

PCRF Training Description, Policy and Charging Rules Function Training

PCRF Training covers all aspects of Policy Control and Charging (PCC) functionality including: Policy and Charging Rules Function (PCRF), Policy and Charging Enforcement Function (PCEF), Bearer Binding and Event Reporting Function (BBERF), Online Charging System (OCS), Offline Charging System (OFCS), Subscription Profile Repository (SPR) and Application Function (AF).

PCC enables a centralized control to ensure that the service sessions or IP-CAN sessions, are provided with appropriate bandwidth and QoS. PCC also provides a means to control charging on a per-service basis.

Policy and Charging Rules Function (PCRF) is part of the PCC and supports service data flow detection, policy enforcement, flow-based charging. PCRF manages policies to manage and control Quality of Service (QoS), charging, quota, optimization and admission control.

Policy and Charging Control functionality encompasses two main including Flow Based Charging, charging control and online credit control, and Policy control such as gating control, QoS control, and QoS signalling.

PCRF function as part of the larger PCC architecture, includes the Proxy Call Session Control Function (P-CSCF) and the Policy and Charging Enforcement Function (PCEF).

Learn about PCC functions including:

- PCRF (policy and charging rules function)
- PCEF (policy and charging enforcement function)
- OCS (online charging system)
- OFCS (off-line charging system)
- PCC rules and its purposes
- Policy rules between applications and policy enforcement points
- gx: Policy decisions-related information between PCEF and PCRF
- Gy: *Online flow based bearer charging PCEF and OCS*
- Sy: Policy rules between PCRF and OCS (Online Charging System)
- Gq: Policy exchange policy decisions-related information between P-CSCF and PDF

Course Topics

Introduction to PCC (Policy and Charging Control)

- What is PCC?
- Overall PCC Logical Architecture
- PCC Functional entities
- AF (Application Function)

- BBERF (Bearer Binding and Event Reporting Function)
- OFCS (Offline Charging System)
- OCS (Online Charging System)
- PCEF (Policy and Charging Enforcement Function)
- PCRF (Policy and Charging Rules Function)
- SPR (Subscription Profile Repository)
- User Data Repository (UDR)
- Traffic Detection Function (TDF)

Policy and charging control architecture

- Charging models
- Examples of Service Data Flow Charging
- Policy control requirements
- QoS control
- Subscriber Spending Limits
- Usage Monitoring Control
- Application Detection and Control

PCRF Architecture model and reference points

- Reference architecture and Reference points
- Rx reference point
- Gx reference point
- Reference points to subscriber databases
- Sp reference point
- Ud reference point
- Interaction between an Online Charging System and a Policy Server
- Gy reference point
- Gz reference point
- S9 reference point
- Gxx reference point
- Sd reference point
- Sy reference point

PCC Functional description

- Binding mechanism
- Reporting
- Credit management
- Event Triggers

- Policy Control
- Service (data flow) Prioritization and Conflict Handling
- Standardized QoS characteristics
- Termination Action
- Handling of packet filters provided to the UE by PCEF/BBERF
- IMS Emergency Session Support
- Multimedia Priority Service Support
- ADC rule authorization

Policy and charging control rule

- Policy and charging control rule operations
- IP CAN bearer and IP CAN session related policy information
- Quality of Service Control rule
- Usage Monitoring Control specific information
- IP flow mobility Routing rule
- Application Detection and Control Rule
- Policy decisions based on spending limits

PCC Procedures and flows

- IP CAN Session Establishment
- IP CAN Session Termination
- IP CAN Session Modification
- Update of the subscription information in the PCRF
- PCRF Discovery and Selection
- Gateway Control Session Procedures
- Change in subscription for MPS priority services
- Procedures over Sy reference point

Policy Controller Supported Protocols

- Policy Controller Supported Protocols
- Diameter Base specification
- AF (application function)
- Policy and Charging Control Over Rx reference point
- OCS (Online Charging System)
- Policy Controller communicated with the OCS portion of your SPR/OSC using this Sy interface standard:
- Sy Interface based on the Diameter Protocol
- PCEF (Policy Controller Enforcement Function)
- Policy and Charging Control over Gx Reference

- Quality of Service
- Policy and Charging Control signalling flows and Quality of Service (QoS) parameter mapping
- SPR (Subscriber Profile Repository)

Protocol Support for Rx and Gx Interfaces

- Abort-Session-Request (ASR)
- Abort-Session-Answer (ASA)
- Capabilities-Exchange-Request (CER)
- Capabilities-Exchange-Answer (CEA)
- Device-Watchdog-Request (DWR)
- Device-Watchdog-Answer (DWA)
- Disconnect-Peer-Request (DPR)
- Disconnect-Peer-Answer (DPA)
- Re-Auth-Request (RAR)
- Re-Auth-Answer (RAA)
- Session-Termination-Request (STR)
- Session-Termination-Answer (STA)

Supported Gx Commands

- Policy and Charging Rules Function (PCRF and PCEF)
- Procedures over Gx interface
- Request and Provisioning for PCC rules
- PULL procedure (Provisioning solicited by PCEF)
- PUSH procedure (Unsolicited provisioning)
- Credit-Control-Request (CCR)
- Credit-Control-Answer (CCA)
- Re-Authorization-Request (RAR)
- Re-Authorization-Answer (RAA)

Gy interface (OCS and PCEF)

- Online credit control for service data flow based charging
- Gy reference point at the Policy Charging and Control (PCC) architecture
- Basic principles for Diameter OCS
- Online Credit Control Application Requirements
- Procedures over Gy interface
- Immediate Event Charging (IEC)
- Event Charging with Unit Reservation (ECUR)
- Session Charging with Unit Reservation (SCUR)

