Call Back Server

General Information

When providing telecom services to the subscribers in some cases tariffs for incoming calls are lower that ones for outgoing calls. In addition mobile prepaid subscribers that are served by the Service Node or Loop Around platforms are unable to make outgoing calls while in roaming they can accept incoming calls.

The use of all Back technology provides convenient and efficient alternative to the traditional scheme of providing mobile telecommunications services to the roaming subscribers. Using this algorithm the outgoing calls can be made by placing a Call Back request for the call with the called party. Calls can be ordered by sending SMS or USSD message to the service number. The order comes to the Call Back Server, then the Server processes it and makes two calls – one to the calling party and one to the called party. So the call will be charged as an incoming call for both parties. The picture below shows the technical implementation of the Call Back concept.

Call back technology can be efficiently used for deploying "Call collect" services using "called party pays" principle to enable the subscriber having too low balance to initiate the call to place an order for a conversation with a called party. Called party will receive the call from the Call back server, and if he enters the confirmation code meaning that he ready to pay for this call then the call will be established.

PROTEI Call Back server allows to provide different types of call back services by convenient and efficient way. System supports flexible routing functions, powerful policy management and open interface for integration with third party prepaid platforms.

System Features

- MSC connection via E1 trunks (SS7/ISUP or PRI protocols) – up to 4 E1 per module;
- SMS/USSDC connection via SMPP v3.4 protocol over TCP/IP (Ethernet 10/100 Base-T);
- Receiving orders via SMS, USSD or voice calls;
- Support VLR black lists to restrict USSD-access to the service from the selected networks;
- Request originator IMSI or MSISDN can be accepted in USSD-request;
- ODBC/XML interface to the external databases for IMSI-to-MSISDN conversion;
- Numbers modifying;
- SMS message to inform the calling party if it's impossible to reach the called party;
- Open API for the third party prepaid platform integration;
- Remote service configuration;
- Alarm and event logging;
- Collect statistical information;
- CDR logging.

Order Processing Algorithm

When the Call Back Server receives an order, it is queued for subsequent processing. The order has to include a number of the calling party and a number of the called party. The processing of the order begins with establishing an outgoing call to the called party. If the subscriber's mobile station is active and the subscriber accepts the call, a voice message is played back informing him that conversation was ordered. After that another outgoing call is established with the called party. When both calls are established, Call Back Server switches these calls, and the order is considered to be fulfilled.

Several additional features are supported: number redial if the initial attempt fails, order queuing etc.

Administration and Maintenance

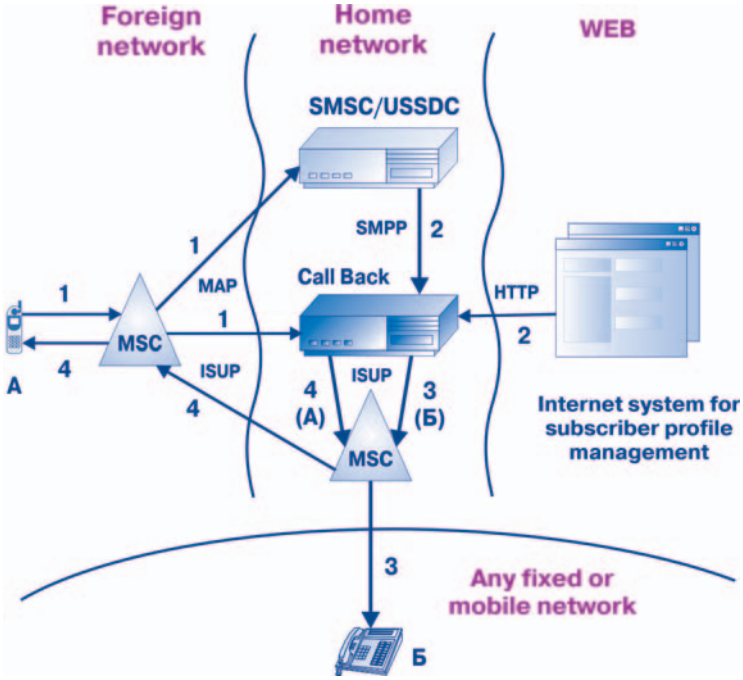
- Flexible SS7 signaling parameters setup;
- Mail client management;
- SMPP connections management to SMSC for receiving orders and sending message (IP address, port, address information);
- VLR black list configuration;
- SMS and USSD message text management.

Call Back Server specifications

Destrition	Vaiue, note
System capacity	4 E1 per one unit*
CO/MSC connection	PRI, SS7 (MTP, ISUP)
Call Back order	Voice Call, SMS, USSD
Identification of the Call Back request originator	MSISDN, IMSI
SMSC interface	SMPP v3.4
Hardware platform	Intel/HP
Dimensions	2U 19" rack mounted
Software platform	Linux/XFS
Power supply	48 VDS, 220 VAS

* - system is horizontally scalable

Technology of Call Back concept implementation



1. Request for the service by SMS, USSD, http, E-mail
2. Transferring the request to the Call Back Server
3. Establishing outgoing connection to subscriber B
4. Establishing outgoing connection to subscriber A

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