Mobile Banking & Loan Performer

The following will be discussed in this session:

- Configuring LPF for Mobile Banking
- Mobile Banking Services with LPF
- Troubleshooting Mobile Banking

Target Group:

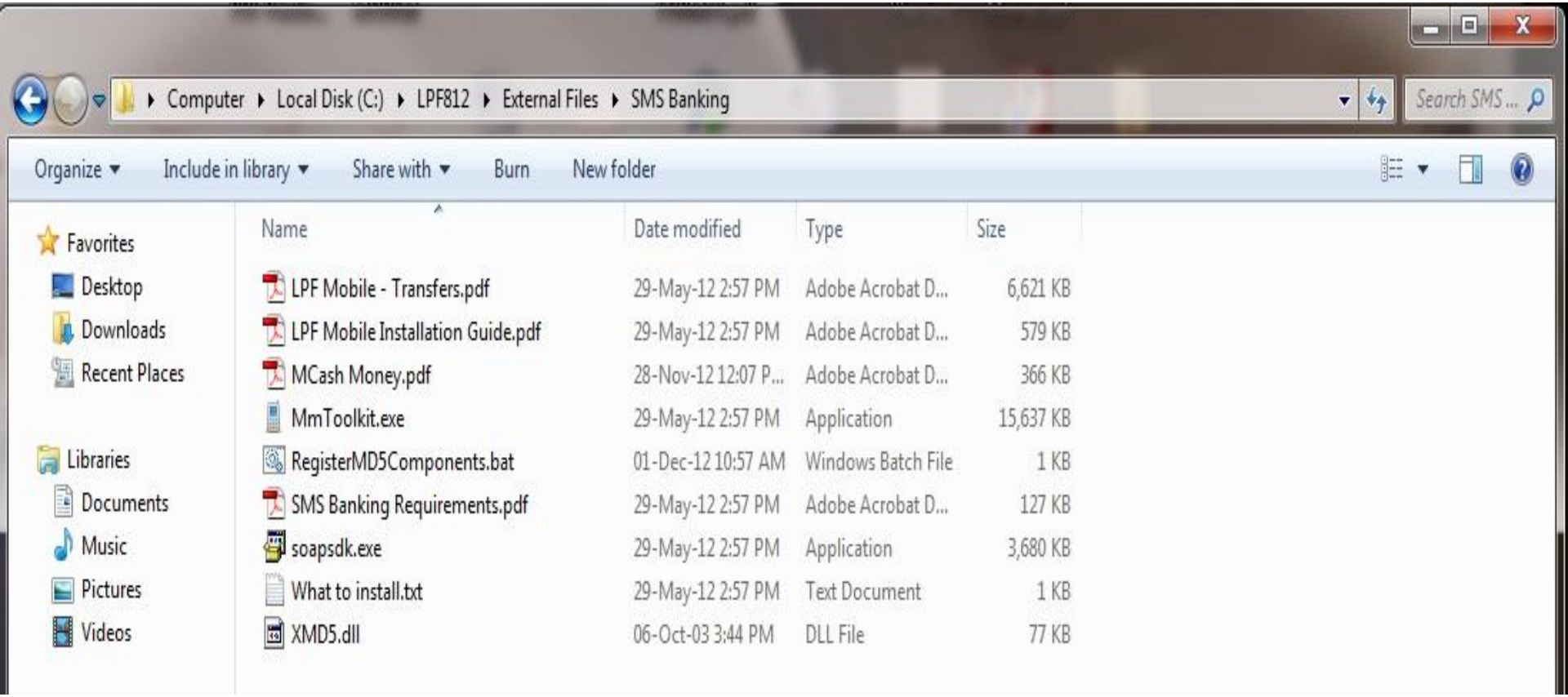
IT Administrators of Microfinance Institutions (MFIs) and Saccos using Loan Performer.

Required (Third-Party) Tools

- Loan Performer 8.13 or higher with SMS/Mobile Banking enabled (the demo version only allows 10 accounts)
- An Agent account with MCash
- Two SMS Modems (one for Pushing LPF Mobile, one for receiving and sending SMS)
- MMTookit – This manages sending and receiving SMS Messages (included with LPF 8.13)
- MD5 Encryption Tools – Needed for MCash transactions (included with LPF8.13).

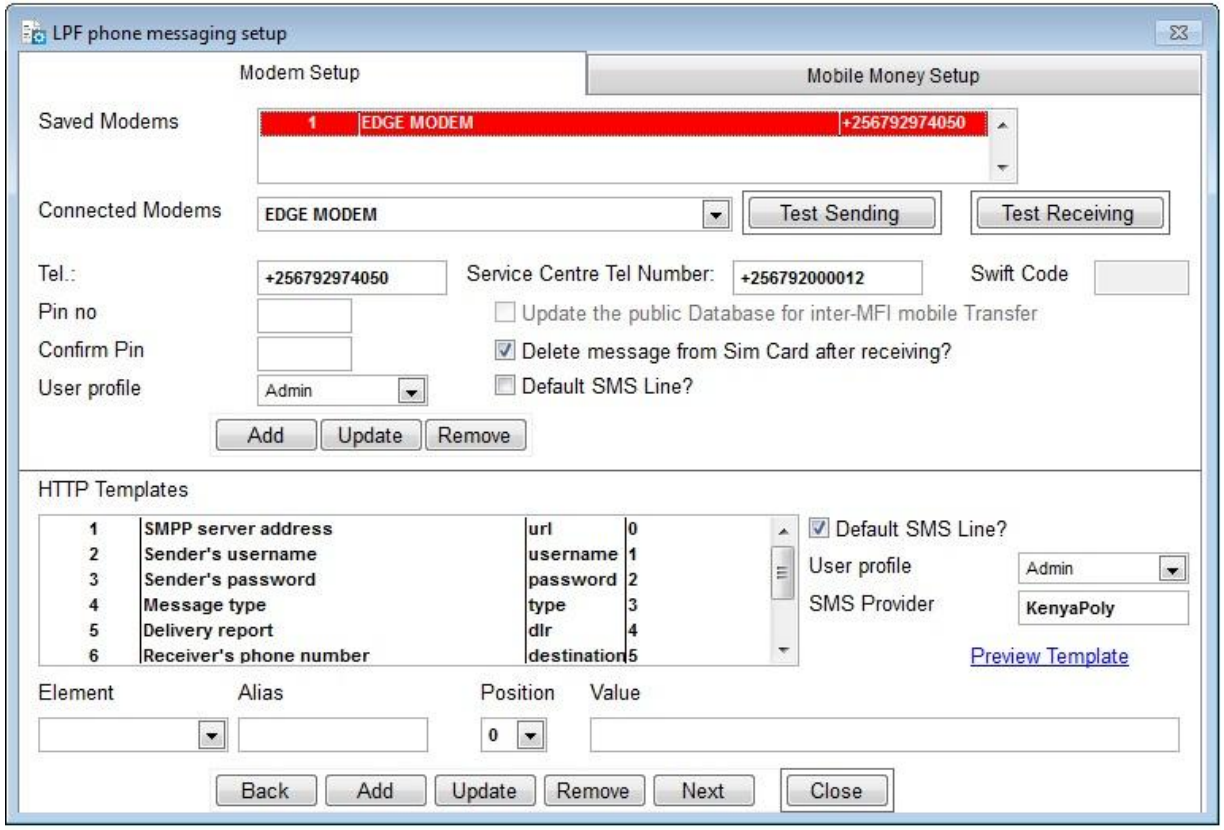
Knowledge Base

The following documents are available in External Files/SMS Banking. Before you start testing, training, or supporting a client on Mobile Banking, please read these documents.



Configure LPF for Mobile Banking – Modem Setup

First, we register the modem and/or Http Template. The modem is used for receiving and sending SMS. The Http Template is used for sending bulk SMS. Http is recommended for SACCOs with a large number of clients who have subscribed for Mobile Banking.



Advantages of HTTP:

- Cheaper
- LPF does not depend on telephone networks to send SMS

Disadvantages of HTTP:

- Unlike the modem, HTTP requires internet connection to send SMS. For the modem, LPF relies on the telephone network to send SMS.

Configure LPF for Mobile Banking – HTTP Template

The HTTP Template:

The bulk SMS Service Provider will provide an URL similar to the one below:

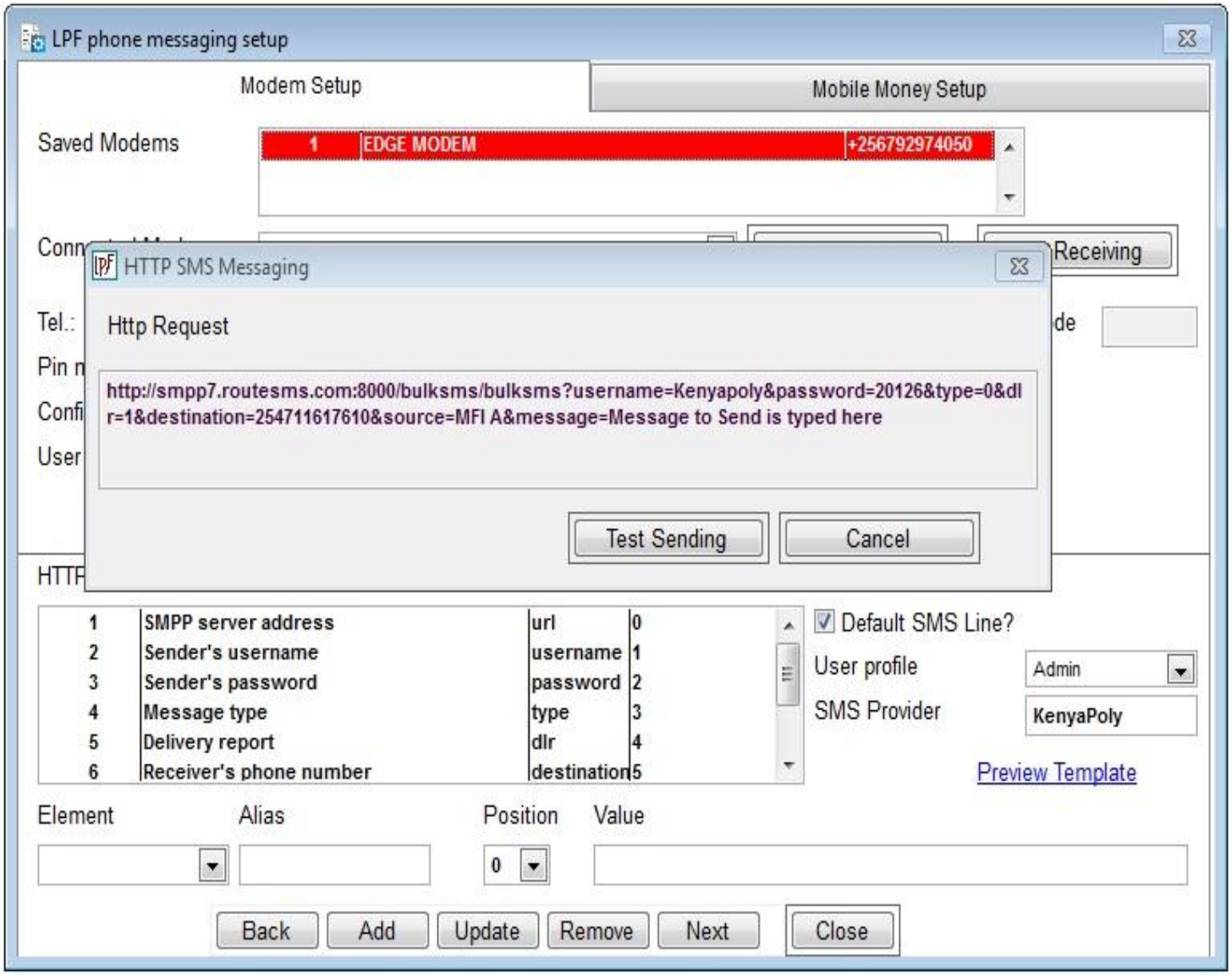
http://smpp7.routesms.com:8000/bulksms/bulksms?username=Kenyapoly&password=20126&type=0&dlr=1&destination=254711617610&source=Kenyapoly&message=Message to send is typed here

The above URL is broken down as seen below. We ignore the ampersand (&), the Equivalent operator (=), and the question mark (?) and arrange the Elements in the order presented by the URL:

Element	Alias	Position	Value
SMPP Server Address	url	0	http://smpp7.routesms.com:8000/bulksms/bulksms
Sender's username	username	1	Kenyapoly
Sender's password	password	2	20126
Message type	type	3	0
Delivery report	dlr	4	1
Receiver's phone no	destination	5	254711617610
Sender's phone no	source	6	MFI A
Message Contents	message	7	**Message to send is typed here**

An example of a bulk SMS Service provider in Uganda is SMS Media

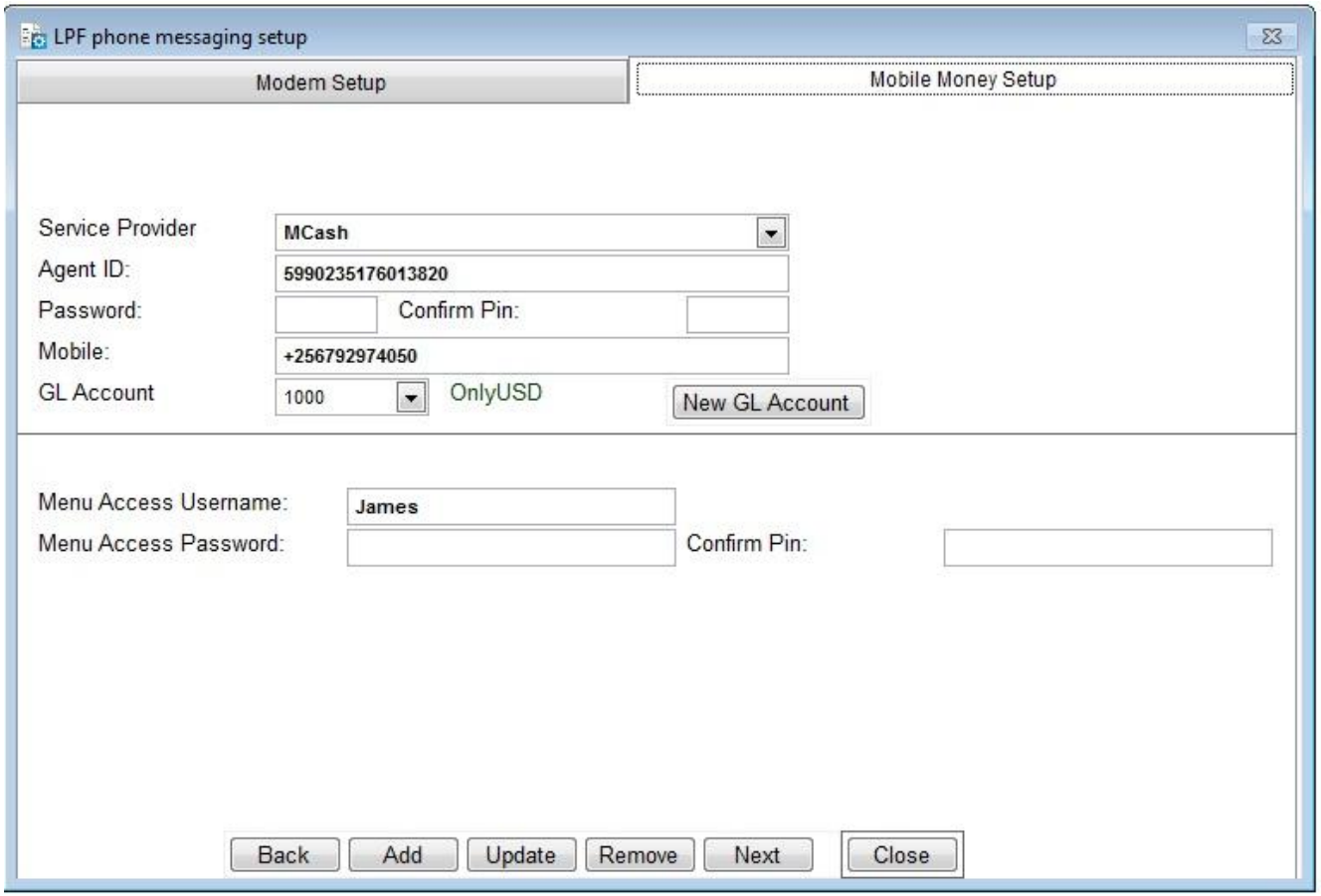
Configure LPF for Mobile Banking – HTTP Template



On Clicking the **"Preview Template"** button, the http request is automatically built to resemble the one provided by the bulk SMS service provider.
You can test the string by clicking the "Test Sending" button.

Configure LPF for Mobile Banking – Mobile Money

To configure LPF for Mobile Money, select the Mobile Money Setup tab at System/Configuration/Mobile Banking Setup. Provide the required fields & save.



-The Agent ID and Password are provided by the Service Provider (MCash).

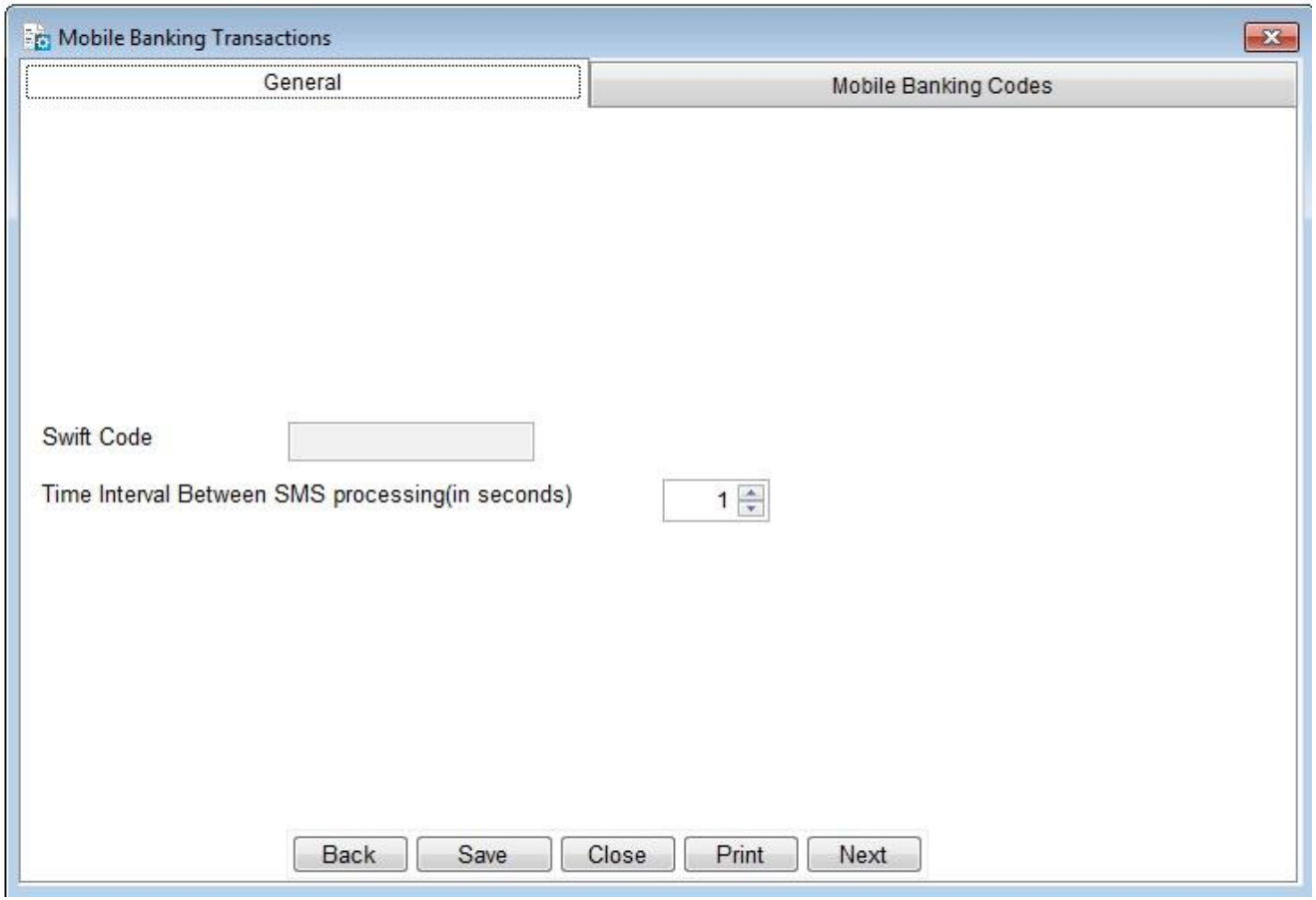
-The Mobile Number is the one the SACCO registers with MCash.

