

SIM Server

Installation Guide

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1. Server System

The SIM Server requires to run on Linux OS and it has been tested to be compatible with Linux OS from RedHat, CentOS, Debian, and Ubuntu.

1.1 Extended Library

Login to the Linux server with the “root” ID and execute the following command to determine if the server is a 32-bit or 64-bit system

```
uname -a
```

If the response is “i386” or “i686”, it means that your server is a 32-bit system. There is no need to install any extended library.

If the response is “x86_64”, it means that your server is a 64-bit system and you need to install the following extended library.

For RedHat / CentOS installation, execute the following command.

```
yum install -y glibc.i686 zlib.i686 zlib.x86_64 krb5-libs.i686 krb5-libs.x86_64
```

For Debian / Ubuntu installation, execute the following commands.

```
dpkg --add-architecture i386 && apt-get update
```

```
apt-get install lib32z1-dev libgssapi-krb5-2:i386
```

1.2 LAMP

LAMP is an archetypal model of web service stacks, named as an acronym of the names of its original four open-source components: the Linux Operating System, the Apache HTTP Server, the MySQL relational database management system (RDBMS), and the PHP programming language.

SIM Server must run in a LAMP environment; therefore, all LAMP components must first be installed and configured properly before installing the SIM server.

For CentOS 5 or 6:

a) Type the following command to install the LAMP and common extended packages

```
yum -y install httpd php mysql mysql-server php-mysql mod_perl \  
mod_auth_mysql php-mcrypt php-gd php-xml php-mbstring php-ldap php-pear \  
php-xmllrpc libdbi-dbd-mysql
```

b) Type the following command to start MySQL and Apache

```
service mysqld start && service httpd start
```

c) Type the following command to start MySQL and Apache on server at start up

```
chkconfig mysqld on && chkconfig httpd on
```

For CentOS 7:

- a) Issue the following command to install the LAMP and common extended packages

```
yum install -y httpd php mariadb mariadb-server php-mysql php-gd php-ldap \
php-odbc php-pear php-xml php-xmlrpc php-mbstring php-bcmath php-mhash
```

- b) Type the following command to start MySQL and Apache

```
systemctl start mariadb.service && systemctl start httpd.service
```

- c) Type the following command to start MySQL and Apache on server start up

```
systemctl enable mariadb.service && systemctl enable httpd.service
```

For Ubuntu:

- a) Type the following command to start both MySQL and Appache

```
apt-get install -y mysql-server mysql-client apache2 php5 php5-mysql
```

2. SIM Server Instatllation and Execution

Please first visit the software download site below to note obtain the link for the latest SIM Server Installation package.

<http://www.dbltek.com/Software-Download.html>

Here are the installation steps (Use version 1.19 as an exmaple):

- a) To download and decompress the installation package, type the following commands at the server system prompt. Please note that the link obtained above is attached after the command “wget”.

```
wget http://dbltek.com/update/smb_scheduler_install-v1.19.tar.gz
tar -xvzf smb_scheduler_install-v1.19.tar.gz -C /root
```

- b) Type the following commands to execute the installation script.

```
cd /root/smb_scheduler_install
chmod +x smb_scheduler_install.sh
./smb_scheduler_install.sh
```

Here are interactive display and responses during the installation process.

Configure httpd config:

Enter the httpd config file PATH: (default: /etc/httpd/conf.d)

Default press Enter

Configure the apache settings or just press “Enter” to use the default settings.

Import Databases

Enter the Mysql root password if the password exists:

Enter the MySQL password. If no password is set, just press "Enter" to continue.

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

Default press Enter

Enter the MySQL directory path. Just press "Enter" to use the default MySQL path

c) Type the following command to restart the apache server

For CentOS 5 or 6

`/etc/init.d/httpd restart`

For CentOS 7

`systemctl restart httpd.service`

For Ubuntu or Debian

`/etc/init.d/apache2 restart`

d) Firewall

If a firewall is enabled, please make sure the **TCP port 80, 56012, and UDP port 56011** are opened for internet traffics. For security reasons, please do not use those ports for other applications.

