



Moberia sp. z o.o.

Moberia Rating.Server – Solution Overview

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Solution Overview

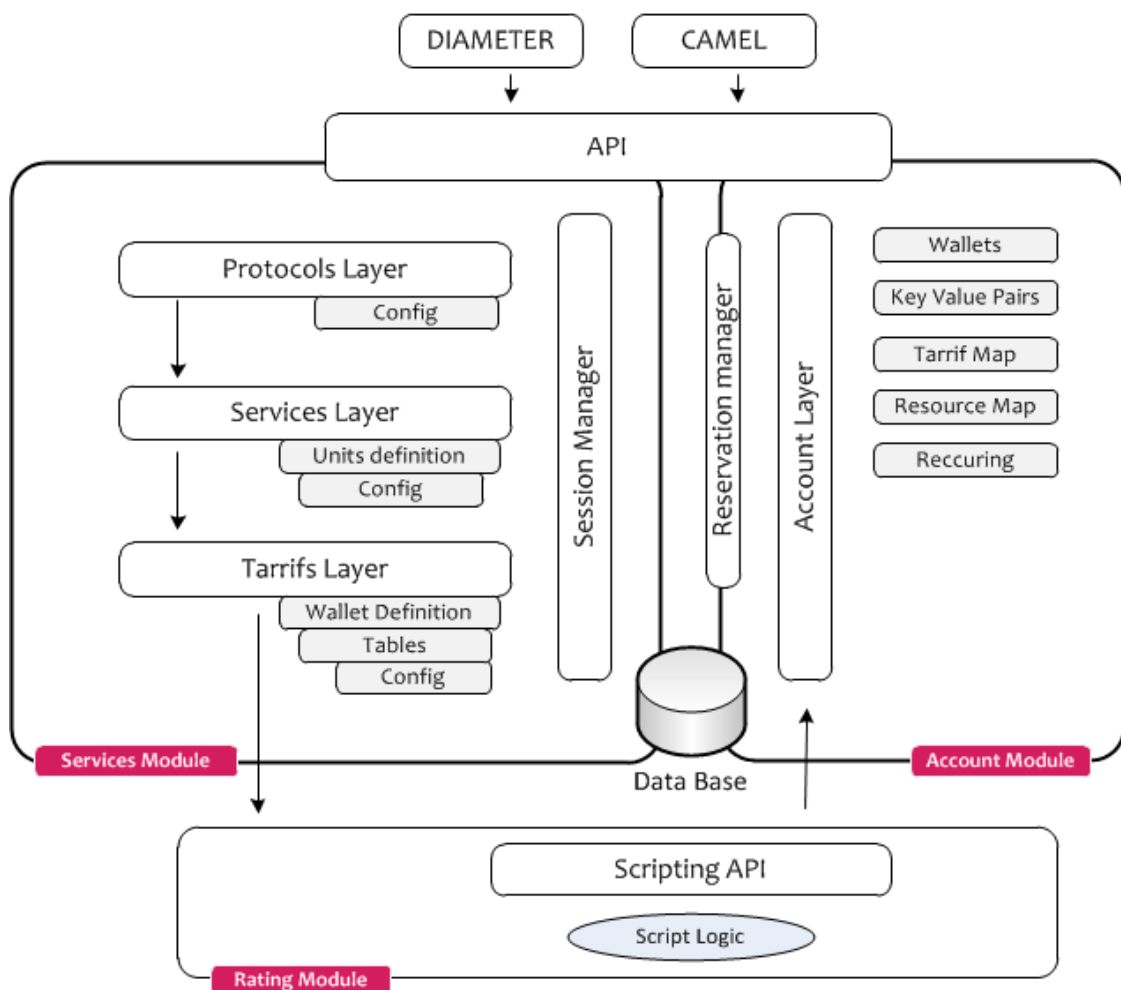
Introduction

The Moberia Rating.Server (MRE) relies on flexible, high performance and standards-based components used by the largest Internet and Telco service providers on the market today. Moberia team can ensure the shortest possible time to market (TTM) delivery of the service platform and guarantee stability and easy horizontal scalability.

The key concept of MRE is to provide an architecture that is based on high throughput, redundant key elements that will allow for easy load sharing and scaling. Such approach allows for easy horizontal scaling and eliminates single point of failure elements.

Rating Server

Moberia Rating Server is an advanced real-time charging solution with flexible tariff schemes for both telecommunication and Internet based services.



