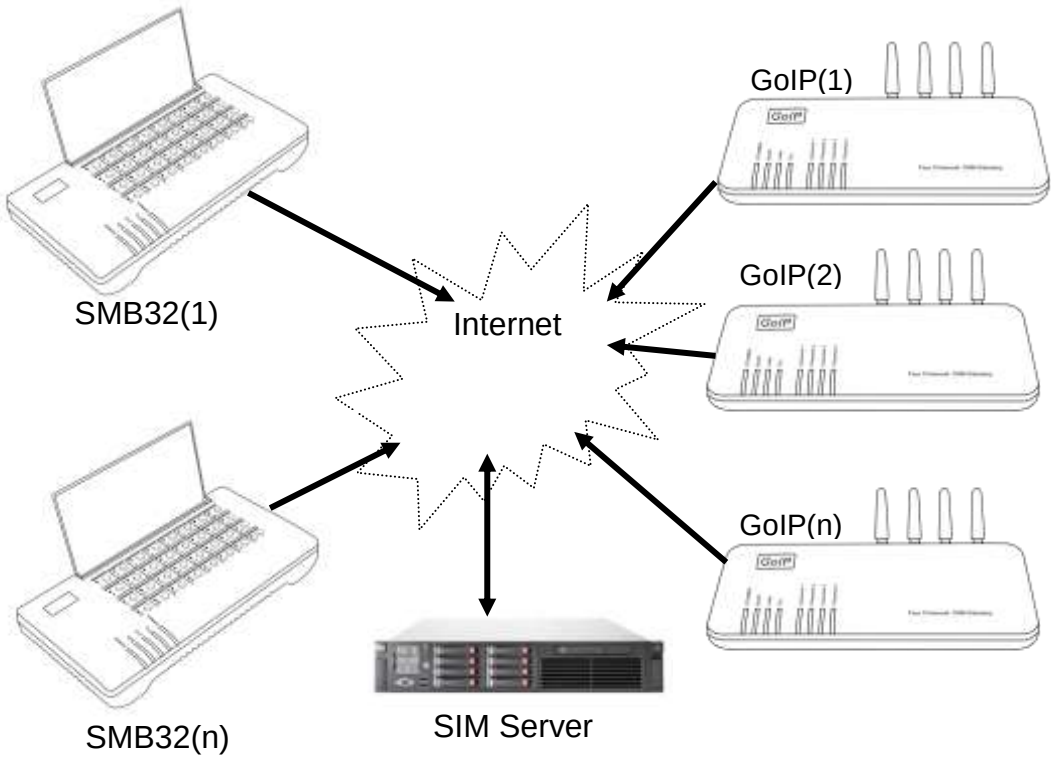
SIM Bank Scheduler Server User Manual

(for Version 1.01.1)

Introduction to the SIM of Bank Scheduler Server:

SIM Bank Scheduler Server ("SIM Server" for short) is a type of server software launched by our company for scheduling the SIM Bank and GoIP line docking. By using this software, SIM Bank and GoIP device will be registered on the SIM Bank Scheduler server via UDP network protocol, and then the user can proceed to the binding management, SIM and GoIP status query and other management operations by accessing the server with a web browser. By using a SIM Server, it is possible to manage more than 10,000 SIM cards simultaneously and to achieve the effect of unified scheduling.



Installation Requirements:

SIM Bank Scheduler management server is a set of software using PHP and mysql, which is installed in the 32-bit Linux device. It is recommended to use Centos 5 32-bit Linux system and apache web server. Version apache2 or higher, php5 or higher, mysql5 or higher is required. UTF-8 character encoding is applied to the software, if your webpage is garbled, please change the default character encoding of mysql to UTF-8. The yum instructions of Linux system may be

used for the installation of abovementioned components. Run the instructions in sequence for installation:

yum install mysql
yum install mysql-server
yum install mysql-devel
yum install mysql-client
yum install httpd
yum install php
yum install php-mysql

If you encounter any problems during the installation process, please contact with us, or we may install it for you.

The network environment packet loss rate required by this system should be less than 5 % (< 5%), the network delay should be less than 300 ms (< 300 ms) (GoIP and SIM Bank to the Server respectively), and the single channel SIM peak flow should be 11 kbs.

Installation:

It is required to enter the mysql root user password for installation, and the installation steps are as follows:

Log in the Linux system as system root user.

Run command: wget http://118.142.51.162/update/smb_scheduler_install.tar.gz to download the installation package.

Run command: tar-xzvf smb_scheduler_install.tar.gz to uncompress package.

Run command: cd smb_scheduler_install to enter the installation folder.

Run command:. ./smb_scheduler_install.sh to install.

The installation process is interactive installation, which is as follows:

./smb_scheduler_install
Starting Sim Bank Scheduler Server install

Configure httpd config:
Enter the httpd config file PATH: (default: /etc/httpd/conf/httpd.conf)
Default press Enter

Import Databases
Enter the Mysql root password if the password exist:

Enter your Mysql PATH: (default: /usr/bin/mysql)
Default press Enter

Copying file to /usr/local/smb_scheduler
Install finish.
Please restart your httpd
Sim bank scheduler URL: http://your_ip/smb_scheduler

Reboot httpd server (/etc/init.d/httpd restart) when the installation is completed. The management interface can be accessed by opening http://your_ip/smb_scheduler with a browser, default user name: admin, password: admin

Note:

1. The system will run two programs (xchanged and smb_cheduler) in the background, if these two processes are not started, manually run /usr/local/smb_scheduler/run_scheduler, and add /usr/local/smb_scheduler/run_scheduler into the boot automatic operation.
2. If the processes are still not started, please check whether the mysql database is installed perfectly and whether php-mysql components are installed or not.
3. If the firewall is enabled by the operating system, please add 56011 udp port to the trust list.

Update:

Where the old version has been installed and it is required to update to a new version of SIM Server, the update steps are as follows:

Log in Linux system as root user.

Run command: wget http://118.142.51.162/update/smb_scheduler_install.tar.gz to download installation package.

Run command: tar-xzvf smb_scheduler_install.tar.gz to uncompress package.

Run command: cd smb_scheduler_install to enter installation folder.

Run command: ./update.sh to update.

Management:

Open the browser and enter http://IP/smb_scheduler, replace the IP with your IP address and then you can enter the system login interface, default user name: admin, password: admin. The management interface is shown in figure:

The working process of Remote SIM is as follows: both the GoIP line and SIM Bank Slot are registered on the SIM Server, and then the SIM Server will bind one GoIP line with one SIM Slot according to the settings, so that the GoIP module may make the operators be registered through

the communication between the server and the SIM Card in SIM Slot. In this way, the line may run normally.