Once the installation is completed, type the following address in a browser to login to the SIM Server. The default login ID/password is "admin/admin".

Note: Should you encounter any problems during the installation, please contact technical support (<http://en.dbltek.com/contactus.html>) for help.

https://<server IP>/smb_scheduler

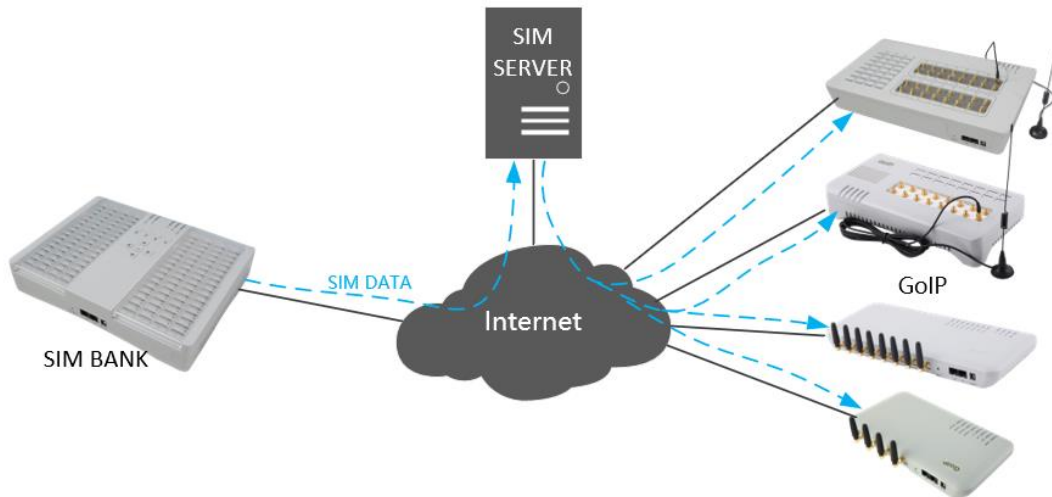
For the first time login, it is strongly recommended to change the password immediately. On the left menu column, click "User Manage" and then "Change Password" to access the window below.

Modify Myself	
Name:	admin
New Password:	<input type="text"/>
Confirm password:	<input type="text"/>
Remark:	1111
Will not change password with blank input_box named "New Password"	
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

3. Basic Configuration

3.1 Overview

The topology diagram below shows a typical network setup for SIM Server, SIM Banks, and GoIPs.



The SIM Server performs the following major features.

1. Support SIM Bank registration. Once a SIM Bank is registered, each SIM Slot on board will have a unique SIM ID.
2. Support GoIP registration. Once a GoIP is registered, each line on board will have a unique Line ID.
3. Support fixed binding of a SIM slot to a GoIP line.
4. Support auto binding for SIM slots and GoIP lines that are assigned to the same group.
5. Support SIM Balance checking and recharging via SMS or USSD.
6. Monitoring and restricting call activities.
7. Simulating call activities that are similar to human behavior.(Programmable).
8. Support different IMEI schemes.

3.2 Adding a Group

Since each carrier may have a few different types of SIM cards for various service plans, it is necessary to categorize the SIM cards into different groups. This means the SIM slots needs to be categorized accordingly as well. In addition, the GoIP lines that are designated for the deployment of a particular group of SIM cards are needed to be assigned to the same group. This enables the SIM Server to automatically bind the SIM slots (with SIM cards inserted) to the GoIP lines that are in the same group. As a result, a wide range of SIM cards can be supported by creating multiple groups created.

1. Click "Group" in the menu blow.

Main Logout
User Name:admin
Permissions:Super
Configuration
Group
SIM Bank
GoIP
<u>Group Scheduler</u>
Human Behavior
IMEI Database
Monitor
Data Manage
User Manage

2. Click "Add Group" in the navigation bar below.

Navigation: Group List Add Group
Current Location: Add a Group

3. Assign a group name and then click "Add"

Add a Group	
Group Name:	<input type="text" value="Group1"/>
<input type="button" value="Add"/>	<input type="button" value="Cancel"/>

3.3 Adding a SIM BANK

As similar to 3.1 Add Group, click "SIM Bank" on the left hand menu and then "Add" on the navigation bar to access the "Add SIM Bank" window below.

