When a rule-set number is provided, PCRF will send the content of the specified rule-set and an additional installing instruction along with the answer.

SendModGxxSessAnsErr

- Purpose: PCRF sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to BBERF for rejecting the modification of a Gx diameter session.
- Sender: PCRF
- Receiver: BBERF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxxSessInstallRuleReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258) to PCEF for modifying a Gx diameter session by installing a new QoS rule.
- Sender: PCRF
- Receiver: BBERF
- Parameters: A QoS rule-set number.
- Message Content: A request contains subscriber IDs, addresses, Charging-Rule-Install and content of the specified rule-set.
- Alternate Contents: N/A

SendModGxxSessInstallRuleAns

- Purpose: BBERF sends a successful Re-Auth answer (Command-Code=258) to PCRF for accepting the installation of a new QoS rule.
- Sender: BBERF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModGxxSessInstallRuleAnsErr

- Purpose: BBERF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF for rejecting the request for installation of a new rule.
- Sender: BBERF
- Receiver: PCRF
- Parameters: An optional error code.

- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendModGxxSessRemoveRuleReq

- Purpose: PCRF sends a Re-Auth request (Command-Code=258) to BBERF for modifying a Gxx diameter session by removing a previous installed rule.
- Sender: PCRF
- Receiver: BBERF
- Parameters: A QoS rule-set number.
- Message Content: A request contains subscriber IDs, addresses, Charging-Rule-Remove and a name of the specified rule-set.
- Alternate Contents: N/A

SendModGxxSessRemoveRuleAns

- Purpose: BBERF sends a successful Re-Auth answer (Command-Code=258, Result-Code=2001) to PCRF for accepting the removal of an existing rule.
- Sender: BBERF
- Receiver: PCRF
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendModGxxSessRemoveRuleAnsErr

- Purpose: BBERF sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to PCRF for rejecting the request for the removal of a rule.
- Sender: BBERF
- Receiver: PCRF
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

S9-interface Commands

"The purpose of the S9 Diameter application is to install PCC rules or QoS rules generated in the HPLMN into the VPLMN and transport the events that may occur in the VPLMN to the HPLMN."

"The S9 protocol allows establishment, modification and termination of Diameter S9 sessions. There is an S9 session per UE between each H-PCRF and V-PCRF pair. An S9 session can contain zero, one or several S9 subsessions. The S9 subsession scope is per PDN connection. An S9 subsession can be established, modified and terminated."]

SendEstS9SessReq

When the V-PCRF receives a CCR command with CC-Request-type AVP set to the value "INITIAL_REQUEST" from the PCEF/BBERF that cannot be associated with any existing S9 session to the H-PCRF for that UE (based on the Subscription-ID AVP), the V-PCRF shall establish a new S9 session according to the procedures specified in clause 4.5.2.1 or 4.5.3.1 for home-routed and visited access respectively.]

SendEstS9SessAns

SendEstS9SessAnsErr

SendTrmS9SessReq

The V-PCRF shall initiate a termination of the S9 session when it receives a trigger that originates the removal of the last existing S9 subsession associated with the referred S9 session.