GoIP line-SIM SLot binding approaches are broken down into two modes:

The first is the manually fixed mode: the user can specify the binding between a certain SIM Slot and a specific GoIP line, and it will not change once the binding has been done (see 1.1.2.2 Modify Slot Parameters and 1.2.2.2 Modify GoIP Line Parameters).

The second is the group scheduling mode: the user creates a scheduling group and places the SIM Slot and GoIP line which are need to be bound together into the group in which the cross dynamic binding is conducted by system in accordance with the group scheduling rules. The group is featured by two properties, namely re-allocation Interval (working time) and sleep time (see 1.3 Group Management), and GoIP has the property of zone(area) ID (see 1.2 GoIP Terminal Management). The group scheduling process is as follows:

1. At the very beginning, SIM Slot and GoIP line in the group bind randomly and start to run normally;
2. When the working time ends, SIM Slot and GoIP line cancel the binding and turn into the hibernation state;
3. When the hibernation time ends, SIM Slot and GoIP line rebind in accordance with the following conditions: (1) SIM Slot will not select the GoIP line with which it has been bound last time (in order to achieve the effect that the SIM card may automatically switch the Channel) ; (2) SIM Slot will not select the line which has the same area ID with the GoIP line with which it has been bound last time (in order to achieve the effect that the SIM card may automatically switch the location). Repeat working processes 2 and 3 after the re-binding.

Detailed Description The software consists of four major parts: Configuration, Monitor, Data Manage and User Manage. The Configurations are the highlight of the software.

1. Configuration:

1.1 SIM Bank Management

1.1.1 SIM Bank Terminal Management

1.1.1.1 SIM Bank List

Click Configuration -> SIM Bank to enter the SIM Bank List.

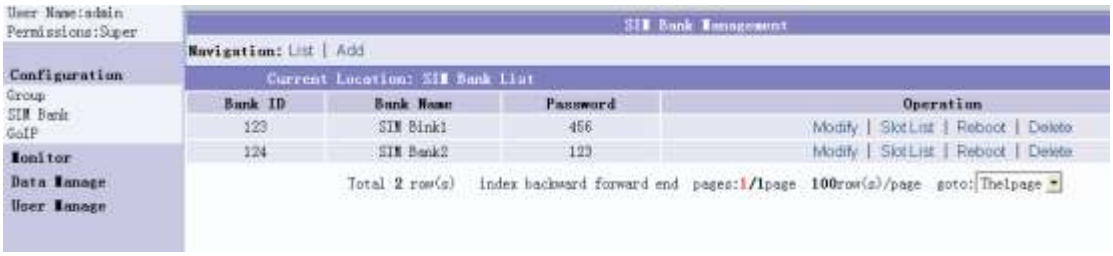


Figure: SIM Bank List

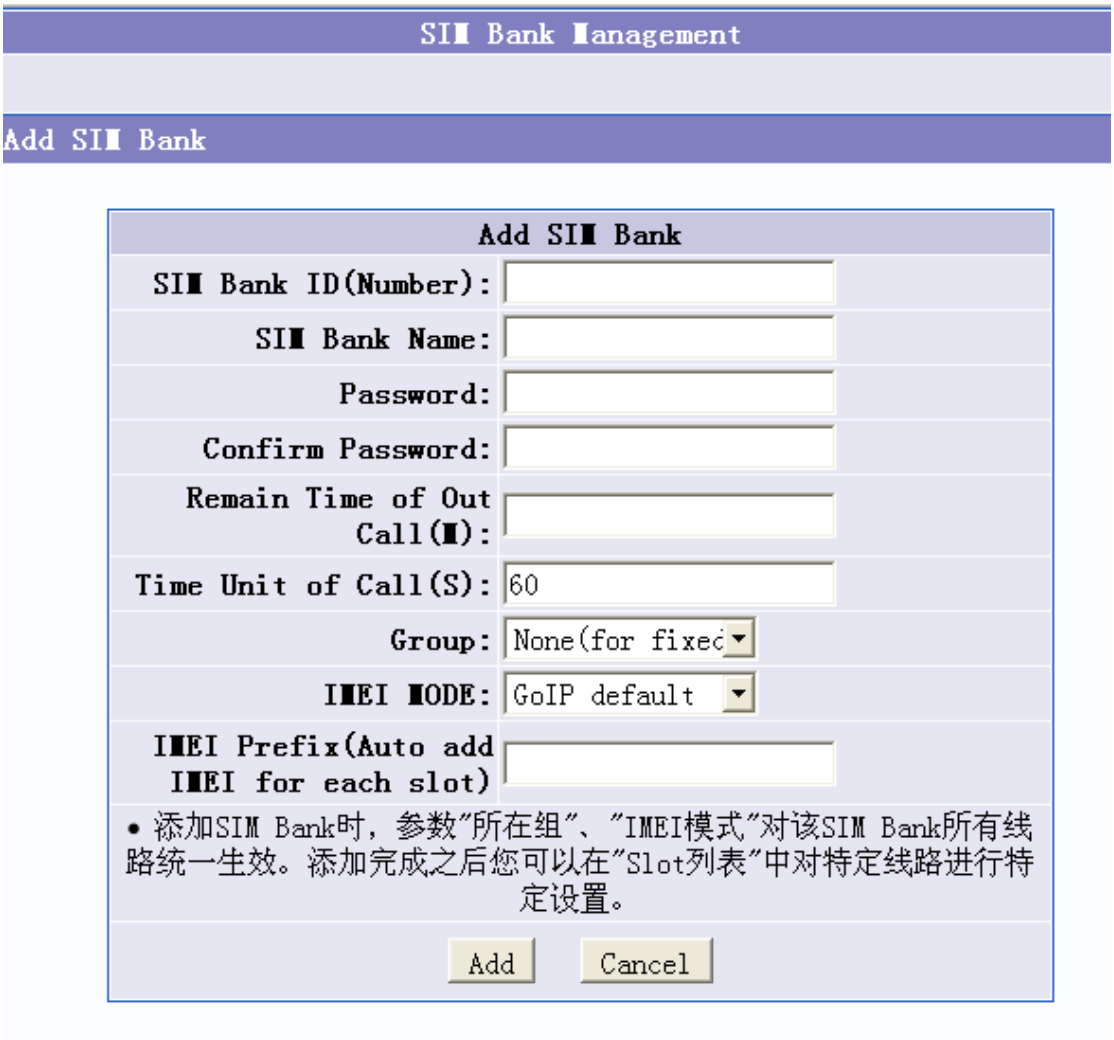
The parameters of the SIM Bank such as Bank ID, Bank name and password can be seen from the SIM Bank List.

