

show pcc-policy

This chapter describes the output of the **show pcc-policy** command.

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show pcc-policy service all

Table 1: show pcc-policy service all Command Output Description

Field	Description
Service name	Indicates the name of the PCC-Policy service instancefor which counters are displayed.
Context name	Indicates the name of the context in which the PCC-Policy service instance is configured and running.
Service State	Displays the state of PCC-Policy service instance on an IPCF node. Possible states are: • Initial • Connected • Disconnected
Diameter	This group displays information of Diameter configuration parameters configured in this PCC-Policy service instance.
Origin	Indicates the name of the Diameter origin host configured in this PCC-Policy service instance.
Dictionary	Indicates the Diameter dictionary configured and used for Diameter session (Gx) in this PCC-Policy service instance.
Associate PCC-Service	Indicates the name of the PCC service which is associated with this PCC-Policy service instance.

Field	Description
Max Policy Sessions	Indicates the maximum limit of policy (Gx) sessions allowed in this PCC-Policy service instance.
Newcall Policy	Indicates the action configured when new calls arrived after reaching a threshold limit in this PCC-Policy service instance to manage the congestion control. If configured possible actions are: • drop • reject
GPRS-Access-BCM	Indicates the Bearer Control Mode configured in PCC-Policy service instance to access the PCEF in GPRS network. If configured possible modes are: • **as-requested**: the PCC-Policy service is configured to accept the BCM request from Application Server (AS) for PCEF access over **Gx** interface on IPCF node. This is the default mode. • **ue-nw**: the PCC-Policy service is configured to accept the BCM request from UE and/or network element for PCEF access over **Gx** interface on IPCF node. • **ue-only**: the PCC-Policy service is configured to accept the BCM request from UE only for PCEF access over **Gx** interface on IPCF node.
eHRPD-Access-BCM	Indicates the Bearer Control Mode configured in PCC-Policy service instance to access the PCEF in eHRPD network. If configured possible modes are: • **as-requested**: the PCC-Policy service is configured to accept the BCM request from Application Server (AS) for PCEF access over **Gxa** interface on IPCF node. This is the default mode. • **ue-nw**: the PCC-Policy service is configured to accept the BCM request from UE and/or network element for PCEF access over **Gxa** interface on IPCF node. • **ue-only**: the PCC-Policy service is configured to accept the BCM request from UE only for PCEF access over **Gxa** interface on IPCF node.
Subscriber Binding ID	Indicatges the subscriber binding identifier used by **bindmux** for binding subscriber session to PCC-Policy service instance.If configured possible binding identifiers are: • IMSI • MSISDN • NAI • SIP-URI

Field	Description
Subscription-ID Absence Action	Indicatges the action configured for PCC Policy when CCR-I message is received by IPCF/PCRF without a valid Subscription id (IMSI, NAT, E164 etc.). Possible actions are: • Continue • Reject

show pcc-policy service statistics

Table 2: show pcc-policy service statistics Command Output Description

Field	Description
Total Services	Indicates the total number of PCC-Policy services for which counters are displayed.
Messages Statistics	This group displays the summary statistics of messages in a PCC Policy service instance.
Total Messages Recv	Indicates total number of inbound messages received (CCR + RAA).
Total Messages sent	Indicates total number of outbound messages sent (CCA + RAR).
Total CCR	Indicates total number of known (I/U/T) and unknown CCR received.
CCR-Initial	Indicates total number of CCR-I messages received.
CCR-Updates	Indicates total number of CCR-U messages received.
CCR-Terminate	Indicates total number of CCR-T messages received..
Unknown CCR	Indicates total number of CCR messages received with type not determined.
Total CCA	Indicates total number of known (I/U/T) and unknown CCA sent..
CCA-Initial	Indicates total number of CCA-I messages sent.
CCA-Updates	Indicates total number of CCA-U messages sent.
CCA-Terminate	Indicates total number of CCA-T messages sent.
Unknown CCA	Indicates total number of CCA messages sent as response to CCR with type not determined..
CCA with Success	Indicates total number of CCA messages sent with Result-Code as DIAMETER_SUCCESS(2001).