SendTrmS9SessAns

SendTrmS9SessAnsErr

SendRelS9SessReq

SendRelS9SessAns

SendRelS9SessAnsErr

SendModS9SessEstSubSessReq

SendModS9SessEstSubSessAns

SendModS9SessEstSubSessAnsErr

SendModS9SessTrmSubSessReq

SendModS9SessTrmSubSessAns

SendModS9SessTrmSubSessAnsErr

SendModS9SessRelSubSessReq

SendModS9SessRelSubSessAns

SendModS9SessRelSubSessAnsErr

SendModS9SessInstallPccRuleReq

SendModS9SessInstallPccRuleAns

SendModS9SessInstallPccRuleAnsErr

SendModS9SessRemovePccRuleReq

SendModS9SessRemovePccRuleAns

SendModS9SessRemovePccRuleAnsErr

SendModS9SessInstallQosRuleReq

SendModS9SessInstallQosRuleAns

SendModS9SessInstallQosRuleAnsErr

SendModS9SessRemoveQosRuleReq

SendModS9SessRemoveQosRuleAns

SendModS9SessRemoveQosRuleAnsErr

SendModS9SessModSubSessEstBearerReq

SendModS9SessModSubSessEstBearerAns

SendModS9SessModSubSessEstBearerAnsErr

SendModS9SessModSubSessModBearerReq

SendModS9SessModSubSessModBearerAns

SendModS9SessModSubSessModBearerAnsErr

SendModS9SessModSubSessTrmBearerReq

SendModS9SessModSubSessTrmBearerAns

SendModS9SessModSubSessTrmBearerAnsErr

SendModS9SubSessInstallApnRuleReq

SendModS9SubSessInstallApnRuleAns

SendModS9SubSessInstallApnRuleAnsErr

SendModS9SubSessRemoveApnRuleReq

SendModS9SubSessRemoveApnRuleAns

SendModS9SubSessRemoveApnRuleAnsErr

SendCCRIReq

SendCCRIAns

SendCCRIAnsErr

SendCCRUReq

SendCCRUAns

SendCCRUAnsErr

SendCCRTReq

SendCCRTAns

SendCCRTAnsErr

SendRARReq

SendRAAAns

SendRAAAnsErr

Sy-interface Commands

SendSLRReqInitial

- Purpose: PCRF sends a Spending-Limit Request with request type,"Initial" to OCS
- Sender: PCRF
- Receiver: OCS
- Parameters: The following optional parameters are allowed:
- PccPolicyCounterIndx – Used for specifying the index of the preconfigured Policy Counter Id
- Message Content: A request contains subscriber IDs, a pre-selected SLR request Type initial type and a pre-selected policy Counter Id
- Alternate Content: N/A

SendSLRReqIntermediate

- Purpose: PCRF sends a Spending-Limit Request with request type,"Intermediate" to OCS to modify the previously subscribed policy counters
- Sender: PCRF
- Receiver: OCS
- Parameters: The following optional parameters are allowed:
- PccPolicyCounterIndx – Used for specifying the index of the configure Policy Counter Id
- Message Content: A request contains subscriber IDs, with request type Intermediate and a pre-selected policy Counter Id
- Alternate Content: N/A

SendSLAAns

- Purpose: OCS sends a Spending-Limit Answer with result code DIAMETER_SUCCESS to PCRF
- Sender: OCS
- Receiver: PCRF
- Parameters: None
- Message Content: An answer contains the initial status of policy counter Id in policy counter status report And result diameter code Success.
- Alternate Content: N/A

SendSLAAnsErr

- Purpose: OCS sends a Spending-Limit Answer with error code to PCRF
- Sender: OCS
- Receiver: PCRF
- Parameters: None
- Message Content: An answer contains error code unknown policy
- Alternate Content: N/A

SendSNRReq

- Purpose: OCS sends a Notification Request to PCRF for the policy counter Id PCRF subscribed-to, in the session
- Sender: OCS
- Receiver: PCRF
- Parameters: None
- Message Content: It contains the status of policy counter Id in policy counter status report
- Alternate Content: N/A

SendSNAAns

- Purpose: PCRF sends a Status notification answer with Result code DIAMETER_SUCCESS
- Sender: PCRF
- Receiver: OCS
- Parameters: None
- Message Content: Successful answer(SNA) from PCRF to OCS The result code diameter success
- Alternate Content: N/A

SendSNAAnsErr

- Purpose: PCRF sends a Status notification answer with error code
- Sender: PCRF
- Receiver: OCS

- Parameters: None
- Message Content: Error answer(SNA) from PCRF to OCS

SendSTRReq

- Purpose: PCRF sends a session Termination request to OCS
- Sender: PCRF
- Receiver: OCS
- Parameters: None
- Message Content:

SendSTAAns

- Purpose: Session Terminate Answer from OCS to PCRF
- Sender: OCS
- Receiver: PCRF
- Parameters: None
- Message Content: Success answer (STA) from PCRF to OCS

SendSTAAnsErr

- Purpose: Session Terminate Answer from OCS to PCRF with error
- Sender: OCS
- Receiver: PCRF
- Parameters: None
- Message Content: Error answer (STA) from PCRF to OCS

Sd-interface Commands

SendTSR

- Purpose: TDF Session Request from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters: AdcRuleSetIndex
- Message Content: It includes the adc rule indicated by the index, if no index is specified, it includes all configured adc rules.