Bank ID: the ID for this SIM Bank set on the server by the user, which must be numeric.

Bank Name: the name of this SIM Bank given on the server by the user, which only used to easy to remember.
Password: the password of this SIM Bank set on the server by the user. SIM Bank terminal will be registered to the server according to ID and password.

1.1.1.2 Add SIM Bank

Click Add in SIM Bank management navigation to enter the adding terminal page.

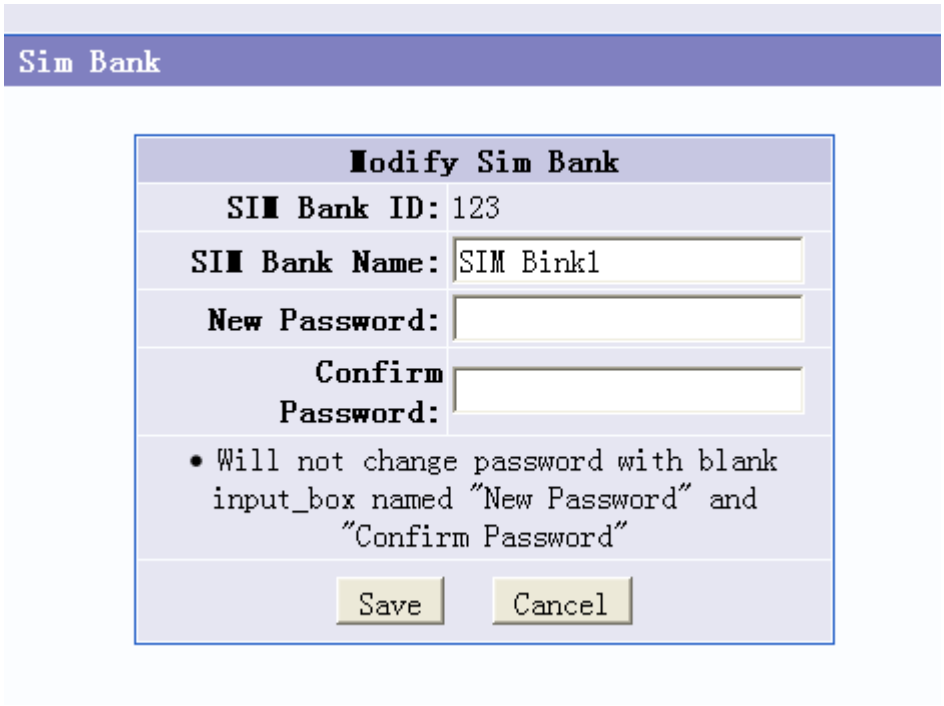


When adding SIM Bank, in addition to the parameters mentioned above such as ID, name and password, other parameters can also be specified. These parameters are the properties of the SIM Slot. When adding a SIM Bank, those parameters will take effect on the 32 Slot generated by it. Once it has been added, the user may make special modifications on these parameters in single SIM Slot. The meaning of these parameters:
The Remain Out Call Time (minutes): it is the limit time for the SIM Slot out call. When a call is made with the SIM Slot, the remain out call time will be calculated and less the call time. When

the remain out call time becomes 0, the SIM Slot will not be able to make a call and will not be involved in the binding with GoIP line (similar to the Disable status). If this value is left blank or negative, there is no limit time for the outbound call.
Time Unit of Call (seconds): when it refers to the computing unit for the outbound call time, the default is 60 seconds. If the call time is less than 60 seconds, it should be calculated as 60 seconds.
Group : place the Slot under the SIM Bank into a scheduling group. If there is no need for scheduling, please select the option "None".

1.1.1.3 Modify SIM Bank Parameters

Click Modify in the SIM Bank List for modification, then enter the parameter modification interface and modify the name and password.



1.1.1.4 Reboot Device

Click Reboot in the SIM Bank List to reboot the SIM Bank terminal.

1.1.1.5 Delete SIM Bank

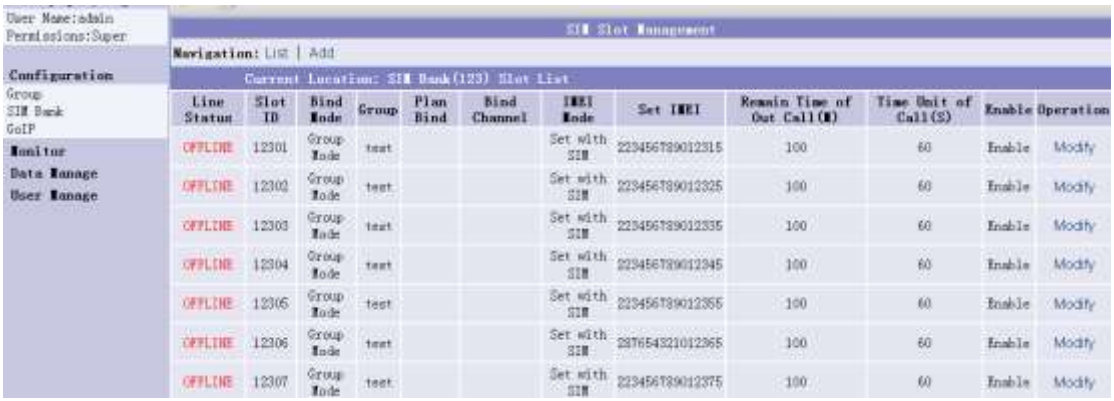
Click Delete in the SIM Bank List to delete the data of this SIM Bank on the server.

1.1.1.6 Enter Slot List

Click List in the SIM Bank List to enter the Slot List of this SIM Bank (See 1.1.2).

1.1.2 SIM Slot Management

1.1.2.1 Slot List



The following parameters may be seen in the SIM Bank Slot List:

Status: whether the SIM Slot is registered on SIM Server.

Slot ID: the ID generated for the Slot of each line according to the ID of SIM Bank. The IDs shown in the list from xxx01 to xxx32 indicate the IDs from the line 1 to the line 32.

Bind Mode: it falls into two types, namely manually fixed binding mode and group scheduling mode.

Group Location: it goes into effect only if the group scheduling mode is set as the binding mode and displays to which scheduling group the Slot belongs.

Plan Bind: it goes into effect only if the manually fixed binding mode is set as the binding mode and displays the GoIP line set by the user with fixed binding.

Bind Channel: displays the binding GoIP line at that moment.