Field	Description
CCA-I with Success	Indicates total number of CCA-I messages sent with Result-Code as DIAMETER_SUCCESS(2001).
CCA-U with Success	Indicates total number of CCA-U messages sent with Result-Code as DIAMETER_SUCCESS(2001).
CCA-T with Success	Indicates total number of CCA-T messages sent with Result-Code as DIAMETER_SUCCESS(2001).
CCA with Failures	Indicates total number of CCA messages rejected.
CCA-I with Failures	Indicates total number of CCA-I messages rejected.
CCA-U with Failures	Indicates total number of CCA-U messages rejected.
CCA-T with Failures	Indicates total number of CCA-T messages rejected.
Total RAA	Indicates total RAA messages received.
Total RAR	Indicates total RAR messages sent.
RAA with Sucesss	Indicates total RAA messages with Result-Code or Experimental-Result-Code as SUCCESS..
RAA with Failure	Indicates total RAA messages with Result-Code or Experimental-Result-Code depicting FAILURE..
RAA without Result	Indicates total RAA messages with both Result-Code or Experimental-Result-Code absent..
Unexpected RAA	Indicates total RAA messages for the non-existing sessions.
RAA parse Sucesss	Indicates total RAA messages with parsing SUCCESS..
RAA parse Failure	Indicates total RAA messages with parsing FAILURE.
Reauth probes	Indicates total RAA messages with reauthorization triggers for subscriber session due to expiry idle timeout timer.
RAR for Sess Release	Indicates total RAR message with Session Release-Cause.
Unspecified	Indicates total RAR message with Session Release-Cause AVP as UNSPECIFIED (0).
UE-subscription-Reason	Indicates total RAR message with Session Release-Cause AVP as UE_SUBSCRIPTION_CHANGED (1).
Insuff Server Resources	Indicates total RAR message with Session Release-Cause AVP as INSUFFICIENT_SERVER_RESOURCES (2).
Total RAR Timeouts	Indicates total RAR messages for which no RAA response was received from PCEF.

Field	Description
Update RAR Timeouts	Indicates total Timed-out RAR messages which were sent by PCRF for session updates (e.g. RAR with new / modified PCC rules / QoS).
Release RAR Timeouts	Indicates total Timed-out RAR messages which were sent by PCRF for session termination (RAR with Session-Release-Cause AVP).
Session-Level Statistics	This group displays the session level statistics of messages in a PCC Policy service instance.
Current Sessions	Indicates the session counter which keeps track of existing sessions under this PCC-Policy service.
Total Session Created	Indicates cumulative number of sessions created at the PCC-Policy service.
Total Session Updates	Indicates cumulative number of sessions updates at the PCC-Policy service. This will include both PCRF-initiated and PCEF initiated updates.
PCEF-Initiated	Indicates cumulative number of PCEF-initiated sessions updates at the PCC-Policy service. This will include session updates through CCR-U message.
PCRF-Initiated	Indicates cumulative number of PCRF-initiated sessions updates at the PCC-Policy service. This will include session updates through RAR.
Total Session Deleted	Indicates cumulative number of session deletion at the PCC-Policy service.
PCEF-Initiated	Indicates cumulative number of PCEF-initiated session terminations at the PCC-Policy service initiated through CCR-T message.
PCRF-Initiated	Indicates cumulative number of PCRF-initiated session termination at the PCC-Policy service initiated through RAR messages with Session-Release-Cause AVP.
Peer Down Initiated	Indicates cumulative number of sessions terminations due to peer disconnect at the PCC-Policy service..
Initial Reject	Indicates cumulative number of sessions terminations at the PCC-Policy service initiated through CCR-I rejection.
Idle Timeout	Indicates the idle session timeout duration set for a subscriber session timer. Possible range of duration is 1 to 4294967295 in seconds. Special value of 0 indicates that timer is disabled and it is the default behavior.
Setup Timeout	Indicates IPCF setup timeout duration set on a system for setup timer. Possible range of duration is 1 to 120 in seconds. By default Setup timeout value is 60 seconds. Special value of 0 indicates that timer is disabled.