-The GL Account keeps track of transactions between LPF $ MCash

Use the “Menu Access Password” to access the Mobile Money Clients’ Menu at “Clients/Mobile Banking Clients/Mobile Money Clients”. If the user does not know this password, s/he cannot enter or modify client’s phone numbers. It’s extra security.

Configure LPF for Mobile Banking – Time Interval

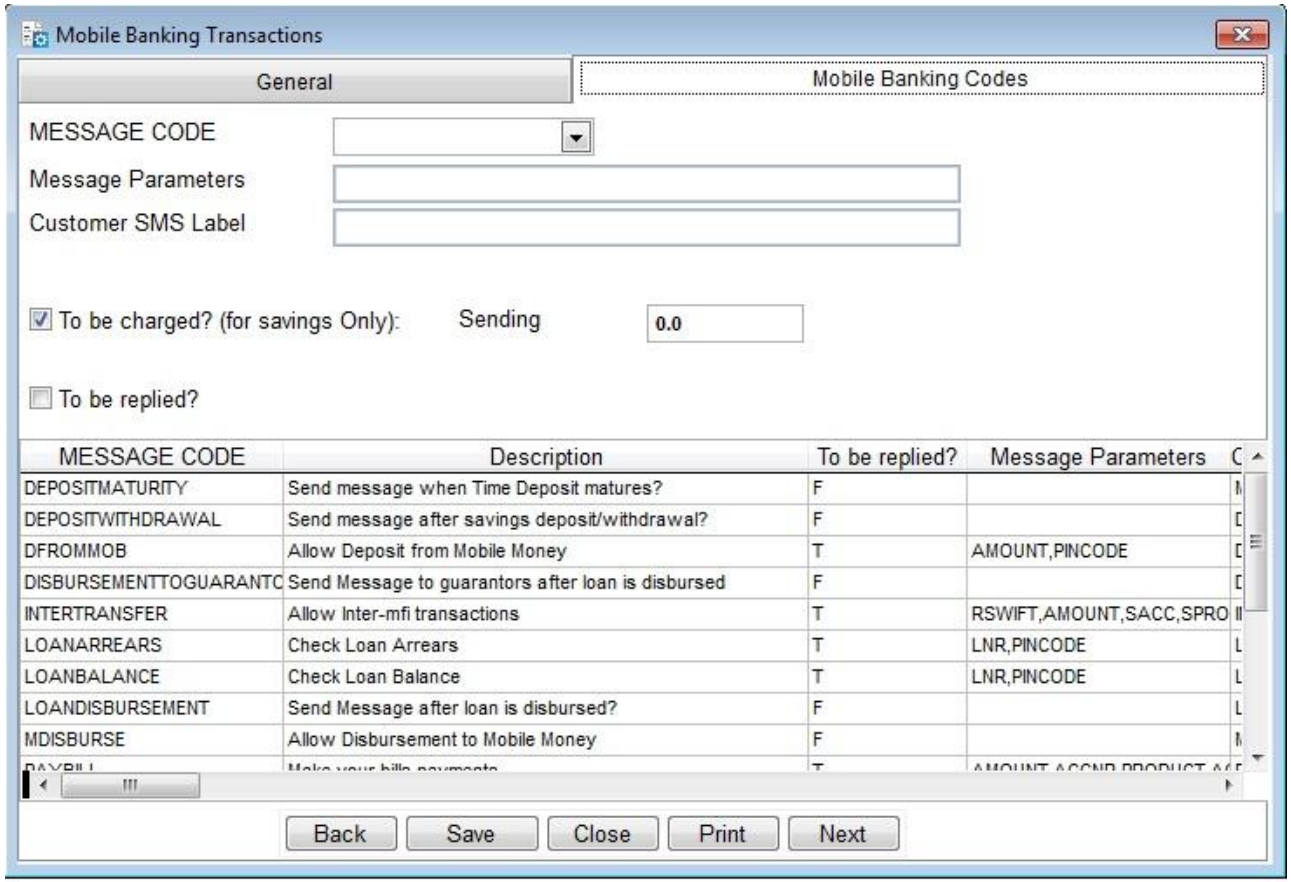
Configure the speed of processing at “System/Configuration/Mobile Banking Transactions” and set the time interval for SMS processing. The Mobile Banking Server will check the modem for any incoming messages after every x seconds.



A lower value of seconds indicates that the server will often update its received messages table. We recommend a value of 1 second.

Configure LPF for Mobile Banking - Charges

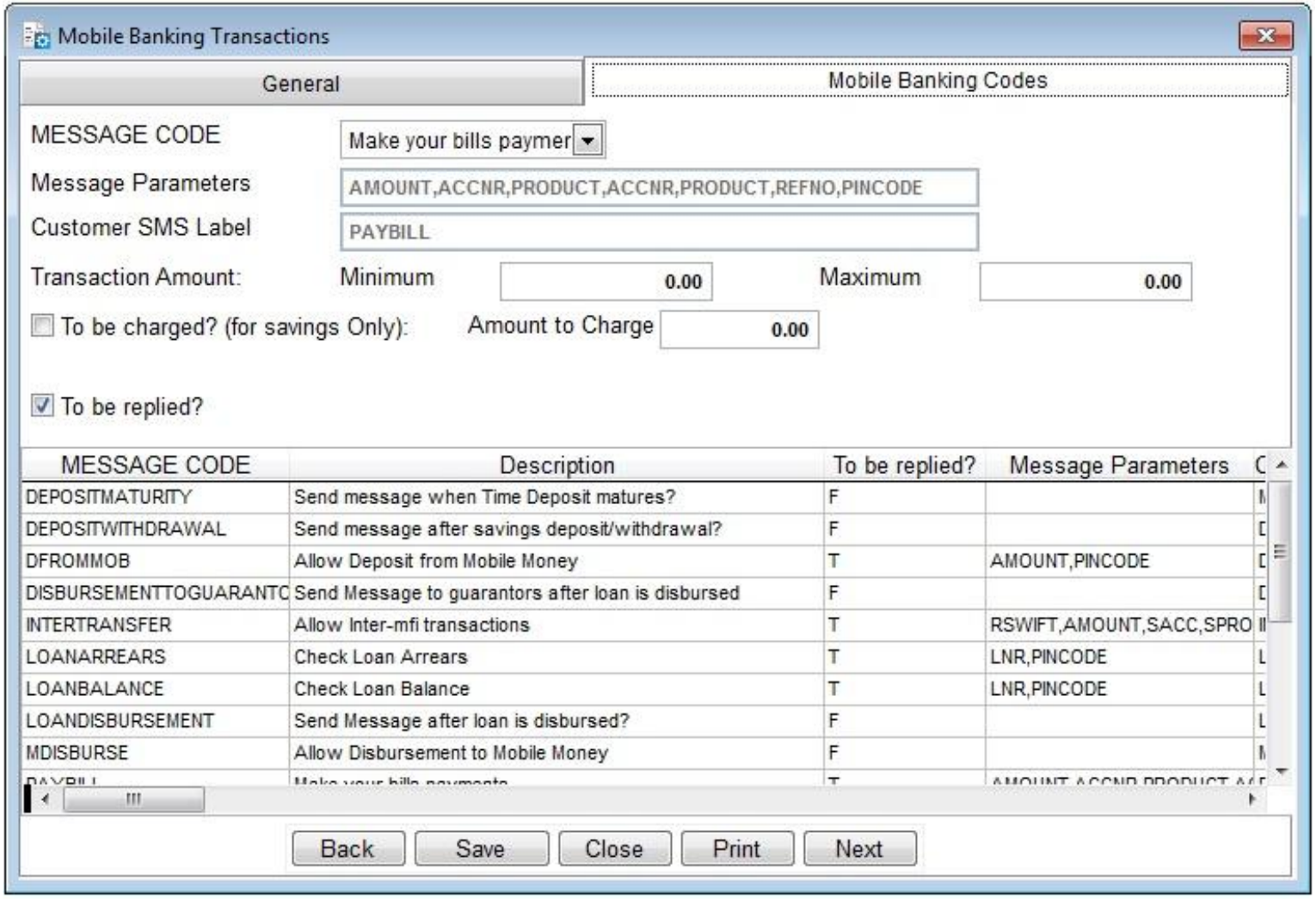
If the MFI/SACCO wants to charge for Mobile Banking Services, this can be done on the second tab at “System/Configuration/Mobile Banking Transactions”. Select the type of Service from “MESSAGE CODE”, provide the required data and save.



For MFIs/SACCOs that don’t charge for Mobile Banking Services, this configuration is ignored.

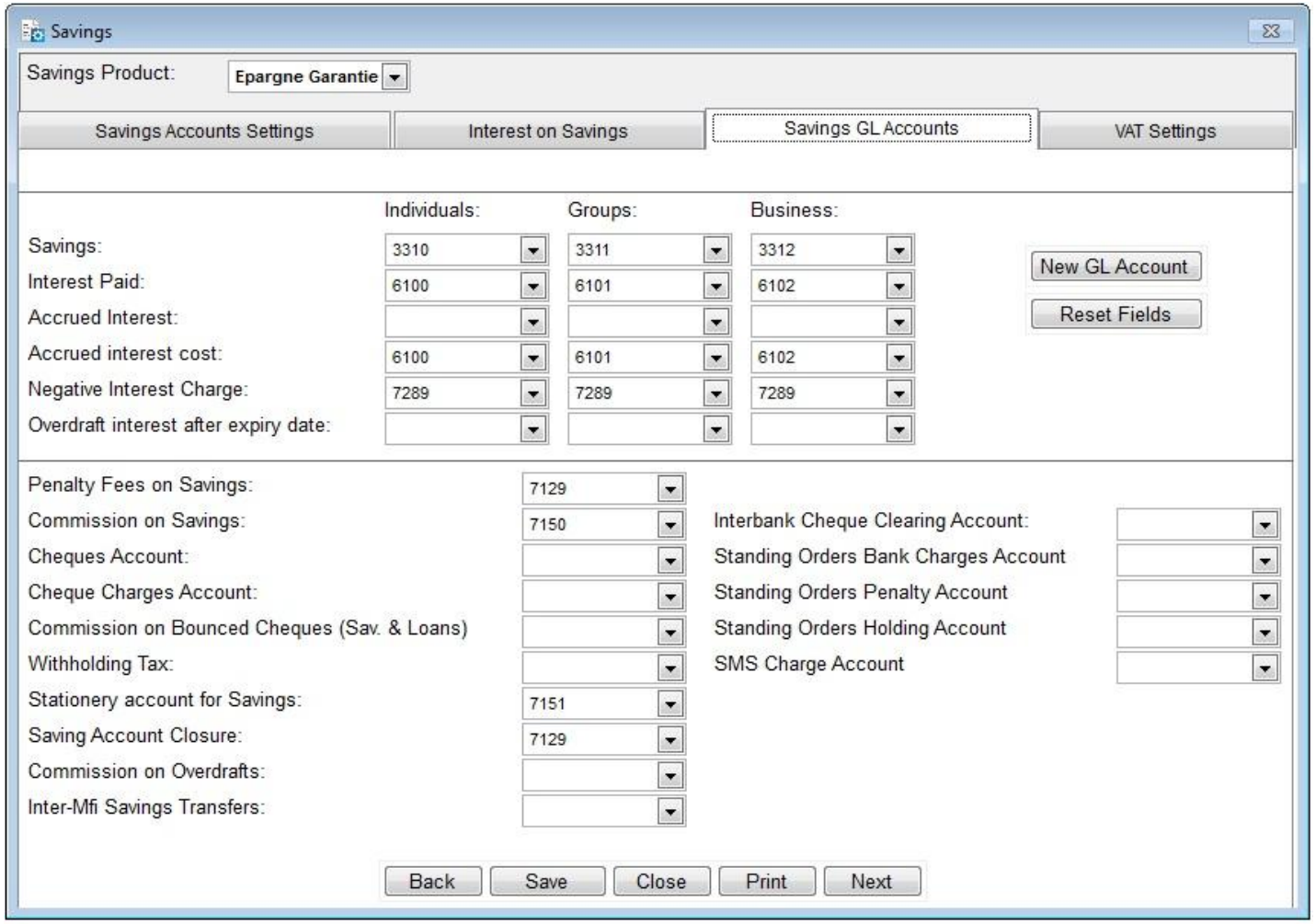
Configure LPF for Mobile Banking - Charges

An example of how to configure LPF to charge when a client pays bills. This also configures LPF for the Minimum and Maximum transaction amount.



Configure LPF for Mobile Banking - Charges

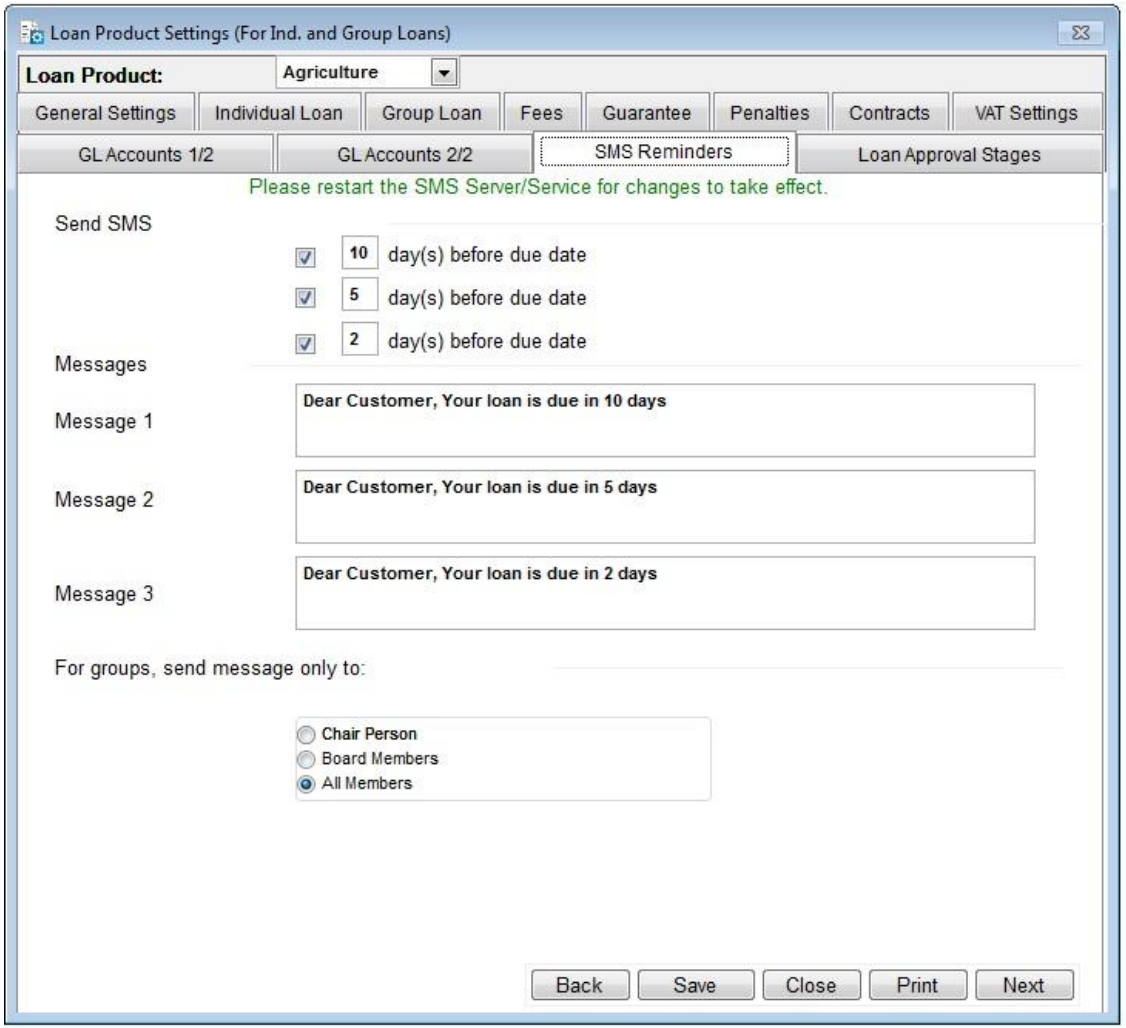
Set the Charges GL Account at System/Configuration/Savings.
This is where charges are posted.



The admin should do this for each and every product.
The Server reminds the user to set this GL Account if there are charges.