SendTSA

- Purpose: TDF Session Answer from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: AdcRuleIndex
- Message Content: It includes the adc rule indicated by the index, if no index is specified, it includes all configured adc rules.

SendTSAErr

- Purpose: TDF Session Answer from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: Errorcode
- Message Content: It includes the error code specified by the argument, if not specified TOO_BUSY will be included in the answer

SendCCRU

- Purpose: Credit Control request from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: AdcRuleIndex
- Message Content: It includes the adc rule indicated

SendCCAU

- Purpose: Credit Control Answer Update from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters: AdcRuleSetIndex
- Message Content: It includes the adc rule indicated by the index, if no index is specified, it includes all configured adc rules.

SendCCAUErr

- Purpose: Credit Control Answer error Update from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters: Errorcode
- Message Content: It includes the error code specified by the argument, if not specified TOO_BUSY will be included in the answer

SendCCRT

- Purpose: Credit Control request Terminate from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: None
- Message Content:

SendCCAT

- Purpose: Credit Control Answer Terminate from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters:
- Message Content: Diameter Success as result

SendCCATErr

- Purpose: Credit Control Answer Terminate from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters:
- Message Content:

SendRAR

- Purpose: Reauth request from PCRF to TDF
- Sender: PCRF
- Receiver: TDF
- Parameters: AdcRuleSetIndex
- Message Content: It includes the adc rule indicated by the index, if no index is specified, it includes all configured adc rules.

SendRAA

- Purpose: Reauth Answer from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: AdcRuleSetIndex
- Message Content: It includes the adc rule indicated by the index, if no index is specified, it includes all configured adc rules.

SendRAAErr

- Purpose: Reauth Answer from TDF to PCRF
- Sender: TDF
- Receiver: PCRF
- Parameters: Errorcode
- Message Content: It includes the errorcode

Sh interface

Per 3GPP TS 29.299

SendUserDataReq

- Purpose: AS sends a User-Data-Request (UDR) to the HSS to request subscriber related information
- Sender: AS
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - DataRefs
  - ServiceIndication
  - ReqDomain
  - CurrLocation
  - DSAITag
  - ServerName
  - Identity Set
- Message Content: Contains the User-Identity AVP

SendUserDataAns

- Purpose: HSS sends a User-Data-Answer (UDA) to AS
- Sender: HSS
- Receiver: AS
- Parameters: The following optional parameters are allowed:
  - IncludeXMLHeader
  - DataRefs(0, 10-19,21-24,26-33)
- Message Content: Contains the requested User-Data AVP and result-code DIAMETER_SUCCESS

SendUserDataAnsErr

- Purpose: HSS sends a User-Data-Answer (UDA) to AS with an error code
- Sender: HSS
- Receiver: AS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendProfileUpdateReq

- Purpose: AS sends a Profile-Update-Request to the HSS to update the user data on the server
- Sender: AS
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - IncludeXMLHeader
  - ServiceIndication
  - DSAITag
  - ServerName
  - DataRef(0,18,19,24,27)
- Message Content: Contains the User-Identity AVP and User-Data AVP

SendProfileUpdateAns

- Purpose: HSS sends a Profile-Update-Answer to AS
- Sender: HSS
- Receiver: AS
- Parameters: None
- Message Content: Contains result-code DIAMETER_SUCCESS

SendProfileUpdateAnsErr

- Purpose: HSS sends a Profile-Update-Answer to AS with an error code
- Sender: HSS
- Receiver: AS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendSubsNotifReq

- Purpose: AS sends a Subscribe-Notification-Request to the HSS to request notifications of changes to user data.
- Sender: AS
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - DataRefs
  - ServiceIndication
  - DSAITag
  - ServerName
  - IdentitySet
  - SendData
  - SubsReqType
- Message Content: Contains the User-Identity AVP, Sub-Req-Type AVP and Data-Reference AVP

SendSubsNotifAns

- Purpose: HSS sends a Subscribe-Notification-Answer to AS
- Sender: HSS
- Receiver: AS
- Parameters: The following optional parameters are allowed:
  - IncludeXMLHeader
  - DataRef(0, 10-13,16,18,19,21-23,25,28,29,33)