Main modules of the Rating Server solution include:

- Services Module - responsible for service associated configuration and definitions;
- Rating Module - responsible for pricing and rating logic execution;
- Account Module - responsible for:
 - account management;
 - balances and discounts management;
 - bill management;
 - tariff mapping;
 - resource mapping;
 - recurring services mapping;

Moberia Rating Server allows for pricing and rating of various telecommunication and Internet e-commerce services and products. The Services Module of MRE is very flexible because all of service and product parameters are not hard-coded but defined at configuration level. For example introducing “voice calling” service we would configure a new service definition and units of seconds (or minutes). The service would then be associated with a specific tariff. The tariff would then be associated with appropriate wallets (main money, main or on-net minute package, bonus, or other defined at configuration level) and table objects (which may include zones, prices, black lists) to be used by rating logic. An “sms” service would be defined in a similar way, but this approach also allows for creation of other (not necessarily telecommunication) services, for example e-commerce purchases (these can include telecom services such packages or discounts, but also other services such as newspaper, magazines and gaming or access to premium Internet content such as specialized professional articles).

The key concept of Moberia Rating Server is rule based tariff implementation. Tariff definition uses script based rule logic to implement very flexible rating patterns. This relatively simple but powerful concept allows for very flexible and efficient configuration of service pricing and rating patterns. Introducing scriptable instead of clickable tariff definition greatly reduces the time and complexity required to implement a tariff logic and at the same time removes the limits imposed by a clickable GUI which allows for very powerful and flexible rating definitions. Rule logic can be implemented in JavaScript for example. This extract implements price resolution of a product, it first finds a price id in first table object and then finds the price in the prices table:

A discount logic can be implemented in script which will hold the discount level in a variable. The variable could be set externally by BSS for example or by another service whose usage could trigger discount level such as inbound minutes for interconnected networks.

Inside a script rating logic can traverse wallets attached to account looking for a wallet that has either enough credits (prepaid or mix) or is debitible (postpaid or mix). Another condition can be that units associated with the wallet have to be credit type and not service type (i.e. we are looking for monetary units and not packages).

Moberia Rating Server employs rules logic at several levels when processing a transaction. The first rule is executed to resolve account from protocol context (e.g. to identify the account from

parameters in CAMEL InitialDP for example, either by simple transformation from calling party id or by resource mapping from account layer). The next rule is executed to resolve a service from protocol context (e.g. to identify the service from parameters in CAMEL InitialDP). The main rule is executed to process and calculate the requested service units from the protocol layer (i.e. perform pricing, rating and account layer interaction).

Application Server Framework

MRE is based on Moberia Value Added Service Delivery Platform. The solution will implement Online Charging application, future IMS applications, SCCP Proxy, and other applications service logic in a Java EE application server framework and will allow to further develop other services in the same framework.

Applications will be realized in widely understood Java EE technology. We found using another abstract layer as inefficient:

- developing code with strict use of design patterns results in keeping all market;
- standards – in architecture and implementation – by our applications years of experience and constant development of our projects allows for faster implementation and evolution of our products without using any additional restrictions;
- narrowing of possible to use technologies causes in reduction of programmers and ready libraries available for projects. It effect in extension of development time and costs;

Recommended application server for running with our software is Tomcat. This open-source platform is used in many commercial projects around the world. It allows:

- easy management by www console;
- many configuration options for tuning server for running with particular system;
- relatively low weight of application server;
- full support for all J2EE standards and components;
- easy scaling and clustering;

Global community supporting Tomcat project and many commercial implementations are guarantee of high quality of this solution.

Although we recommend Tomcat, but our software can be deployed on any application server that supports J2EE solutions.

Post parameters in our systems are maintained in property files. That allows support team to tune whole system to work optimally under specific load characteristics.

Rich API of our applications, also meeting all J2EE and telecommunications standards allows for creating additional software to develop new products and offers for Carrier, also by third party suppliers.

Moberia Rating.Server will expose a set of API's and allow to create service logic employing Signaling (SIP and CAP), Voice (and Video) and messaging (SMS). The programming interfaces will allow to further develop services and applications for Carrier.

Supported Standards

The basic standards supported by the platform are presented below.

- Application Server
 - Java EE 5.0
 - Java EE 6.0
 - JSR 289
- Session Control Protocols
 - SIP - RFC 2543, RFC 3261
 - RFC 3265
 - RFC 2976 (INFO Method)
- SS7 Protocols
 - SCTP RFC2960
 - M3UA RFC3332
 - TCAP 3gpp TS 33.204
 - SCCP 3gpp TS 29.203
 - CAMEL phase 2 3GPP TS 02.78
 - MAP 3gpp TS 29.002
- Media encapsulation protocols
 - RTP/RTCP
- Media codecs
 - G.711
 - G.726
 - G.722.2
- Billing protocols
 - RFC3588
 - RFC4006
- Messaging protocols
 - SMPP 3.4
- Provisioning protocols
 - HTTP/REST

Performance

System arrangement will allow handling in the order of:

- ~ 400 rating sessions / second;
- ~ up to 20.000 concurrent rating sessions
- ~ 200 SMS attempts / second;
- ~ up to 1.000 concurrent VoIP channels

Easy horizontal scaling is achieved by adding new Application Servers which further increases platform performance parameters.

Performance of key elements on a standard, low-end server hardware (dual core) are:

- CAP signaling gateway - over 2.000 messages / second;