Way4 Internet Gateway for Mobile Telephony Billing Systems

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Introduction

Payments for mobile telephony services with bankcards on the Way4 platform are executed in much the same way as for other goods and services. To facilitate the instantaneous funds transfer, this type of online payments can be performed by a cardholder via an ATM and a billing system's internet gateway on the telephony service provider side.

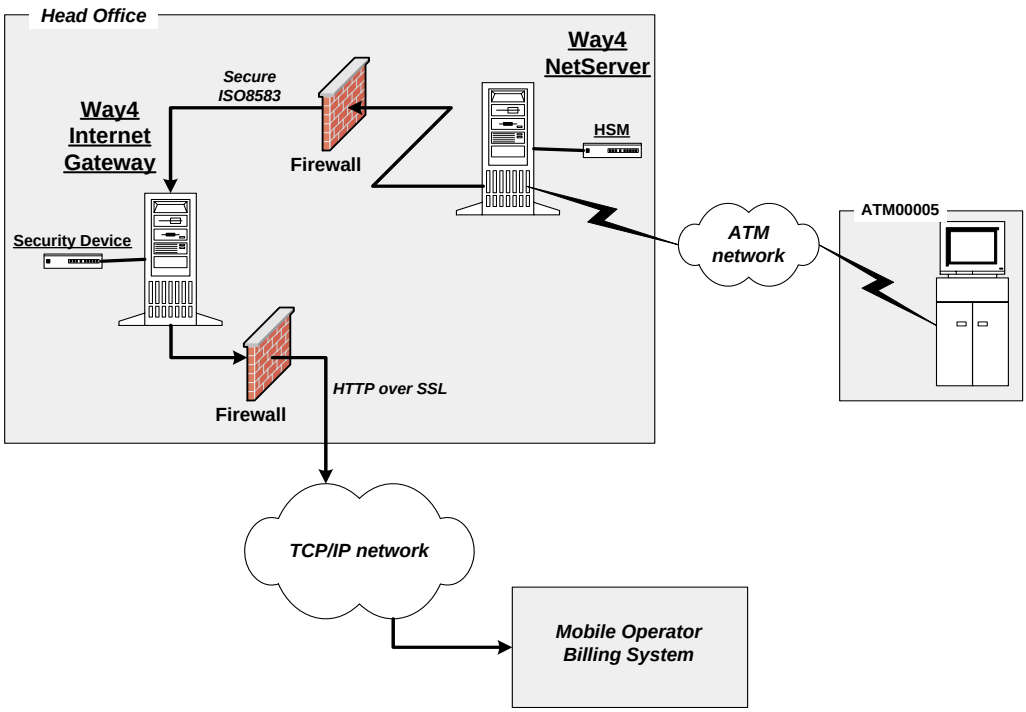
For such online payment processing to work, Way4 must be equipped with:

- an additional Way4 NetServer channel and
- Way4 Internet Gateway that enables connectivity with the telephony service provider's billing system host.

The following sections of this document introduce the principles of integrating Way4 with a mobile telephony billing system. A short overview of the Way4 Internet Gateway functionality is also provided.

Way4 and Billing System Integration Configuration

The diagram below depicts the Way4 components that interact with the mobile telephony operator's billing system to execute online payments from an ATM.



ATM Controller Payment Operation Principles

Required ATM Functionality

To successfully execute payments for mobile telephony services, an ATM must have the following capabilities:

- Cardholder's PIN entry;
- ATM interface language selection; the selection may be performed automatically, e.g. based on the card number;
- Filtering on financial institutions;
- "Mobile Telephony Payments" operation selection;
- Service provider selection;
- Account selection by the cardholder;
- Additional payment details entry: subscriber's ID (telephone number);
- Transaction currency selection;
- Transaction amount entry;
- Processing centre response display; this may be an *Insufficient Funds* message, erroneous subscriber ID, service currently unavailable, etc.