Configure LPF for Mobile Banking – Loan Due Reminders

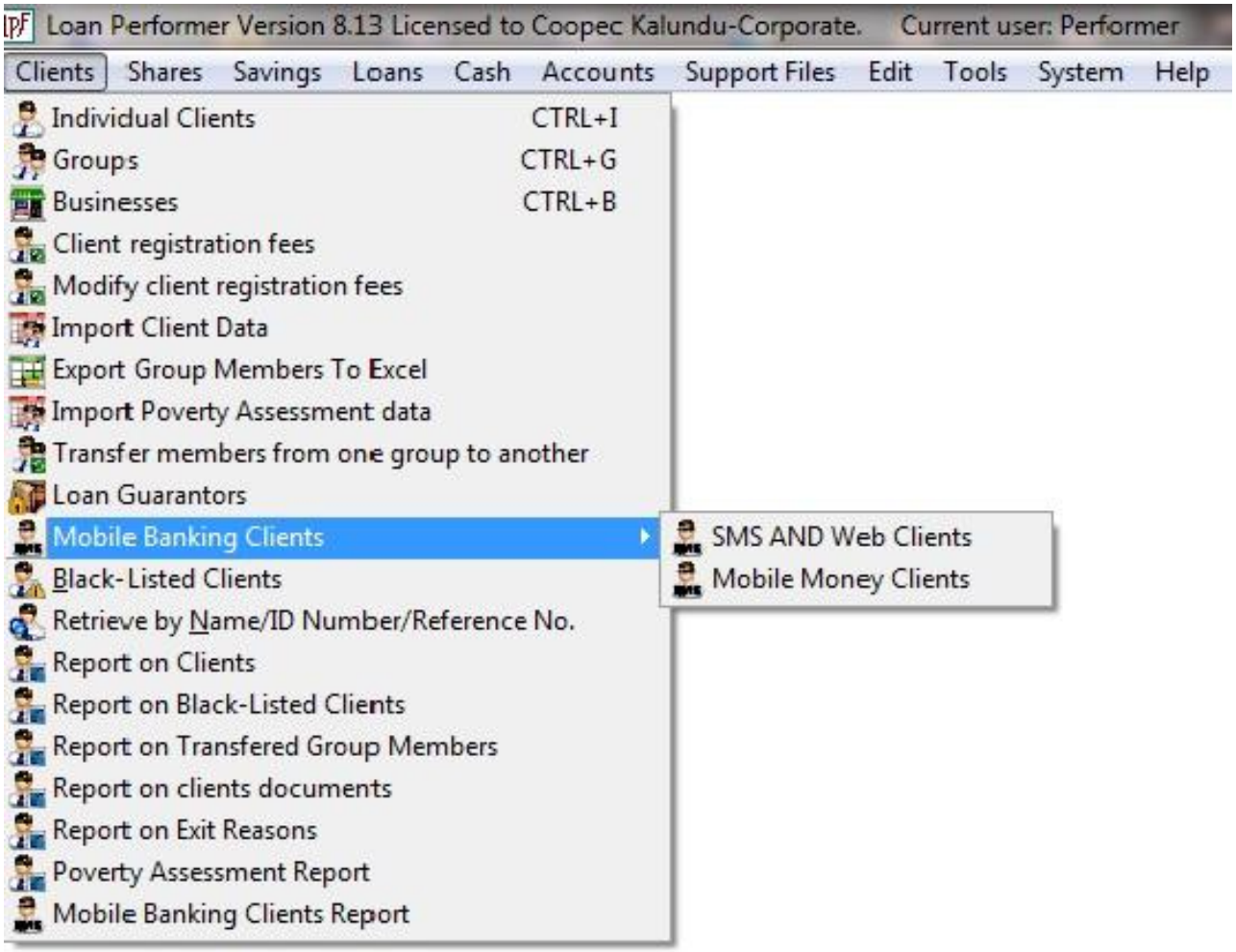
The Mobile Banking Server will send reminder messages before due dates based on the number of days set on this screen. This screen is accessed from "System/Configuration/Loan Product Settings".



The admin should do this for each and every product.
If due reminder messages are not working, probably SMS reminders have not been setup for that product.

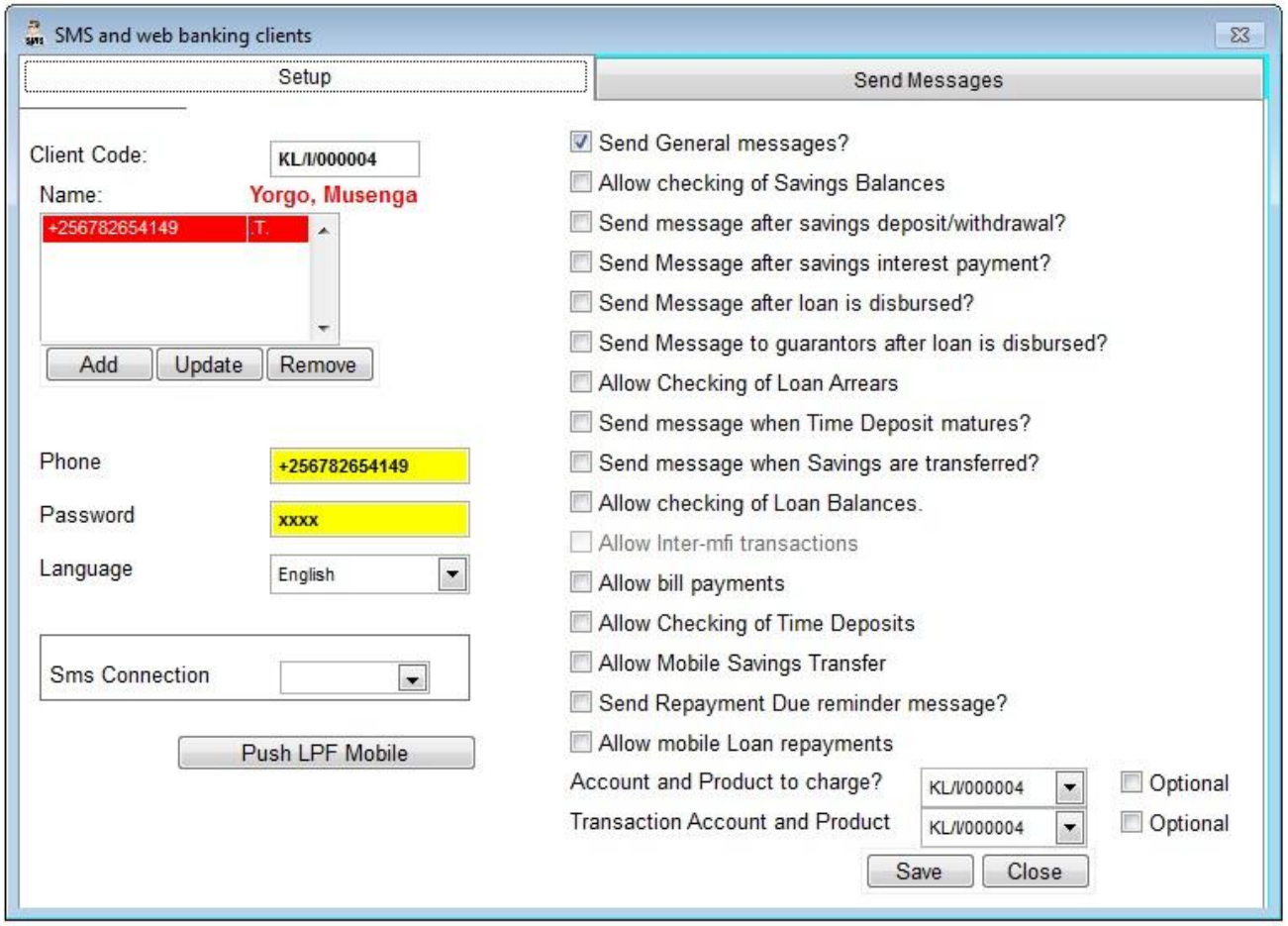
Configure LPF for Mobile Banking – Mobile Banking Clients

Clients are subscribed for Mobile Banking Services from Clients/Mobile Banking Clients.



Configure LPF for Mobile Banking – Mobile Banking Clients

Clicking on “SMS and Web Clients” loads the screen which allows you to select/or enter the client’s client code before coming to the screen below. To subscribe a client for a service, activate the checkbox. Click the Add, Update or Remove button to activate the Save button. The last one commits the changes.

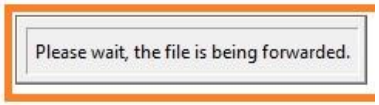


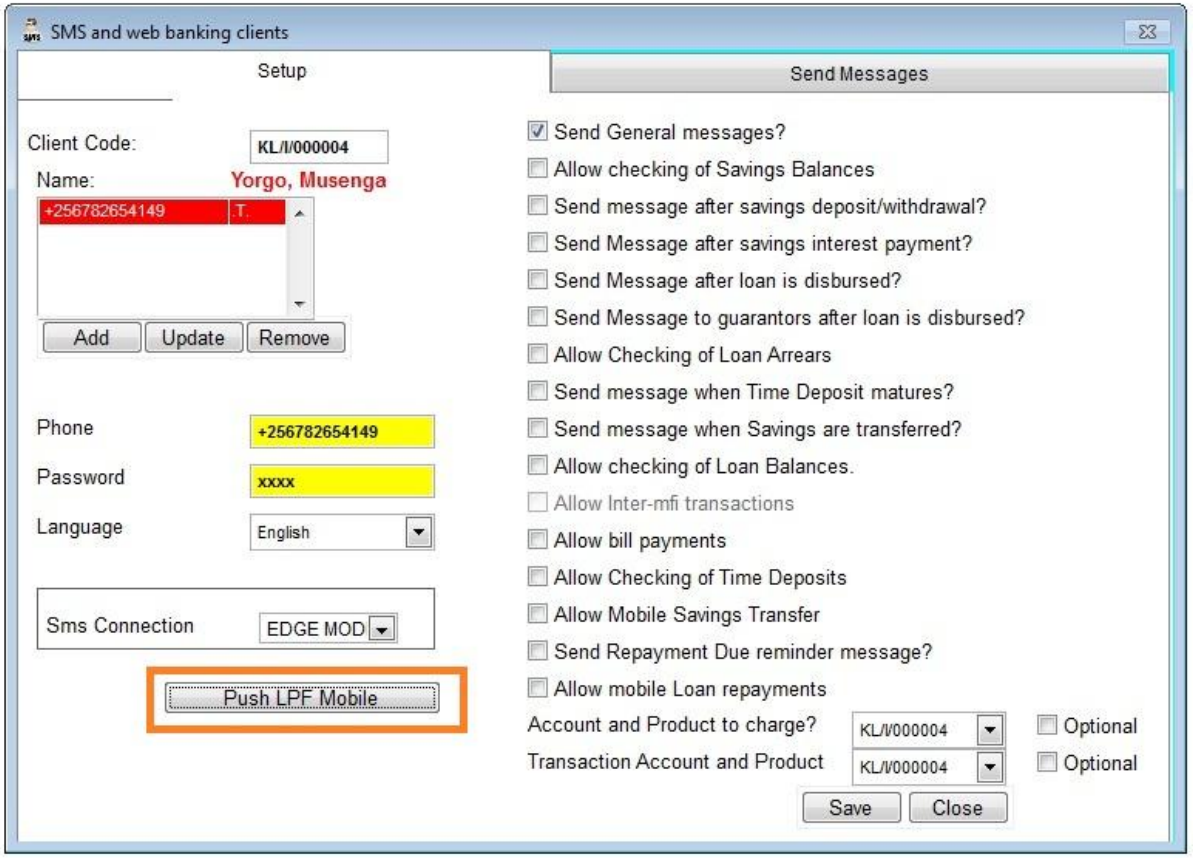
For MFIs/SACCOs that do not do savings, let the “Account & Product to Charge”, and “Transaction Account & Product” be optional.

In this case, there are services which won’t be available for such clients.

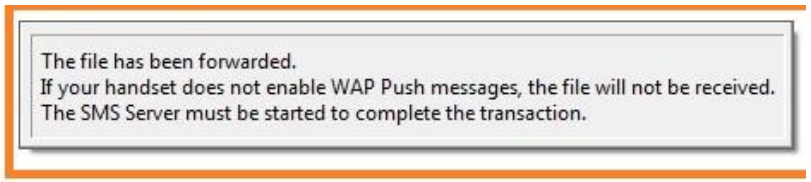
Configure LPF for Mobile Banking – Push LPF Mobile

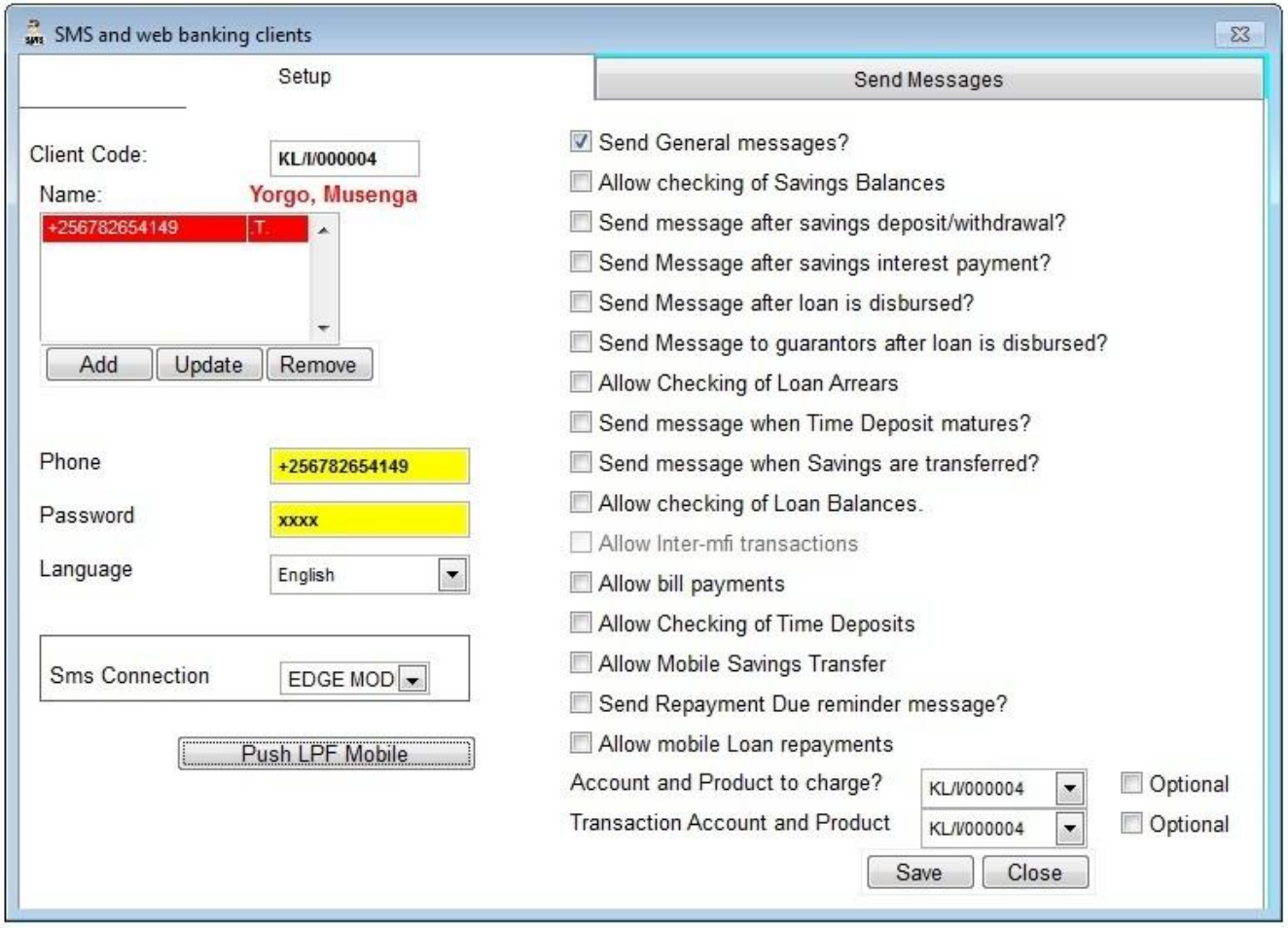
The “LPF Mobile” phone application can be pushed to a client’s phone once the client’s information has been saved. So Save the client’s details, load the client’s data again and then click on the “**Push LPF Mobile**” button.





Configure LPF for Mobile Banking – Push LPF Mobile

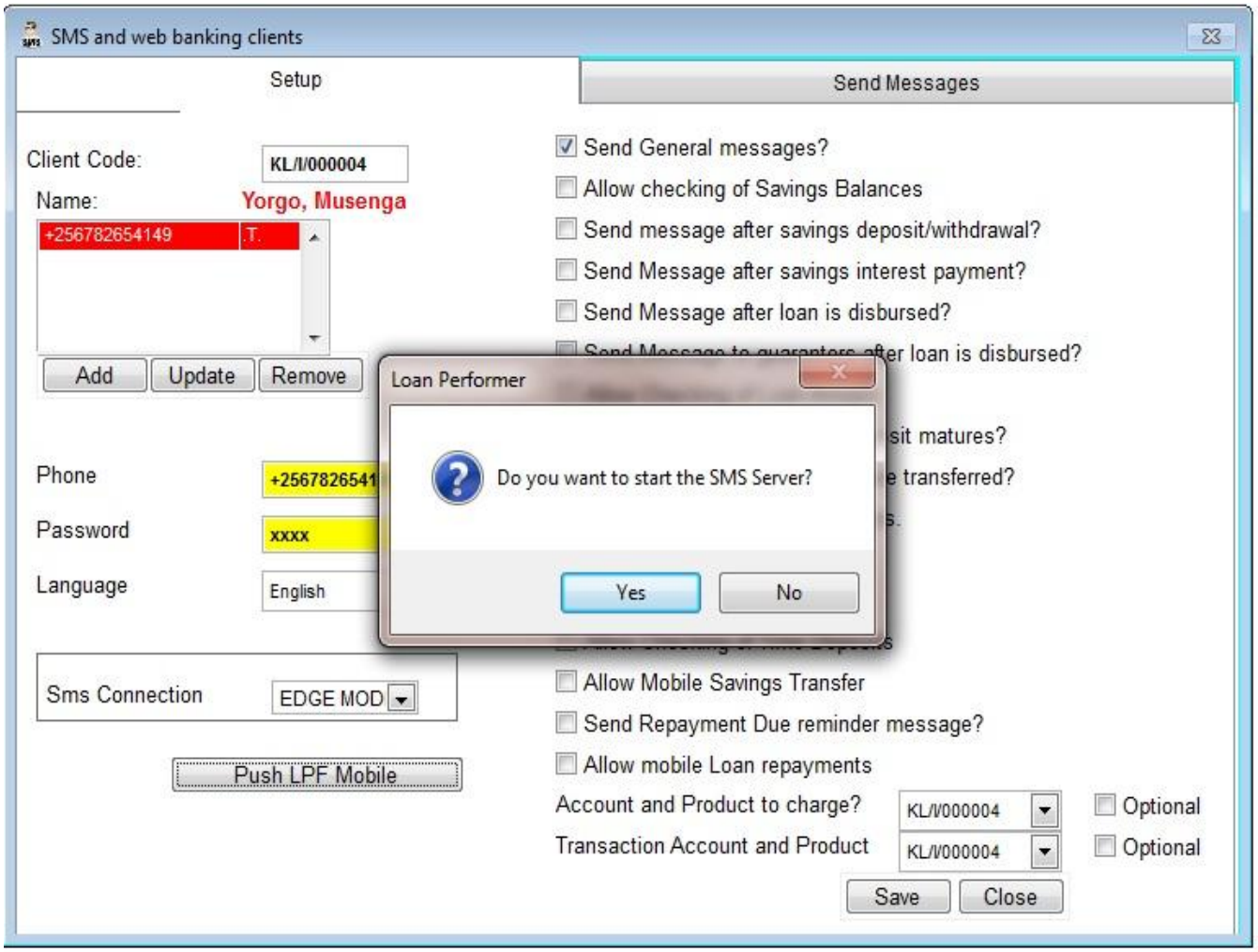




If the Push message is forwarded, the message above will be displayed.