Add SIM Bank	
SIM Bank ID(Number):	1 *
SIM Bank Name:	SMB1
Password:	1234 *
Type:	SMB32 *
Group:	None(for fixed b
IMEI MODE:	GoIP default
IMEI Prefix(Auto add IMEI for each slot)	
Limit Time of Out Call(M) of a Month:	(Reset Day <input type="checkbox"/>)
Limit Time of Out Call(M):	
Time Unit of Call(S):	60
Limit Count of Out Call:	
Limit Count of No Connected Out Call:	
Warning Consecutive No Ring Call:	For Disable <input type="checkbox"/>
Warning Consecutive No Answer Call:	For Disable <input type="checkbox"/>
Warning Consecutive Short Call:	For Disable <input type="checkbox"/>
Short Call time(S):	
<ul style="list-style-type: none"> • Limit=-1 or null, means no limit 	
<input type="button" value="Add"/> <input type="button" value="Cancel"/>	

1. SIM Bank ID(Number) – This is the login ID (numbers only) for the SIM Bank. The same ID must be used when configuring a SIM Bank.
2. SIM Bank Name – This is a reference name for the SIM Bank with ID defined in 1. This is an optional field and can be leaved as blank.
3. Password – This is the login password for the SIM bank with the login ID as defined in 1.
4. Type – This specifies the SIM Bank model and it tells the SIM server how many SIM card slots are available in the SIM Bank.
5. Group – This property enables SIM Banks to be classified for group operation based on certain predefined conditions. SIM cards are not binded to a specific GoIP channel only. In order to be able to select a Group, you must first define a Group as defined in section 3.1. The default setting is “None (for fixed bind)”and this means all SIM slots will not be binded to any GoIP channels automatically. The ID for each slot will be the SIM ID + “slot #”. For example, if the SIM ID is 101 and the slot number is 22, then the Slot ID is 10122.
6. IMEI MODE – This defines which method is used to assign an IMEI to the binded GoIP channels. Five IMEI modes are available:
 - a. GoIP Default
 - b. Random
 - c. Set with Slot
 - d. Random with IMEI
 - e. Set from database with IMEI
7. IMEI Prefix(Auto add IMEI for each slot) –When the IMEI Mode is set to “Random with IMEI”, this IMEI Prefix defines the first 8 digits and the other 7 digits are automatically generated by the SIM

Server.

8. Limit Time of Out Call(M) of each Month – This sets the monthly limit for total call duration.
9. Limit Time of Out Call(M) – This sets the call duration limit for each outbound call.
10. Time Unit of Call(S) – This defines the billing increment in second.
11. Limit Count of Out Call – This defines the maximum number of outbound calls.
12. Limit Count of No Connect Out Call – This the limit for unanswered outbound calls.
13. Warning Consecutive No Ring Call – Trigger an alert when the number of consecutive outbound calls with no ringback tones exceeds the number specified. Check the “For Disable” box to disable the respective SIM Card.
14. Warning Consecutive No Answer Call – Trigger an alert when the number of consecutive unanswered outbound calls exceeds the number specified. Check the “For Disable” box to disable the respective SIM Card.
15. Warning Consecutive Short Call – Trigger an alert when the number of consecutive outbound calls with call duration less than the value specified in “Short Call Time” exceeds the number specified. Check the “For Disable” box to disable the respective SIM Card.
16. Short Call Time – A Call with duration less than this parameter is defined as a short call.

Click “ADD” to proceed adding the SIM Bank data to the SIM Server. You are now ready to power up a SIM Bank and then configure its web page as shown below to log on the SIM Server.

