SIM Cloud User Manual
(V2.1ur)

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1 About This Document

The SIM Cloud User Manual helps you to understand and work with the SIM Cloud, DWG and SIMBANK devices.

SIM Cloud supports Opened Web interface, only authorized users can log on to SIM Cloud and after logging on, each operation in the Web is governed by user privileges. Hence, to explore the various features of SIM Cloud, you need to know your user privileges accordingly. Contact your system administrator for more help on understanding your assigned user privileges.

Contents:

- Chapter 1, About This Document, is a prelude to the User Manual.
- Chapter 2, Getting Started, helps you in understanding the various types of SIM Cloud and how to bring up your service.
- Chapter 3, Working with SIM Cloud, helps you in understanding the features and solutions of SIM Cloud.
- Appendix, provides information on the SIM Cloud definitions, various properties, details, and a Glossary.

Product Support:

- For technical support, send an e-mail to support@ultiroam.com.
- For contact information, refer to Contact page on our Web site www.ultiroam.com.

Related Documents:

- For information on installing SIM Cloud in local server, refer to Installation Manual of SIM Cloud.
- For information on DWG product features, refer to User Manual of DWG.
- For information on SIMBANK product features, refer to User Manual of SIMBANK.
- For information on Open Service APIs, refer to XML-Service APIs of SIM Cloud.

2 Getting Started

This chapter introduces you to the different types of SIM Cloud and helps you in choosing the right one. This chapter also helps you in getting started with the SIM Cloud.

Topics in this chapter include:

- Understanding SIM Cloud
- Bringing Up Public SIM Cloud
- Bringing Up Local SIM Server

2.1 Understanding SIM Cloud

SIM Cloud is a centralized SIM management system based on the newest cloud technologies, SIM Cloud consists of several components including device management, SIM card management, human behavior simulation, performance statistics and open service APIs. SIM Cloud provides a web-based graphical display of information, accessed from SIM Cloud server. You can browse through the discovered devices in your network, view network and device information, manage all SIM cards, monitor their performance, and identify faults in your network.

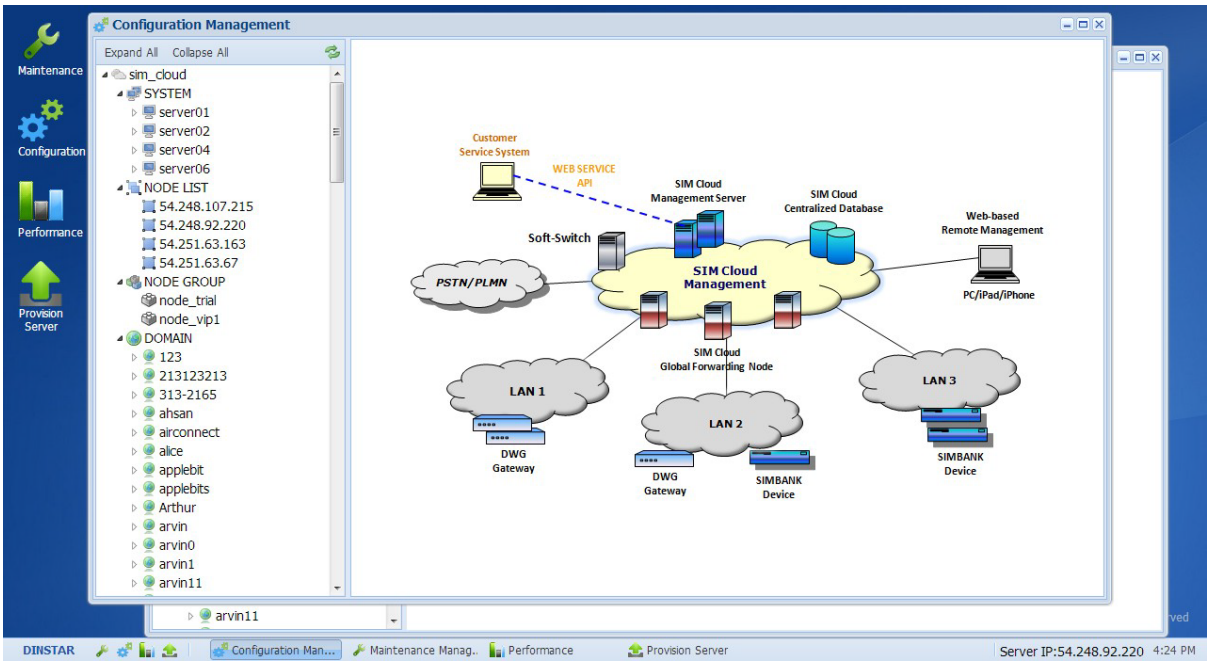


Figure 1 SIM Cloud Homepage

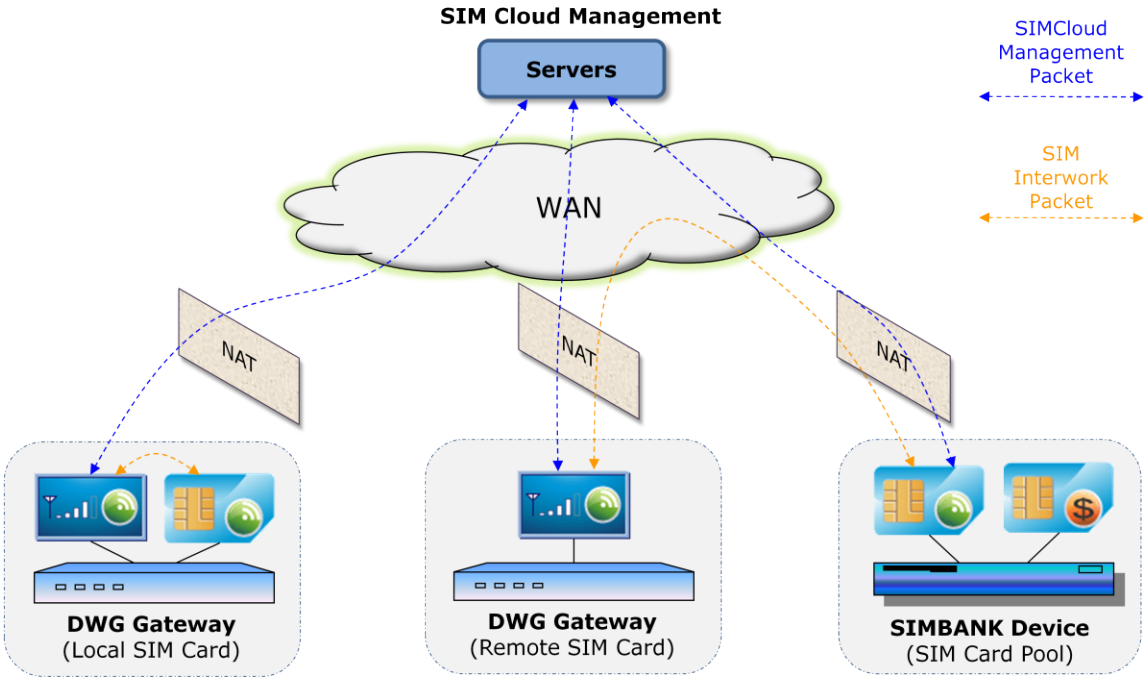


Figure 2 SIM Cloud Management

This topic helps you in understanding each type of SIM Cloud. Based on this, choose the type of SIM Cloud that best suits your need.

- Local SIM Server
- Network Requirements
- Trial Account
- Premium Account

2.1.1 Local SIM Server

Local SIM Server is a personal SIM Cloud system running at your local machine, locates at your network, e.g. VPN, and gets the benefits of low Delay and low packet loss among Local SIM Server, DWG and SIMBANK devices.

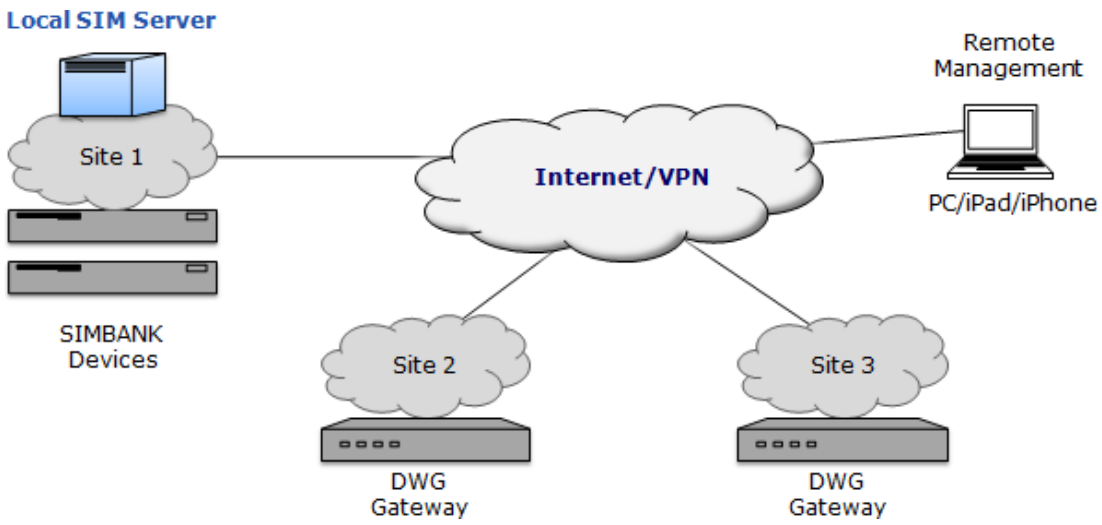


Figure 4 Local SIM Server Solution

To use Local SIM Server, you also need to register an account in Public SIM Cloud, and apply a server license of Local SIM Server under your domain, after system administrator approved your request, support guys would help to install Local SIM Server in your local server at the first time, import your server license, then make Local SIM Server running.

Local machine requirements for Local SIM Server are shown as below:

Item	Requirement	Description
CPU	2.0 GHz	e.g. Intel Xeon E5620 @ 2.40GHz
MEM	> 2 GB	e.g. 2GB DDR3 1333MHz
DISK	> 100 GB	Be used for history CDR records and long-term performance statistics
NET	GE	Bandwidth requirement is based on the number of devices managed
IP	Public IP/VPN IP	Public IP with Server Forwarding mode; VPN IP with direct IP connection without Server Forwarding between DWG and SIMBANK;
OS	Ubuntu 16.04.x	Download Ubuntu Server **16.04.x** LTS: https://releases.ubuntu.com/16.04 Ubuntu 16.04.x LTS is a long-term support release, with support guaranteed until April 2028.

2.1.2 Network Requirements

Network requirements of Public/Local SIM Server include:

- Delay Requirements
- Bandwidth Requirements
- MTU Requirements

Delay Requirements:

The Delay Requirements are shown as below:

Path of Network	Max Delay (round-trip)	Description
between DWG and Server	500ms	Device register/management packets; SIM bind/unbind packets; SIM interworking packets if Server Forwarding was required(optional);

between SIMBANK and Server	500ms	Device register/management packets SIM bind/unbind packets; SIM interworking packets if Server Forwarding was required(optional);
between DWG and SIMBANK	500ms	SIM interworking packets by direct; IP connection; SIM interworking packets by NAT traversal;

Notes:

- Gets the round-trip Delay by ping testing.
- DWG/SIMBANK can works with dynamic IP or private IP, under private IP address.
- Sometimes DWG/SIMBANK works in "Server Forwarding" mode while NAT traversal failed(e.g. caused by NAT/Firewall limitations).

Warning:

- If round-trip Delay was bigger than 500ms, would make service unstable, that issue was caused by errors in SIM interworking between DWG and SIMBANK.

The bandwidth requirements at device side are shown as below(G.723/30ms):

Device	Cloud & SIM Bandwidth (bit/s)	RTP/G.723 Bandwidth (bit/s)	Total bandwidth (bit/s)
SIMBANK-64	192K	0	192K
DWG-32	192K	686K	878K
DWG-16	128K	343K	471K
DWG-8	96K	172K	268K

Bandwidth Requirements:

The bandwidth requirements at device side are shown as below(G.729/20ms):

Device	Cloud & SIM Bandwidth (bit/s)	RTP/G.729 Bandwidth (bit/s)	Total bandwidth (bit/s)
SIMBANK-64	192K	0	192K
DWG-32	192K	1024K	1216K
DWG-16	128K	512K	640K
DWG-8	96K	256K	352K

The bandwidth requirements at device side are shown as below(with bandwidth saving ***):

Device	Cloud & SIM Bandwidth (bit/s)	RTP/G.729 Bandwidth (bit/s)	Total bandwidth (bit/s)
SIMBANK-64	192K	0	192K
DWG-32	192K	288K	480K
DWG-16	128K	160K	288K
DWG-8	96K	96K	192K

Notes:

- Cloud & SIM bandwidth is the extra bandwidth for SIM interworking and Cloud management;
- .
- [***] means the feature is not supported in current release, but will be supported in future, please contact system administrator for more information.

Warning:

- If bandwidth was smaller than the requirement, would make service unstable because of errors of SIM interworking which was caused by packet loss.

MTU Requirements:

Customer network's MTU needs to support 1300 bytes at least, otherwise too small MTU would make device connection unstable.

Warning:

- Sometimes 1300 bytes packet can't pass through special NAT/Firewall devices because of packet fragment issue, make sure your network's MTU is greater than 1300 bytes.