Intersystem Messaging

During the "Mobile Telephony Payments" operation, an ATM passes the following data to the processing centre:

- Card number;
- Transaction amount;
- Transaction currency;
- Service provider ID (used by the processing centre to uniquely identify the mobile telephony service provider);
- Type of cardholder's bank account from which the funds are to be withdrawn;
- Language used to print out the transaction receipt;
- Additional payment details entry: subscriber's ID (telephone number);

Having received the "Mobile Telephony Payments" transaction request from an ATM, the Way4 processing centre performs the following actions:

- Authorise the transaction in the Way4 system;

- Form a pre-authorisation request message to the mobile telephony service provider to check if the requested transaction can be executed;
- Send the pre-authorisation request in ISO8583 format to Way4 Internet Gateway;
- If the pre-authorisation request response from Way4 Internet Gateway is negative or no response is received within the 40 second timeout, Way4 sends a corresponding message to the ATM;
- If the response is positive, Way4 forms a financial authorisation request to the appropriate payment system or its own authorisation channel;
- If the financial authorisation request response is negative or no response is received within the 40 second timeout, Way4 sends a corresponding detailed message to the ATM;
- If the response is positive, Way4 sends a message to the ATM containing:
  - Name and address of the bank;
  - ATM number;
  - Date and time of the transaction;
  - Truncated card number;
  - Unique transaction identifier;
  - Authorisation code;
  - Payment type identification;
  - Additional payment details: subscriber's ID (telephone number);
  - Transaction currency and amount;
  - Card account balance (if available).
- Additionally, if the response is positive, Way4 sends a transaction confirmation message in the ISO8583 format to the mobile telephony service provider through Way4 Internet Gateway.

Way4 Internet Gateway Operation Principles

General

Way4 Internet Gateway enables the execution of payment transactions from Way4 to a telephony operator billing system. The billing system must support such public network connectivity through its own gateway service.

Way4 Internet Gateway supports two basic incoming operation types:

- Payment authorisation;
- Payment.

The billing system's gateway service on the telephony operator side must support the following POST method functions over the HTTPS (HTTP over SSL) transport:

- Determining the target account number in the billing system based on a given telephone number;
- Payment of a specified amount in a given currency to the target account.

An example of the account number query:

```
Function=GET_ACCOUNT&MobilePhone=1234567890&Currency=GBP&PayType=CARD
```

To group payments for the accounting purposes, you can divide them into batches according to certain rules. Such batch grouping can be implicit (defined inside the payment transaction function) or explicit, using the following functions:

- Open batch – open the batch with a given name. The function returns the batch identifier.
- Close batch – close the batch with a given name.

The current version of Way4 Internet Gateway groups all payments within a day into a single batch.

The following additional functions can also be used:

- Login – the system user authentication. The function passes user ID and password;
- Logout – logging out of the system;
- Change Password – password change. The function passes user ID, old password and new password. When executing this function, the current connections must remain active.

The use of the above additional functions requires session state-based messaging. Session states can be implemented with HTTP cookies or a special session state variable identifier. The gateway services of the billing system may automatically close inactive sessions after a 30-60 minute timeout. Way4

Internet Gateway automatically creates the required number of sessions during its startup and keeps them active.

The client SSL certificate can be used as an alternative means of the password check.

The gateway on the mobile telephony service provider side will respond with an appropriately formed XML message with the results of the operation. For example:

```
<XML>
   <Response>OK</Response>
   <PaymentInfo>
    <MobilePhone>1234567890</MobilePhone>
    <Account>77545</Account>
   </PaymentInfo>
</XML>
```

A less preferable response message would be a short HTML page like the example below:

```
<HTML>
  <Input Type="Hidden" Name="Response" Value="OK">
  <Input Type="Hidden" Name="MobilePhone" Value="1234567890">
  <Input Type="Hidden" Name="Account" Value="77545">
</HTML>
```

Internet Gateway Operation

Having received an authorisation request, Way4 Internet Gateway executes the following sequence of actions:

- If the message exchange is session-based, an available session is first sought.
- The target billing system account number is queried according to the supplied telephone number.
- If the query cannot be sent or the response is not received within the timeout period, then response code 91 (operator unavailable) is returned.
- If the billing system's gateway replies with an error, Way4 Internet Gateway returns response code 14 (account unavailable).
- If the operation is successful, Way4 Internet Gateway returns response code 00 (operation successful) with the corresponding account number.

When a payment request is received:

- If the message exchange is session-based, an available session (and the batch ID if batching is used) is first sought.

- The payment is sent to the target account number.
- If the request cannot be sent or the response is not received within the timeout period, then response code 91 (operator unavailable) is returned.
- If the billing system's gateway replies with an error, Way4 Internet Gateway returns response code 14 (account unavailable).
- If a format error is found in the response, Way4 Internet Gateway returns response code 96 (system error).
- If the operation is successful, Way4 Internet Gateway returns response code 00 (operation successful).