SIM Bank Setting	
Status	
Configurations	
Preferences	
Network	
SIM Bank Setting	
Save Changes	
Discard Changes	
SIM Bank Mode	as Client
Server Address	<SIM Server IP>
SIM Bank ID	1
SIM Bank Password	1234
Net protocol	<input type="radio"/> UDP <input checked="" type="radio"/> TCP
Encryption Key	
SIM Auto Enable after Changed	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

1. SIM Bank Mode – Select “As Client” for connecting to a SIM Server.
2. Server Address – Fill in the SIM Server IP (Public).
3. SIM Bank ID – Fill in the SIM Bank ID that is assigned in the SIM Server.
4. SIM Bank Password – Fill in the login password that is assigned in the SIM Server for this SIM Bank ID.
5. Net Protocol – Select the network protocol to be used for communicating with the SIM Server.
6. Encryption Key – Fill in the encryption key that is assigned in the SIM Server.
7. SIM Auto Enable after Changed – This parameter determines if the SIM card is activated automatically or not when changing a SIM card in the SIM Bank.

3.4 Adding a GoIP

As similar to 3.1 Add Group, click “GoIP” on the left hand menu and then “Add” on the navigation bar to access the “Add GoIP” window below.

Add GoIP	
GoIP ID(Number):	1
GoIP Name:	GoIP1
Password:	1234
Type:	GoIPx8
Group:	None(for fixed b
Zone ID(Number):	0
Zone Name:	
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

1. GoIP ID (Number) – This is an unique ID assigned for the GoIP to be logged in the SIM Server.
2. GoIP Name – This is an optional field used to reference the GoIP by name.
3. Password – This is the login password used by the GoIP in order to login the SIM Server.
4. Type – This defines the type of GoIP to be logged in. A GoIP-8 is defined in this example.
5. Group – This Group property to the GoIP is similar to the one described in item 5 of section 3.3.
6. Zone ID (Number) – This give the GoIP a location property which will be used for SIM card management. ID equals “0” means there is no location property for the GoIP.
7. Zone name – This is a reference name for the Zone ID (optional).

Click “Save” to add the GoIP settings in the SIM Server.

You are now ready to power up a GoIP-8 and then configure the Preferences page as shown below (Square box).

Preferences			
Language (语言)	English	Network Tones	China
Time Zone	GMT+8	DDNS	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Time Server	pool.ntp.org	Auto Reboot	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Auto-provision	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	Reboot Time	04:00
	<input type="checkbox"/> Remote Control	Auto Reset CDR	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
	Web Access Security>>	IVR	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
		Remote Server	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
		Remote SIM	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
		Server	<SIM Server IP>
		ID	1
		Password	1234
		Net protocol	<input type="radio"/> UDP <input checked="" type="radio"/> TCP
		Encryption Key	
		SIM Data Format	<input checked="" type="radio"/> Long Command <input type="radio"/> Short Command
		SMPP SMSC	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
		DTMF Detect Min Gap (200-400)	270
		Channel number	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

3.5 Checking System Operation

Once the above configurations are done, you will need to access the System Status via the Monitor menu (see the blue box in the left hand menu column) to check if the SIM banks and GoIPs are properly configured and their

current status.

CH	Slot ID	Line Status	GSM Status	Bind Mode	Group	Plan Bind	Bind Channel	IMEI Mode	Set IMEI	SIM Info	Remain	Consecutive	Time Unit(S)	Sleep	Enable	Operation
<input type="checkbox"/>	101	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	102	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	103	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	104	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	105	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	106	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]
<input type="checkbox"/>	107	OFFLINE	LOGOUT	Group Mode	lee1			GoIP default	0000000000000000	SIM Info	Enough	Enough	60	Active	Enable	[MORE]

SIM Slot – Click on this to display the current settings and status of all the SIM Slots that are available from the SIM Banks registered. The settings for each SIM slot can be modified manually in this page (move the cursor to [MORE]) located at the end of each slot status line to see the [Modify] icon).

GoIP Channel – Click on this to display the current settings and status of all GSM lines that are available from the GoIPs registered. Each GoIP line can be configured individually by clicking the [Modify] icon located at the end of the status line.