2.1.3 Trial Account

Trial Account supports basic features which make SIMBANK working with DWG device, only excluding advanced features such as Human Behavior Simulation and Open Service APIs. Trial Account is free for all registered users, no matter Public/Local SIM Server you are using.

Basic features are shown as below:

Type	Feature	Description
Deploy	NAT Traversal	NAT traversal based on advanced STUN protocol

Type	Feature	Description
	Global Forwarding *	Forwarding packets for device interworking to reduce Delay
	Commercial Database *	High security commercial database
	Server Redundancy *	Automatic protection switching to active server while one server was crashed or power down
	Backup/Restore Configuration	Backup whole configuration of one domain; Restore whole configuration of one domain;
Device Mgmt	Graphical Web Information	Show all information in graphical Web interface
	Device/Port Setting	Enable/Disable Device; Enable/Disable Port; Enable/Disable SIM; Configure Device/Port/SIM setting;
	Device/Port Maintenance	Graphical running status; Reset Device; Reset Port;
	Device Remote-Web	Open Remote-Web of device even if device worked with private IP
	Device Remote-Cli ***	Open Remote-Cli of device even if device worked with private IP
	Firmware Upgrade	Upgrade device firmware from provision server; Support batch upgrading;
SIM	Flexible SIM Allocation	by Time Period; by Week Day; by Working/Break Time; by Asc/Desc/Random Order; by Min/Max Used Order; by Call Time Statistics; by Call Count Statistics; by SMS Count Statistics; by USSD Count Statistics; by Specified SIMBANK Port; by Specified SIM Card; by Specified SIM Group;
	Dynamic IMEI Assignment	Assign IMEI for new SIM card; Update IMEI after SIM loaded; Update IMEI after SIM activated;
	Clean OFFLINE SIM	Monitor OFFLINE event of SIM card; Clean OFFLINE SIM card automatically;
	Send/Recv SMS	Send SMS via Web interface; Show all received SMS information;
	Send/Recv USSD	Send USSD via Web interface; Show all received USSD information;
	Send Test CALL	Send testing CALL via Web interface; Show testing CALL result;
	Simple SIM Recharge	Import/Export Paid Card list; Manually recharge SIM card by user; Support SMS/USSD/CALL recharging ways;

Type	Feature	Description
PM	15M/24H Performance Statistics	Statistics by domain; Statistics by device; Statistics by device port; Statistics by SIM group; Statistics by SIM card;
	History CDR/SMS/USSD Records *	History IN/OUT CDR records; History Send/Recv SMS records; History Send/Recv USSD records;
	Graphical ACD/ASR Report	Graphical domain ACD/ASR report; Graphical device ACD/ASR report; Graphical SIM ACD/ASR report;
	Graphical COMM Report	Graphical network Delay report; Graphical network packet-loss report;
ALM	Configurable Alarm Filter	Support user-defined alarm filters
	Configurable Alarm Level	Support user-defined alarm levels
	Current/History Alarm List	Show current alarm list; Show history alarm list;
LOG	User Operation Log	Show user operation logs
	Device Running Log	Start device log tracing; Stop device log tracing; Show device log in Web interface;
USER	Separation of Domain	Different administrative domain for each user; Unique device belonging in Public SIM Cloud;
	User Privileges	Support different user roles: administrator, operator and user-defined roles; Configurable user privileges for each role;

Notes:

- [*] means the feature was provided in Public SIM Cloud, and the maximum capacity would be limited for shared using by all registered users.
- [***] means the feature is not supported in current release, but will be supported in future, please contact system administrator for more information.

2.1.4 Premium Account

Premium Account supports all basic features and extra advanced features, these make SIM card management more effective, and the advanced features include Human Behavior Simulation, Relay Server and Open Service APIs.

Public SIM Cloud, with the way of rent, one premium user only needs to pay for premium license per year, without any one-time expenses, it is named as **public premium cost.** The cost is based on the number (N*128) of managed SIM cards and booked list of the advanced features.

Local SIM Server, with the way of authorization, one user needs to pay for software license of each server at first year, it is named as **authorization cost**. From second year, the user needs to pay for premium license of each server per year, it is named as **local premium cost**. Both authorization cost and local premium cost are based on the number(N*128) of managed SIM cards and booked list of the advanced features.

Advanced features are shown as below:

Type	Feature	Description
HBM-I	SIM Site Roaming	SIM card roaming among several sites in wide region
	SIM Number Learning	Learn SIM number by automatic SMS; Prefix conversion in SIM number learning;
	SMS Generation	Generate SMS after SIM activated; Generate SMS at the end of call; Generate SMS by random timing circle;
	USSD Generation	Generate USSD after SIM activated; Generate USSD at the end of call; Generate USSD by random timing circle;
	CALL Generation	Generate CALL to random numbers; Generate CALL between working SIM cards and testing SIM cards; Generate CALL by random timing circle;
	SIM Blocked Detection	Detect SIM availability by abnormal CDR records; Detect SIM availability by blocked notifications; Detect SIM availability by SMS testing; Detect SIM availability by CALL testing; Detect SIM availability by promotion fails; Detect SIM availability by balance check fails;
HBM-II	Promotion Management	Apply for promotion by SMS/USSD; Support Direct/Option/Number reply in promotion applying; Support promotion expired control by time period; Support promotion expired control by CALL time statistics; Support queue control of working SIM cards; Support Master SIM card;

Type	Feature	Description
	Balance Check	Inquire SIM balance by SMS/USSD/CALL; Refresh SIM balance by CDR billing; Support various billing rates by time; Inquire SIM balance after SIM activated; Inquire SIM balance at the end of normal call; Inquire SIM balance after abnormal CDR records detected; Inquire SIM balance after low-balance detected; Inquire SIM balance after SIM recharged;
	SIM Auto Recharge	Automatically recharge by balance check; Identify wrong Paid Card; Identify reuse Paid Card; Identify not available SIM card;
HBM-III	Intelligent Call Routing ***	Improve ACD/ASR by SIM allocation in whole domain; Sensitive with calling number prefix and choosing lowest-cost SIM cards;
	Black/White Number List ***	Static black/white number list; Dynamic black/white number list; Anti-Call-Scanning and reduce SIM card blocked loss;
	Address Book Service ***	Generate address book for SIM cards; Configurable aging time of address book; Assign CALL to matched SIM card by called number;
Relay	Bandwidth Saving ***	Support Relay Server; Saving bandwidth at DWG side; Saving bandwidth at SIMBANK side;
	Signal/Media Encryption ***	Support Signal(SIP) encryption; Support Media(RTP) encryption;
ALM	Flexible Alarm Notification ***	Send alarm notification via SMS; Send alarm notification via email;
API	Open Service APIs	XML-Service APIs; Web-Service APIs ***; Get device list; Get device info; Set device info; Get port list; Get port info; Set port info; Assign SIM card to DWG port; Send SMS; Get received SMS; Send USSD; Get received USSD; Send testing CALL; Get testing CALL result; Get CDR list;

Notes:

- [*] means the feature was provided in Public SIM Cloud, and the maximum capacity would be limited for shared using by all registered users.
- [***] means the feature is not supported in current release, but will be supported in future, please contact system administrator for more information.
- Premium users have higher priority over trial users to get technical supports, and software changes of customized requirements.

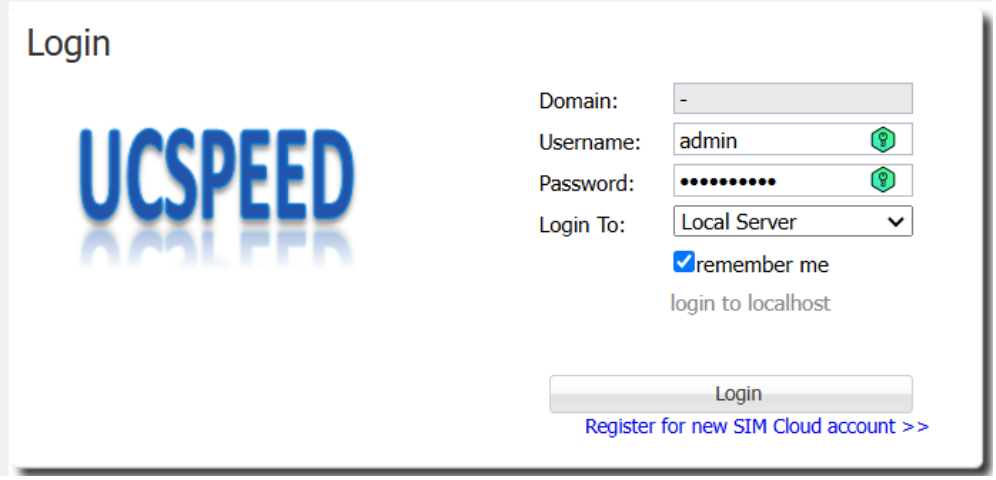
2.2 Bringing Up SIM Cloud

This topic helps you to register new account, configure DWG and SIMBANK devices, and then let devices connect to Public SIM Cloud. Based on these, start working with Public SIM Cloud.

- Register New Account
- Log On With New Domain
- Default Configuration
- Add One Device In Cloud
- Cloud Setting At Device Side

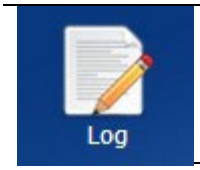
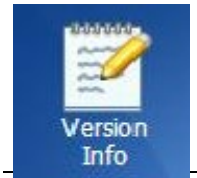
2.2.1 Logging On

Open a browser on http:/IP_Address/index.html of your server. And replacing IP_Address with the IP address of DNS name of your server:



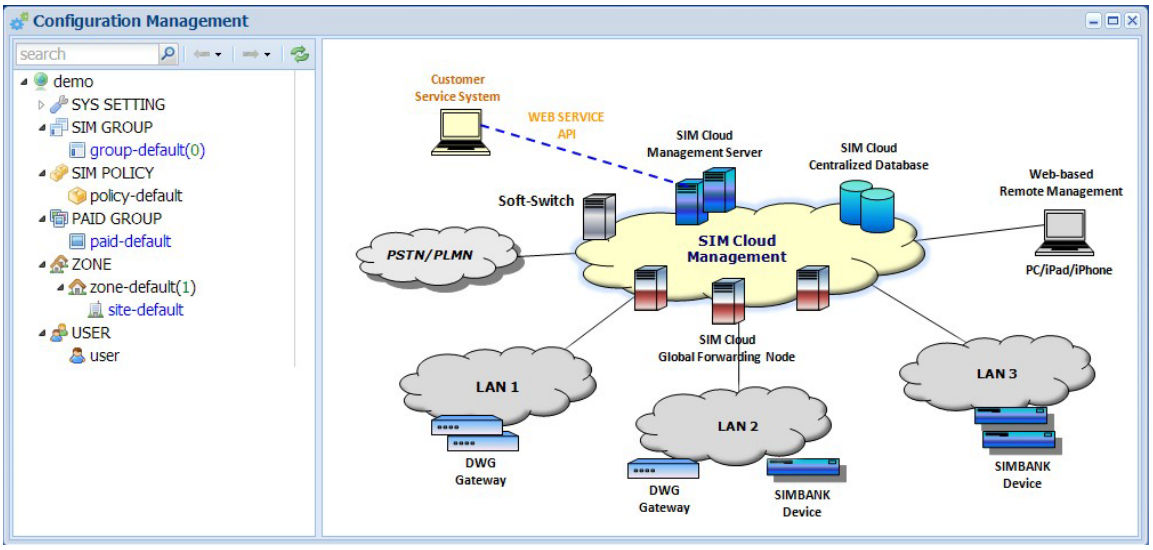
Input Username and Password, then click **[Login]** button to log on.

There are several modules on the desktop.

Module	Description
	Configure your domain, e.g. domain setting, device/port setting, zone/site setting, SIM group/SIM card setting, SIM policy/rule setting, Paid Group/Paid List setting, etc.
	Maintain all devices in your domain, e.g. device upgrade, device reset, port reset, device log tracing, etc.
	Manage all statistics data in your domain, and provide helpful 15M/24H statistics reports.
	System Log Management.
	System Version Information.
	License Management.
	Users Management.

2.2.2 Default Settings

Click **[Configuration]** icon on the desktop of Public SIM Cloud.



On the **Left Tree**, show all object/function nodes.

There is a toolbar at the top of the Left Tree.