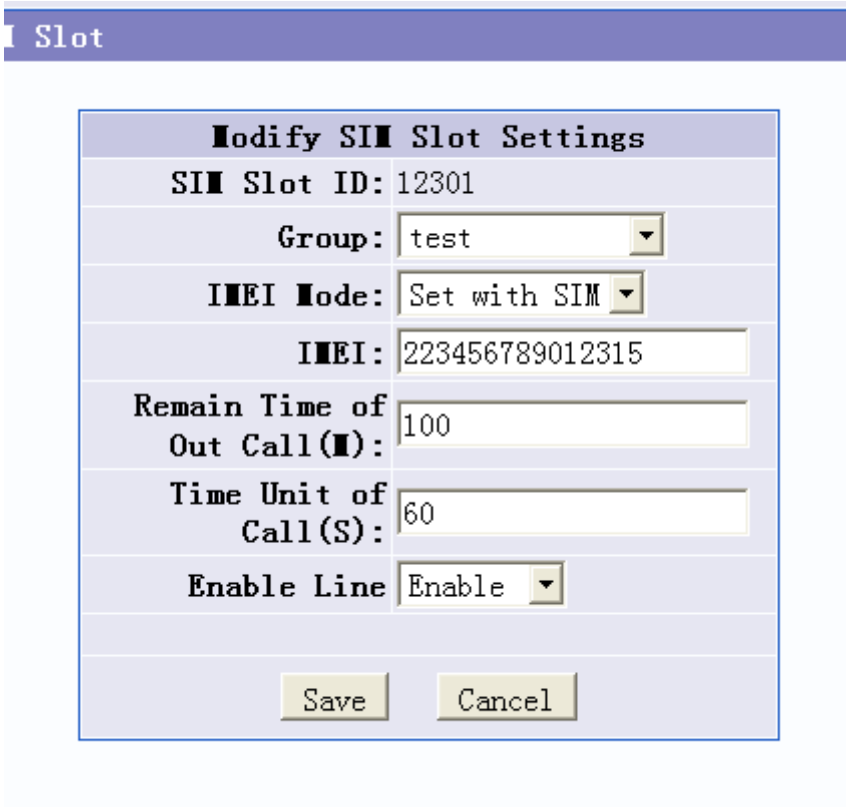
Remain Time of Out Call (minutes): it is the limit time for the SIM Slot out call. When a call is made with the SIM Slot, the remaining outbound call time will be calculated and less the call time. When the remaining outbound call time becomes 0, the SIM Slot will not be able to make a call and will not be involved in the binding with the GoIP line (similar to the Disable status). If this value is left blank or negative, there is no limit time for the outbound call.

Time Unit of Call (seconds): when it comes to the computing unit for the outbound call time, the default is 60 seconds. If the call time is less than 60 seconds, it should be calculated as 60 seconds.

Disabled or not: when the Slot is disabled, it will not be involved in the scheduling and binding.

1.1.2.2 Modify Slot Parameters

Click Modify in the SIM Slot List to enter Modify Slot Parameters page and modify the parameters of a single Slot.



Parameters Description:

Group: the scheduling group to which the SIM Slot belongs under the group scheduling binding mode, and the SIM Slot and GoIP line of the group will automatically dock with each other according to the group rules. It is set by the user on the server.

Plan to bind GoIP Channel:this option appears only when the "Group" parameter is displayed as "None", and the Slot will fall into the manually fixed binding mode. The GoIP line ID in manually fixed binding mode will also appear in drop-down list, and the ID of the GoIP line to be bound should be set by the user.

1.2 GoIP Management

1.2.1 GoIP Terminal Management

1.2.1.1 GoIP List

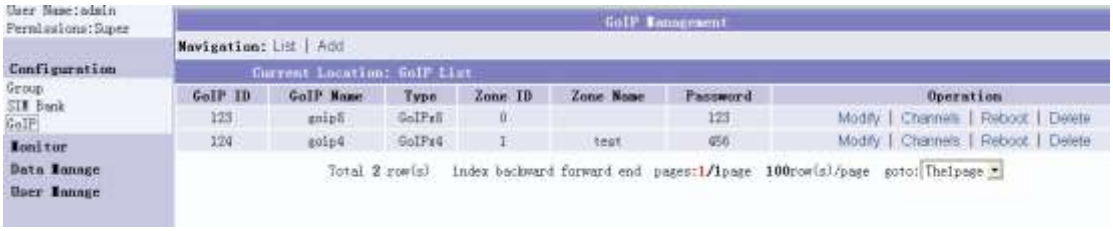


Figure: GoIP List

The GoIP parameters, including the GoIP ID, the GoIP name, type, area ID, area name and password, can be seen from the GoIP List.

GoIP ID: the ID for this GoIP set on the server by the user, which must be numeric.

Bank Name: the name of this GoIP given on the server by the user, which should be easy to remember.
Password: the password of this GoIP set on the server by the user. The same ID and password are required to be set on the GoIP terminal and registered on the server.
Type: the model of GoIP, currently there are GoIPxn..
Zone ID: the ID of GoIP location, for example, the GoIP located in place a will be set as area 1, while the GoIP located in place b will be set as area 2, which should be set by the user on the server and must be numeric. This property goes into effect only when the group scheduling mode is set as the GoIP binding mode.
Zone Name: a name given for this zone on the server by the users to facilitate their own memory.

1.2.1.2 Add GoIP

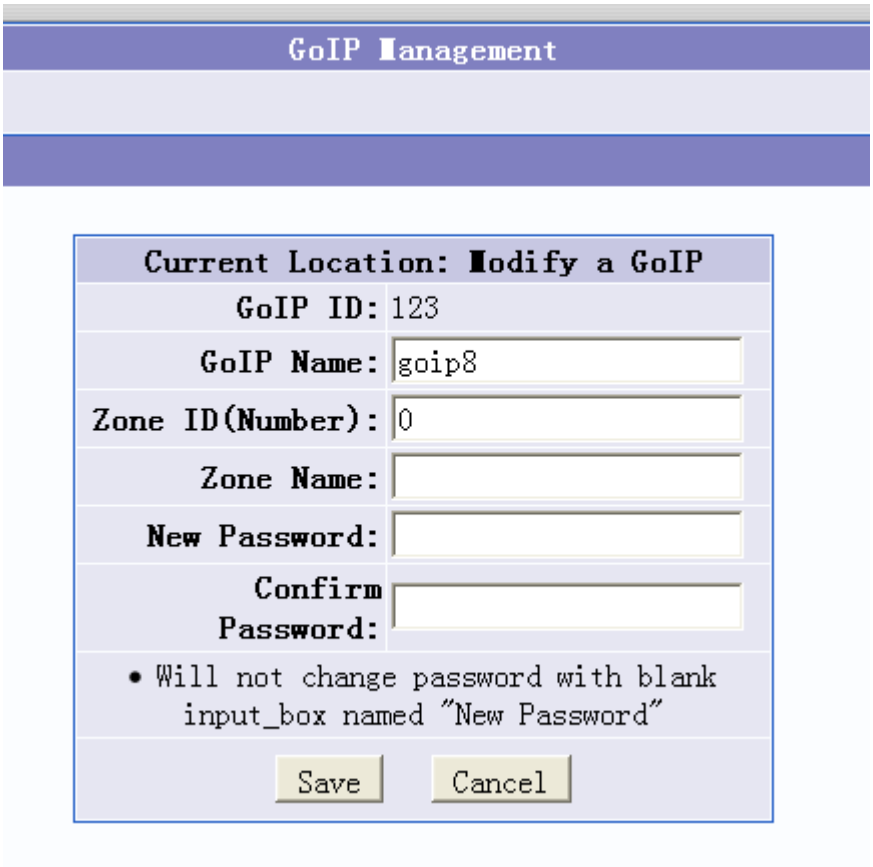
Click Add in GoIP management navigation to enter the adding terminal page.