- Message Content: Contains result-code DIAMETER_SUCCESS

SendSubsNotifAnsErr

- Purpose: HSS sends a Subscribe-Notification-Answer to AS with an error code
- Sender: HSS
- Receiver: AS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendPushNotifReq

- Purpose: HSS sends a Push-Notification-Request to the AS to notify client of changes in user data
- Sender: HSS
- Receiver: AS
- Parameters: The following optional parameters are allowed:
  - IncludeXMLHeader
  - DataRef(0, 10-13,16,18,19,21-23,25,29)
- Message Content: Contains the User-Identity AVP and User-Data

SendPushNotifAns

- Purpose: AS sends a Push-Notification-Answer to HSS
- Sender: AS
- Receiver: HSS
- Parameters: None
- Message Content: Contains result-code DIAMETER_SUCCESS

SendPushNotifAnsErr

- Purpose: AS sends a Push-Notification-Answer to HSS with an error code
- Sender: AS
- Receiver: HSS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

Cx interface

SendUARReq

- Purpose: I-CSCF sends a User-Authorization-Request to HSS during SIP registration to retrieve S-CSCF name or capabilities for S-CSCF selection
- Sender: I-CSCF
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - UserAuthorizationType
- Message Content: Contains the User-Authorization-Type AVP

SendUARAns

- Purpose: HSS sends a User-Authorization-Answer to I-CSCF
- Sender: HSS
- Receiver: I-CSCF

- Parameters: The following optional parameters are allowed:
  - IncludeServerCapabilities
- Message Content: Contains the Server-Name and Server-Capabilities AVP and result-code DIAMETER_SUCCESS

SendUARAnsErr

- Purpose: HSS sends a User-Authorization-Answer to I-CSCF with an error code
- Sender: HSS
- Receiver: I-CSCF
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendSARReq

- Purpose: S-CSCF sends a Server-Assignment-Request to update S-CSCF name on the HSS and download user profile to the S-CSCF
- Sender: S-CSCF
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - ServerAssignmentType
- Message Content: Contains the Server-Assignment-Type AVP

SendSARAns

- Purpose: HSS sends a Server-Assignment-Answer to S-CSCF
- Sender: HSS
- Receiver: S-CSCF
- Parameters: The following optional parameters are allowed:
  - UserDataAlreadyAvailable
- Message Content: Contains the Server-Name, Server-Capabilities and User-Data-Already-Available AVP and result-code DIAMETER_SUCCESS

SendSARAnsErr

- Purpose: HSS sends a Server-Assignment-Answer to S-CSCF with an error code
- Sender: HSS
- Receiver: S-CSCF
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendLIRReq

- Purpose: I-CSCF sends a Location-Info-Request to HSS in SIP session set-up to retrieve S-CSCF name serving the UE or to request S-CSCF capabilities for S-CSCF selection
- Sender: I-CSCF
- Receiver: HSS
- Parameters: None
- Message Content: Contains the Server-Assignment-Type AVP

SendLIRAns

- Purpose: HSS sends a Location-Info-Answer to I-CSCF
- Sender: HSS
- Receiver: I-CSCF
- Parameters: None

- Message Content: Contains the Server-Name, Server-Capabilities and Wild-Carded-Public-Identity AVP and result-code DIAMETER_SUCCESS

SendLIRAnsErr

- Purpose: HSS sends a Location-Info-Answer to I-CSCF with an error code
- Sender: HSS
- Receiver: I-CSCF
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendMARReq

- Purpose: S-CSCF sends a Multimedia-Auth-Request to HSS to exchange information to support authentication between end user and Home Network
- Sender: S-CSCF
- Receiver: HSS
- Parameters: The following optional parameters are allowed:
  - AuthenticationScheme
  - NumberOfRequestedVectors
- Message Content: Contains the SIP-Number-Auth-Items AVP

SendMARAns

- Purpose: HSS sends a Multimedia-Auth-Answer to S-CSCF
- Sender: HSS
- Receiver: S-CSCF
- Parameters: The following optional parameters are allowed:
  - NumberOfRequestedVectors
- Message Content: Contains the Public-Identity, SIP-Number-Auth-Items AVP and result-code DIAMETER_SUCCESS

