



IPLOOK PCRF PRODUCT INFORMATION

Version: V1.3

Issue data: 2018-07-13

Versions

Versions	Alteration of contents	Director
V 1.2	Functions	Liaoxinrong

Contents

Contents 1

1 Description 2

2 Feature List..... 3

3 Product Strategy..... 8

4 Technical Support 10

1 Description

IPLOOK PCRF bring the functionality of the PCRF into the SAE domain. It features distributed structure, modular design and supports many reliability functions, including flexible strategy control ability, good integration of fixed and mobile services, large capacity and high degree of integration, open data access interface. Moreover, in-memory data management, multi-level data backup and seamless geographic redundancy solution. The User Data and Server Process of PCRF are separated to BE (End Back, subscriber data storage and operations) and FE (End Front, process the signal and service logic).

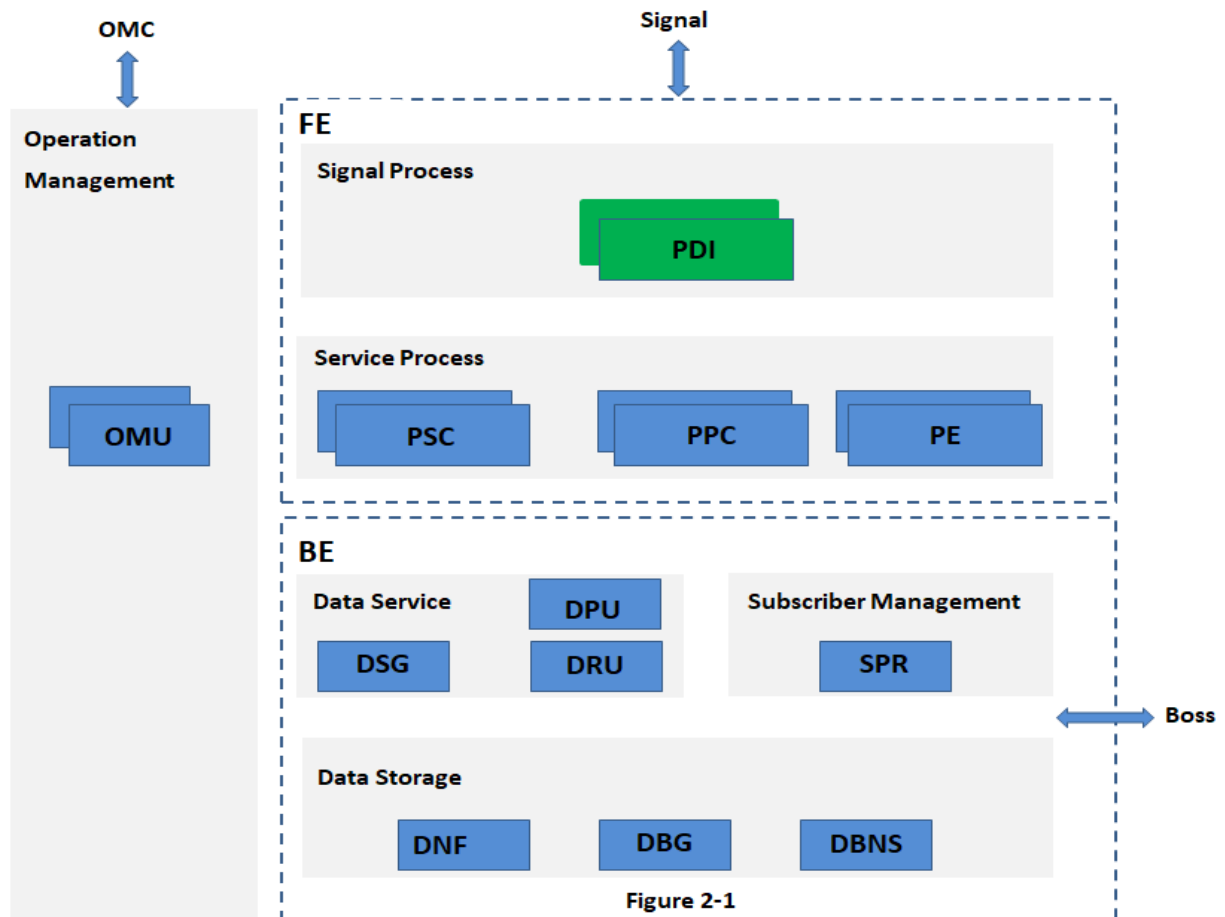
2 Feature List

- **SPR Data Management**
 - a) Spr user and contract information storage and management
 - b) Spr supports restful Service configuration and user signing Interface
 - c) Spr Network element configuration Management
 - d) Spr supports remote disaster recovery
- **Dynamic policy control**
 - a) Dynamic Policy Control based on usage
 - b) Dynamic Policy Control based on time period
 - c) Dynamic Policy Control based on Service area
 - d) Dynamic Policy Control based on Terminal Type
 - e) Dynamic Policy Control based on shared usage
 - f) Dynamic Policy Control based on apn
- **High performance Policy Engine**
 - g) Pcrf redundant backup Design
 - h) Overload control function
 - i) Subscriber area roaming restriction
 - j) Multiple pcef access support
 - k) Pcrf Network element Fault alarm report
- **Volte service support**
 - l) Volte basic business support (voice, video service)
 - m) Volte supplementary business support (CFW, cwch, etc.)
- **subscriber data management**
- **Interface comply to 3GPP standard, comply to 3GPP R13 release**
 - a) Gx

b) Rx

● **Modular design is described as below:**

- a) PDI: PCRF Diameter Interface
- b) PSC: PCRF Session Control
- c) PPC: PCRF Policy Control
- d) PE: Policy Engine
- e) DPU: Data Processing unit
- f) DRU: Data routing unit
- g) DBMS: Data Base Management System
- h) DSG: Data Service Gateway



● **Distributed System**

Distributed architecture is applied in PCRF, which has the following excellent quality:

- ◆ High Reliability
- ◆ Smoothly Expansion

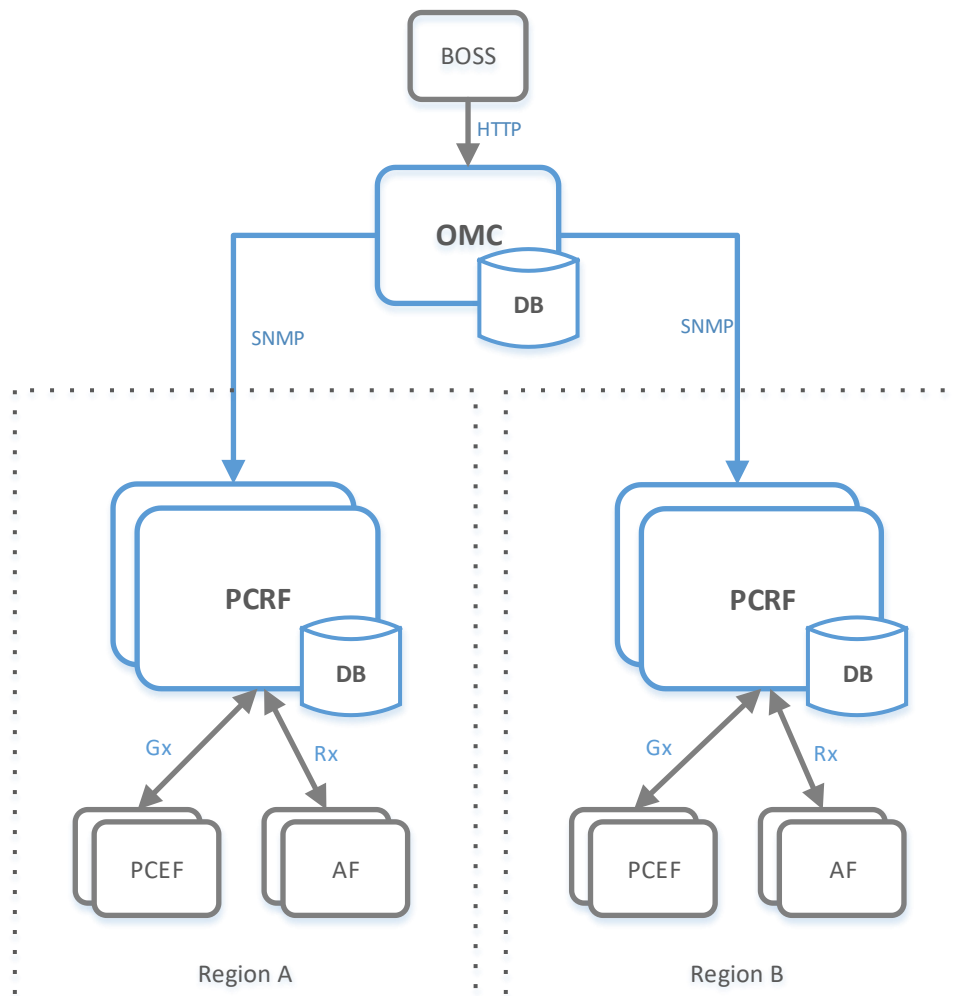


Figure 2-2

● Multi-level backup mechanism

There are three level backup mechanisms.

Level 1

2N or N+1 redundancy solutions are applied in backup user data stored in cache. The user data from the main unit will be synchronized to the backup unit in real time.

Level 2

Database backup mode using 1+1 redundancy mode.

Level 3

The data is saved to a disk array in RAID10 mode.