When adding GoIp, in addition to the parameters mentioned above, the group location can also be assigned. All the GoIP lines will be placed in this group when adding GoIP, and then the user may set a certain line separately in the GoIP Line List.

Group: place the line under the GoIP into a scheduling group. If there is no need for scheduling (manually fixed binding mode is required), please select the option “None”.

1.2.1.3 Modify GoIP Parameters

Click Modify in the GoIP list, then enter the parameter modification interface and modify the GoIP name, area ID, area name and password.



1.2.1.4 Reboot Device

Click Reboot in the GoIP List to reboot the GoIP terminal.

1.2.1.5 Delete GoIP

Click Delete in the GoIP List to delete the record of this GoIP on the server.

1.2.1.6 Enter GoIP Line List

Click Channels in the GoIP List to enter the line list of this GoIP (See 1.2.2).

1.2.2 GoIP Line Management

1.2.2.1 GoIP Line List

The following parameters may be seen from the GoIP Line List:

Status: offline indicates that the line has not been registered on the server, online indicates that the line has been registered on the server, IDEL indicates that the line has been registered on the server and it is idle, BUSY indicated that the line is busy.

GSM Status: shows whether the operators are registered on the line module, which can be divided into LOGIN and LOGOUT.

ID: the ID of GoIP.

The GoIP name: the set name of GoIP.

Line ID: the ID generated for each line according to the ID of GoIP. The IDs shown in the list from xxx01 to xxx08 indicate the IDs from the line 1 to the line 8.

Bind Mode: it falls into two types, namely manually fixed binding mode and group scheduling mode.

Group Location: it goes into effect only if the group scheduling is set as the binding mode and displays to which scheduling group the line belongs.

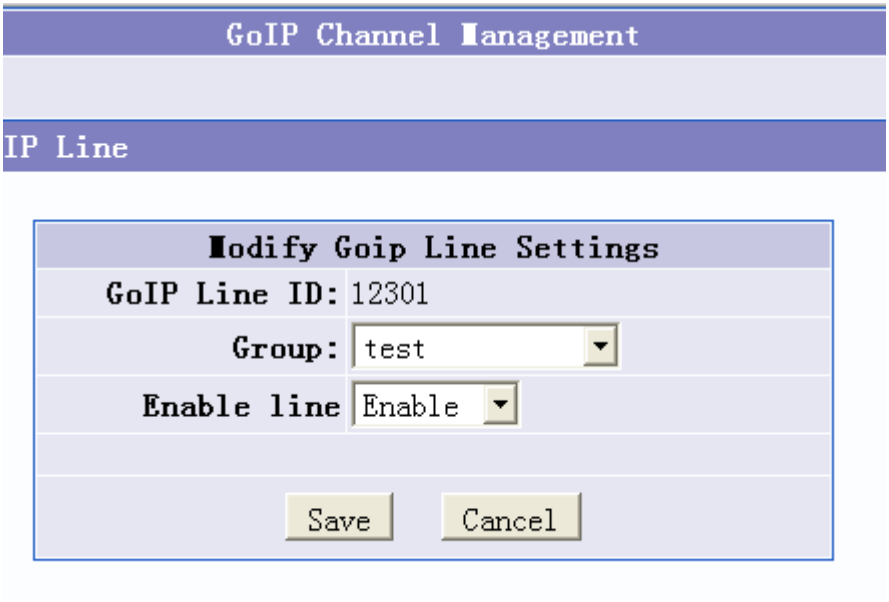
SIM Bind: displays the binding SIM Slot at that moment.

Disabled or not: when the GoIP line is disabled, it will not be involved in the scheduling and binding.

1.2.2.2 Modify GoIP Line Parameters

Click 

in the GoIP Line List to enter the Modify GoIP Line Parameters page and modify the parameters of a single GoIP line.



Parameters Description:

Group: the scheduling group to which the line belongs under the group scheduling binding mode, and the SIM Slot and GoIP line of the group will automatically dock with each other according to the group rules. It is set by the client on the server.

Plan to bind SIM: this option appears only when the “Group” parameter is displayed as “None”, and the GoIP line will fall into the manually fixed binding mode. The SIM Slot ID in manually fixed binding mode will also appear in drop-down list, and the SIM Slot ID to be bound should be set by the user.

1.2.2.3 Reboot GoIP Line Module

Click Reboot to reboot the GSM module of the GoIP line.

1.3 Group Management

Click Configuration -> Group Management to enter the group list

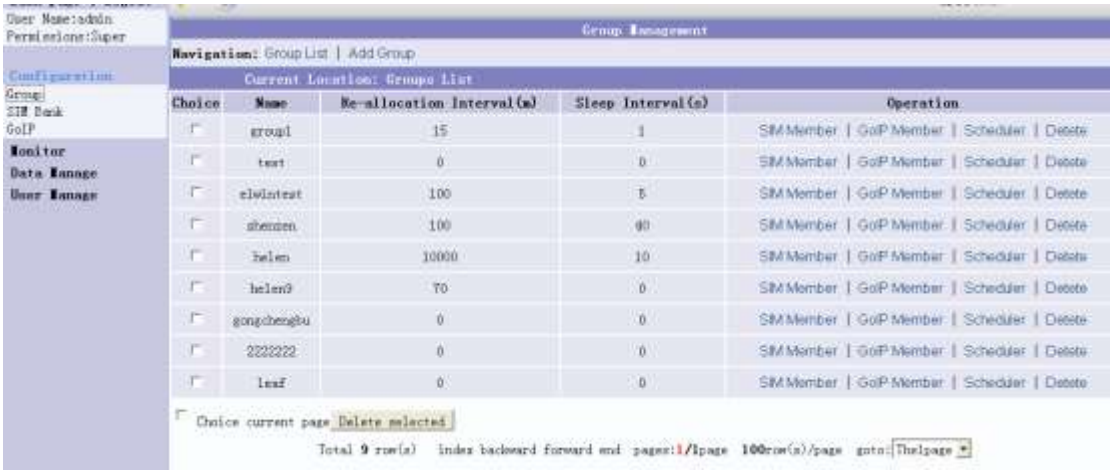


Figure: Group List

After a few SIM Slot and GoIP lines are placed into the same group, the server will carry out the automatic docking (binding) operation for the Slot-Channel lines within the group in accordance with the rules, and Slot-Channel may achieve the phone conversation function only if the docking (binding) has been done successfully.