SendMARAnsErr

- Purpose: HSS sends a Multimedia-Auth-Answer to S-CSCF with an error code
- Sender: HSS
- Receiver: S-CSCF
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendPPRReq

- Purpose: HSS sends a Push-Profile-Request to S-CSCF to update the user data in S-CSCF if the data changes in HSS while S-CSCF is still serving user
- Sender: HSS
- Receiver: S-CSCF
- Parameters: The following optional parameters are allowed:
  - IncludeUserProfile
  - IncludeChargingInfo
  - IncludeAuthenticationInfo
- Message Content: Contains the User-Data and Charging-Info AVP

SendPPRAns

- Purpose: S-CSCF sends a Push-Profile-Answer to HSS
- Sender: S-CSCF

- Receiver: HSS
- Parameters: None
- Message Content: Contains the Public-Identity, SIP-Number-Auth-Items AVP and result-code DIAMETER_SUCCESS

SendPPRAnsErr

- Purpose: S-CSCF sends a Push-Profile-Answer to HSS with an error code
- Sender: S-CSCF
- Receiver: HSS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

SendRTRReq

- Purpose: HSS sends a Registration-Termination-Request to S-CSCF to administratively de-register one of the user's Public Ids
- Sender: HSS
- Receiver: S-CSCF
- Parameters: The following optional parameters are allowed:
  - DeRegistrationReason
  - DeRegistrationReasonInfo
- Message Content: Contains the DeRegistration-Reason AVP

SendRTRAns

- Purpose: S-CSCF sends a Registration-Termination-Answer to HSS
- Sender: S-CSCF
- Receiver: HSS
- Parameters: None
- Message Content: Contains the Associated-Identities AVP and result-code DIAMETER_SUCCESS

SendRTRAnsErr

- Purpose: S-CSCF sends a Registration-Termination-Answer to HSS with an error code
- Sender: S-CSCF
- Receiver: HSS
- Parameters: Optional error code
- Message Content: Contains default error code 3004 (DIAMETER_TOO_BUSY). When an error code is provided, it will be used in place of the default value

S6t/T6a/T6b Interfaces

SendConfigInfoReq

- Purpose: SCEF sends a Configuration Information request (Command-Code=8388718) to MME for configuration the event of the number of UEs at a given geographic location.
- Sender: SCEF
- Receiver: MME
- Parameters: None
- Message Content: A request contains one monitoring event configuration for the number of UEs at a given geographic location in the monitoring-event-report AVP.
- Alternate Content: None.

SendConfigInfoAns

- Purpose: MME sends a Configuration Information answer (Command-Code=8388718) to SCEF for acknowledge configuration the event of the number of UEs at a given geographic location.

- Sender: MME
- Receiver: SCEF
- Parameters: The following optional parameters are allowed (the first two parameters and the third one are mutual-exclusive):
    - IncludeMonEvtRpt – Used for forcing to include Monitoring-Event-Report in the message. This will overwrite the one configured on GUI
    - NumOfUEs – Used for answering with a specified number of UEs in the geographic location. By default, the number of UEs from GUI T6a/b will be used. This is a valid parameter only Monitoring-Event-Report is configured to be included either from GUI or from the parameter above.
    - MonEventServiceResultCode – Used for specifying a service result code within service-report AVP. Without this parameter, the service-report will have success code (2001) by default.
-
- Message Content: An answer contains one monitoring event config status and optionally one monitoring event report.
- Alternate Content: None.

SendConfigInfoAnsErr

- Purpose: HSS sends a Configuration Information answer (Command-Code=8388718) to HSS for acknowledge configuration/deletion of monitoring events and/or communication patterns with diameter error.
- Sender: HSS
- Receiver: SCEF
- Parameters: The following optional parameters are allowed:
    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code 5511 (Unauthorized Service) by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

SendReportInfoReq

- Purpose: MME/SGSN sends a Reporting Information request (Command-Code=8388719) to SCEF for reporting the event of the UE Loss of Connectivity, the UE Reachability, Location of the UE and change in location of UE, and Communication Failure.
- Sender: MME/SGSN
- Receiver: SCEF
- Parameters: None
- Message Content: A request contains one or more monitoring-event-report AVPs for the event of the UE Loss of Connectivity, the UE Reachability, Location of the UE and change in location of UE, and Communication Failure.
- Alternate Content: None.