Configure LPF for Mobile Banking – Push LPF Mobile

To complete the push process, the Mobile Banking Server must be started. Normally, if the server is not started, LPF will prompt the user to start the server.

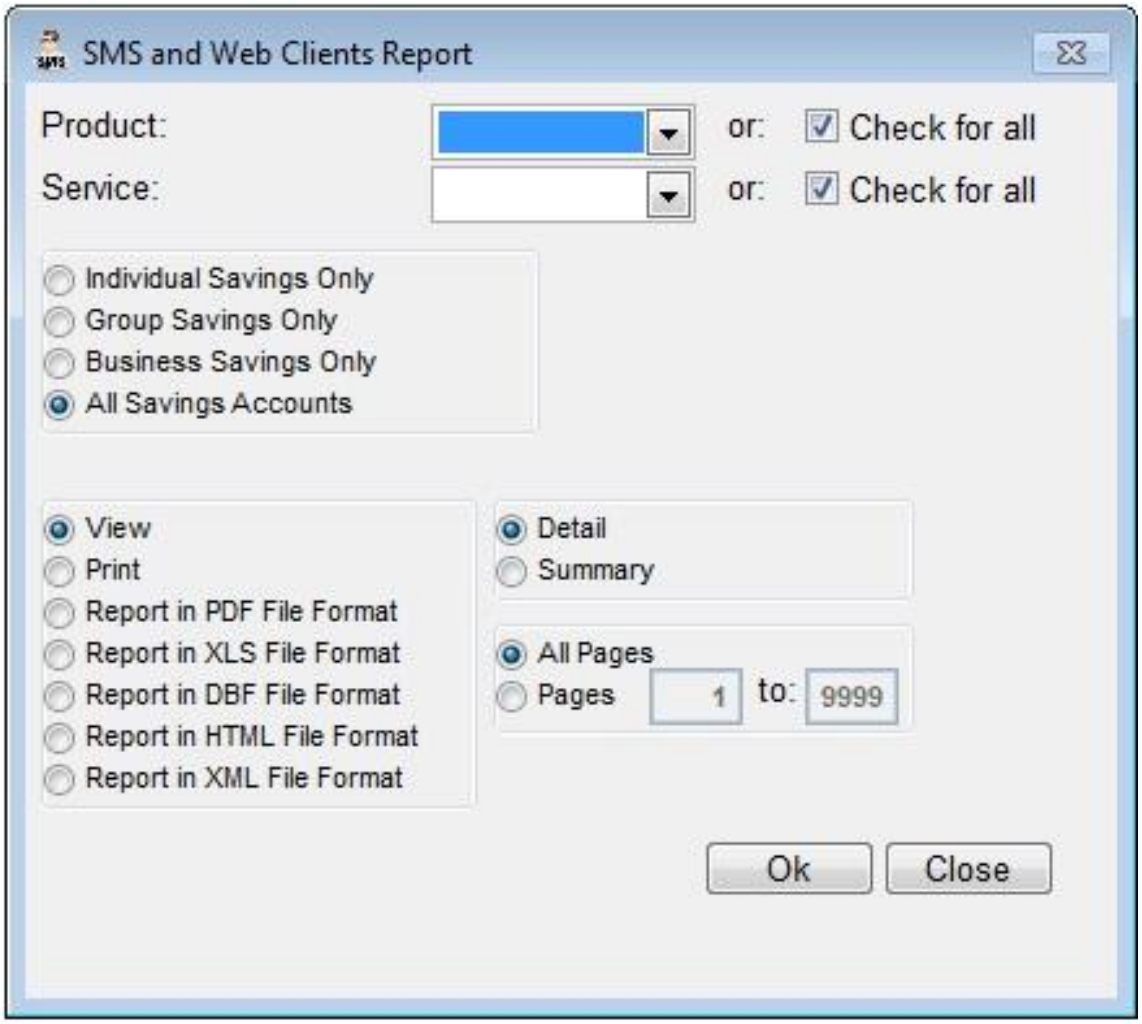


If the server is not started and if there are charges set for push messages, they will not be posted immediately.

In such cases, the push message will be sent and charges processed as soon as the server is started.

Configure LPF for Mobile Banking –

SMS and Web Clients Report

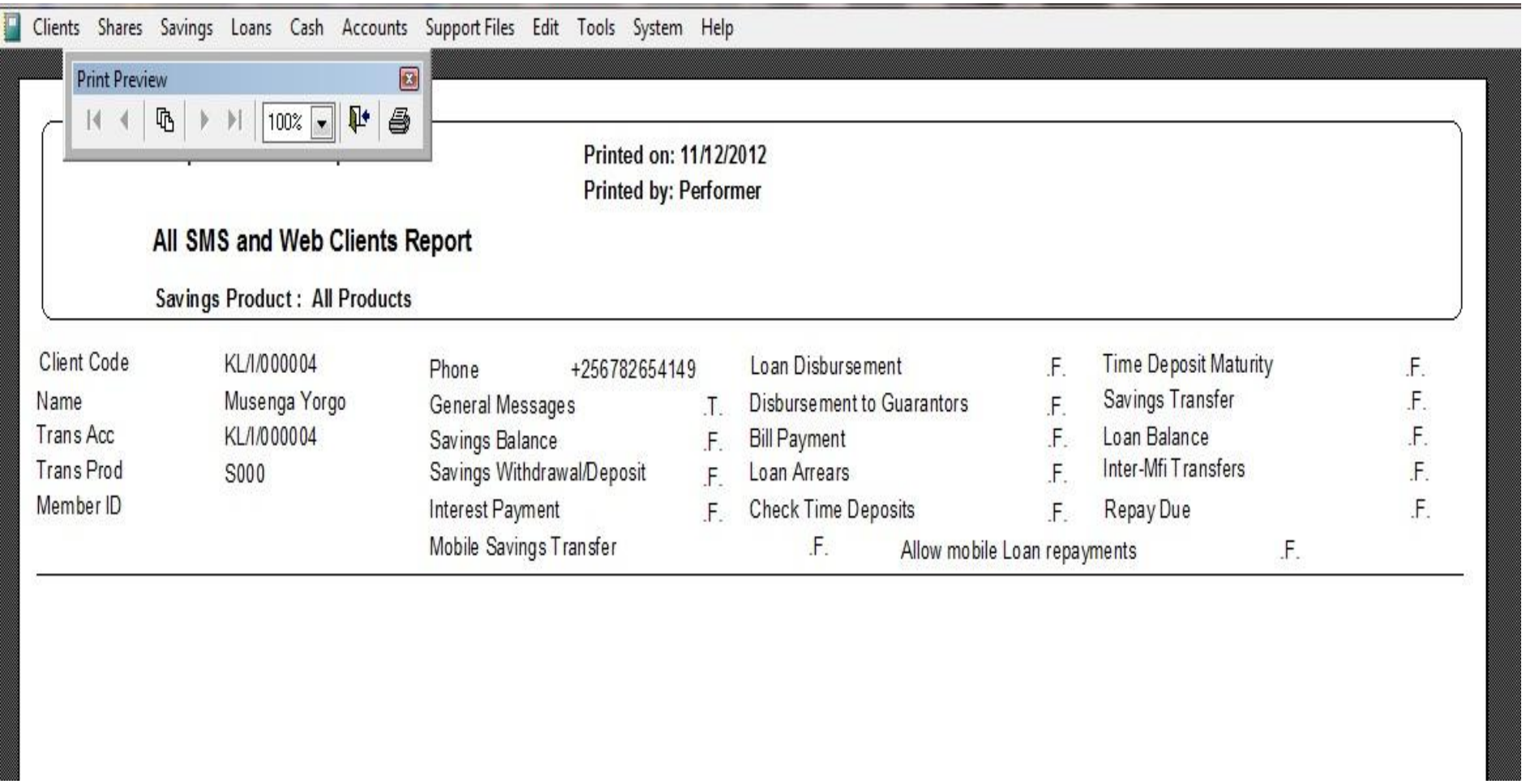


This report displays clients who have been subscribed for Mobile Banking Services.

Configure LPF for Mobile Banking –

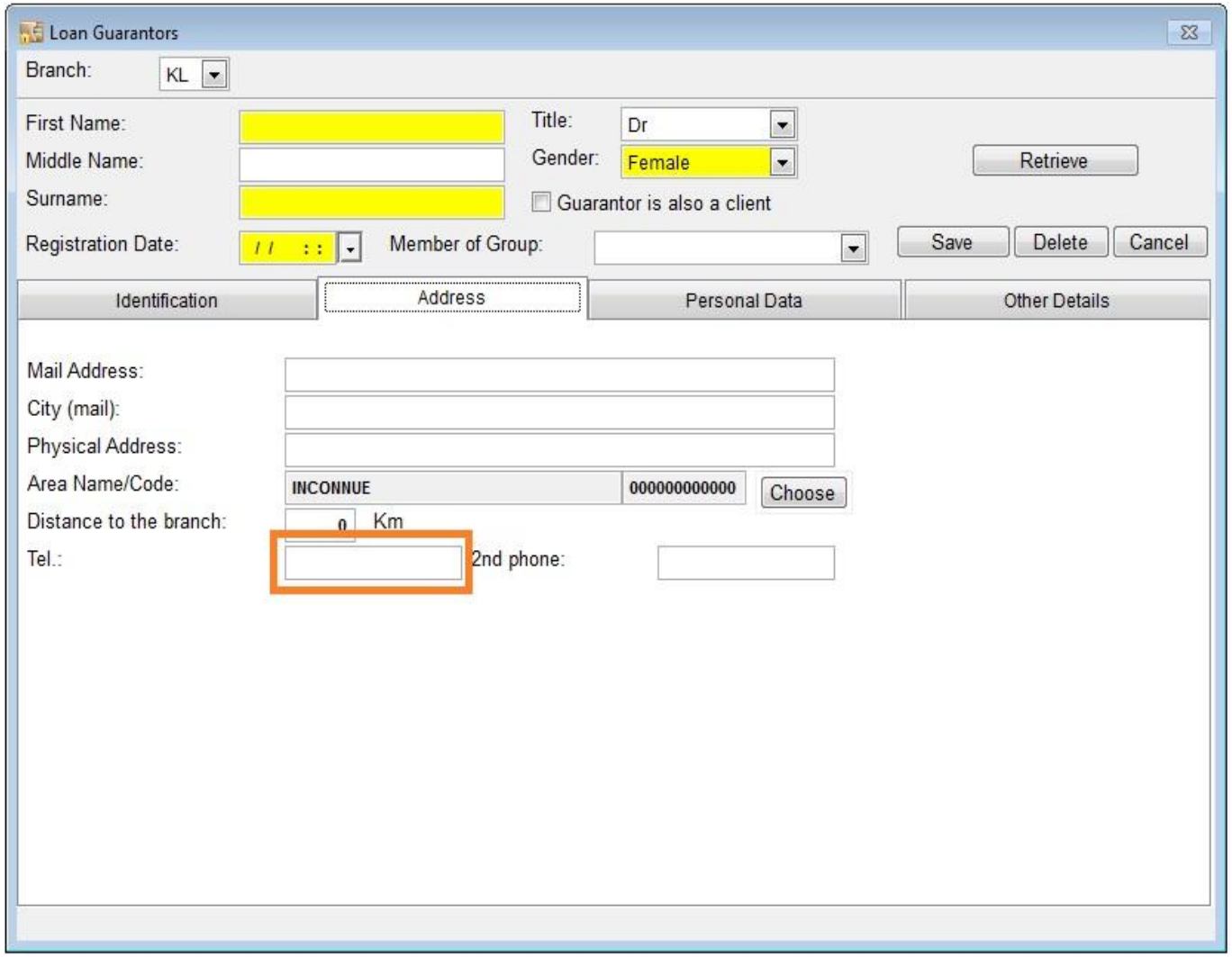
SMS and Web Clients Report

Sample Report



Configure LPF for Mobile Banking – Guarantor's Phone No

If messages have to be sent to guarantors after a disbursement, the phone number of the guarantor must be set. It should appear in the international format.

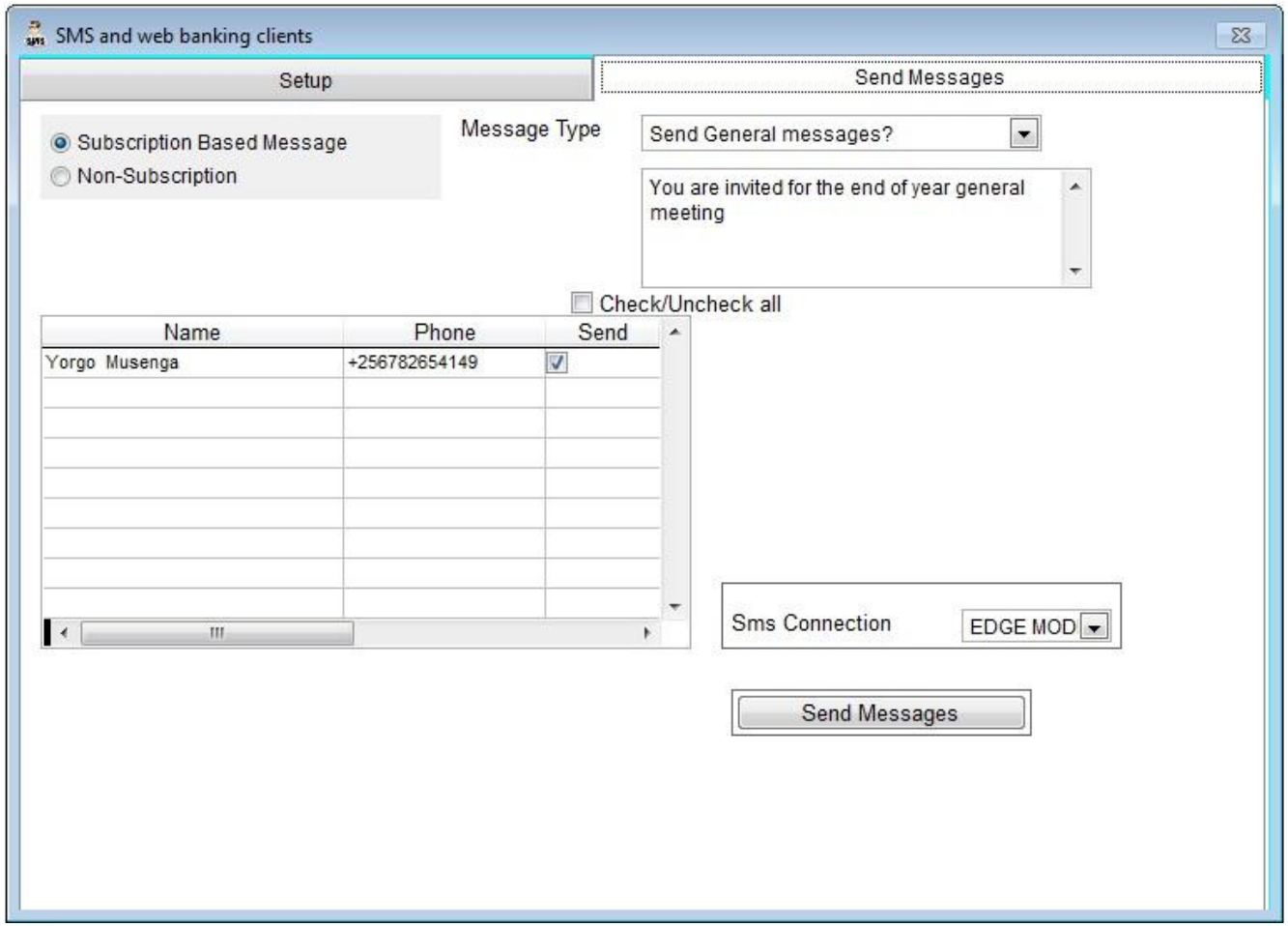


No message will be delivered to a guarantor whose phone number has not been saved in the international format.

To edit a guarantor's information, Click on the Clients' menu and then click on Guarantors.

Configure LPF for Mobile Banking – Send Messages

To send messages customized for clients based on Mobile Banking services, on the SMS and Web Clients window, select the second tab. From the Message Type drop down, select the type of Service. All clients subscribed for that service will be loaded on the grid.



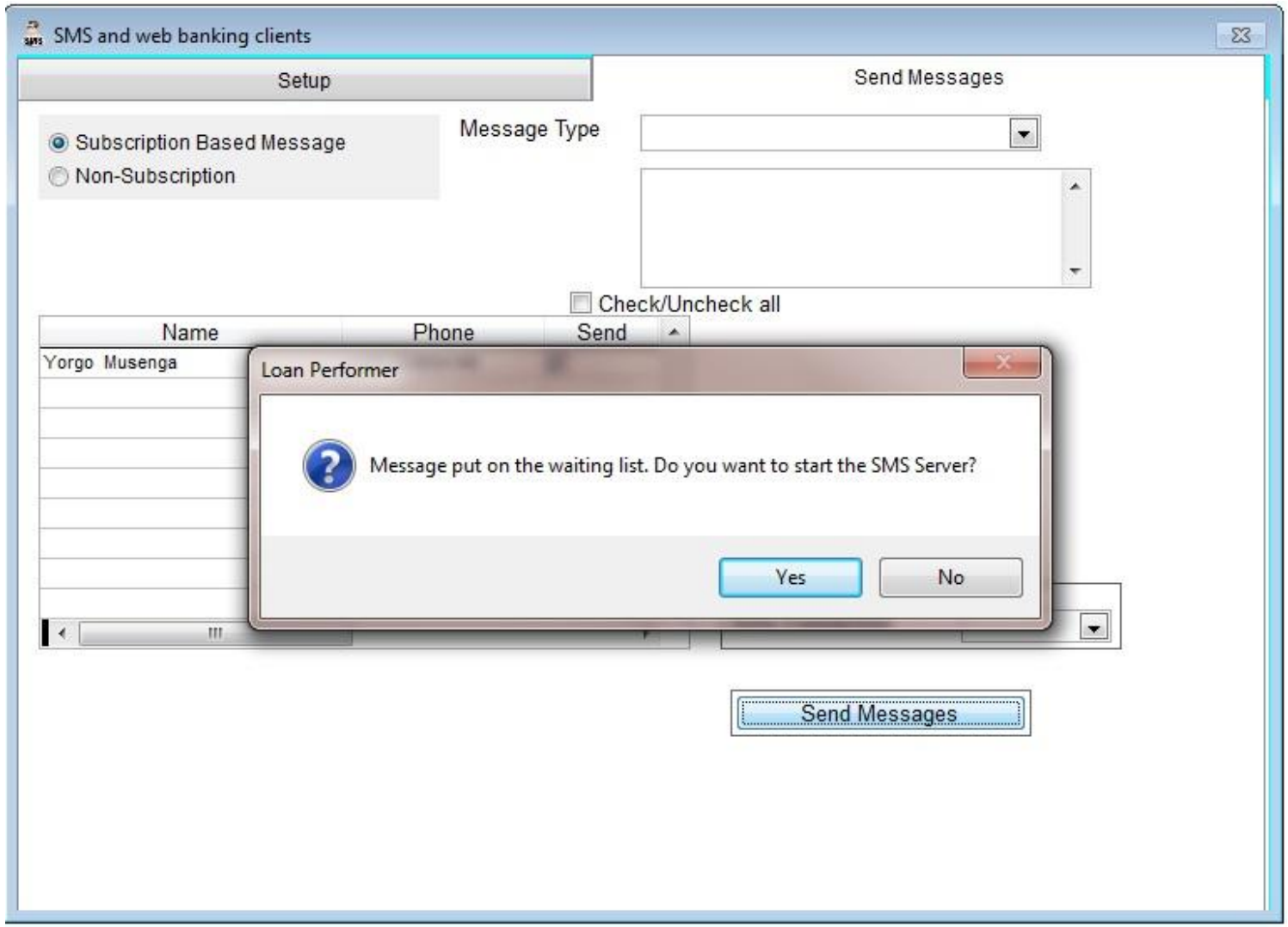
1. Check all clients who will receive this message.