Button	Description
Expand	Expand all object/function nodes in Left Tree

Collapse	Collapse all object/function nodes in Left Tree
	Back to previous object/function node
	Move to next object/function node
	Refresh all object/function nodes in Left Tree

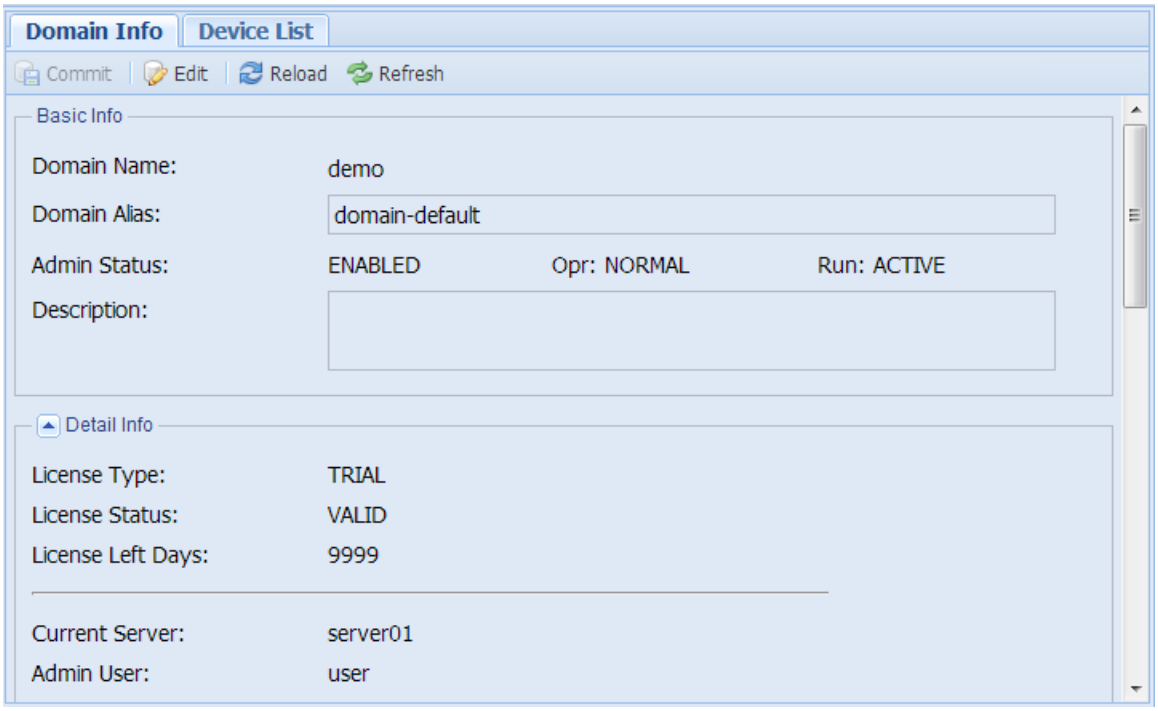
Notes:

- After one node was added or removed, it is important to refresh the Left Tree.

On the **Right Panel**, show selected object/function details or related object list.

2.2.2.1 DOMAIN

Click **[demo]** on the Left Tree, show detail information of the domain.



Notes:

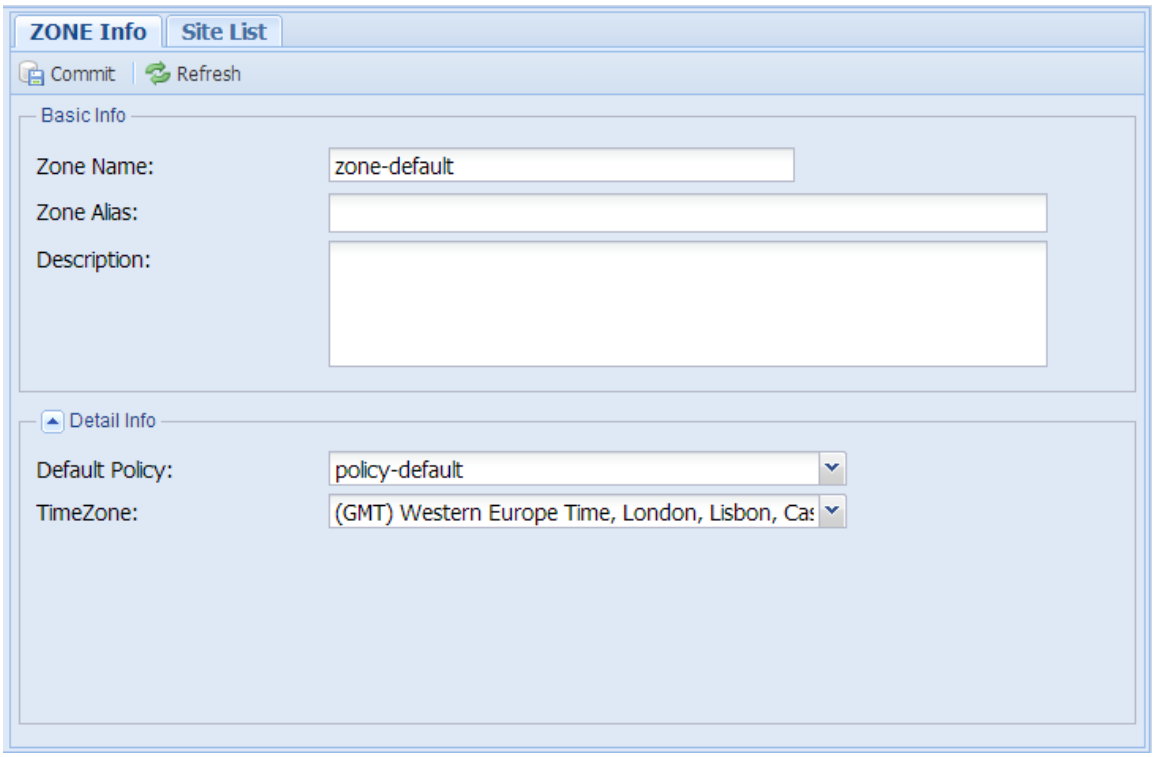
- Default license type of new registered domain is TRIAL.

Warning:

- Expired TRIAL domain would be removed by system administrator.

2.2.2.2 ZONE

Click **[ZONE/zone-default]** on the Left Tree, show detail information of the zone.

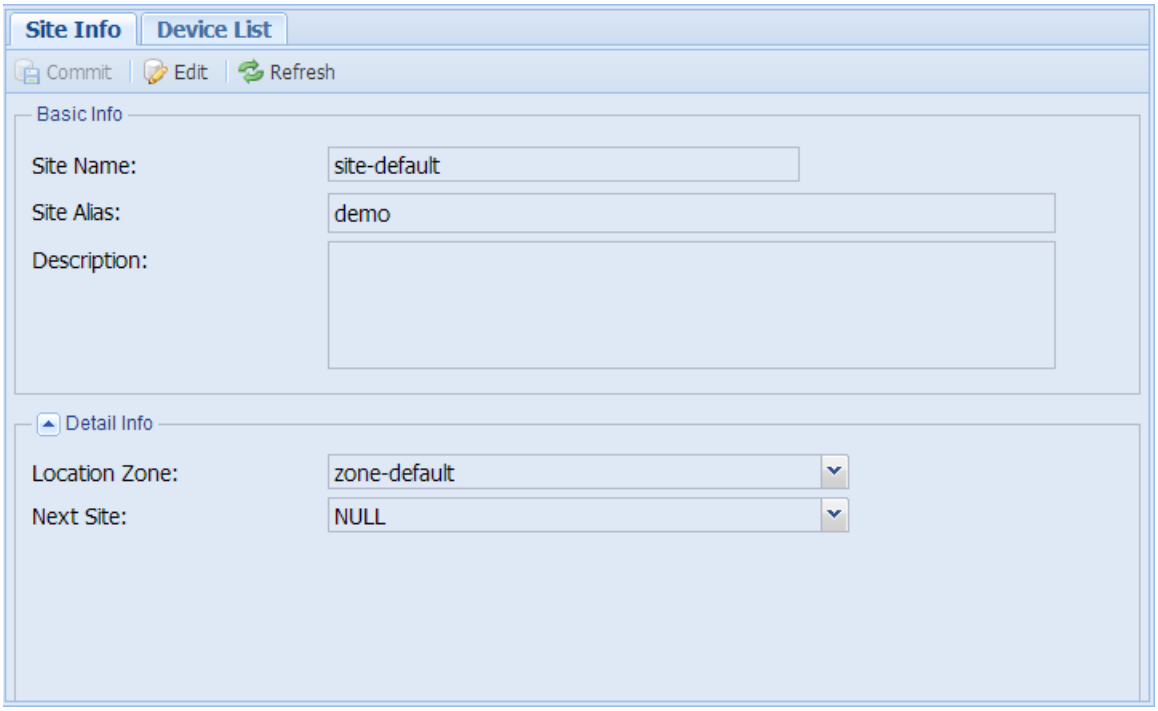


Notes:

- Support local timezones, and set timezone in Zone Info.
- Add new Zone for another timezone.
- System uses UTC time, but day-based processing depends on local timezone.

2.2.2.3 SITE

Click **[ZONE/zone-default/site-default]** node on the Left Tree, show detail information of the site.

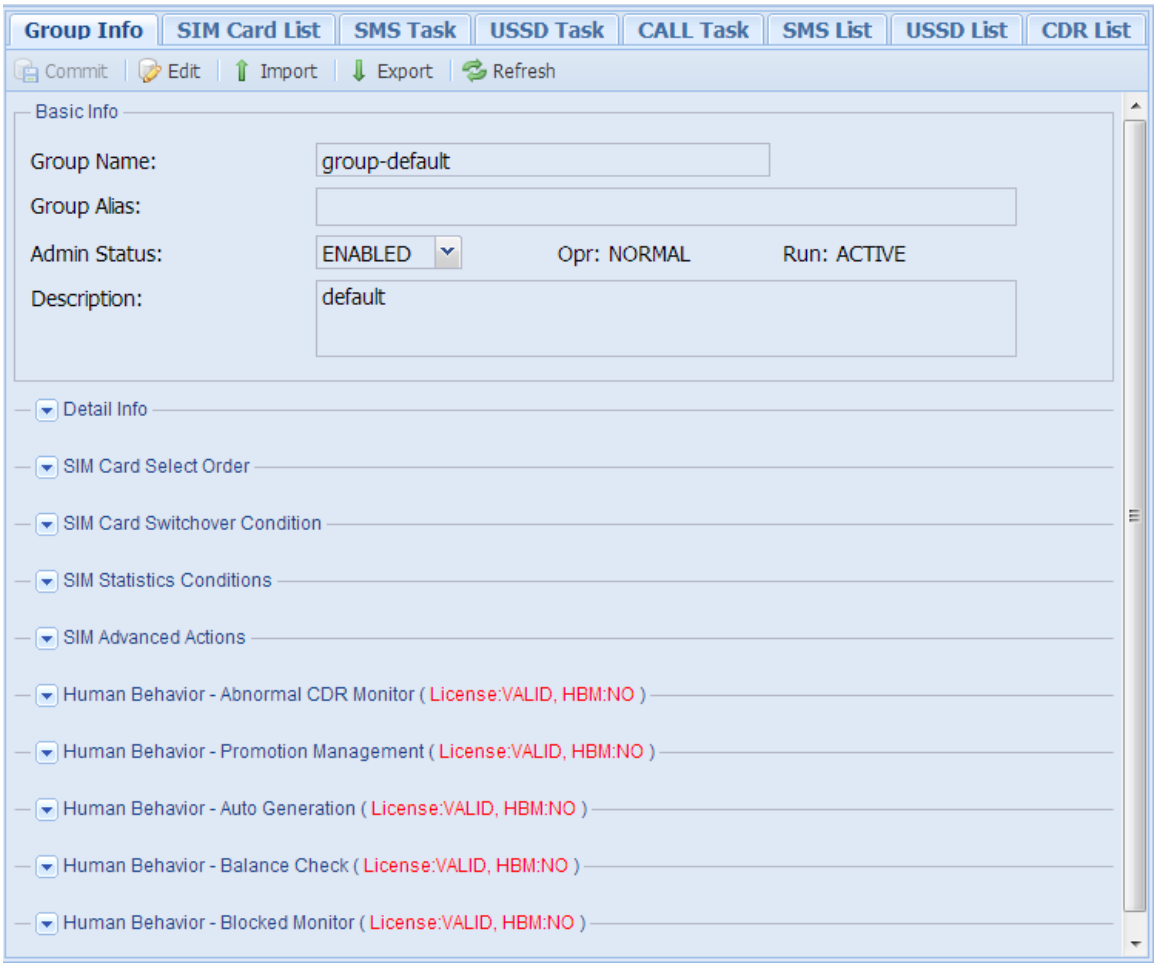


Notes:

- Each device locates at one site.
- Add device under one site.
- Multiple sites are required for SIM Site Roaming.

2.2.2.4 SIM GROUP

Click **[SIM GROUP/group-default]** node on the Left Tree, show detail information of the group.