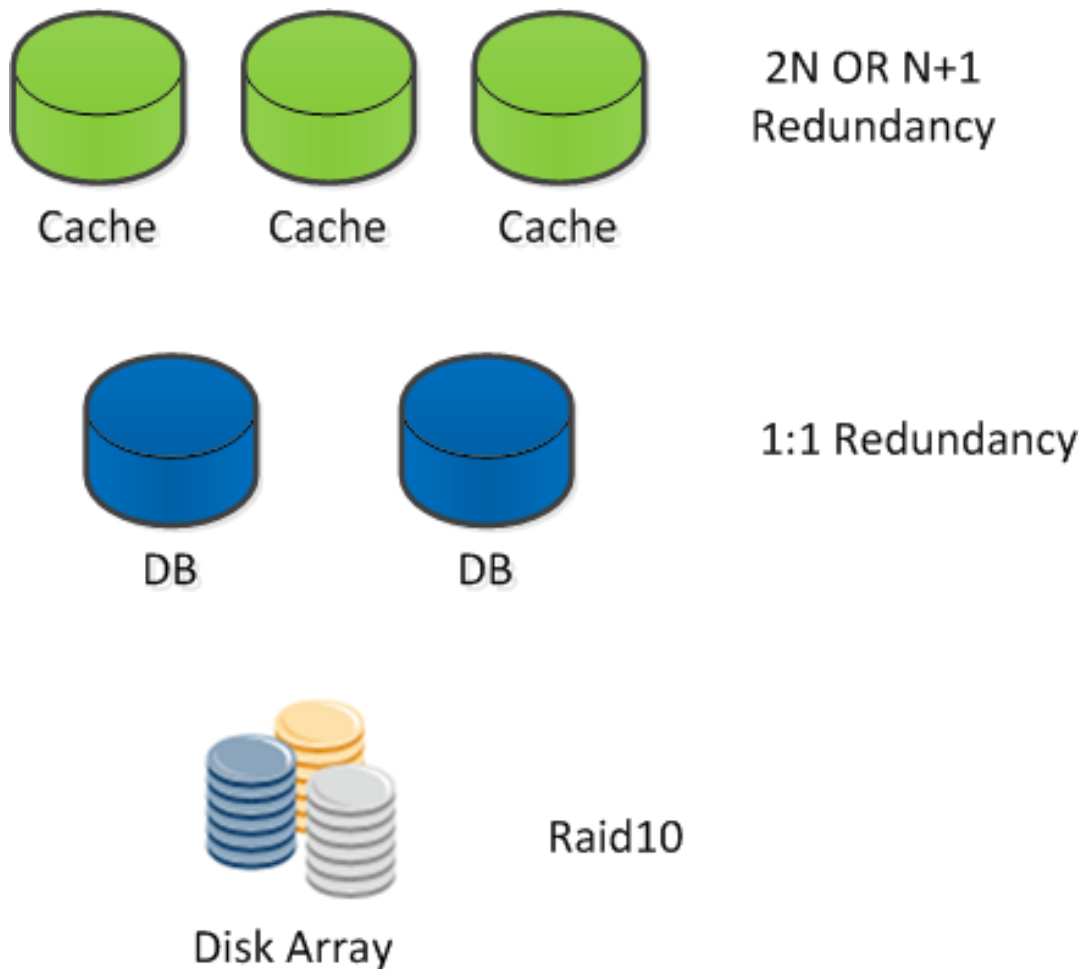


Figure 2-3

- **Operation and Management**

- ✓ There are three modes for Operation and maintenance:

- a) Web Client
 - b) OMC Client
 - c) Command Line Interface
- ✓ OM - features
- a) Configuration Management
 - b) Fault Management
 - c) Performance Management