2. Type the message and select the SMS Connection i.e. Modem or HTTP.

3. Click the "**Send Message**" button to send the message to the queue.

Configure LPF for Mobile Banking – Send Messages

LPF will prompt the user to start the server if it is not started yet.

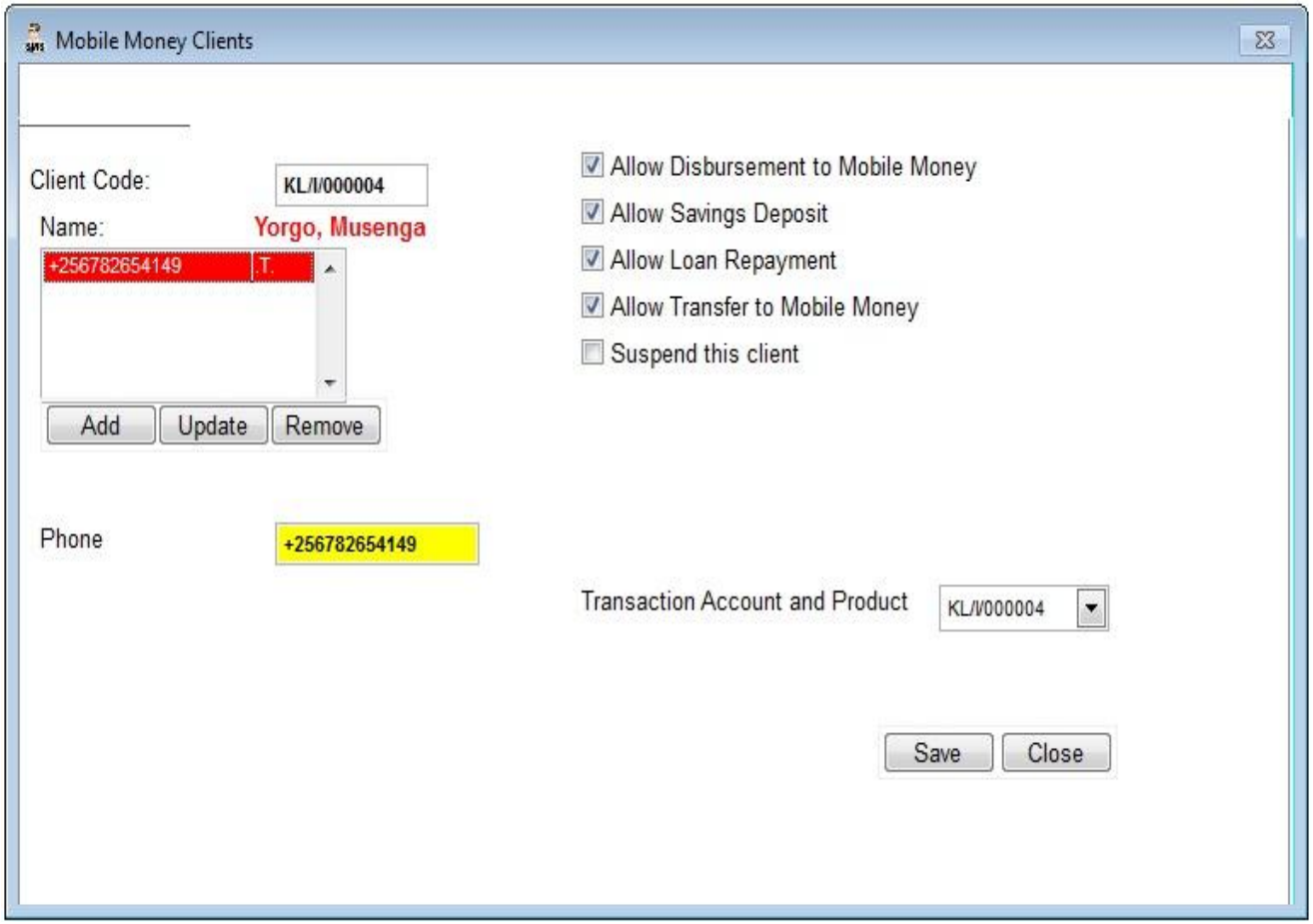


Configure LPF for Mobile Banking – Mobile Money Clients

To subscribe clients for the MCash services click on Clients/Mobile Banking Clients/Mobile Money Clients. This menu is password protected.

Configure LPF for Mobile Banking – Mobile Money Clients

To subscribe a client for a service, activate the appropriate checkboxes.
Click the Add, Update or Remove button to activate the Save button.
Click the Save button to commit the changes.

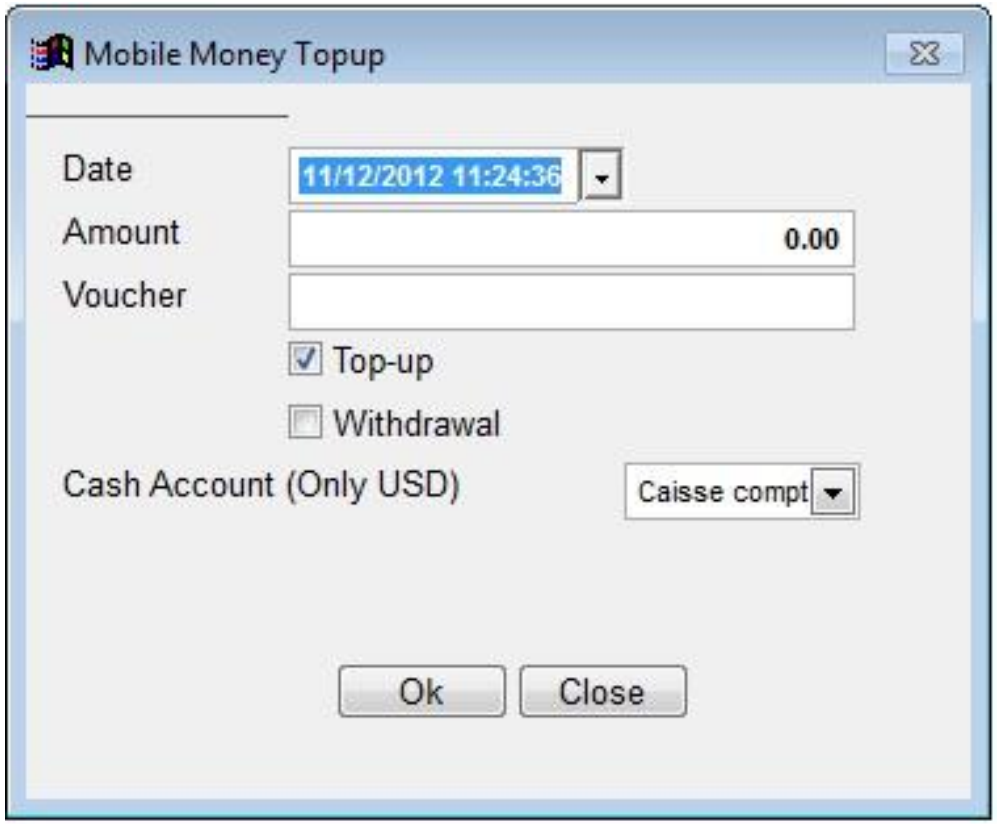


For SACCOs which do not do savings, the "Transaction Account & Product" is optional.

In this case, there are services which won't be available for such clients.

Mobile Banking Services - Using MCash

1. Mobile Money Top-Up
2. Savings Deposit
3. Loan Disbursement
4. Loan Repayment



Mobile Banking Services – MCash Services

The Loan Performer Mobile Banking Application sits on the mobile phone of the client. Version 8.13 has been modified to include a menu for MCash Money. The Application communicates to the Mobile Banking Server (MBS) of Loan Performer.

Using the Mobile Application, the client sends a request to the MBS. The MBS validates the client before forwarding the transaction to the MCash Server. If the MCash server confirms, the MBS completes the transaction. If not a response from the MCash Server is forwarded to the client.

Mobile Banking Services – MCash Services

MCash Money menus on the Loan Performer Mobile Banking Application.

Mobile Banking Services – MCash Services

Transfer of funds from a client's savings account with the MFI/Sacco to his/her mobile money account with MCash.

Mobile Banking Services – MCash Services

Transfer of funds from a client's Mobile Money account with MCash to his/her Loan Performer savings account with the MFI/Sacco.

Note: A pin verification message/call is sent to the client by the MCash Server before the transaction is completed.

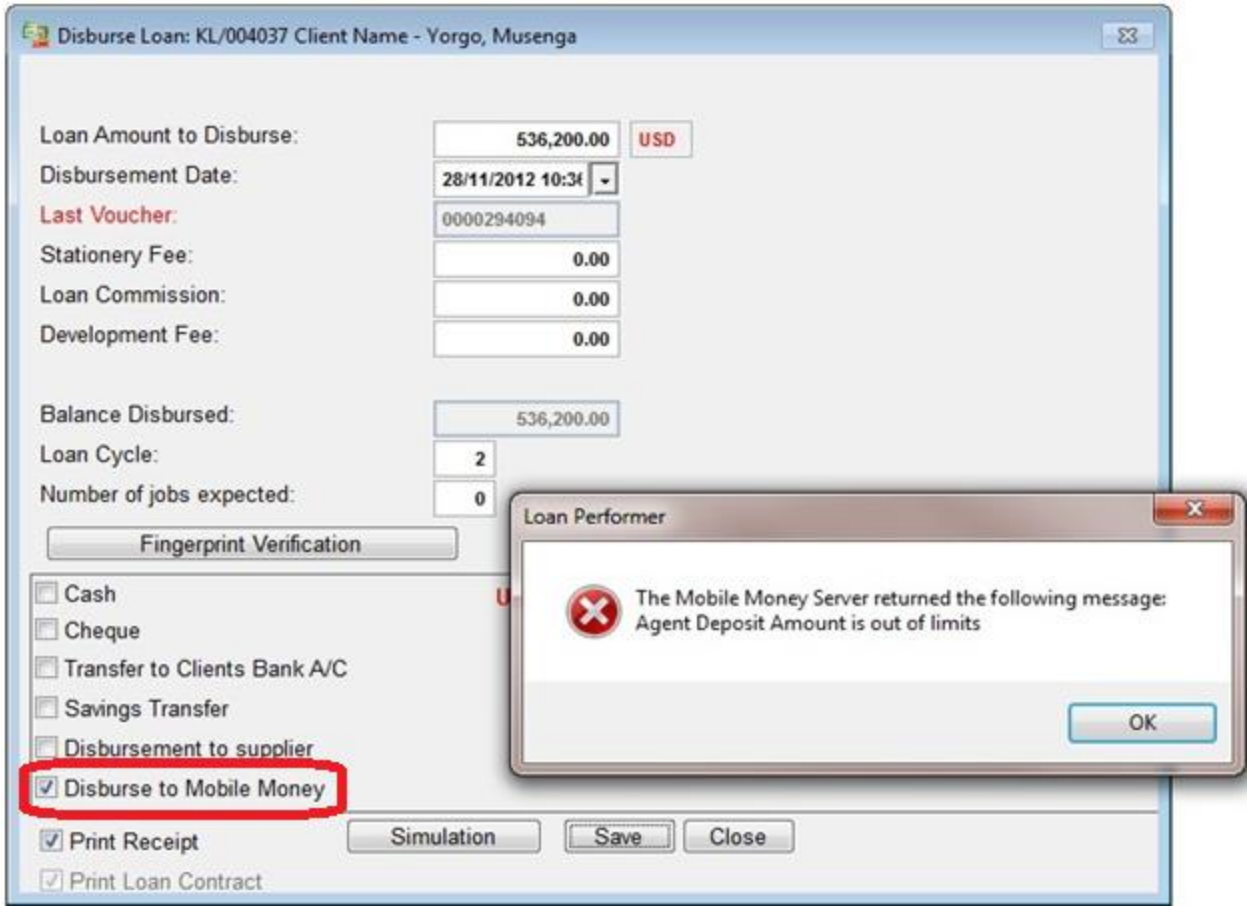
Mobile Banking Services – MCash Services

Transfer of funds from a client's MCash account for repayment of a loan.

Note: A pin verification message/call is sent to the client by the MCash Server before the transaction is completed.

Mobile Banking Services – MCash Services

It is now possible to disburse a loan from Loan Performer to the client's MCash account. An option ("Disburse to Mobile Money") has been added to the disbursement screen



Loan Performer contacts the MCash server after the user clicks on the Save button.

A successful transaction ends with confirmation messages from MCash and Loan Performer to the client's phone.

Mobile Banking Services – MCash Services

Besides the Mobile Money menus, LPF Mobile provides the menus below:

Clicking on any of the menus, loads a screen which allows the user to enter details such as loan number, savings account, product, etc as seen on the next slide.

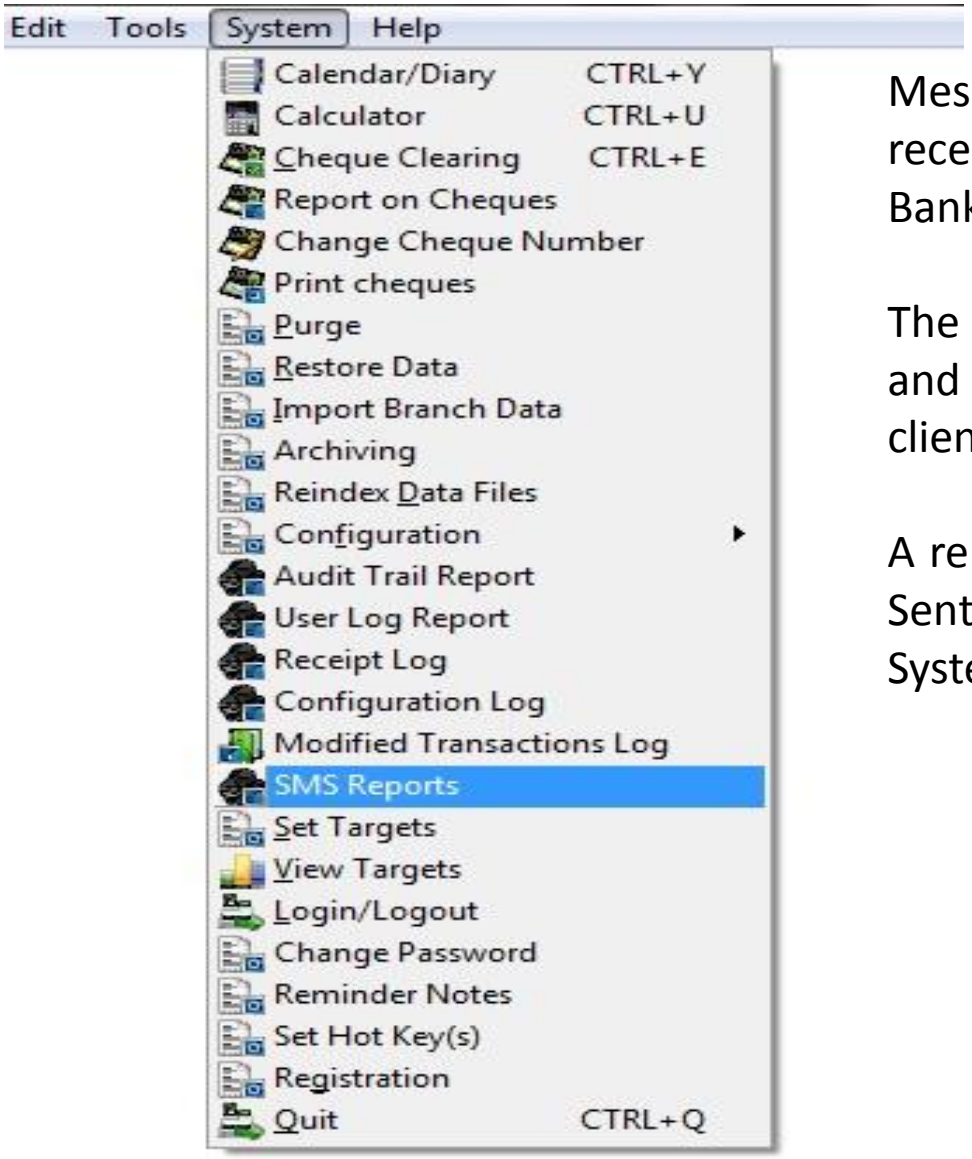
Mobile Banking Services – Savings Balance

To check for savings balance, the client provides his/her pin code and the Bank contact telephone number. The bank contact number is the one loaded in the modem.

When the client selects the finish command, LPF mobile validates the details and then sends an SMS.

If the details are invalid or some have not been provided, the client is asked to correct or enter more details.