SendReportInfoAns

- Purpose: SCEF sends a Reporting Information answer (Command-Code=8388719) to MME/SGSN for acknowledge reporting the event of the UE Loss of Connectivity, the UE Reachability, Location of the UE and change in location of UE, and Communication Failure.
- Sender: SCEF
- Receiver: MME/SGSN
- Parameters: None
- Message Content: An answer contains result code 2001 (success).
- Alternate Content: None.

SendReportInfoAnsErr

- Purpose: SCEF sends a Reporting Information answer (Command-Code=8388719) to MME/SGSN for acknowledge reporting the event of the UE Loss of Connectivity, the UE Reachability, Location of the UE and change in location of UE, and Communication Failure.
- Sender: SCEF
- Receiver: MME/SGSN
- Parameters: The following optional parameters are allowed:
  - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code DIAMETER_ERROR_SCEF_REFERENCE_ID_UNKNOWN by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

S6t Interface

SendNiddInfoReq

- Purpose: SCEF sends a NIDD Information request (Command-Code field set to 8388726) to HSS for details of Authorization for NIDD e.g. Charging identity
- Sender: SCEF
- Receiver: HSS
- Parameters: None
- Message Content: A
- Alternate Content: None.

SendNiddInfoAns

- Purpose: HSS sends a NIDD Information answer (Command-Code field set to 8388726) to SCEF for details of Authorization for NIDD e.g. Charging identity
- Sender: HSS
- Receiver: SCEF
- Parameters: None
- Message Content: An answer details of Authorization for NIDD e.g. Charging identity
- Alternate Content: None.

SendNiddInfoAnsErr

- Purpose: HSS sends a Configuration Information answer to SCEF for details of Authorization for NIDD e.g. Charging identity with diameter error.
- Sender: HSS
- Receiver: SCEF
- Parameters: The following optional parameters are allowed:
  - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code 5511 (Unauthorized Service) by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

T6a Interface

SendMODataReq

- Purpose: MME sends a MO Data request (Command-Code=8388733) to SCEF for forwarding Non-IP data of a mobile user from the MME to the SCEF.
- Sender: MME
- Receiver: SCEF
- Parameters: None
- Message Content: A request contains the IMSI of the UE, the Bearer-Identifier of the EPS bearer for NIDD, and the Non-IP Data.
- Alternate Content: None.

SendMODataAns

- Purpose: SCEF sends a MO Data answer (Command-Code=8388733) to MME for acknowledge Non-IP data of a mobile user.
- Sender: SCEF
- Receiver: MME
- Parameters: None
- Message Content: An answer contains result code 2001 (success).
- Alternate Content: None.

SendMODataAnsErr

- Purpose: SCEF sends a MO Data answer (Command-Code=8388733) to MME for acknowledge mobile terminated Non-IP data of a mobile user.
- Sender: SCEF
- Receiver: MME
- Parameters: The following optional parameters are allowed:
    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code 5651 (invalid EPS bearer) by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

SendMTDataReq

- Purpose: SCEF sends a MT Data request (Command-Code=8388734) to SCEF for forwarding mobile terminated Non-IP data of a mobile user from the SCEF to the MME.
- Sender: SCEF
- Receiver: MME
- Parameters: None
- Message Content: A request contains the IMSI of the UE, the Bearer-Identifier of the EPS bearer for NIDD, and the Non-IP Data.
- Alternate Content: None.

SendMTDataAns

- Purpose: MME sends a MT Data request (Command-Code=8388734) to MME for acknowledge mobile terminated Non-IP data of a mobile user.
- Sender: MME
- Receiver: SCEF
- Parameters: None
- Message Content: An answer contains result code 2001 (success).
- Alternate Content: None.