Group Properties Description:

Name: the name given by the user while creating a new group.

Re-allocation Interval (Working Time): the continuous running time after each docking has been done.

Sleep Interval (Hibernation Time): after the end of the continuous running stage, the Slot-Channel in docking (binding) status may cancel the docking (binding) status and enter the hibernation stage; after the end of the hibernation time, it may proceed to the next docking (during the docking process, SIM Slot will not select the GoIP line with which it docked last time; and if the area property of GoIP Channel has a value (nonzero), the SIM Slot line will select a GoIP line of which the area is different with the one it docked last time. For example, if the GoIP line docked with SIM Slot ID 10032 last time belongs to area 1, then SIM Slot will select the GoIP line which does not belong to area 1 for the new docking, and this process may exceed the hibernation time), so as to achieve the roaming effect of SIM card and proceed to the next continuous running stage. In order to ensure that the process may proceed smoothly and rapidly, try to ensure that the numbers of lines in different areas are basically the same so as to prevent long hanging or uneven distribution.

Operation: it allows the user to manage sim line and goip line, modify Re-allocation Interval and Sleep Interval of the group or delete the group.

1.3.1 SIM Slot Line Management in Group

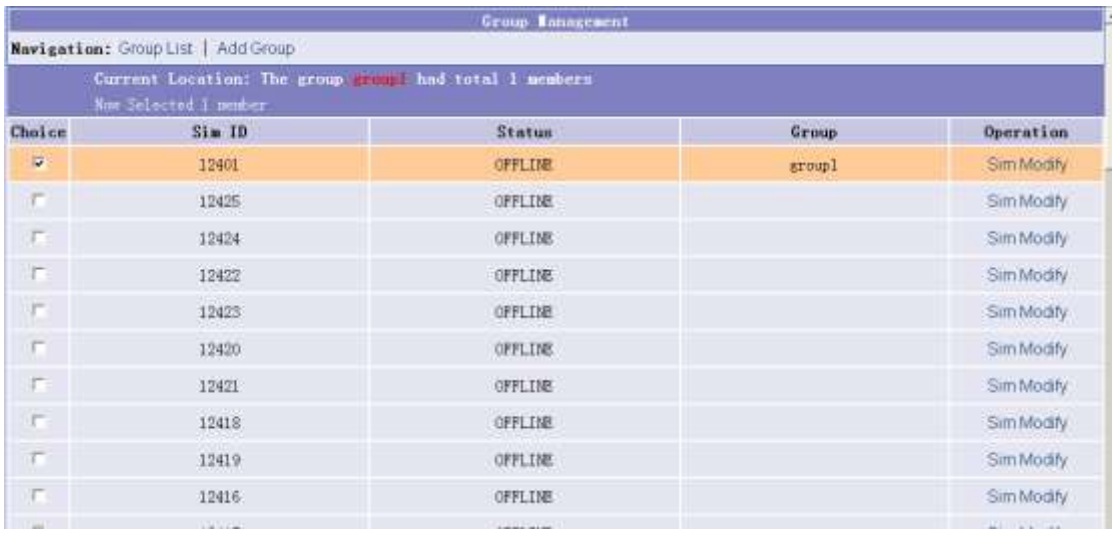


Figure: SIM Slot Management in Group

Click SIM Member to enter the page. This page lists all the SIM Slots on the server and shows all the SIM Slots of this group (marked with tick and shown in red), where the user may specify certain lines and place them into this group.

1.3.2 GoIP Line Management in Group

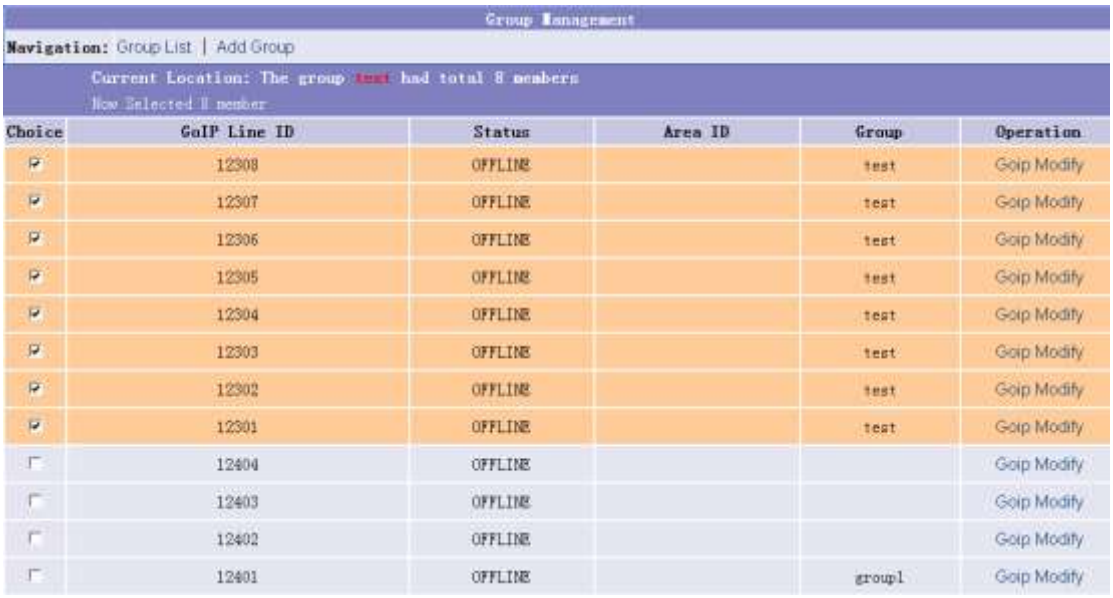


Figure: GoIP Line Management in Group

Click GoIP Member to enter the page, which is similar with SIM Slot line.