SMS Reports – SMS Reports



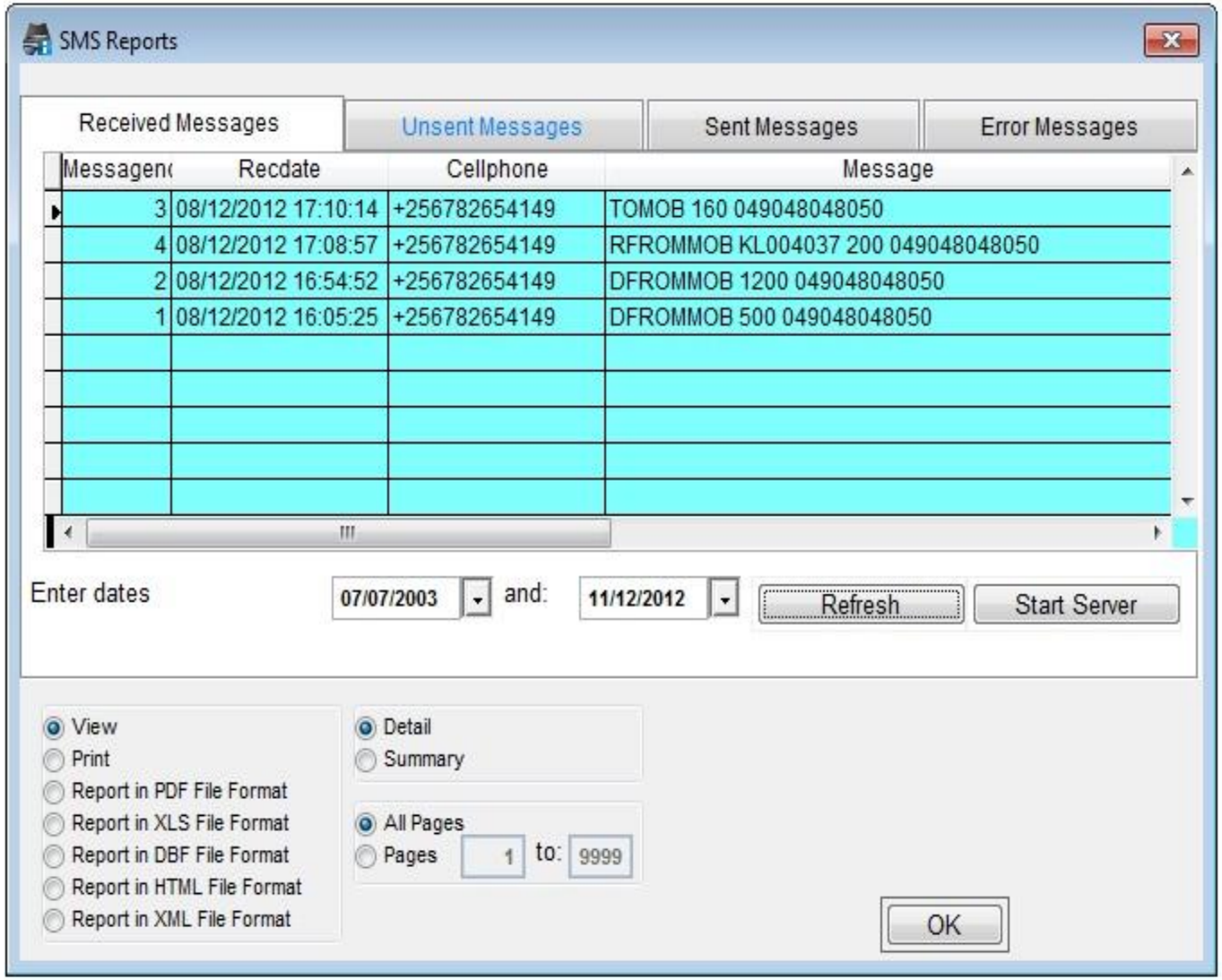
Messages sent from the client are received on the modem of the Mobile Banking Server.

The server processes these messages and then provides feedback to the client.

A report that displays Received, Unsent, Sent and Error messages is available at System/SMS Reports.

SMS Reports – Received Messages

The Received Messages report shows all received messages and those that are still in the queue waiting to be processed by the Mobile Banking Server.

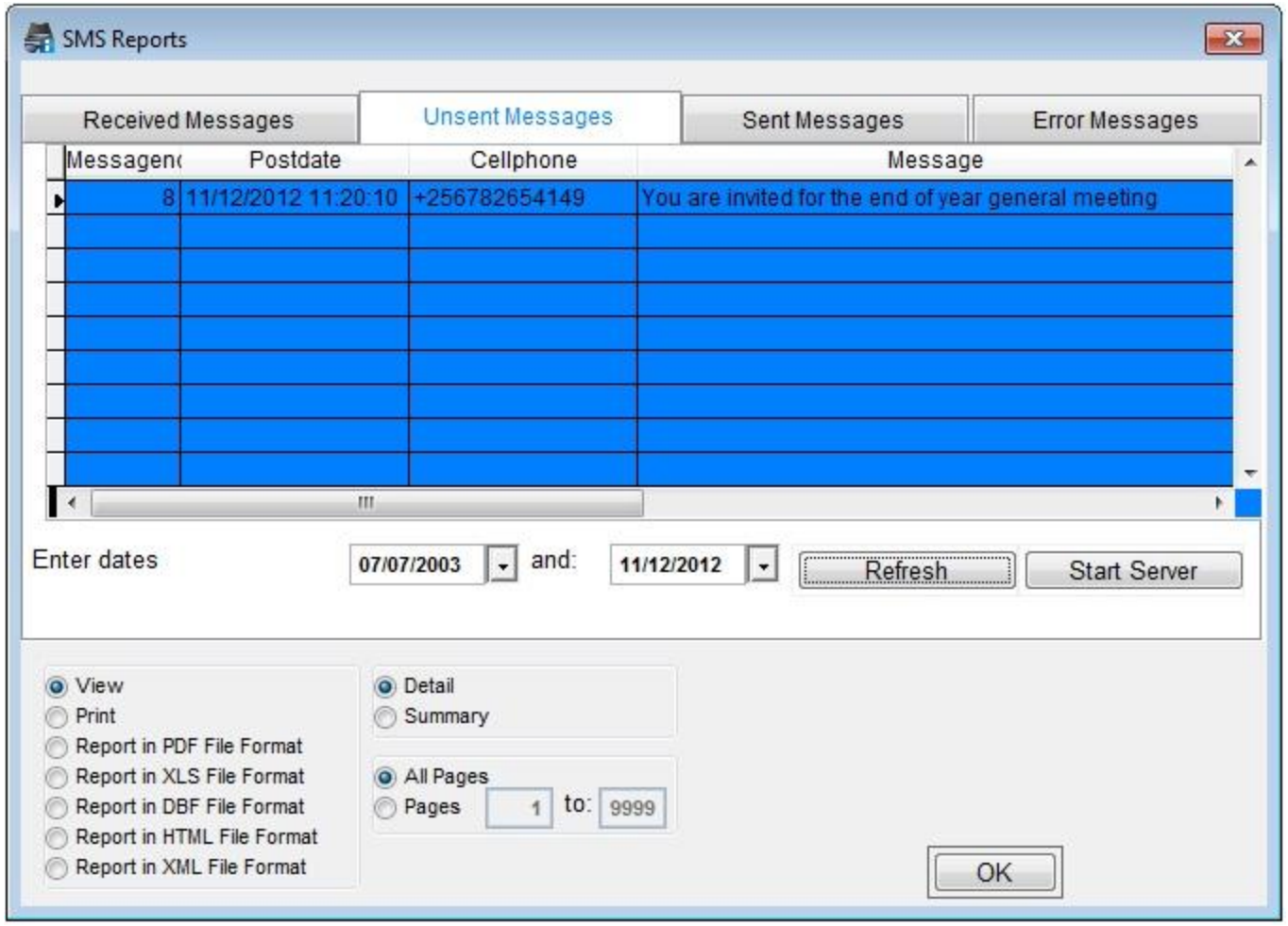


The feedback message is put in the unsent messages queue after the server has processed the received message.

This queue also contains any other message waiting to be sent.

SMS Reports– Unsent Messages

The Unsent Messages report contains messages waiting to be sent to the client. The Mobile Banking server uses the modem or Http connection (which ever is set default SMS Connection) to send messages.

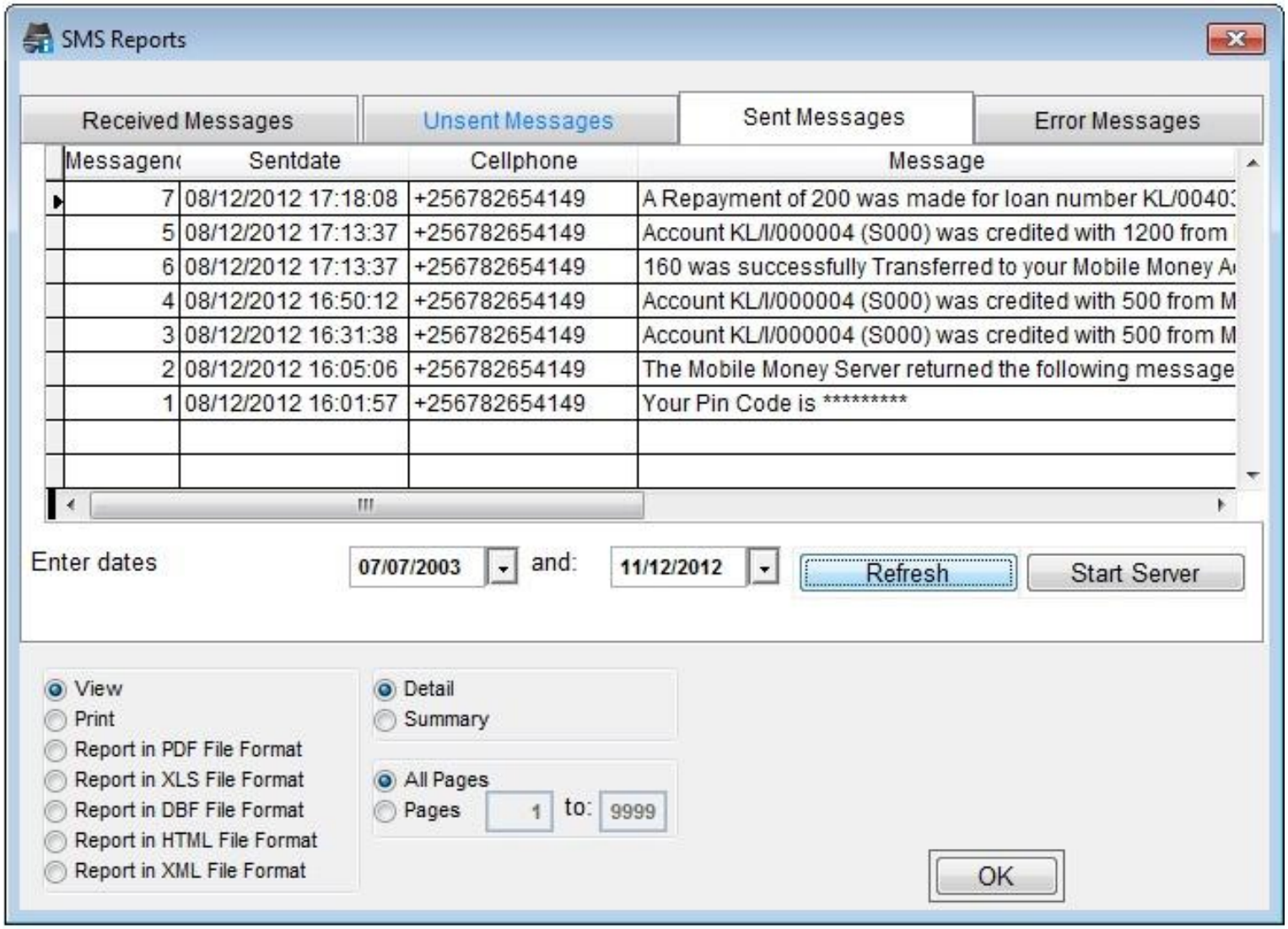


If a modem does not have enough credit and it has been set as the default SMS Connection, messages will remain in the unsent queue until the modem is loaded.

A sent message appears in the Sent Messages report.

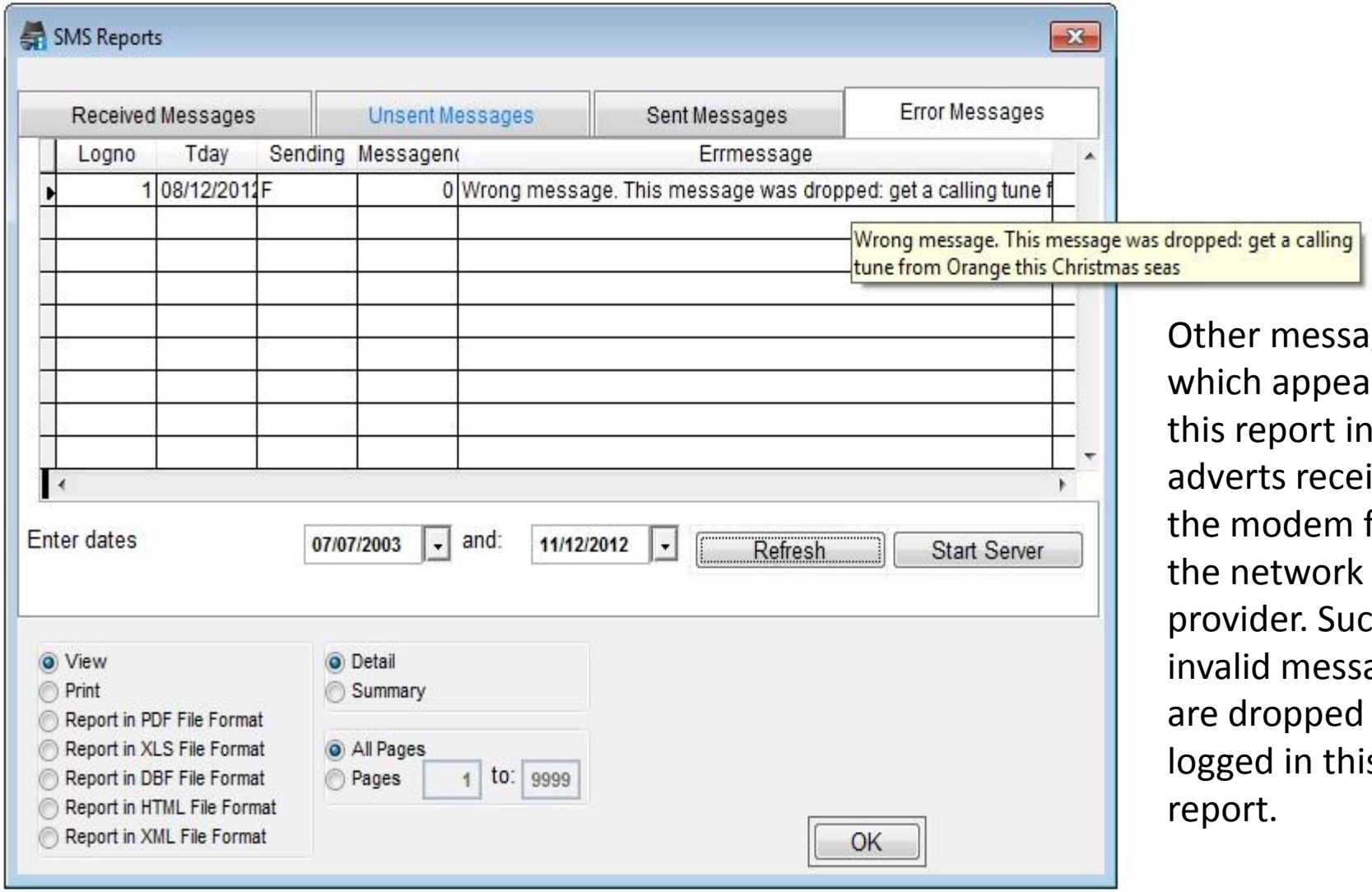
SMS Reports – Sent Messages

Messages appear in the Sent Messages report only if they have been sent. When the telephone network is slow, messages may take a while to reach the receivers.



SMS Reports – Error Messages

The “Error Messages” report displays errors which occur when the server is processing transactions.

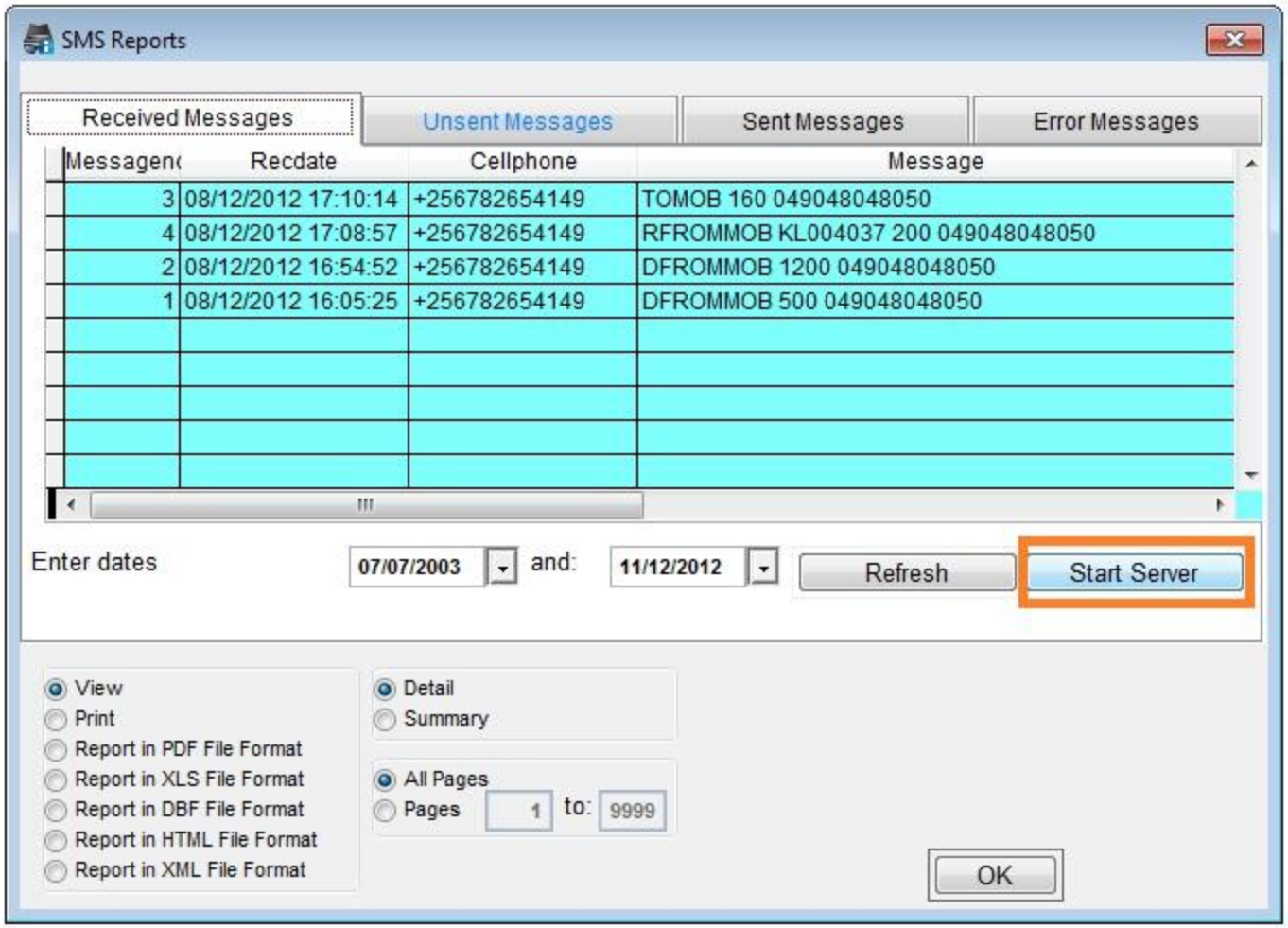


Other messages which appear in this report include adverts received on the modem from the network service provider. Such invalid messages are dropped but logged in this report.