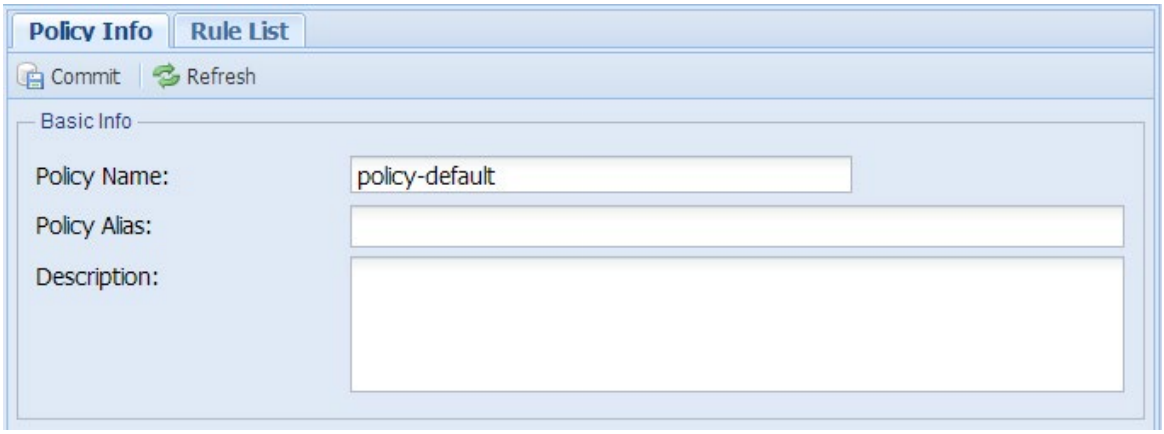


Notes:

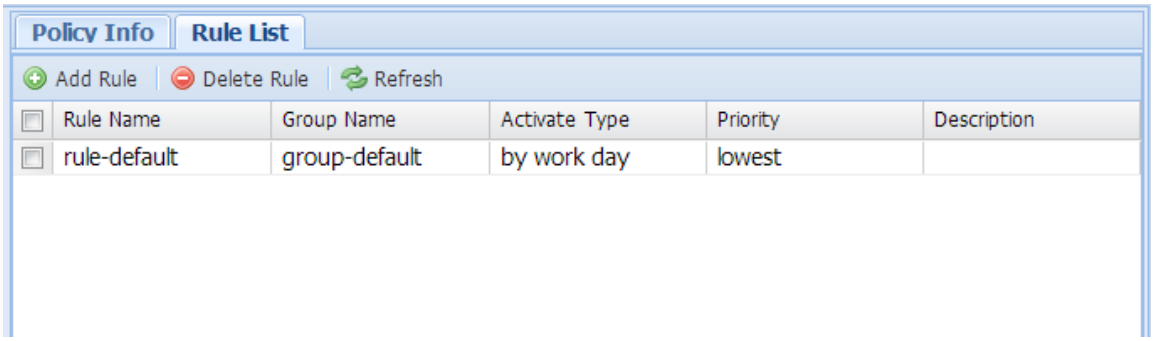
- SIM Group is the most important in Public SIM Cloud.
- Each SIM card belongs to one SIM Group.
- All Human-Behavior setting are in SIM Group.

2.2.2.5 SIM POLICY

Click **[SIM POLICY/policy-default]** node on the Left Tree, show detail information of the policy.



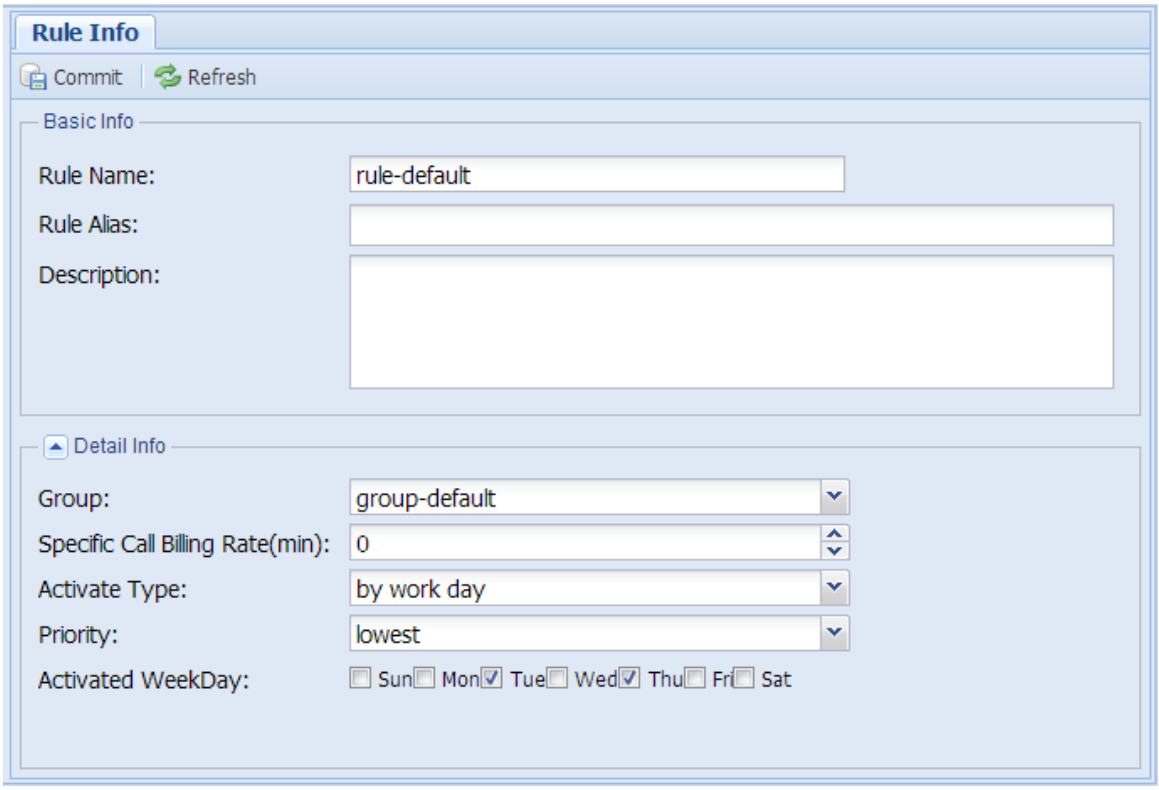
Then click **[Rule List]** tab on the Right Panel, show the rule list of the policy.



Notes:

- DWG device allocates SIM card by SIM Policy.
- SIM Policy supports multiple SIM groups with different priorities.

Click **rule-default** in Rule List of SIM Policy, show detail information of the rule.

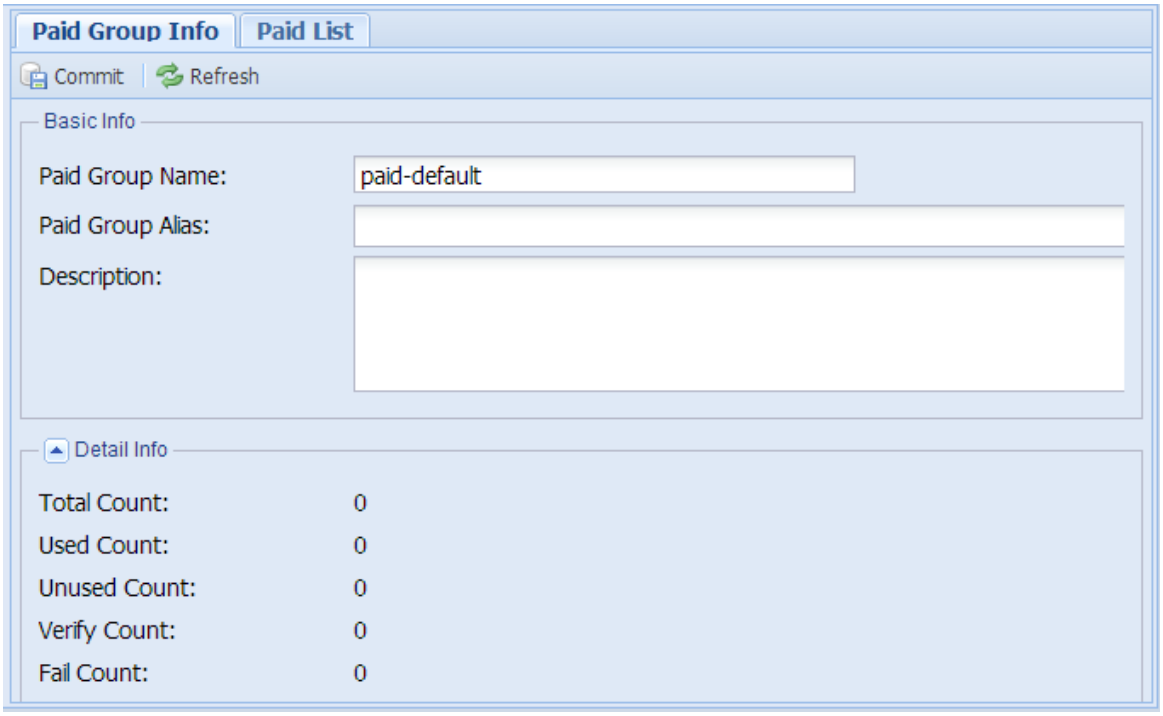


Notes:

- In Rule Info, configure activation conditions of the SIM group.
- If SIM group was deactivated, all SIM cards would be disconnected.
- The detail switchover conditions are configured in Group Info.

2.2.2.6 PAID GROUP

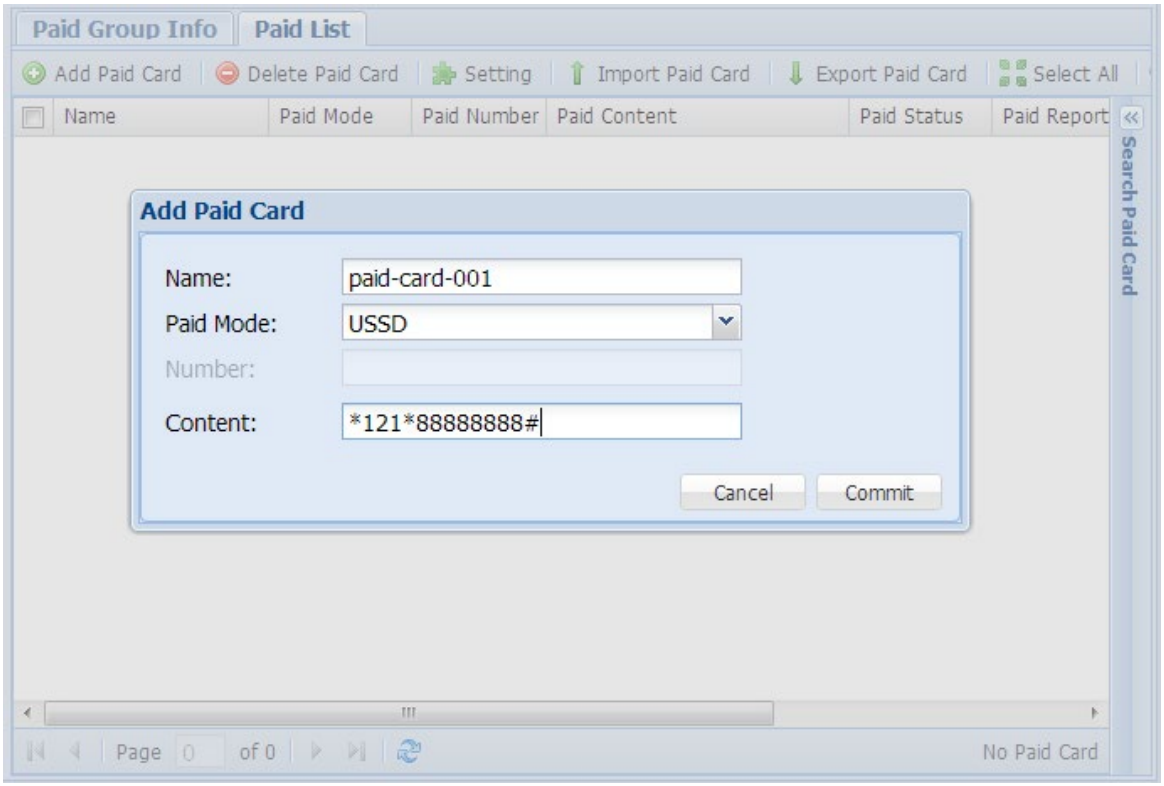
Click **[PAID GROUP/paid-default]** node on the Left Tree, show detail information of the Paid group.



Notes:

- Paid card belongs to one Paid Group.
- Different SIM groups use different Paid groups.

Then click **[Paid List]** tab on the Right Panel, show the Paid list of the Paid group.



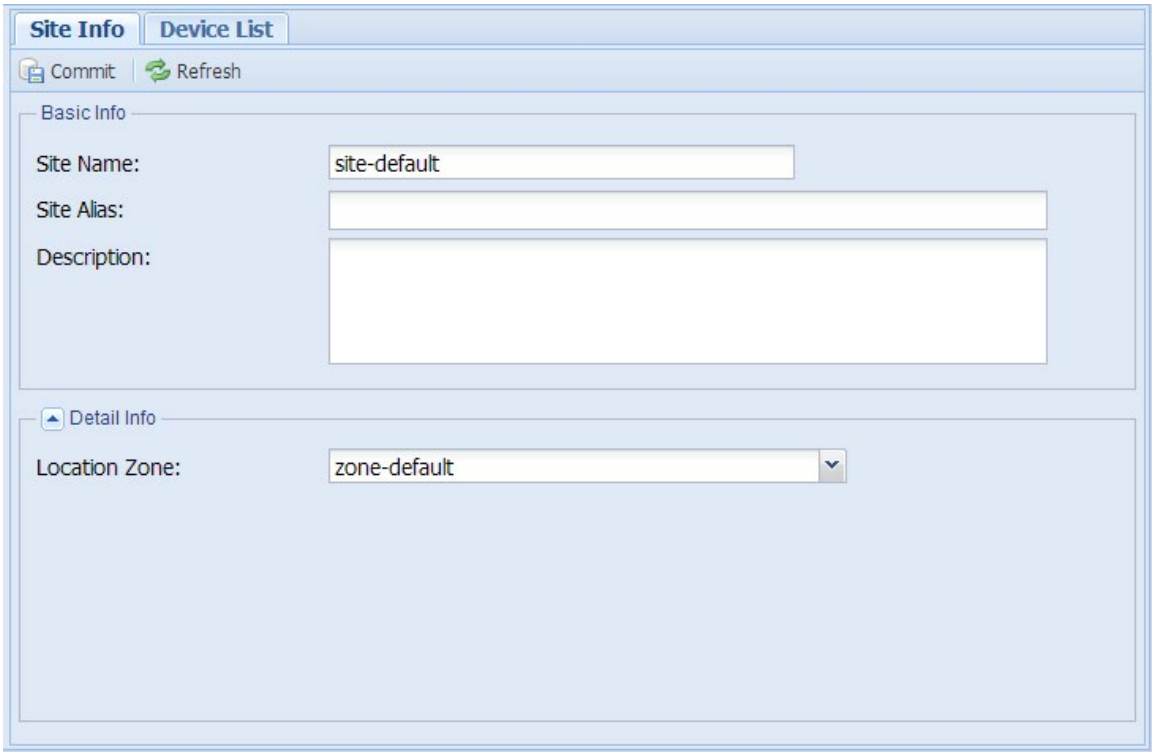
Notes:

- Support to add one Paid card in Web interface, or import Paid card list from a excel file.
- Support 3 recharge ways: USSD, SMS and CALL(optional DTMF numbers).