Field	Description
Long-duration Timeout	Indicates the long duration idle session timeout set for a subscriber session timer. Possible range of duration is 1 to 4294967295 in seconds. Special value of 0 indicates that timer is disabled and it is the default behavior.
Failure Statistics	This group displays the statistics of various failure reasons in a PCC Policy service instance.
Missng CCR-Type	Indicates total number of CCR messages with mandatory CC-Request-Type AVP missing.
Unexpected CCR-I	Indicates total number of CCR-I message for existing session.
Unexpected CCR-U	Indicates total number of CCR-U message for non-existing session.
Unexpected CCR-T	Indicates total number of CCR-T message for non-existing session.
Missng CCR-Num	Indicates total number of CCR messages with mandatory CC-Request-Number missing.
Out-of-Order CCR	Indicates total number of CCR messages with out-of-order CC-Request-Number.
PCC-Sess Create Fail	Indicates total number of PCC Session Creation Failure after receiving CCR-I due to miscellaneous reasons.
Policy-Sess Create Fail	Indicates total number of PCC Policy Session Creation Failure after receiving CCR-I due to miscellaneous reasons.
PCC-Sess Lookup Fail	Indicates total number of PCC Session Creation Failure after receiving CCR-U/T due to miscellaneous reasons.
Policy-Sess Lookup Fail	Indicates total number of PCC Policy Session Creation Failure after receiving CCR-U/T due to miscellaneous reasons.
Missing Origin-Host	Indicates total number of CCR messages with mandatory Origin-Host AVP missing.
Invalid Origin-Host	Indicates total number of CCR messages with mandatory Origin-Host AVP invalid.
Missing Origin-Realm	Indicates total number of CCR messages with mandatory Origin-Realm AVP missing.
Invalid Origin-Realm	Indicates total number of CCR messages with mandatory Origin-Realm AVP invalid.
Missing Dest-Realm	Indicates total number of CCR messages with mandatory Destination-Realm AVP missing.
Invalid Dest-Realm	Indicates total number of CCR messages with mandatory Destination-Realm AVP invalid.

Field	Description
Unsubscribed Triggers	Indicates total number of Event-Trigger received from PCEF for which PCRF has not subscribed (E.g. RAT_CHANGE received from PCEF even though it is not supplied previously by PCRF).
Unknwown Triggers	Indicates total number of Event-Trigger received from PCEF which is undefined for the policy version. (E.g. Defaul-EPS-Bearer-QoS-Change received for R7-Gx).
Non-Applicable Triggers	Indicates total number of Event-Trigger received from PCEF which is not applicable for the access-type. (E.g. Defaul-EPS-Bearer-QoS-Change received for R8 GGSN with 3GPP-GPRS access).
Missing Trigger-Param	Indicates total number of Event-Trigger received from PCEF without the related parameter (E.g. PCEF sending RAT_CHANGE without the RAT-Type value).
Invalid Trigger-Param	Indicates total number of Event-Trigger received from PCEF with invalid related parameter (E.g. PCEF sending RAT_CHANGE by RAT-Type reported is same as previous one).
Event-Trigger in CCR-I	Indicates total number of Event-Trigger received from PCEF in CCR-I message.
Event-Trigger in CCR-T	Indicates total number of Event-Trigger received from PCEF in CCR-T message.
Invalid BCM Request	Indicates total number of failure cases where PCEF requests bearer control mode (BCM) as UE-ONLY by sending Network-Request-Not-Supported in CCR-I. However, operator configured BCM is UE-NW. Thus, BCM is not provisioned and PCRF rejects this CCR.
QoS-Auth Fail	Indicates total number of failure when PCRF rejects the CCR in case of QoS-authorization failure in CCR-I message.
Invalid Initial Param	Indicates total number of failure when PCRF rejects the CCR with Experimental Result-Code DIAMETER_ERROR_INITIAL_PARAMETERS due to incorrect information in the request.
Invalid AVP Value	Indicates total number of failure when PCRF rejects the CCR with Result-Code DIAMETER_INVALID_AVP_VALUE due to incorrect AVP value in the request.
Unsupported AVP	Indicates total number of failure when PCRF rejects the CCR with Result-Code DIAMETER_AVP_UNSUPPORTED due to incorrect AVP value in the request.
Missing AVP	Indicates total number of failure when PCRF rejects the CCR with Result-Code DIAMETER_MISSING_AVP due to incorrect AVP value in the request.