Starting the Server

The Mobile Banking Server can be started in three major ways:

1. Click on the “Start Server” button on the “SMS Reports” form.
2. Open the LPF working folder and double click on lpfsmsserver.exe

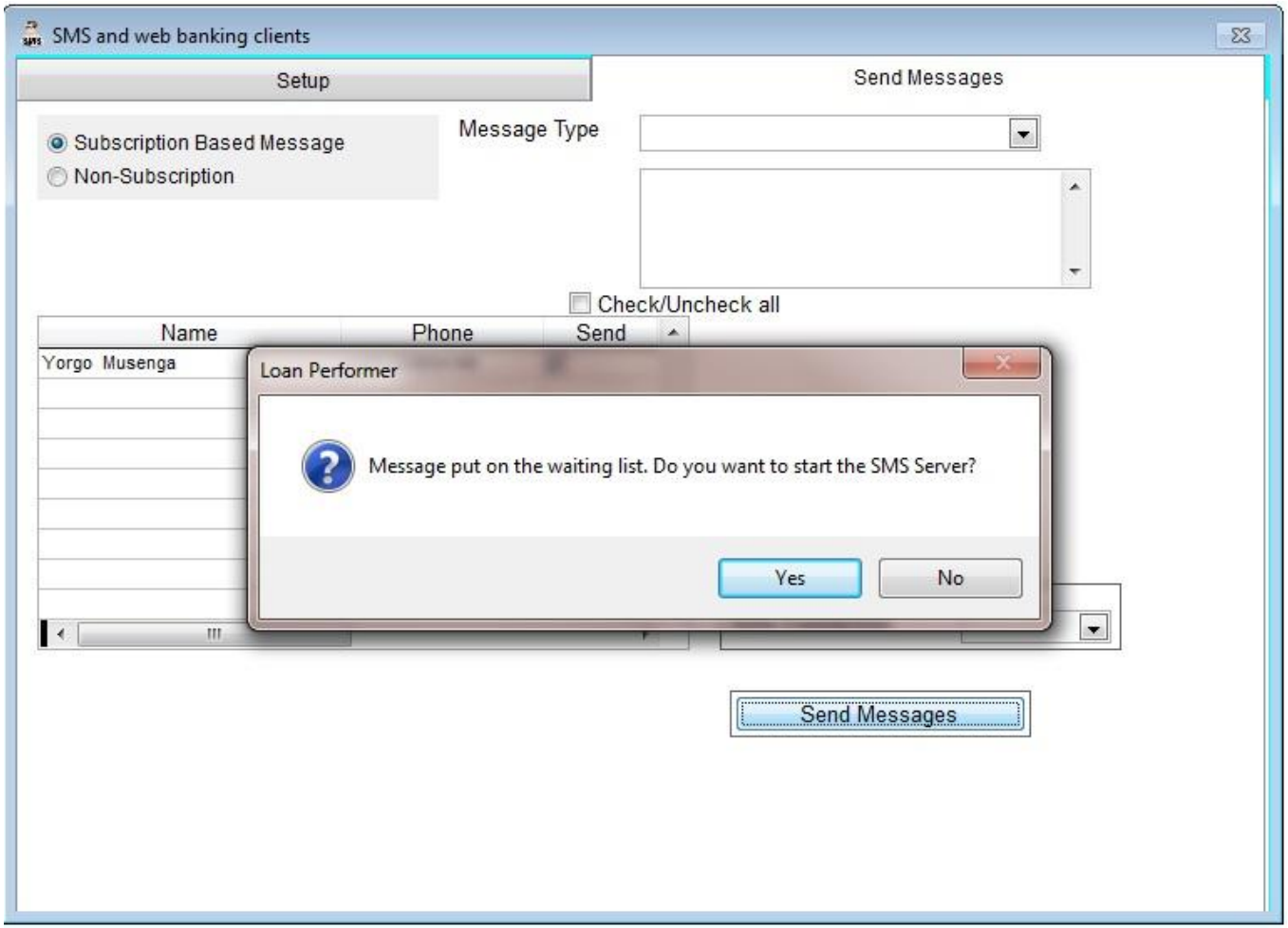


3. For every transaction which requires the Mobile Banking Server started, the user is prompted to start the server. This happens only when the server is not running. Please refer to the next slide for an example.

Starting the Server

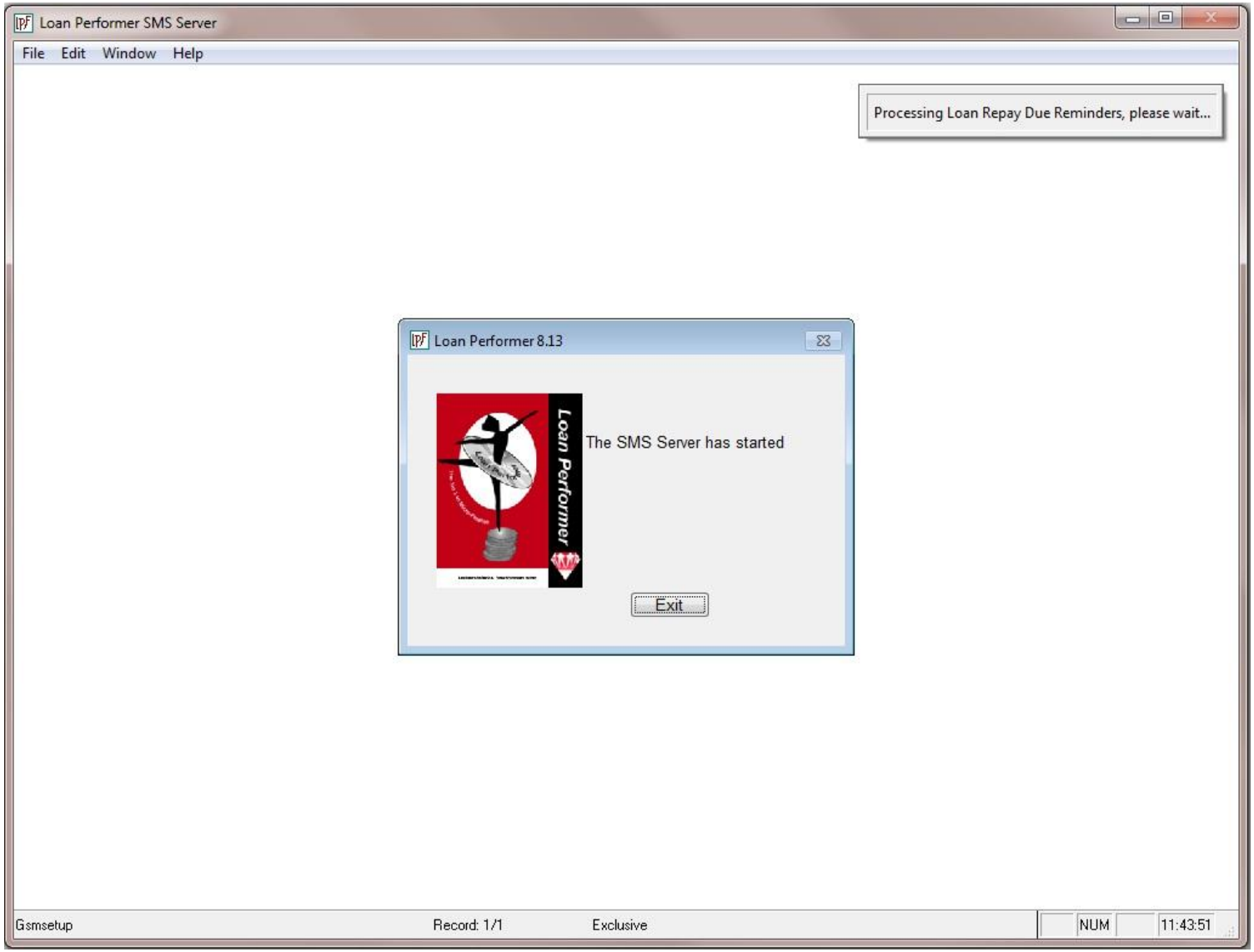
The user is prompted to start the Mobile Banking Server after sending a message from the second tab of the LPF menu “System/Mobile Banking Clients/SMS and Web Clients”.

If the user selects “No”, the message will remain in the queue until the server is started.



Starting the Server

When the Mobile Banking Server is successfully started, the following screen is displayed:



The Server displays its activity in the top right corner.

When the user clicks Exit, the Server will not stop until it has finished processing the current transaction.

The user has to wait.

Other Transactions

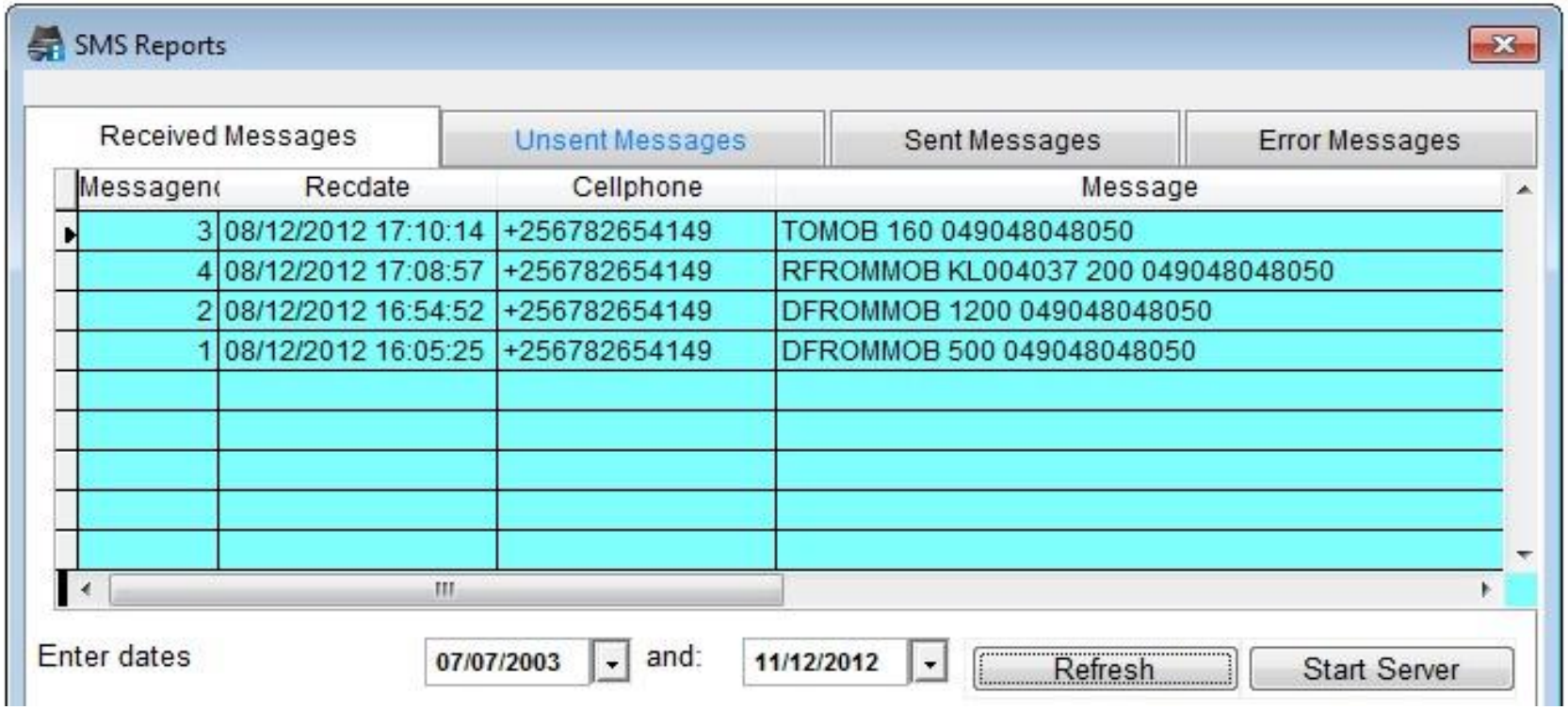
- Message after savings Deposit/Withdrawal
- Message after savings interest payment
- Message after disbursement
- Message to guarantors after disbursement
- Message after Time Deposit Matures
- Message after Savings are transferred

Note: If the Mobile Banking Server is not running, these messages will be queued and sent as soon as the Server is started. That means that messages will NOT be sent immediately after the transaction is done.

Troubleshooting Mobile Banking

A message is sent from the phone but not received by LPF (1/5).

The Mobile Telephone network is slow. In most cases the message will take longer to reach the modem in case the network is slow. Confirm that the message has reached by loading the “Received Messages” report

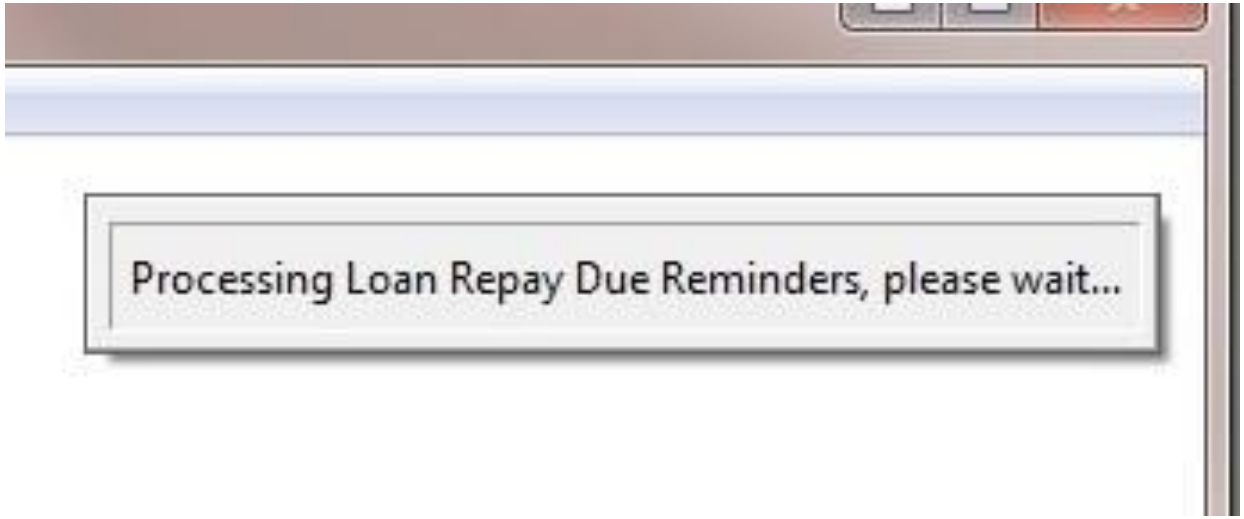


A message is sent from the phone but not received by LPF (2/5).

The modem does not support receiving of SMS. Test the modem at “System/Configuration/Mobile Banking Setup”.

A message is sent from the phone but not received by LPF (3/5).

The Mobile Banking server might be still busy processing other transactions. The Server displays a message that the transaction being processed.



A message is sent from the phone but not received by LPF (4/5).

Does the Sim Card of the Modem require a pin number? If a pin number is required and an invalid number has been entered at the time of registering the modem, LPF will not be able to open the modem.

A message is sent from the phone but not received by LPF (5/5).

If the user enters a wrong Bank Contact Number, that message will not be received on the modem.

Messages are not sent by the MFI/Sacco (1/7)

- Has the Mobile Banking server been started? Messages will not be processed if the Server is not running.

Messages are not sent by the MFI/Sacco (2/7)

- Does the Modem have enough credit? The Mobile Banking Server informs the user when there is no credit. i.e. "**The Modem has not responded, make sure there is enough credit**".

- If http is set as the default SMS Line, an internet connection is required for messages to be sent. The Mobile Banking Server informs the user when the internet connection is lost.

Messages are not sent by the MFI/Sacco (3/7)

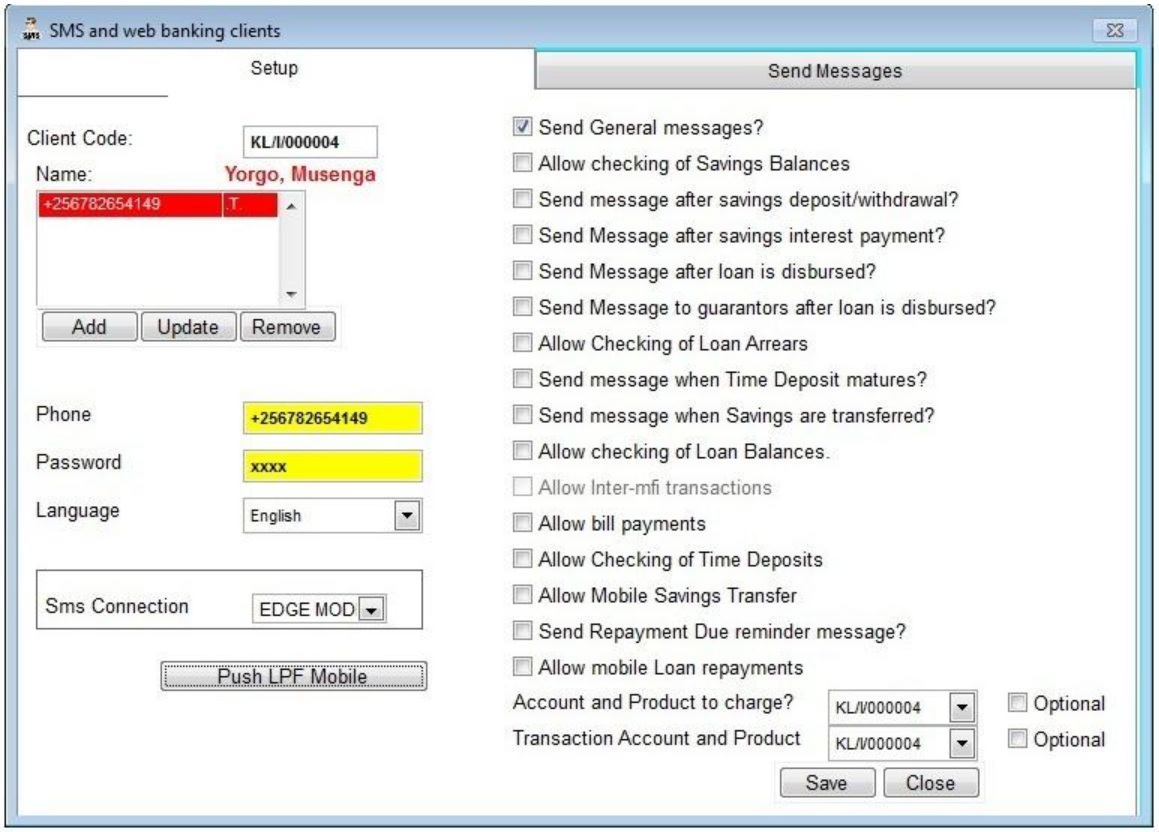
Does the Sim Card in the Modem require a pin number? If a pin number is required and an invalid number has been entered at the time of registering the modem, LPF will not be able to open the modem.