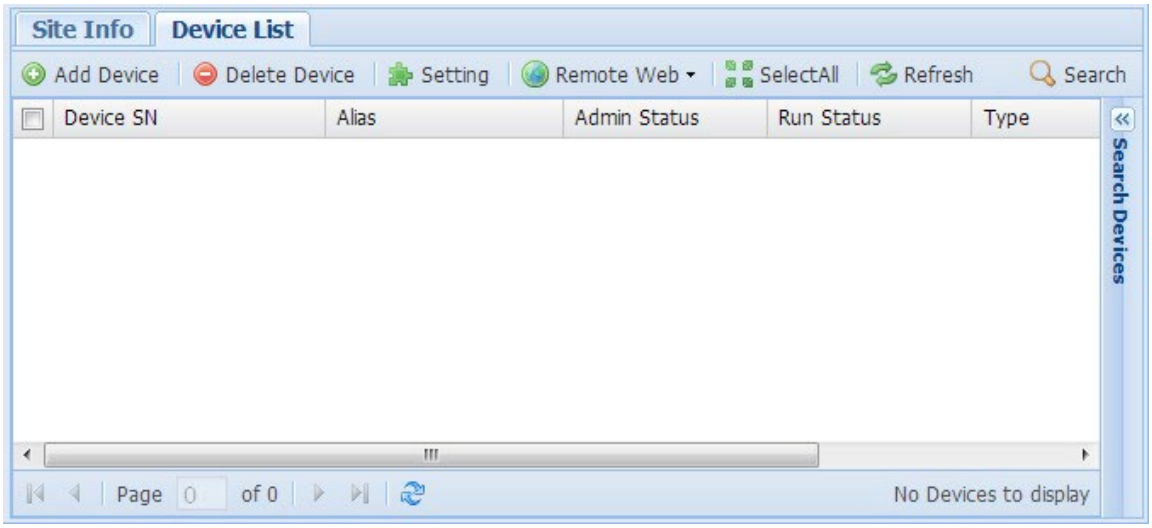
2.2.3 Add One Device In Cloud

Enter into **Configuration** module.

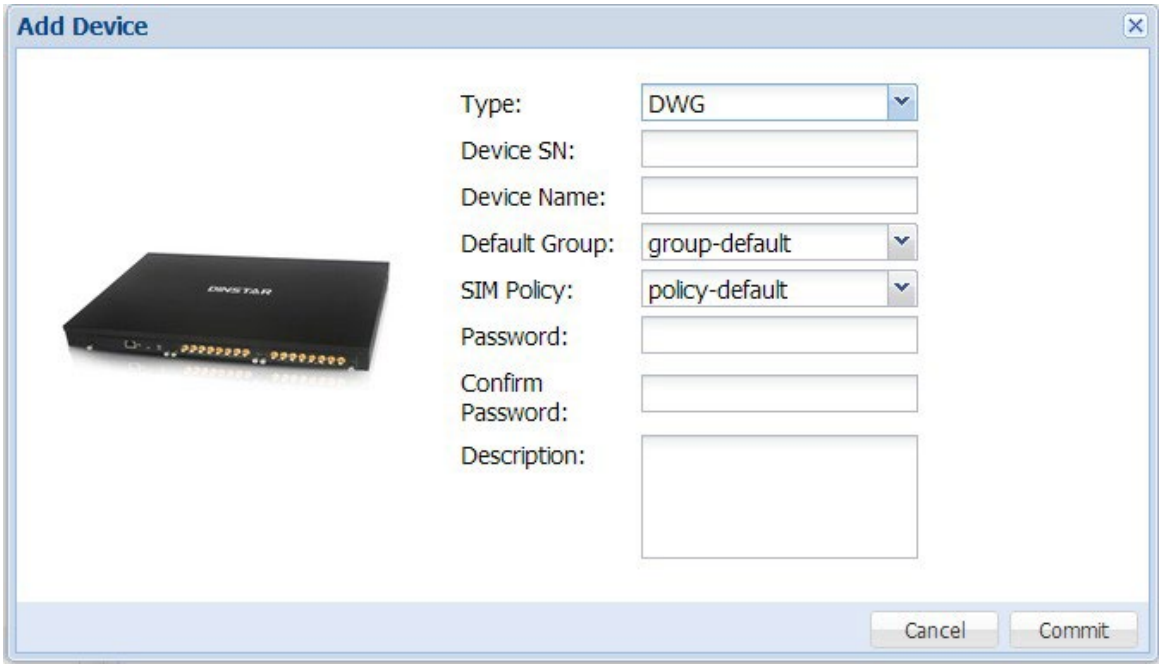
Click **[ZONE/zone-default/site-default]** node on the Left Tree, show detail information of the site.



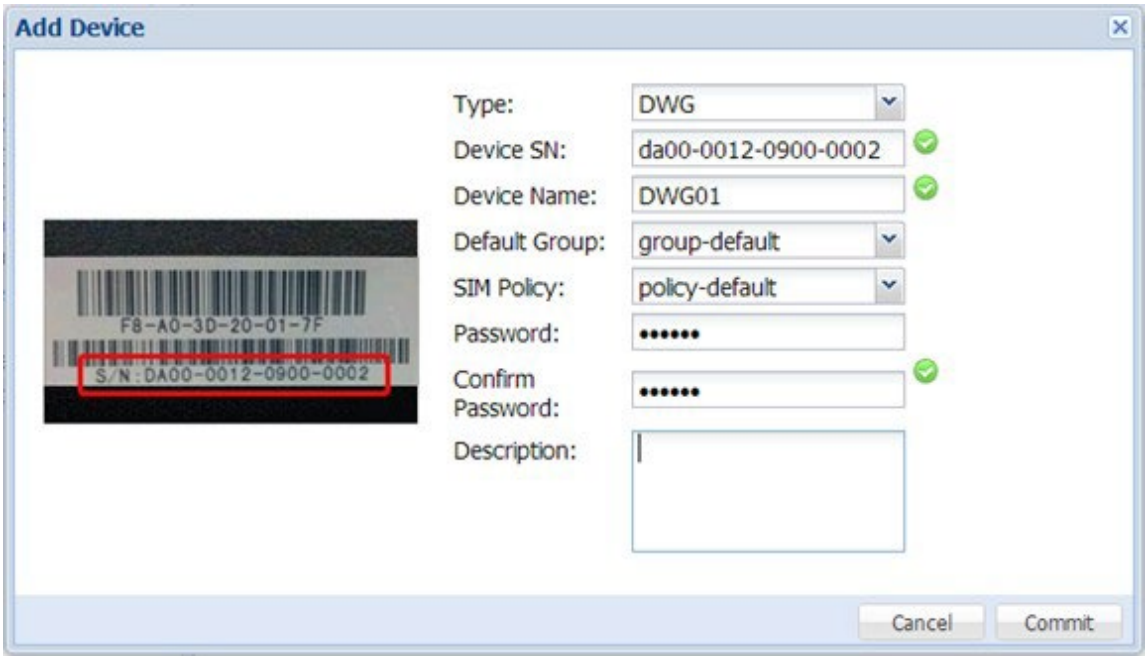
Then click **[Device List]** tab on the Right Panel, show the device list under the site.



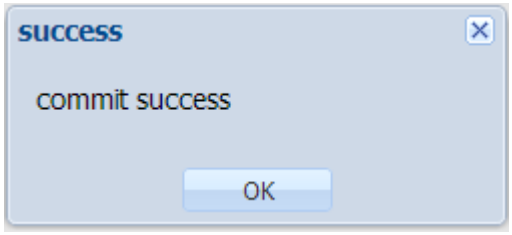
There is no device, click **[Add Device]** button on the toolbar to add new device.



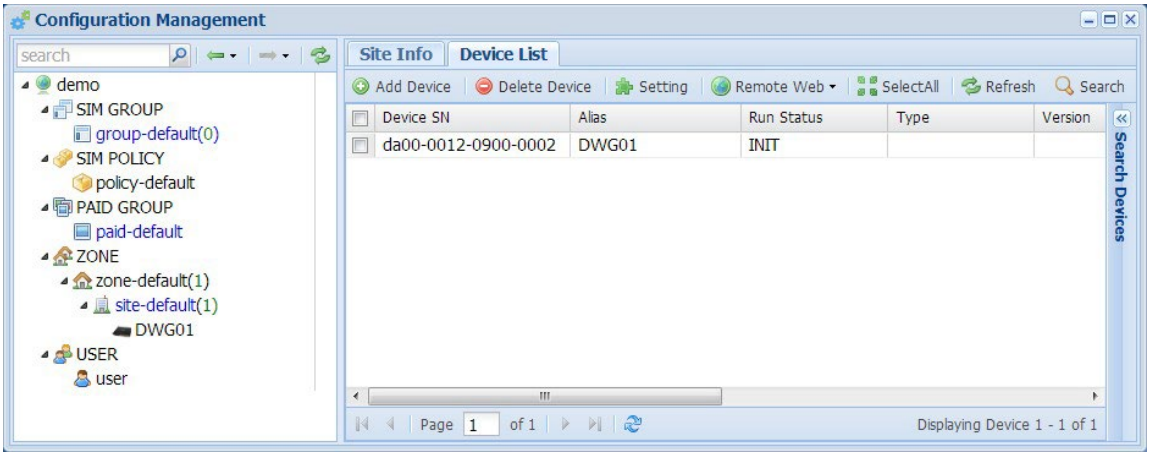
Field	Description
Device Type	Choose DWG or SIMBANK
Device SN	A unique SN of each device
Device Name	A unique device name in one domain
Default Group	For DWG device, new loaded local SIM card will be added into this SIM group, only for Local mode; For SIMBANK device, new loaded SIM card will be added into this SIM group;
SIM Policy	DWG device uses this SIM Policy to allocate SIM cards, only for SIMBANK mode
Password	Device authentication password, MUST be same as device side
Description	Description for one device



Fill above information of new device, then click **[Commit]** button.



If committing succeeded, the device would be added into the Device List.



2.2.4 Server Settings At Device Side

Server Settings are shown as below:

Field	Description
Domain	Your owned url in Public SIM Cloud: Public SIM Cloud: demo.dinstarcloud.com Local SIM Server: serverxxxx.dinstarcloud.com or IP address
Port	2020, don't change it by yourself
Password	Device authentication password, is as same as cloud setting
Protocol	SCTP, reliable protocol, working well in good network; UDP, simple protocol, working more stable in worse network,;
Mode	Auto, support NAT traversal for lower delay; Relay, server trasfer to check NAT unstable issue;

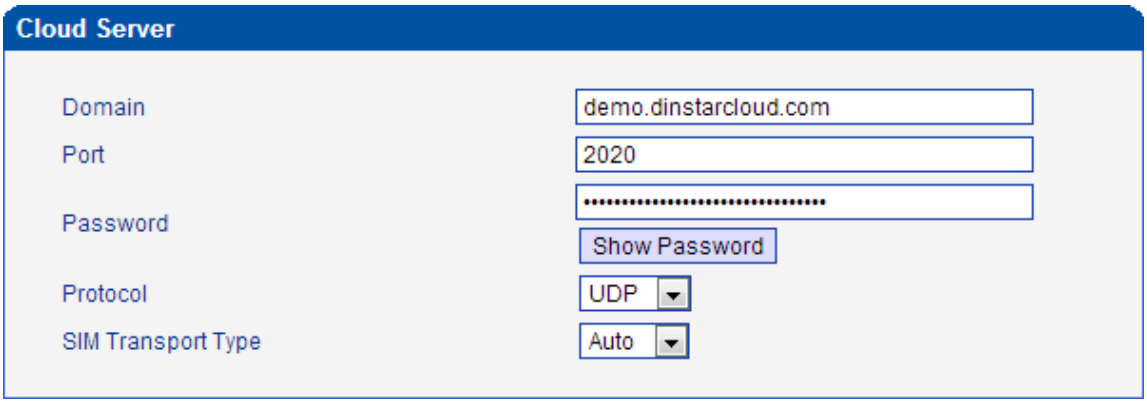
Notes:

- If your network ping was greater than 500ms, or packet loss was greater than 1%, strongly suggest to use UDP protocol.