Field	Description
Session-Linking Failurre	Indicates total number of failure when PCRF rejects the CCR-I with Result-Code DIAMETER_AUTHORIZATION_REJECTED due to Session Linking failure.
Unavail Srv Credits	Indicates total number of session failure due to unavailability of enough service credits for PCC-Policy Session creation.
Multiple Policy Sess Reject	Indicates total number of session rejection due to no-support for multiple PCC session per subscriber available but attempted by PCEF.
Diameter Statistics	This group displays the statistics of various Diameter interface messages in a PCC Policy service instance.
App Register Success	Indicates total number of successful diabase registrations at this PCC-Policy service due to service addition.
App Register Fail	Indicates total number of failed diabase registrations performed at this PCC-Policy service due to service addition.
App Unregister Success	Indicates total number of successful diabase deregistration at this PCC-Policy service due to service removal.
App Unregister Fail	Indicates total number of failed diabase deregistration performed at this PCC-Policy service due to service removal.
App Reregister Success	Indicates total number of successful diabase re-registrations at this PCC-Policy service due to service modification.
App Reregister Fail	Indicates total number of failed diabase registrations performed at this PCC-Policy service due to service modification.
Total Msg Create Fail	Indicates total number of failure to create diabase messages for CCA and RAR.
CCA Create Fail	Indicates total number of failure to create diabase messages for CCA.
RAR Create Fail	Indicates total number of failure to create diabase messages for RAR.
Total Msg Encode Fail	Indicates total number of failure to encode diabase message AVP for CCA and RAR.
CCA Encode Fail	Indicates total number of failure to encode diabase message AVP for CCA.
RAR Encode Fail	Indicates total number of failure to encode diabase message AVP for RAR.
Total Msg Send Fail	Indicates total number of failure to send diabase messages for CCA and RAR.
CCA Send Fail	Indicates total number of failure to send diabase messages for CCA.
RAR Send Fail	Indicates total number of failure to send diabase messages for RAR.

Field	Description
Termination Cause Statistics	This group displays the statistics of various causes for session termination in a PCC Policy service instance.
Diameter Logout	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_LOGOUT (1).
Serv	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_SERVICE_NOT_PROVIDED (2).
Bad Answer	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_BAD_ANSWER (3).
Administrative	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_ADMINISTRATIVE (4).
Link Broken	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_LINK_BROKEN (5).
Auth Expired	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_AUTH_EXPIRED (6).
User Moved	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_USER_MOVED (7).
Session Timeout	Indicates total number of session termination happened due to CCR-T with Termination-Cause AVP set to value DIAMETER_SESSION_TIMEOUT (8).
Rule Report Statistics	This group displays the statistics of various Rule Reports in a PCC Policy service instance.
Total Rules Reports	Indicates total number of rule-reports received for various PCC/QoS rules.
Total Install Failures	Indicates total number of rule-reports received for various PCC/QoS rule installation failures.
Total Install Success	Indicates total number of rule-reports received for various successful PCC rule installation.
Total Credit Exhaustion	Indicates total number of rule-reports received for various PCC rule out-of-credit.
Total Credit Reallocs	Indicates total number of rule-reports received for various PCC rule credit reallocation.

Field	Description
Unknown Rule-Names	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as UNKNOWN_RULE_NAME (1).
Rating Group Errors	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as RATING_GROUP_ERROR (2).
Service-ID Errors	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as SERVICE_IDENTIFIER_ERROR (3).
GW-PCEF Malfunctions	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as GW/PCEF_MALFUNCTION (4).
Resource Limitations	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as RESOURCES_LIMITATIONS (5).
Max-NR-Bearers Reached	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as MAX_NR_BEARERS_REACHED (6).
Unknown Bearer ID	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as UNKNOWN_BEARER_ID (7).
Missing BearerID	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as MISSING_BEARER_ID (8).
Missing Flow-Desc	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as MISSING_FLOW_DESCRIPTION (9).
Resource Alloc Fail	Indicates total number of rule-reports received for valrious PCC rule installation failures with Rule-Failure-Code as RESOURCE_ALLOCATION_FAILURE (10).
QoS Validation Fail	Indicates total number of rule-reports received for various PCC rule installation failures with Rule-Failure-Code as UNSUCCESSFUL_QOS_VALIDATION (11).
Usage Statistics	This group displays the usage statistics in a PCC Policy service instance.
Total Usage Thresholds	Indicates total number of usage thresholds supplied to PCEF for various monitoring instances.
Rule-Level Thresholds	Indicates total number of PCC-Rule-Level usage thresholds supplied to PCEF for various monitoring instances.