SendMTDataAnsErr

- Purpose: MME sends a MT Data request (Command-Code=8388734) to MME for acknowledge mobile terminated Non-IP data of a mobile user.
- Sender: MME
- Receiver: SCEF
- Parameters: The following optional parameters are allowed:
    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code 5651 (invalid EPS bearer) by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

SendConnMngEstablishmentReq

- Purpose: MME sends a Connection Management request (Command-Code=8388732) to SCEF for establish a T6a connection between MME and SCEF.
- Sender: MME
- Receiver: SCEF
- Parameters: The following optional parameters are allowed:
    - Apn – Used for specifying different NIDD APN other than the one from GUI.
    - CMRFlags – Used for setting CMR Flags. 0 means bit0 clear, 1 means bit0 set. Default is 0.
- Message Content: A request contains the IMSI of the UE, Bearer-Identifier of the EPS bearer for NIDD, Connection-Establishment in the Connection-Action AVP, the APN in the Service-Selection AVP, Rat-Type and Charging Characteristics. CMR-Flags will be included if provided by parameter.
- Alternate Content: None.

SendConnMngEstablishmentAns

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for acknowledge establishment of a T6a connection between MME and SCEF.
- Sender: SCEF
- Receiver: MME
- Parameters: None
- Message Content: An answer contains Success result code and PDN-Connection-Charging-Id AVP.
- Alternate Content: None.

SendConnMngEstablishmentAnsErr

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for rejecting establishment of a T6a connection between MME and SCEF.
- Sender: SCEF
- Receiver: MME
- Parameters: The following optional parameters are allowed:

    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code DIAMETER_ERROR_NIDD_CONFIGURATION_NOT_AVAILABLE by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

SendConnMngUpdateReq

- Purpose: MME sends a Connection Management request (Command-Code=8388732) to SCEF for update the parameters or the status of a T6a connection between MME and SCEF. It can also be sent by SCEF to MME to update the parameters of a T6a connection between MME and SCEF
- Sender: MME or SCEF
- Receiver: SCEF or MME
- Parameters: None
- Message Content: A request contains the IMSI of the UE, Bearer-Identifier of the EPS bearer for NIDD, and Connection-Update in the Connection-Action AVP. CMR-Flags will be included if provided by parameter.
- Alternate Content: None.

SendConnMngUpdateAns

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for acknowledge update the parameters or the status of a T6a connection between MME and SCEF. It can also be sent by MME to SCEF to acknowledge update the parameters of a T6a connection between MME and SCEF
- Sender: SCEF or MME
- Receiver: MME or SCEF
- Parameters: None
- Message Content: An answer contains Success result code.
- Alternate Content: None.

SendConnMngUpdateAnsErr

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for rejecting update of the parameters or the status of a T6a connection between MME and SCEF. It can also be sent by MME to SCEF to rejecting update the parameters of a T6a connection between MME and SCEF
- Sender: SCEF or MME
- Receiver: MME or SCEF
- Parameters: The following optional parameters are allowed:
    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code DIAMETER_ERROR_NIDD_CONFIGURATION_NOT_AVAILABLE by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

SendConnMngReleaseReq

- Purpose: MME sends a Connection Management request (Command-Code=8388732) to SCEF for release a T6a connection between MME and SCEF.
- Sender: MME
- Receiver: SCEF
- Parameters: None
- Message Content: A request contains the IMSI of the UE, Bearer-Identifier of the EPS bearer for NIDD, and Connection-Release in the Connection-Action AVP. CMR-Flags will be included if provided by parameter.
- Alternate Content: None.

SendConnMngReleaseAns

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for acknowledge release a T6a connection between MME and SCEF.
- Sender: MME
- Receiver: SCEF
- Parameters: None
- Message Content: An answer contains Success result code.
- Alternate Content: None.

SendConnMngReleaseAnsErr

- Purpose: SCEF sends a Connection Management answer (Command-Code=8388732) to MME for acknowledge release a T6a connection between MME and SCEF.
- Sender: MME
- Receiver: SCEF
- Parameters: The following optional parameters are allowed:
    - ErrorCode – Used for specifying a result code or an experimental error code. Without this parameter, the message will have error code DIAMETER_ERROR_NIDD_CONFIGURATION_NOT_AVAILABLE by default.
- Message Content: A answer contains an error result code or an experiment error code.
- Alternate Content: None.