2.2.4.1 DWG Device

Open DWG device web.

Click **[Mobile Configuration/Cloud Server]** node on the Left Tree, show detail information of the setting of cloud server.



Notes:

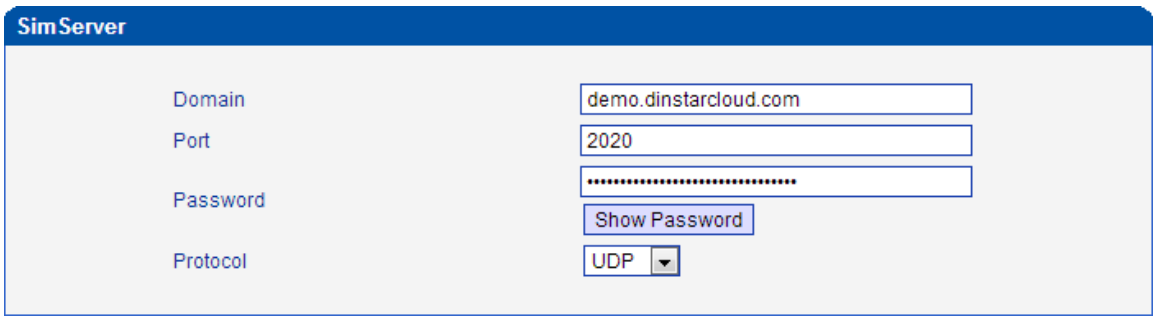
- If your network ping was greater than 500ms, or packet loss was greater than 1%, it is strongly suggested to choose UDP protocol.

Update above setting, then click **[Save]** button, the setting will be activated immediately.

2.2.4.2 SIMBANK Device

Open SIMBANK device web.

Click **[Sim Server]** node on the Left Tree, show detail information of the setting of cloud server.



Notes:

- If your network ping was greater than 500ms, or packet loss was greater than 1%, strongly suggest to use UDP protocol.

Update above setting, then click **[Save]** button, the setting will be activated immediately.

2.3 Bringing Up Local SIM Server

2.3.1 Install Local SIM Server

Local SIM Server runs upon "ubuntu server **12.04.3** LTS **32bit**", please download ubuntu server image from below URL:
http://www.ubuntu.com/download/server/thank-you?distro=server&bits=32&release=lts

Ubuntu 12.04.3 LTS is a long-term support release, with support guaranteed until April 2017.

To install Local SIM Server, please refer to below steps:

Step-1: install ubuntu server 12.04.3 LTS 32bit on your hardware server

If you install mysql-server-5.5 at this moment, MUST set mysql root as **root/123456**.

Step-2: download the installation script of Local SIM Server into your server

$ sudo wget --no-cache server02.dinstarcloud.com/provision/version/patch/install-full-package.sh

Step-3: run the installation script of Local SIM Server at your server

$ sudo chmod +x ./install-full-package.sh

Usage: ./install-full-package.sh <server02.dinstarcloud.com> <0132xxxx> <pkg_pwd> <db_pwd>

*$ sudo ./install-full-package.sh server02.dinstarcloud.com 01320214 ****** dbpassword*

Notes:

- 01320214 – newest Local SIM Server release;
- 0132xxxx – means Local SIM Server release, DON'T input wrong release id;
- ****** - package decryption password, please ask support guys for help;
- dbpassword – change it as you like, special password of dinstar@% of simserver db in mysql.

Input **[Y**es**]** for all confirm questions.

Special for system settings:

No.	Name	: Value	Desc
1	sys_uuid	: 1	system uuid
2	sys_alias	: server01	system alias
3	sys_pub_ip	: 127.0.0.1	system assigned public IP
4	stun_listen_eth	: eth0	stun server listen eth intf
5	stun_udp_port01	: 3478	stun server udp listen port01
6	stun_tcp_port01	: 3478	stun server tcp listen port01
7	stun_udp_port02	: 8478	stun server udp listen port02
8	stun_tcp_port02	: 8478	stun server tcp listen port02
9	trans_listen_port	: 2020	trans server listen port
10	web_proxy_port	: 8080	remote-web proxy port
11	service_api_port	: 3030	service api port
12	mysql_url	: localhost	mysql url/ip
13	mysql_port	: 3306	mysql port
14	mysql_user	: dinstar	mysql username
15	mysql_pwd	: 123456	mysql password
16	prov_url	: server02.dinstarcloud.com	provision url/ip

```
17   prov_user               : ftpuser                   provision username
18   prov_pwd                : 111111                    provision password
19   dns_url01               : dns01.dinstarcloud.com    auth server url01/ip
20   dns_url02               : dns02.dinstarcloud.com    auth server url02/ip
21   tomcat6_mem             : 384                       tomcat6 buffer size
To change value, please enter parameter No.( 0 - quit ):
```

Notes:

- sys_alias - change the name as you like, default is "server01";
- sys_pub_ip – change to public/static IP address of your server;
- stun_listen_eth – change to the interface which devices register to your server;
- tomcat6_mem – change to 384 if your server MEM is higher than 2GB;
- **others – DON'T CHANGE THE SETTINGS!!!**

After the script finished, reboot server…

Step-4: check status of Local SIM Server

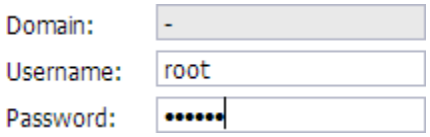
Check SIM Server status:

$ service simserver status

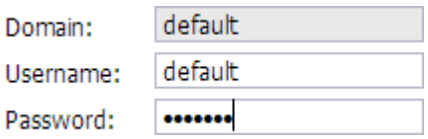
```
Show status of simserver:
simserver daemon                : is running
simserver   app_restund    :    is   running
simserver  udp_echo_server  :   is   running
simserver webapps               : is running
simserver dns                   : is running
simserver app                   : is running
```

Open web of your server: http://xxx.xxx.xxx.xxx (server IP)

Login as supervisor(root/123456):



Login as default domain(default/default)



Notes:
- Register Local Domain for new one;
- Supervisor can delete/rename one domain.

2.3.2 Update Local SIM Server

Tips-1: how to restore to the default system settings

$ sudo rm –f /etc/dinstar/system_conf.xml
$ sudo /dinstar/bin/configure.sh

Tips-2: how to change the system settings

$ sudo /dinstar/bin/configure.sh

Tips-3: how to backup the old simserver db into sql file

Usage: /dinstar/bin/dump-simserver-sql.sh <root> <password> <db_name> <simserver_local_xxxx.sql>

$ sudo /dinstar/bin/dump-simserver-sql.sh root 123456 simserver simserver_local_xxxx.sql

Tips-4: how to restore the default simserver db in mysql

Usage: /dinstar/bin/load-simserver-sql.sh <root> <password> <dinstar_pwd2> <db_name> <simserver_local_xxxx.sql> [auto]

$ sudo /dinstar/bin/load-simserver-sql.sh root 123456 dbpassword simserver /dinstar/cfg/simserver_local.sql

Tips-5: how to update software version of Local SIM Server

Usage: /dinstar/bin/install-from-prov.sh <server02.dinstarcloud.com> <0132xxxx> <password> [auto]

Sometimes software version changes depend on the simserver db changes, so DON'T update software version by yourself, please contact support guys for help.

2.3.3 Apply PREMIUM License (optional)

New installed Local SIM Server has TRIAL license, the TRIAL license has no limitation of SIM capacity, but without HBM Features.

If you want to use HBM Features, please apply PREMIUM server license, at first you need to register an account in Public SIM Cloud, then contact sales guys to apply new server license.

2.4 Manage Your Account in SIM Cloud

There are 3 ways to login SIM Cloud, e.g. demo, uses Public SIM Cloud and Loal SIM Server(server8888) at the same time:

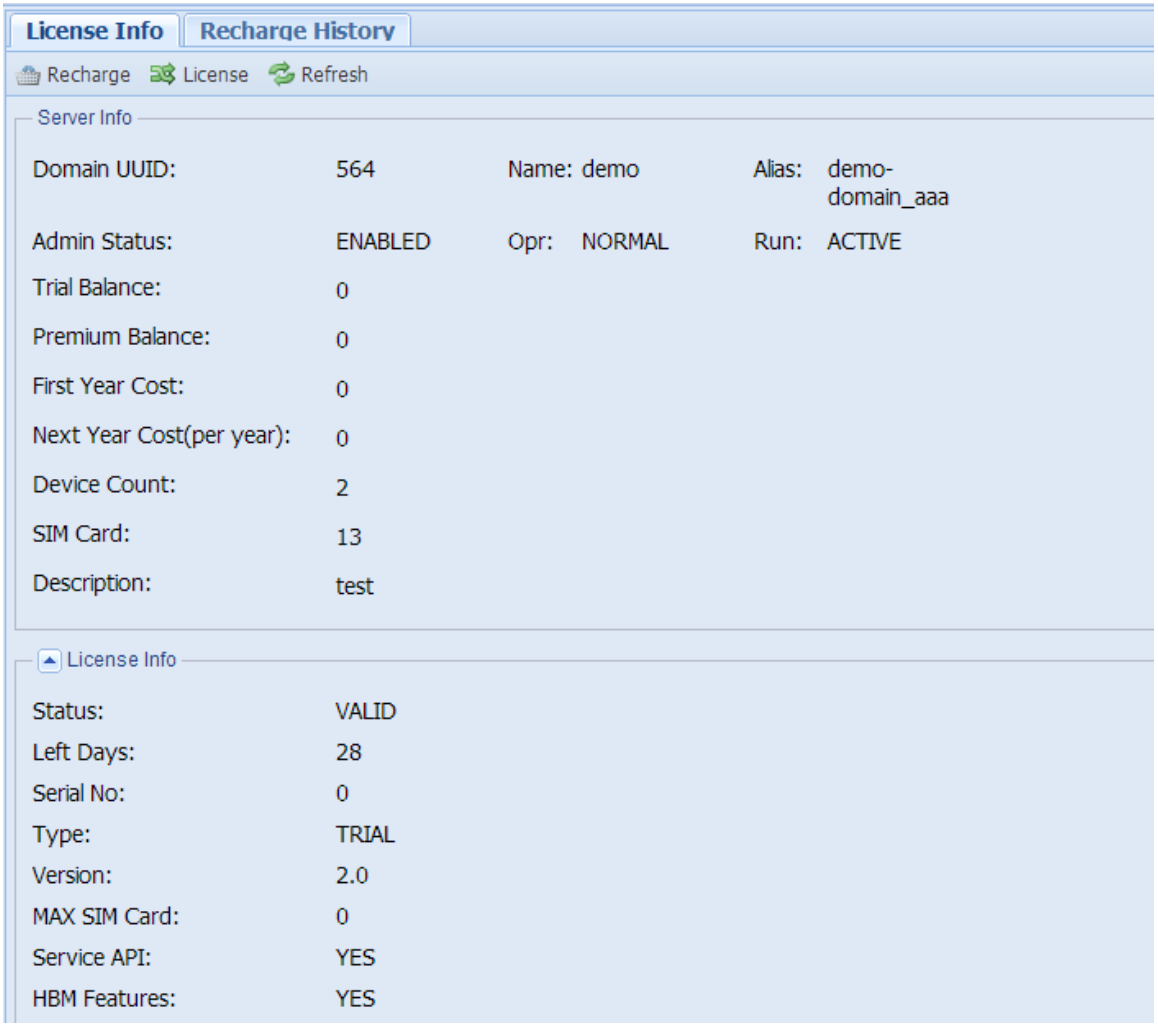
URL	Location	Description
www.dinstarcloud.com	License Server	Special for recharge and license update *Login:* *Domain:* *demo* *Username:* ****** *Password:* ******
demo.dinstarcloud.com	Public SIM Cloud	Public working server of demo *Login:* *Domain:* *demo* *Username:* ****** *Password:* ******
server8888.dinstarcloud.com	Local SIM Server	Personal working server of demo *Login:* *Domain:* *demo* *Username:* ****** *Password:* ******

Notes:

Usually the public working server is different with the license server, so please use "demo.dinstarcloud.com" to login and manage devices.

Login www.dinstarcloud.com, open 

module, Click **[demo]** on the Left Tree, show license information of the demo in Public SIM Cloud.



License Info:

Field	Description
Status	• NULL – no license • INVALID – invalid license • VALID – valid license • COMM_FAIL – comm. fail with license server • EXPIRED – valid license but expired
Left Days	Left days from current date to the expired date
Serial No	Increased after each license update
Type	• TRIAL – trial license, 3 months for Public SIM Cloud and 1 month for Local SIM Server • PREMIUM – premium license

Version	2.0 – license management version
Max SIM Card	Limitation of SIM card capacity, including remote SIM cards and local SIM cards 0 – no limitation
Service API	• NO – service API was disabled • YES – service API was enabled
HBM Features	• NO – HBM features was disabled • YES – HBM features was enabled
Expired Date	License expired date
Valid Days	• 30 – 1 month • 90 – 3 months • 365 – 1 year
Sign Date	License issue date
Sign Author	default – issued by default, only for trial license admin – issued by administrator
Authentication	License authentication checksum

Warning:

- If the count of SIM card is more than the limitation in the license, system will remove part of SIM cards;
- Tips: clean OFFLINE SIM cards to avoid the limitation issue of SIM capacity.