Field	Description
Sess-Level Thresholds	Indicates total number of Session-Level usage thresholds supplied to PCEF for various monitoring instances.
Rule-Level Report Req	Indicates total number of PCRF initiated PCC-Rule-Level usage report requests supplied to PCEF for various monitoring instances.
Sess-Level Report Req	Indicates total number of PCRF initiated session-level usage report requests supplied to PCEF for various monitoring instances.
Rule-Level Disable Requests	Indicates total number of PCRF initiated PCC-Rule-level usage report disable requests supplied to PCEF for various monitoring instances.
Sess-Level Disable Req	Indicates total number of PCRF initiated session-level usage report disable requests supplied to PCEF for various monitoring instances.
SPR Statistics	This group displays the statistics related to SSC/SPR instances and procedures associated with a PCC Policy service instance.
Profile Register	Indicates total messages sent to SPR for Subscriber Profile Registration.
Profile Deregister	Indicates total messages sent to SPR for Subscriber Profile Deregistration.
Usage Register	Indicates total messages sent to SPR for Subscriber Usage Registration.
Usage Deregister	Indicates total messages sent to SPR for Subscriber Usage Deregistration.
Usage Updates	Indicates total messages sent to SPR for Subscriber Usage Update.
RAR-CCR	Indicates total RAR and CCR message collisions.
Update RAR-CCR-U	Indicates total message collision between CCR-U message from PCEF and RAR message sent by PCRF for policy update.
Update RAR-CCR-T	Indicate total message collision between CCR-T message from PCEF and RAR message sent by PCRF for policy update.
Update RAR-CCR-U	Indicates total message collision between CCR-U message from PCEF and RAR message sent by PCRF for session release.
Update RAR-CCR-T	Indicates total message collision between CCR-T message from PCEF and RAR message sent by PCRF for session release.

show pcc-policy session full all

Table 3: show pcc-policy session full all Command Output Description

Field	Description
Callid	Indicates the identity number of the IP-CAN call registered on the PCC-Policy service instancefor which counters are displayed.

Field	Description
Session ID	Indicates the identity number of the IP-CAN session active on the PCC-Policy service instancefor which counters are displayed.
Peer ID	Indicates the identity number (IP address) of the PCEF node used in IP-CAN session within the PCC-Policy service instancefor which counters are displayed.
Service Name	Indicates the name of the PCC-Policy service instancefor which counters are displayed.
Service Type	Indicates the type of IP-CAN session on the PCC-Policy service instancefor which counters are displayed.
IMSI	Indicatges the IMSI number of subscriber used by **bindmux** for binding subscriber session to PCC-Policy service instance.
MSISDN	Indicatges the MSISDN number of subscriber used by **bindmux** for binding subscriber session to PCC-Policy service instance.
APN Name	Indicates the name of the APN used by IP-CAN session to serve subscriber in the PCC-Policy service instance.
IMEI	Indicates the IMEI number of UE used by **bindmux** for binding subscriber session to PCC-Policy service instance.
Session State	Indicates the state of the IP-CAN session on PCC-Policy service instance. Possible states are: • Initial • Connected • Disconnected
Framed-IPv4	Indicates the IPv4 address, if used, for frame route relay prefix in IP-CAN session on PCC-Policy service instance.
Framed-IPv6	Indicates the IPv6 address, if used, for frame route relay prefix in IP-CAN session on PCC-Policy service instance.
RAT-Type	Indicates the Radio Access Type used for this IP-CAN session. Possible RAT types are: • UTRAN • E-UTRAN • GPRS
SGSN_MCC	Indicates the Mobile Country Code used in IP-CAN session on PCC-Policy service instance.
SGSN_MNC	Indicates the Mobile Network Code used in IP-CAN session on PCC-Policy service instance.
IP-CAN-Type	Indicates the type of IP-CAN session active on PCC-Policy service instance.

Field	Description
BCM	Indicates the Bearer Control Mode configured in PCC-Policy service instance to access the PCEF in GPRS/eHRPD network. If configured possible modes are: • **as-requested**: the PCC-Policy service is configured to accept the BCM request from Application Server (AS) for PCEF access over **Gx** interface on IPCF node. This is the default mode. • **ue-nw**: the PCC-Policy service is configured to accept the BCM request from UE and/or network element for PCEF access over **Gx** interface on IPCF node. • **ue-only**: the PCC-Policy service is configured to accept the BCM request from UE only for PCEF access over **Gx** interface on IPCF node.
ANC-Address	Indicates the IP address of the Access Network Controller node of the IP-CAN session on the PCC-Policy service instancefor which counters are displayed.
ANC-Identifier	Indicates the identity number of the Access Network Controller node used in IP-CAN session within the PCC-Policy service instancefor which counters are displayed.
Event-Trigger	Indicates the event triggers configured/activated for IP-CAN session within the PCC-Policy service instancefor which counters are displayed.