1.3.3 Modify Group Scheduling Rules

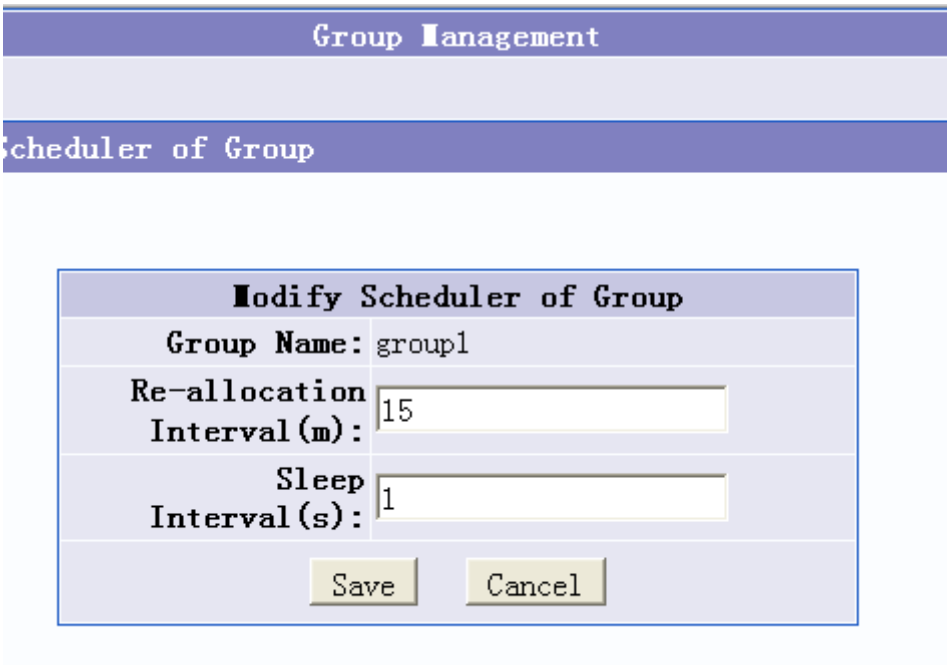
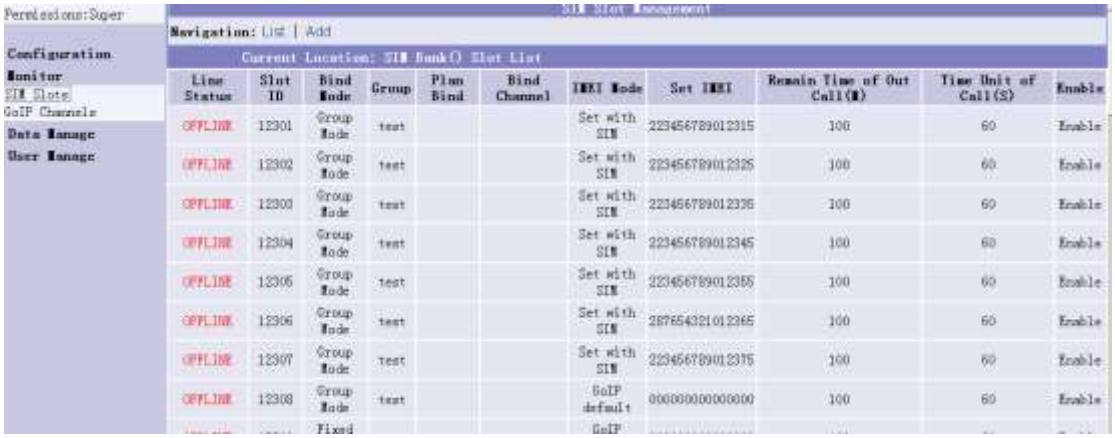


Figure: Modify Group Rules

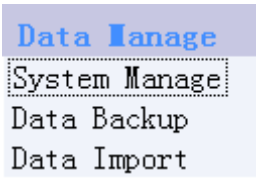
Click Scheduler to enter the modification page and modify the Re-allocation Interval (minutes) and Sleep Interval (seconds) of group rules.

2. Status

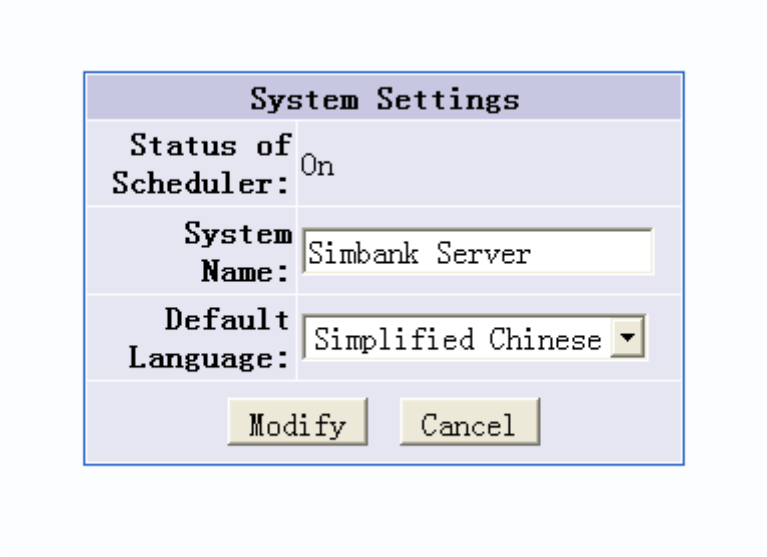
All the lines on the server may be seen from Monitor ->SIM Slot and Status-> GoIP Line.