3 Working with SIM Cloud

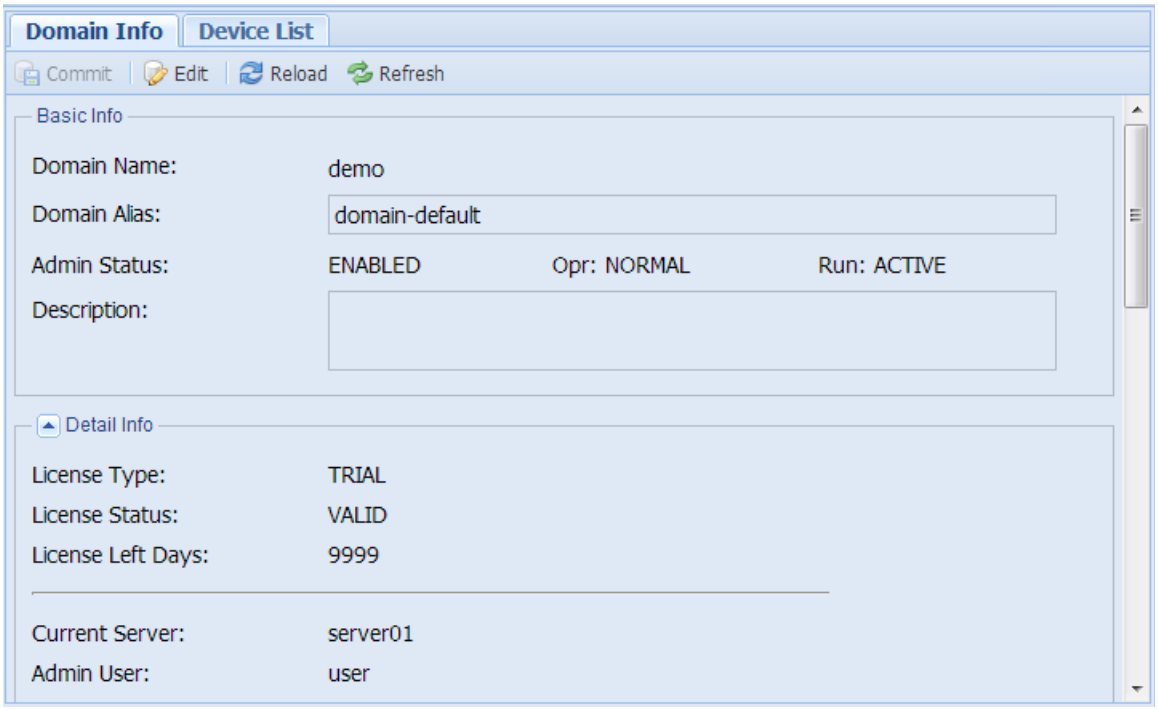
3.1 Basic Configuration

Open 

module.

3.1.1 Domain Info

Click **[demo]** on the Left Tree, show detail information of the domain.



Detail Info:

Item	Description
Busy SIM Card cannot do switchover	Don't allow switchover if SIM busy in SMS/USSD/CALL

One-By-One SIM Switchover inside one device	Smooth switchover, only one port can do switchover at one time
Use device timestamp to generate CDR	Generate exact CDR by device reported timestamp
Force Clear SIM Statistics Data after SIM Switchover in Working Groups	Clear SIM statistics data after SIM switchover from one working group to another one
Force Clean OFFLINE SIM Card even if SIM Unused	If server was restarted, but device became OFFLINE for 15 minutes or longer, system would delete OFFLINE SIM card
Enable Port 15M/24H Performance Statistics	Generate statistics records for each port *Warning:* *Total records MUST be less than 10,000,000*
Enable SIM 15M/24H Performance Statistics	Generate statistics records for each SIM *Warning:* *Total records MUST be less than 10,000,000*
SIM Switch Timeout(sec)	Monitor SIM registering network, if SIM couldn't work, cancel it and try to use next one 300 – default is 300 seconds 0 – means no limitation
Device Comm. Timeout(sec)	Monitor OFFLINE device, if lost connection with server, device becomes COMM_FAIL 60 – default is 60 seconds
Remote-Web Timeout(sec)	Monitor closed remote-web session 600 – default is 600 seconds
HBM Auto Sending Retries	HBM auto SMS/USSD/CALL, retries after sent fail 1 – default retries is once
HBM Saving Sent-Fail SMS Record	Save sent-fail SMS record of HBM into database YES – default is YES
HBM Saving Sent-Fail USSD Record	Save sent-fail USSD record of HBM into database YES – default is YES
HBM Saving Sent-Fail CALL Record	Save sent-fail CALL record of HBM into database YES – default is YES

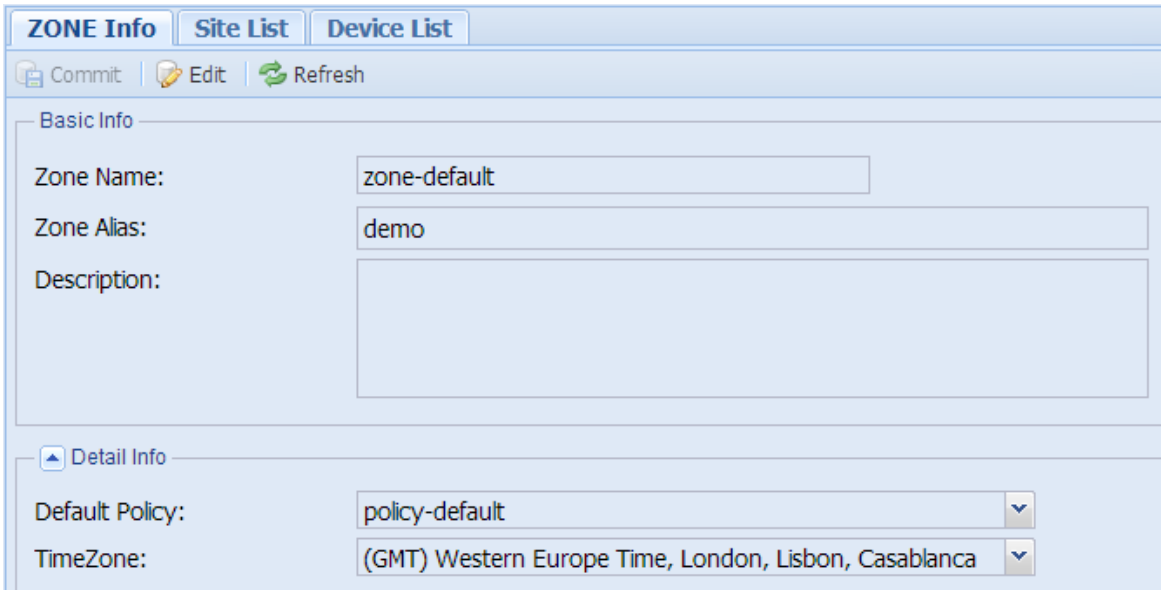
Performance Setting:

Item	**Description**
PM 15Min Max	Maximum history PM 15Min records
PM 24Hour Max	Maximum history PM 24Hour records

PM SMS Max	Maximum history SMS records
PM USSD Max	Maximum history USSD records
PM CALL Max	Maximum history CDR records
Alarm Max	Maximum history ALARM records

3.1.2 Zone Info

Click **[ZONE/zone-default]** on the Left Tree, show detail information of the zone.



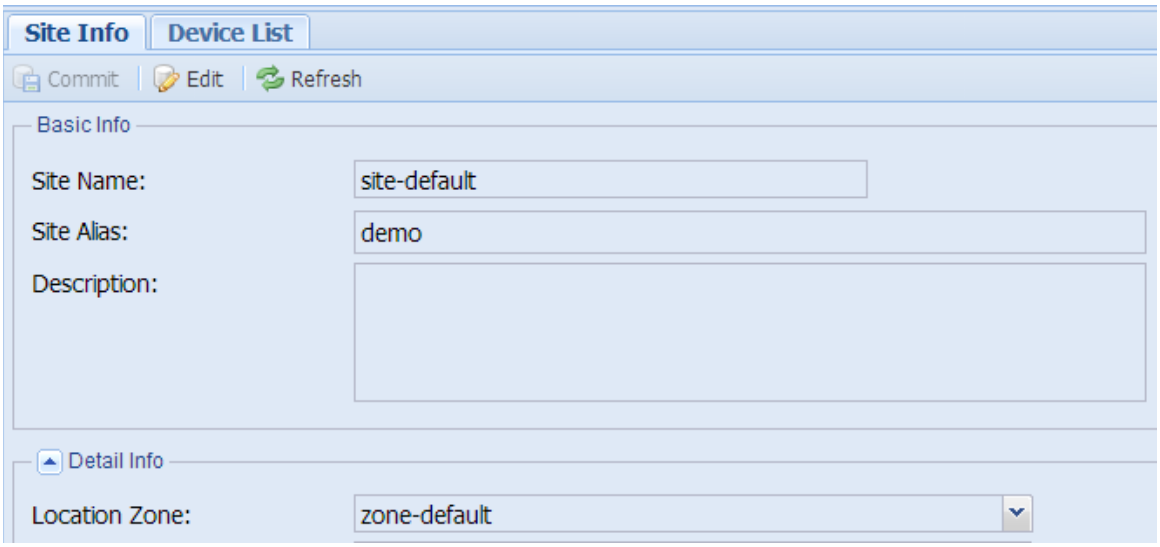
Detail Info:

Item	Description
Default Policy	Default SIM policy of device under this zone
Timezone	Local timezone of this zone, it is very important to do time-based processing System support multiple timezones by multiple zones

3.1.3 Site Info

Click **[ZONE/zone-default/site-default]** on the Left Tree, show detail information

of the site.

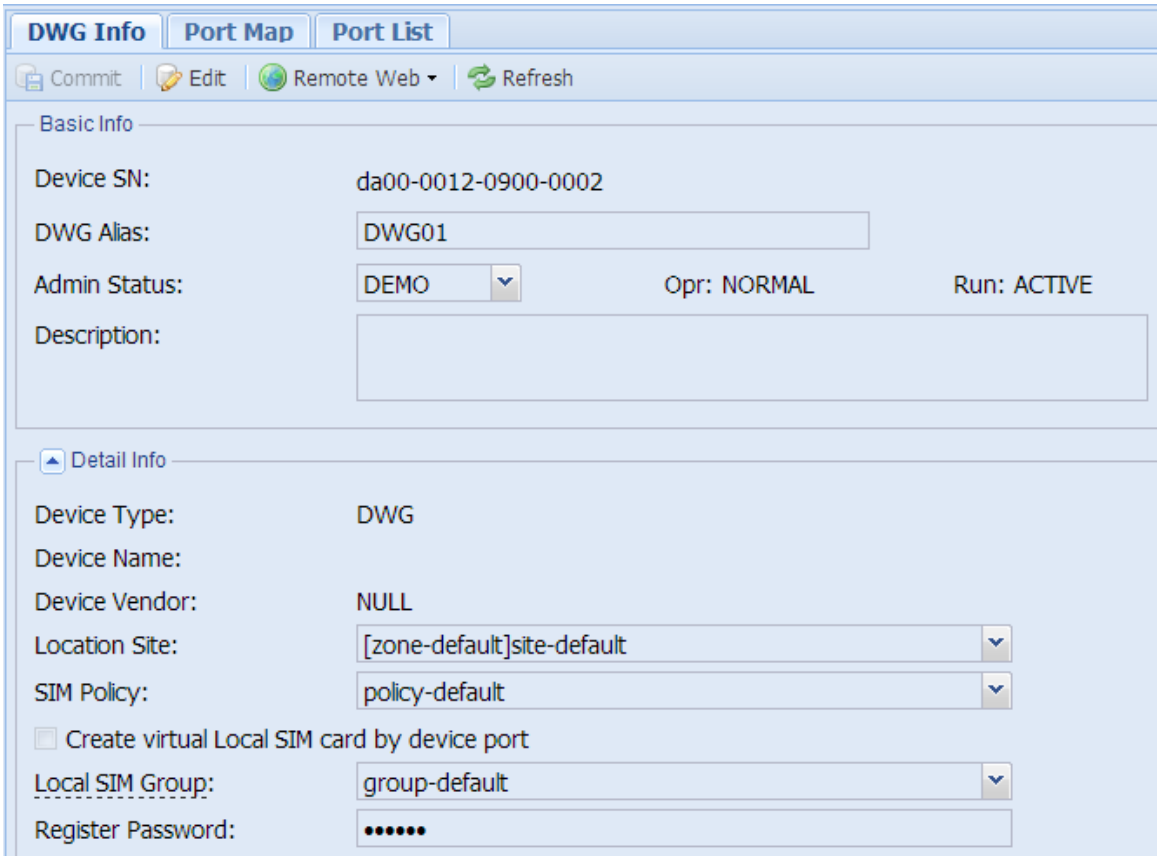


Detail Info:

Item	Description
Location Zone	Belong to which zone One zone can include several sites

3.1.4 DWG Device Info

Click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, show detail information of the DWG device.