- d) Security Management
- e) Remote Maintenance

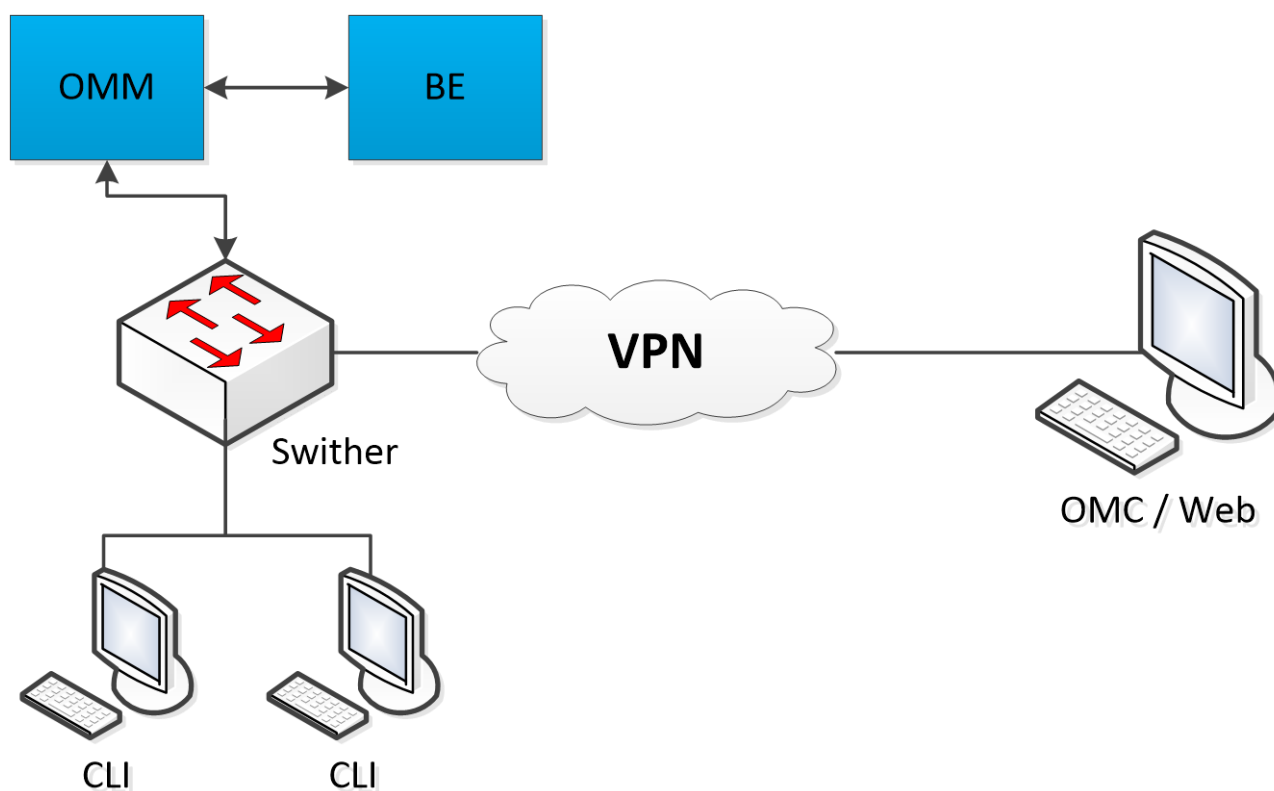


Figure 2-4

3 Product Strategy

IPLOOK PCRF can be deployed based on customer requirement with a very flexible strategy.

1. Deployment Strategy

There are two deployment strategies provided by IPLOOK currently (Both of the two deployment strategies can adopt NFV way and be deployed virtually).

- IPPCR100S

IPPCR100 adopts x86 architecture single server as the platform. The PCRF function can be NFV element and deployed in the data center. The PCRF application can also be directly deployed on the server to make full use of the hardware capability.



IKPCR100S

- ✓ Hardware Description:

- X86 Servers
- 2*10 cores 2.3GHz, 32G Mem

- ✓ Performance:

- Up to 100,000 subscribers per server supported.

- IPPCR100

IPPCRF100 adopts x86 architecture multiple servers as the platform. The PCRF function can be NFV element and deployed in the data center. The PCRF application can also be directly deployed on the server to make full use of the hardware capability.



IKPCRF100

- ✓ Hardware Description:
 - X86 Servers
 - 2*10 cores 2.3GHz, 32G Mem

- ✓ Performance:
 - Up to the number of servers.

4 Technical Support

1 Training

- Provide free training and technology consulting for customer after system have been completed, to ensure related person can use this system correctly. [Main courses of training are as follow:
 - a) Business process understanding of industry and enterprise, and information training.
 - b) Technical training of system hardware device operation specification
 - c) System software program installing, operation, and system software upgrading training
 - d) System simple maintenance training
 - e) System fault location and solving method of faults training.

2 Guarantee and service commitment

- Quality assurance:

The products that we have produced and sold are designed and built under industry standard. All products have eligibility card, warranty card. They are all new, original and accepted products.
- The warranty period: ONE YEAR.

During the warranty period, IPLOOK provides free maintenance for software or hardware provided by IPLOOK, in case the products suffer from a failure. (The failure are caused by non-human factors). Software can be freely upgraded and the hardware can be return to the factory for maintenance service. The resulting costs are free.

After the warranty period, IPLOOK provides free technical support for system upgrading and equipment comprehensive maintenance. The other services are as same as warranty period except that the transportation expenses fee will be charged.
- Upgrade: software upgrading is free, and hardware upgrading will take a discount.

- Operation and maintenance scheme

Resident maintenance: IPLOOK staffs will be arranged to real-time monitoring in 24 hours. They are in charge of resident maintenance, upgrading software and hardware, and take charge of connecting and debugging other products.

Remote maintenance: IPLOOK will provide remote monitoring, remote maintenance and debugging for communication products.

- Fault handling and response time

During the warranty, if the product doesn't work normally, IPLOOK will take a response within 1 hour after receiving the customer's repair record and arrive to site within 12 hours. IPLOOK ensure the repair will be completed within 48 hours.

If special condition occurs and it cannot be repaired, IPLOOK will provide alternative equipment in the following 2 working day until the user equipment are back to service.

During the warranty, if the equipment is still in abnormal state after repairment, we will provide the replacement of new equipment with no charge.