3.Data Manage



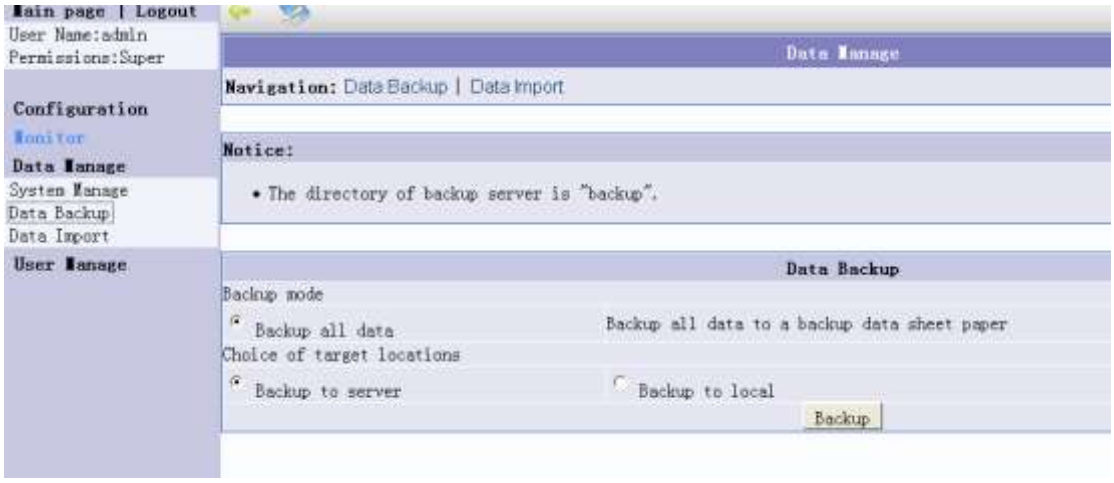
3.1 System Parameters Management



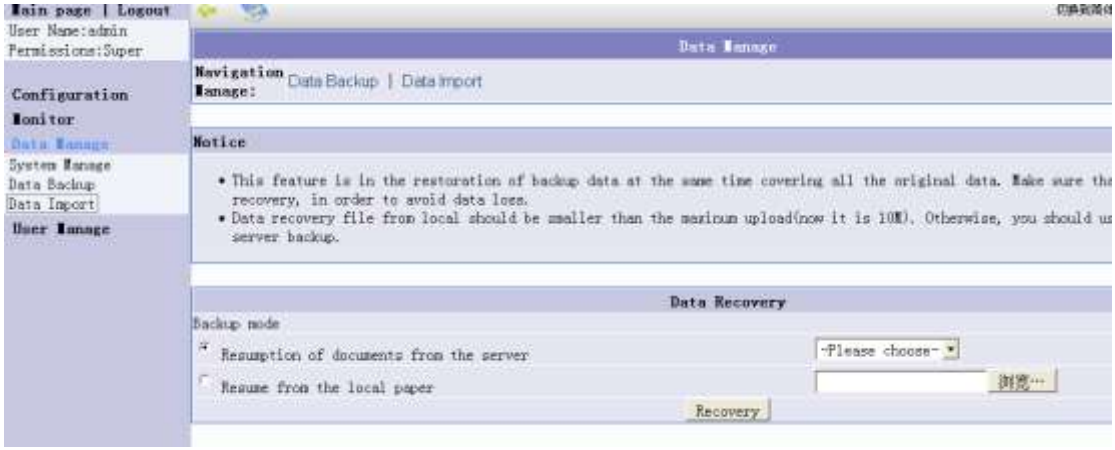
Status of Scheduler: Displays whether the background processes smb_scheduler and xchanged run normally, and it is normal while “On” is shown.
Default Language: select Chinese or English.

3.2 Data Maintenance: back up and restore data

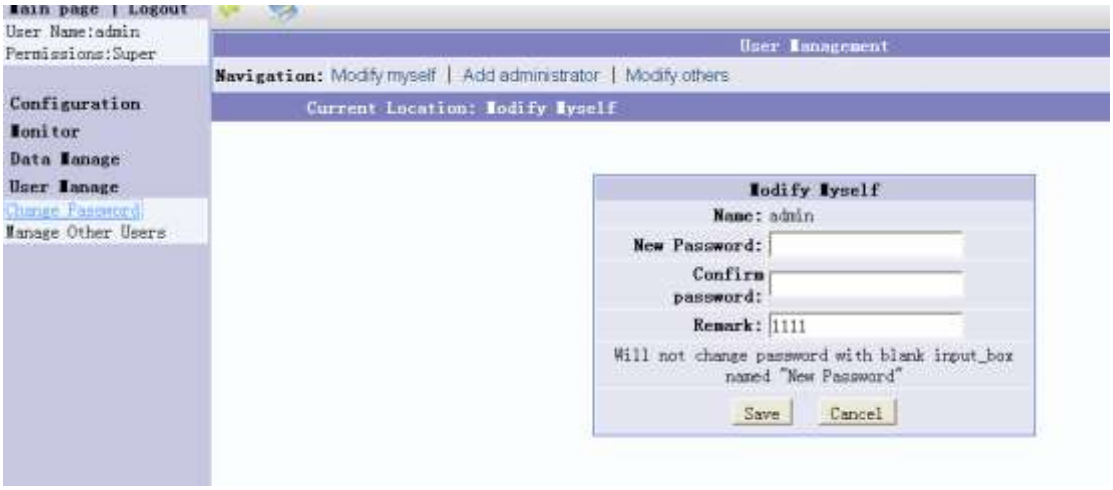
3.2.1 Data Backup: the data in mysql database may be selected to backup to the server or the Local computer.



3.2.2 Data Import: the backup data of the server or local computer may be used to restore data.



4. User Manage

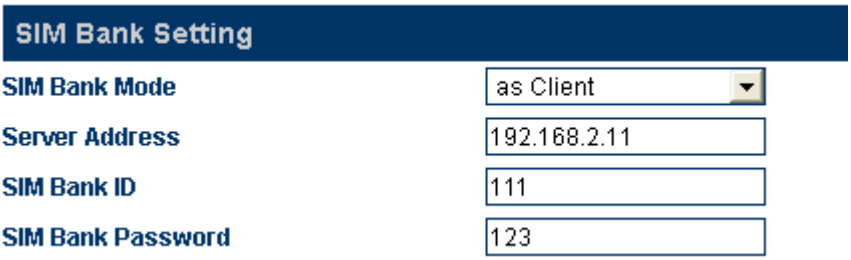


The users may modify their own login password.

Senior administrator may modify the server user's information, add and delete user in User Manage-> Manage Other Users

The user's permissions fall into two categories, namely Super administrator and Normal administrator. Normal administrator does not have the permission to manage other users and database import.

Settings of SIM Bank Terminal Page:

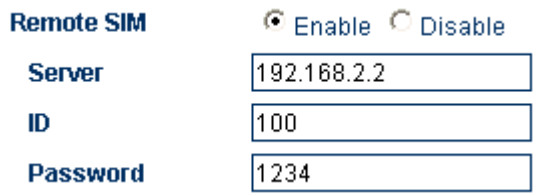


After the information of SIM Bank has been added on the server, the registration of server is completed only after the client-side mode has been enabled on the SIM Bank terminal and the card has been inserted.

User ID and password are the ID and password set on the server for the SIM Bank.

Note that the SIM Bank Slot is registered on the server only when the SIM Card has been inserted.

Settings of GoIP Terminal Page



After the information of GoIP has been added on the server, the registration of server is completed only after the remote SIM has been enabled on the GoIP terminal.

User ID and password are the ID and password set on the server for the GoIP.