Messages are not sent by the MFI/Sacco (4/7)

Does the modem support sending of SMS. Test the modem System/Configuration/Mobile Banking Setup

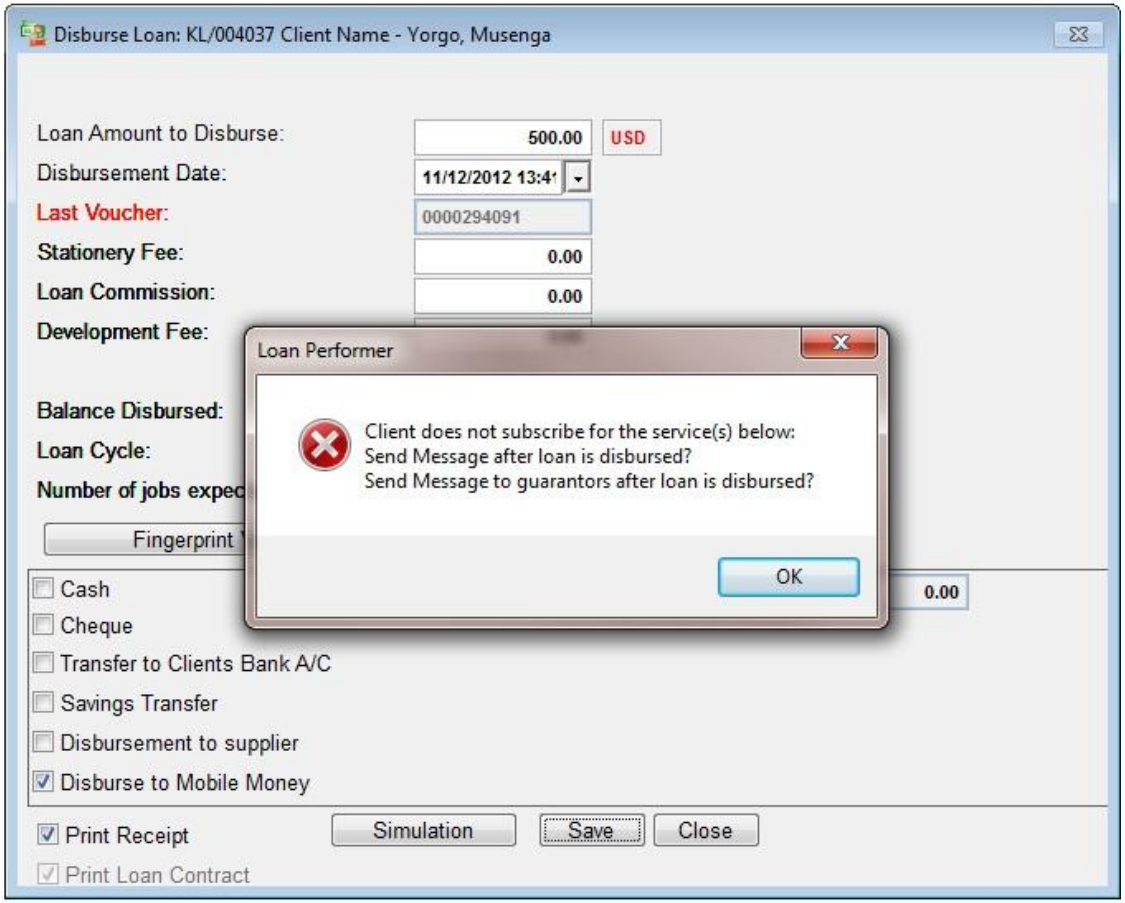
Messages are not sent by the MFI/Sacco (5/7)

If a wrong telephone number is used at the time of subscribing a client for Mobile Banking Services, messages will always be sent to a wrong person.



Messages are not sent by the MFI/Sacco (6/7)

Is the client subscribed for this service at the SMS and Web/ Mobile money clients pages? If the client is not subscribed for the service, messages will not be sent to the queue. Therefore no message will be delivered to the client.

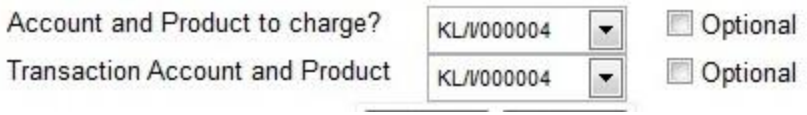


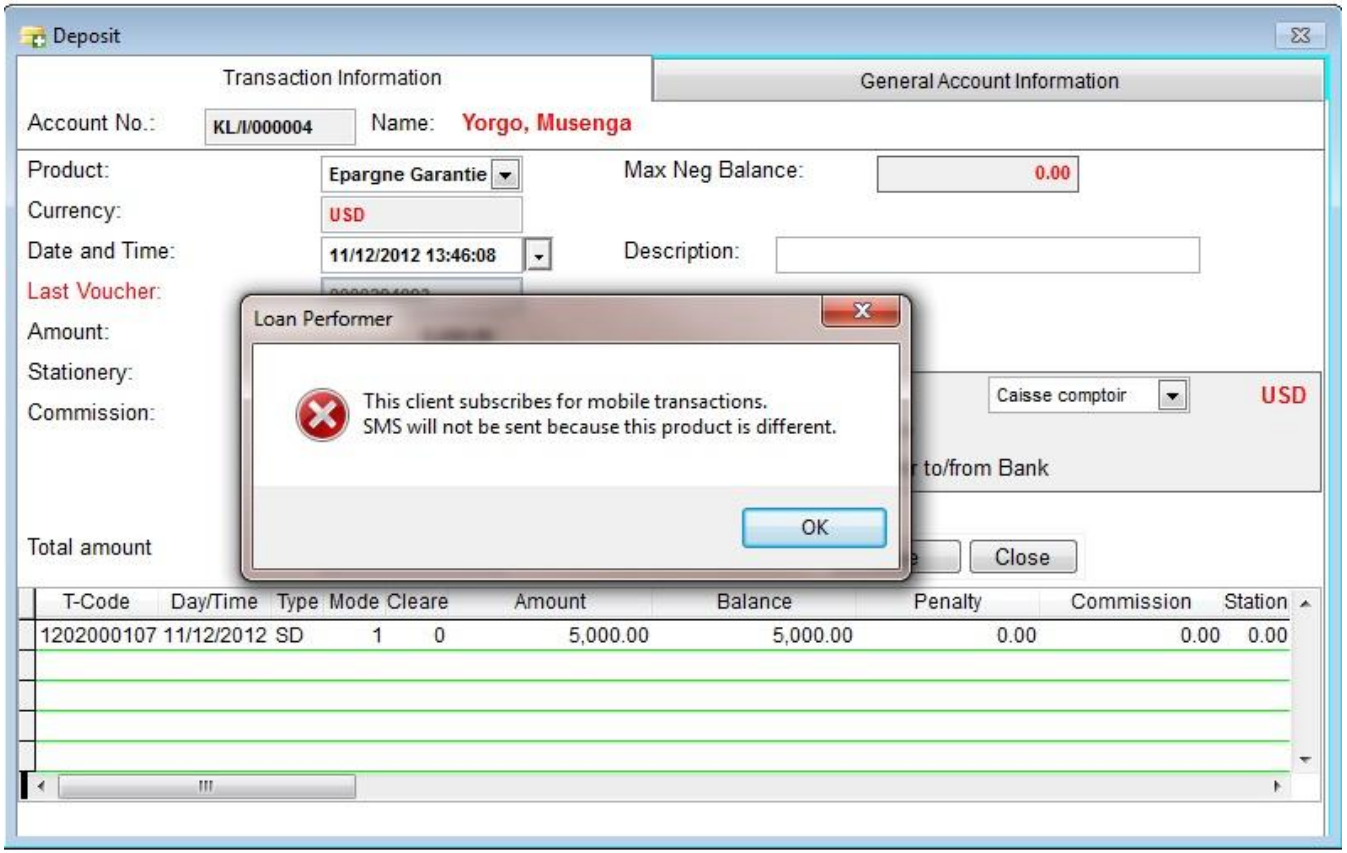
This applies to all services below:

- [x] Send General messages?
- [ ] Allow checking of Savings Balances
- [ ] Send message after savings deposit/withdrawal?
- [ ] Send Message after savings interest payment?
- [ ] Send Message after loan is disbursed?
- [ ] Send Message to guarantors after loan is disbursed?
- [ ] Allow Checking of Loan Arrears
- [ ] Send message when Time Deposit matures?
- [ ] Send message when Savings are transferred?
- [ ] Allow checking of Loan Balances.
- [ ] Allow Inter-mfi transactions
- [ ] Allow bill payments
- [ ] Allow Checking of Time Deposits
- [ ] Allow Mobile Savings Transfer
- [ ] Send Repayment Due reminder message?
- [ ] Allow mobile Loan repayments

Messages are not sent by the MFI/Sacco (7/7)

Is the product the same as the one configured at the SMS and Web/ Mobile money clients page? If the product configured is different, messages will not be sent to the queue. Therefore no message will be delivered to the client.

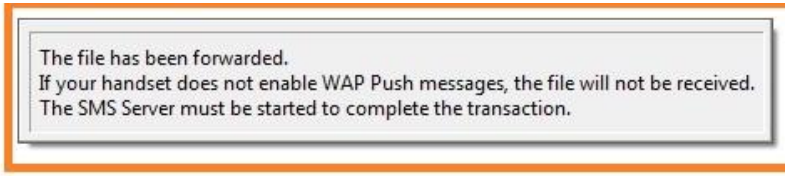


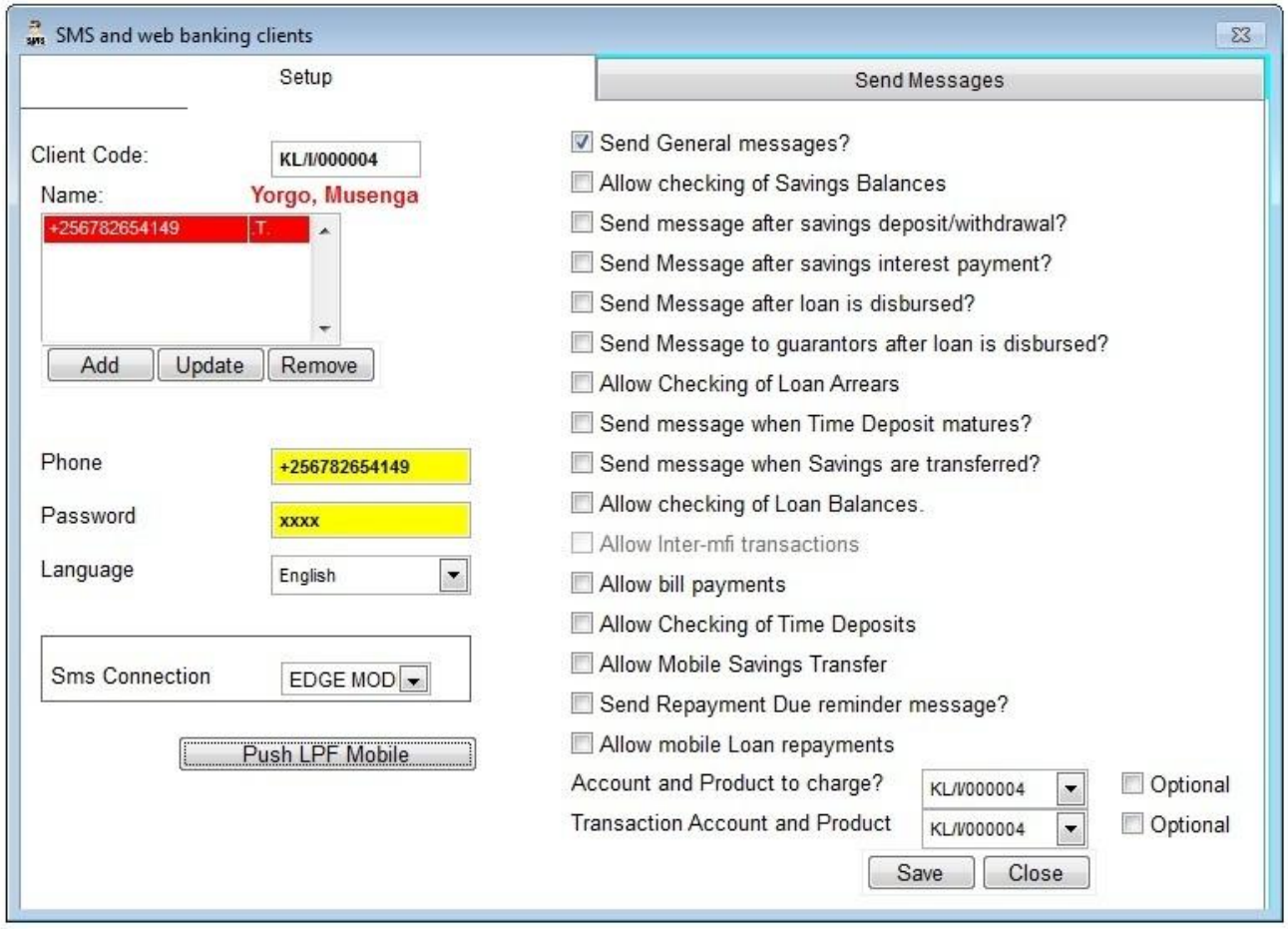


This applies to Send Message after:

1. Disbursement
2. Interest payment
3. Deposits/Withdraw
4. TD Matures
5. Savings Transfer
6. General Messages

LPF Mobile is not delivered to the Clients' Phone

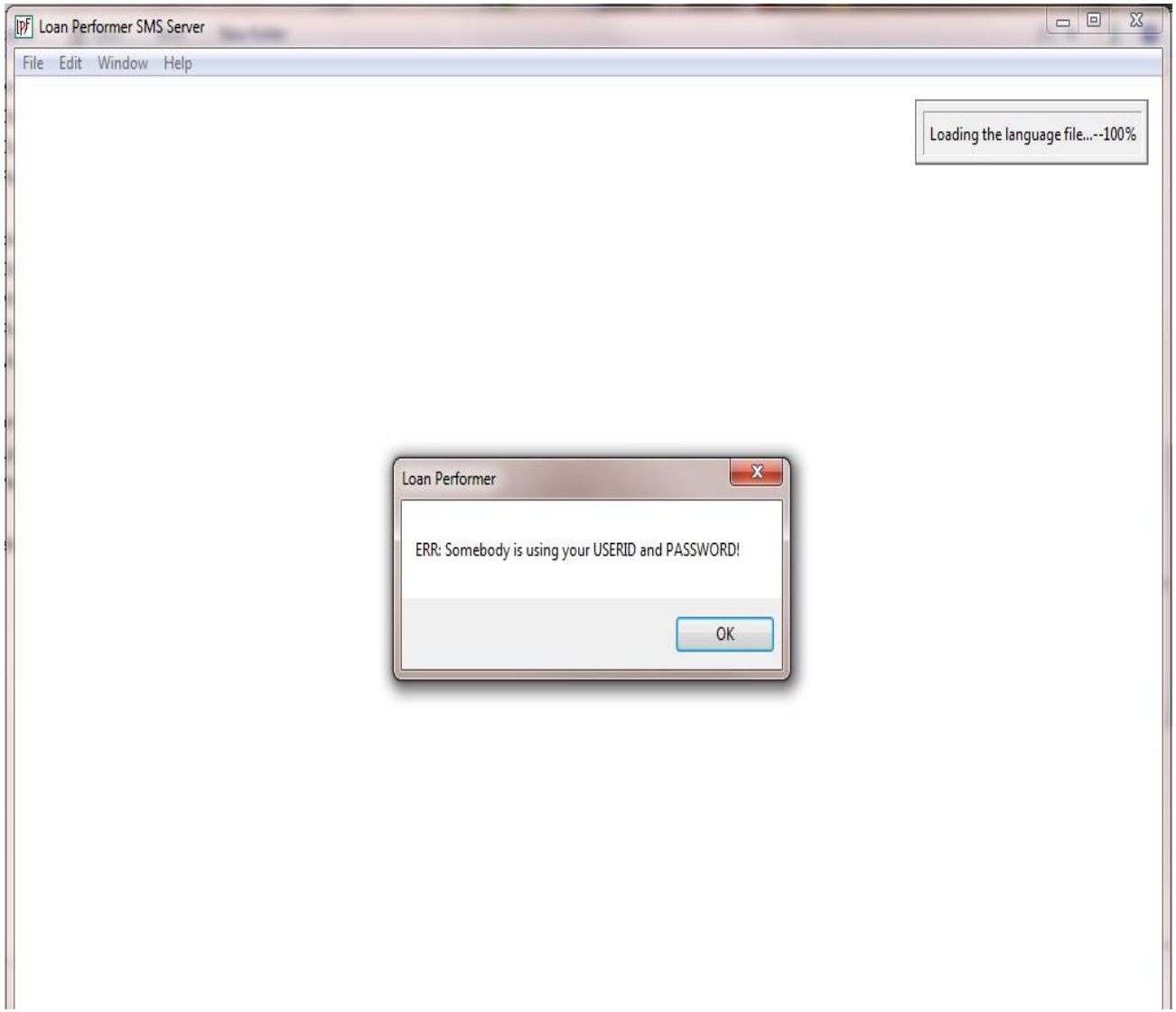




Causes include:

- Telephone network failure
- Receiver's phone rejects Wap Push Messages. Configure the phone to accept Wap Push Messages

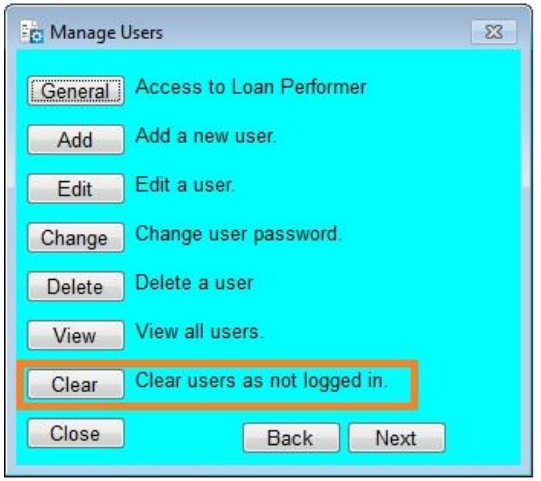
“ERR: Somebody is using your USERID and PASSWORD!” (when starting the Server).



Possible Causes:

- Improper Shut down of the Mobile Banking Server leaves the Mobile Banking Server user appear to be logged in.

Solution:



“The user name provided is reserved for SMS Server. ” (when logging into LPF).

When registering the Modem and Http Connections, the User (profile) selected can not be used for logging into LPF using the LPF login screen. This is because the Mobile Banking Server posts transactions in names of the user configured at this screen. If anyone is able to access LPF using this profile, they can make transactions. It is hard to know which transactions are for the server and which ones are not.

Mobile Banking & Loan Performer

The following topics were discussed:

- Configuring LPF for Mobile Banking
- Mobile Banking Services of LPF
- Troubleshooting Mobile Banking

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