Gy Interface

SendCreditAuthReq

- Purpose: PCEF (PGW) sends a Credit-Control request (Command-Code=272, CC-Request-Type=INITIAL_REQUEST) to OCS for requesting to establish a Gy diameter session.
- Sender: PCEF (PGW)
- Receiver: OCS
- Parameters: The following optional parameters are allowed:
    - Rating-Group, Service-Id, Req-Time, Req-Total-Octets, Req-Input-Octets, Req-Output-Octets, Req-Specific-Units.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=INITIAL_REQUEST.
- Alternate Contents: N/A

SendCreditAuthAns

- Purpose: OCS sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: The following optional parameters are allowed:
    - Rating-Group, Service-Id, Req-Time, Req-Total-Octets, Req-Input-Octets, Req-Output-Octets, Req-Specific-Units.
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=INITIAL_REQUEST; and, content of rule-sets when starting or ending rule- set indexes are specified.
- Alternate Content: N/A.

SendCreditAuthErr

- Purpose: OCS sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=INITIAL_REQUEST.

- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCreditUsedUpdateReq

- Purpose: PCEF (PGW) sends a Credit-Control request (Command-Code=272, CC-Request-Type=UPDATE_REQUEST) to OCS for updating a Gy diameter session.
- Sender: PCEF (PGW)
- Receiver: OCS
- Parameters: The following optional parameters are allowed:
    - Rating-Group, Service-Id, Req-Time, Req-Total-Octets, Req-Input-Octets, Req-Output-Octets, Req-Specific-Units.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request- Type= UPDATE _REQUEST.
- Alternate Contents: N/A

SendCreditUsedUpdateAns

- Purpose: OCS sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: The following optional parameters are allowed:
    - Rating-Group, Service-Id, Validity-Time, Granted-Time, Granted -Total-Octets, Granted -Input-Octets, Granted -Output-Octets, Granted -Specific-Units, Final-Unit-Indicator, Redirect-Add-Type, Redirect-Server-Add.
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=UPDATE_REQUEST; and, content of rule-sets when starting or ending rule- set indexes are specified.
- Alternate Content: N/A.

SendCreditUsedUpdateErr

- Purpose: OCS sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=UPDATE_REQUEST.

- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendCreditTermReq

- Purpose: PCEF (PGW) sends a Credit-Control request (Command-Code=272, CC-Request-Type=TERMINATE_REQUEST) to OCS for requesting to terminate a Gy diameter session.

- Sender: PCEF (PGW)
- Receiver: OCS
- Parameters: The following optional parameters are allowed:
    - Rating-Group, Service-Id, Used-Time, Used-Total-Octets, Used-Input-Octets, Used-Output-Octets, Used-Specific-Units.
- Message Content: A request contains subscriber IDs, addresses, a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: N/A

SendCreditTermAns

- Purpose: OCS sends a successful Credit-Control answer (Command-Code=272, Result-Code=2001) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: N/A
- Message Content: A successful answer contains a result-code=2001 (DIAMETER-SUCCESS) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Content: N/A

SendCreditTermErr

- Purpose: OCS sends an error Credit-Control answer (Command-Code=272, Result-Code=3004) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: An optional error code.
- Message Content: An error answer contains a default protocol error-code=3004 (TOO- BUSY) and a CC-Request-Type=TERMINATE_REQUEST.
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

SendRARReq

- Purpose: OCS sends a Re-Auth request (Command-Code=258) to PCEF (PGW).
- Sender: OCS
- Receiver: PCEF (PGW)
- Parameters: N/A.
- Message Content: A request contains subscriber IDs, addresses.
- Alternate Contents: N/A

SendRAAAns

- Purpose: PCEF (PGW) sends a successful Re-Auth answer (Command-Code=258) to OCS.
- Sender: PCEF (PGW)
- Receiver: OCS
- Parameters: N/A.
- Message Content: A successful answer contains a Result-Code=2001 (DIAMETER-SUCCESS).
- Alternate Contents: N/A.

SendRAAAnsErr

- Purpose: PCEF (PGW) sends an error Re-Auth answer (Command-Code=258, Result-Code=3004) to OCS.
- Sender: PCEF (PGW)
- Receiver: OCS
- Parameters: An optional error code.

- Message Content: An error answer contains a default protocol error-code=3004 (TOO-BUSY).
- Alternate Contents: When an error code is provided, the provided error code will be used as a replacement for the default error in an answer.

Contacting Spirent Communications

For complete contact information, refer to the Online Help | Contacting Spirent Communications section.

E-mail: support@spirent.com
Web:
http://support.spirent.com