

Call Back Server

General Information

When providing services to a mobile subscriber in roaming, the cost of incoming calls is often somewhat lower than the cost of outgoing calls. Additionally, prepaid subscribers served by platforms working on the Service Node or Loop Around principle (including platforms serving so-called 'tourist SIP cards'), cannot make outgoing calls while in roaming, but can receive incoming calls.

By using Call Back technology, mobile network operators can provide roaming subscribers with a convenient and effective alternative to traditional services. Using this system, the outgoing call is made by ordering a connection to the desired number. Connections can be requested by sending an SMS or USSD message to the system's service number.

The request is processed by the Call Back server, which makes two outgoing calls – one to the caller and one to the number requested. This way the call will be billed as an incoming call for both parties.

Call Back enables the operator to provide a 'collect call' service for prepaid customers with low balance. When the called party receives a call from the server, he is prompted to input a confirmation code to verify that he is willing to pay for the call. The caller and called party are then connected.

PROTEI Call Back server allows different types of call back services to be provided in a convenient and efficient way. The system supports flexible routing functions, powerful policy management and an 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);
- Service requests using SMS, USSD or voice calls;
- Supports VLR 'black' lists to restrict USSD-access to the service from selected networks;
- Request originator IMSI or MSISDN can be accepted in USSD-request;
- ODBC/XML interface to external databases for IMSI-to-MSISDN conversion;
- Number modification;
- SMS message to inform the calling party if the called party cannot be reached;
- Open API for third party prepaid platform integration;
- Remote service configuration;
- Alarm and event logging;
- Statistics collection;
- CDR logging.

Call Back Order Processing

When the Call Back server receives an order, it is queued for subsequent processing. The order has to include the number of the calling party and the number of the called party.

Depending on operator preferences, or requirements for a specific service scenario, Call Back can be configured to establish the connection in one of two ways:

1. By setting up the first connection with subscriber **A** (who requested the service), then calling subscriber **B**.
2. By calling subscriber **B** first, then making a call to **A**.

In both cases, Call Back uses voice prompts to keep both subscribers appropriately informed of the call progress. On answering a call from the server, subscriber **B** initially hears a voice message informing him that someone (subscriber **A**) has requested a connection with him.

When the separate connections from the server to subscribers **A** and **B** have both been established successfully, Call Back connects the two together and the process is complete.

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

Administration and Maintenance

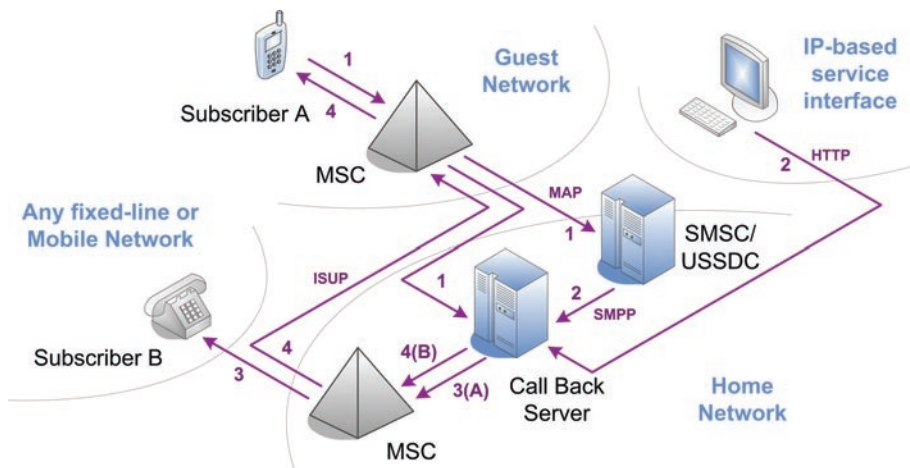
- Flexible SS7 configuration;
- Mail client management;
- Management of SMPP connections to SMSC for receiving orders and sending messages (IP address, port, address information);
- VLR 'black' list configuration;
- SMS and USSD message text management.

Call Back Server Specifications

| Destination | Value, note |
|---|-----------------------|
| System capacity | 4E1 per module* |
| CO/MSC connection | PRI, SS7 (MTP, ISUP) |
| Call Back order options | Voice Call, SMS, USSD |
| Identification of Call Back request originator | MSISDN, IMSI |
| SMSC interface | SMPP v.3.4 |
| Hardware platform | Intel/HP |
| Dimensions | 2U 19" rack mounted |
| Software platform | Linux/XFS |
| Power supply | 48 VDC, 220 VAC |

* – system is horizontally scalable

Call Back Service Implementation



1. Service request from subscriber via SMS, USSD or HTTPS
2. Transfer of request to Call Back Server
3. Connection to subscriber A established
4. Connection to subscriber B established

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