Detail Info:

Item	Description
Device Model	DWG2000D
Device Vendor	DINSTAR
Location Site	Belong to which site
SIM Policy	SIM Policy to choose which SIM card in SIM Groups
Local SIM Group	Default SIM Group for local SIM card, will add new detected SIM card into this group
Register Password	Authentication password between device and server Default password is 123456
Register Fail Count	Statistics count if device register fail
Last Register Time	Last time of device registered to server

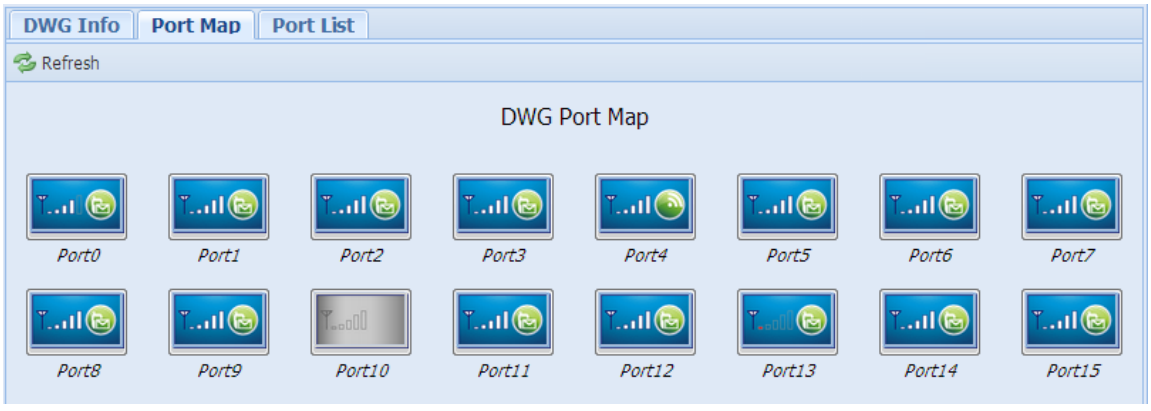
Outer IP Address	Outer device IP address
Software Version	Device firmware version
Software Build Time	Device firmware build time

Provision Setting:

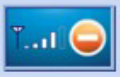
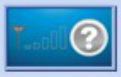
Item	Description
Upgrade Type	DISABLED – not allow to upgrade firmware TO_TARGET_VERSION – allow to upgrade to specific version
Target Version	Specific firmware version
Upgrade Status	NULL – no firmware upgrade ONGOING – in firmware upgrade FINISHED – finished firmware upgrade
Last Upgrade Result	Last result of firmware upgrade
Last Upgrade Time	Last time of firmware upgrade

3.1.5 DWG Port Map

Click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, then click TAB **[Port Map]**, show detail information of the DWG Port Map.

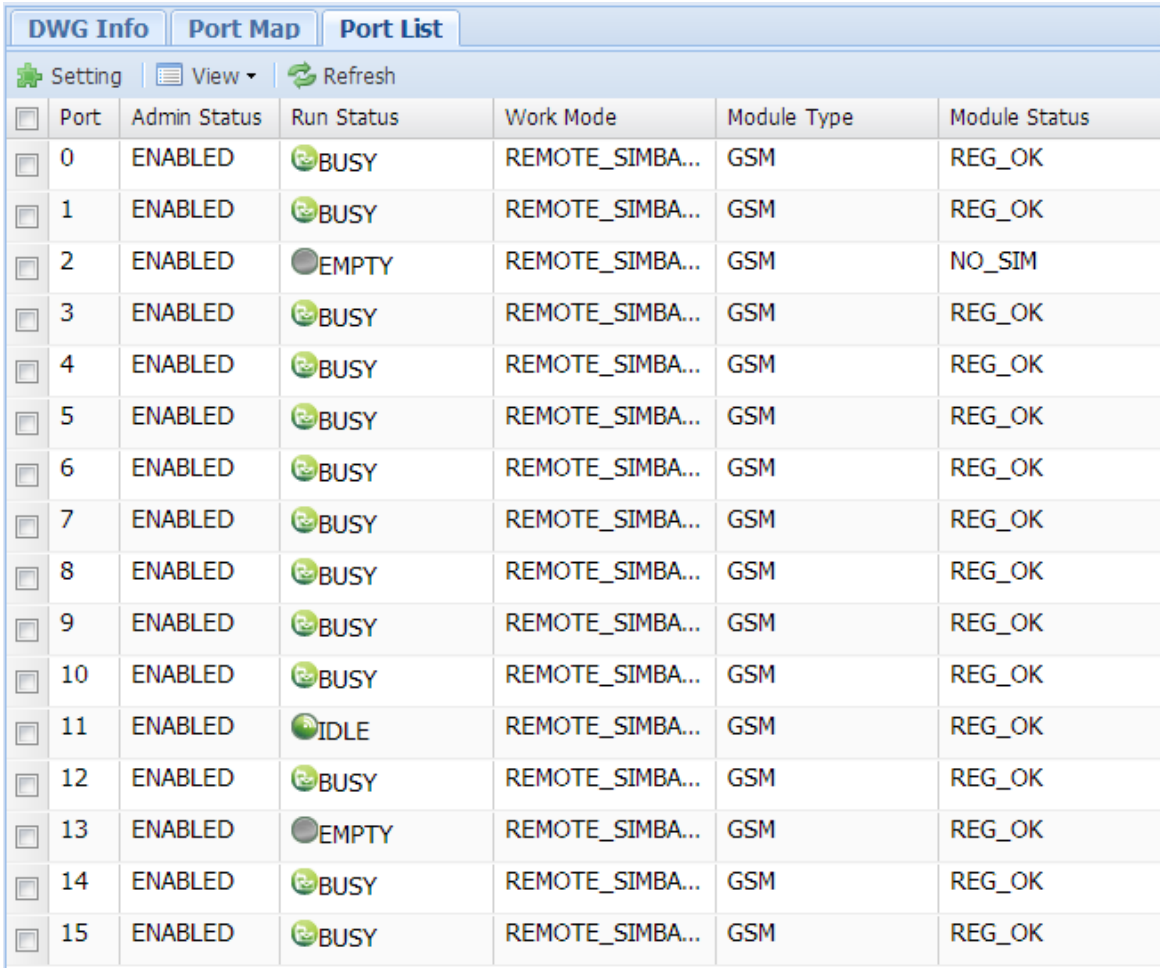


Sample icons refer to:

	ICON	Description	Run Status	ICON	Description
INIT		In initializing stage	DISABLED		Related with Admin Status: DISABLED
IDLE		Working normally and service idle	LOCKED		Related with Admin Status: LOCKED, only for Port/SIM
BUSY		Working normally and service busy	NO_BALANCE		Related with Admin Status: NO_BALANCE, only for Port/SIM
ELEGANT_ STOP		Waiting elegant stop	FAULT		Reported fault event from device
STOP		Working normally but service was stopped	MISMATCH		Found mismatched information and be abnormal
COMM_FAIL		Lost communication with device	EMPTY		No SIM Card binding

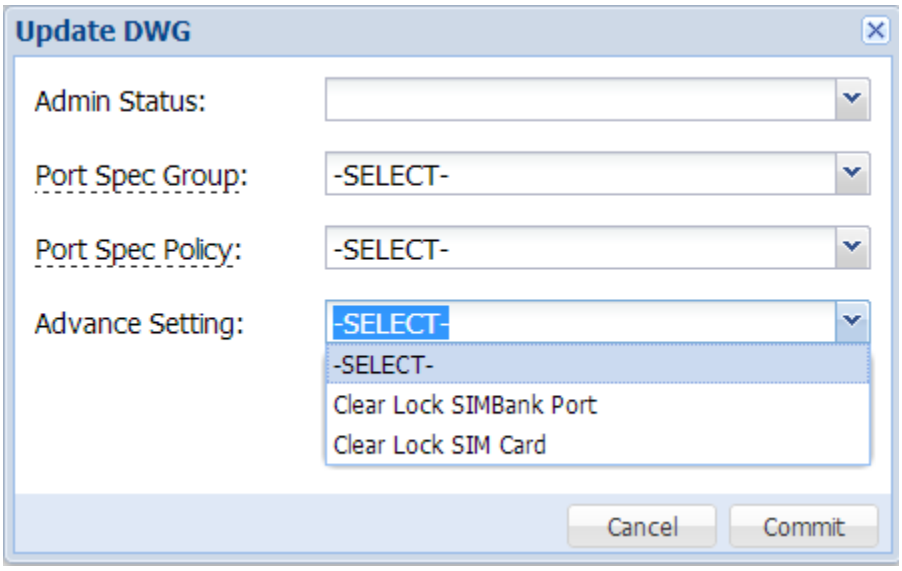
3.1.6 DWG Port List

Click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, then click TAB **[Port List]**, show detail information of the DWG Port List.



Port	Admin Status	Run Status	Work Mode	Module Type	Module Status
0	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
1	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
2	ENABLED	EMPTY	REMOTE_SIMBA...	GSM	NO_SIM
3	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
4	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
5	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
6	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
7	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
8	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
9	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
10	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
11	ENABLED	IDLE	REMOTE_SIMBA...	GSM	REG_OK
12	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
13	ENABLED	EMPTY	REMOTE_SIMBA...	GSM	REG_OK
14	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK
15	ENABLED	BUSY	REMOTE_SIMBA...	GSM	REG_OK

Setting for multiple DWG ports:

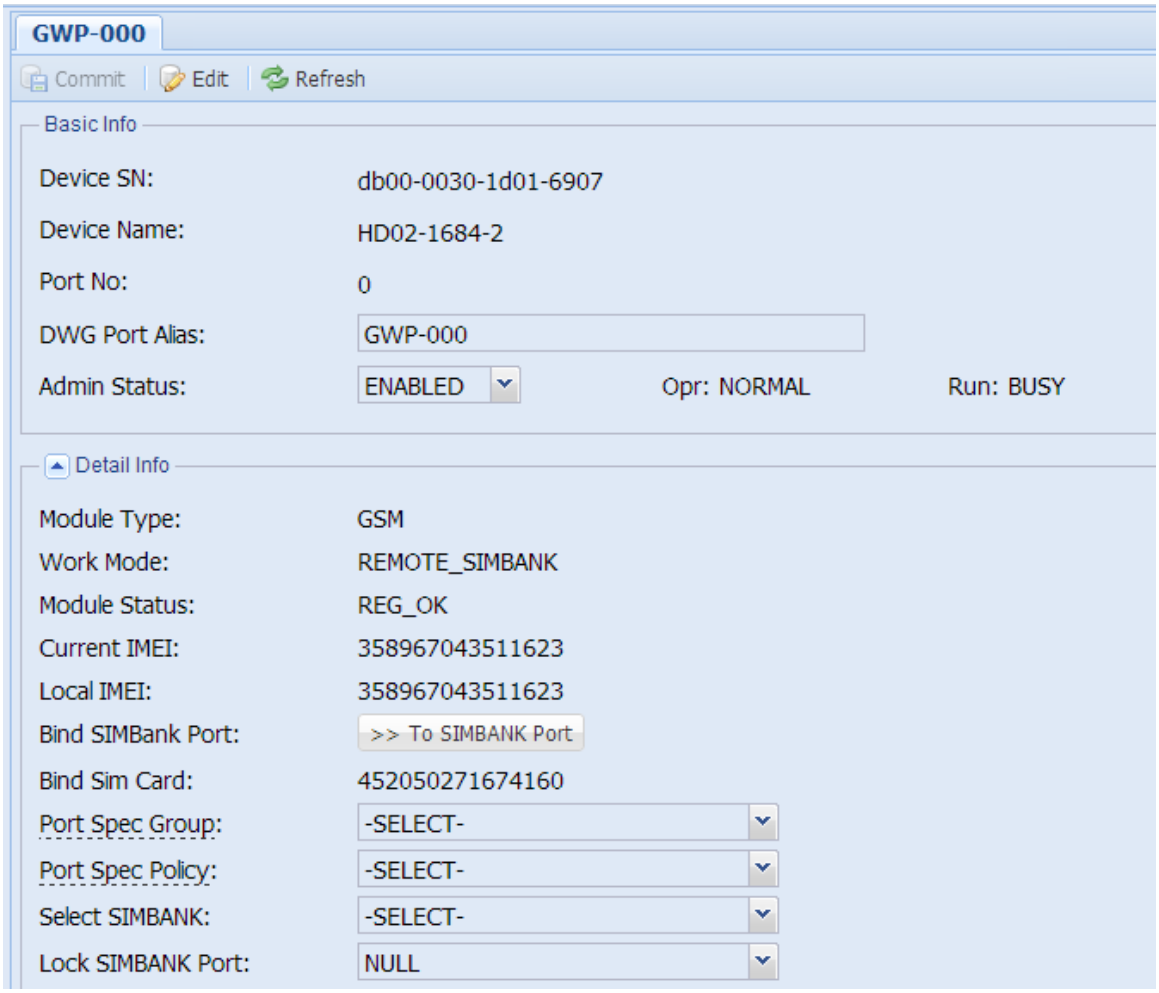


Update Info:

Item	Description
Admin Status	• ENABLED – enable port • DISABLED – disable port
Port Spec Group	Port-based, only for local SIM card, add new SIM card into this group
Port Spec Policy	Port-based, set special policy for specific ports
Advanced Setting	• Clear Locked SIMBANK Port – clear locked SIMBANK setting for specific ports • Clear Locked SIM card – clear locked SIM setting for specific ports

3.1.7 DWG Port Info

Click **[ZONE/zone-default/site-default/DWG01/GWP-0XX]** on the Left Tree, or double click one in Port List, show detail information of the DWG Port Info.



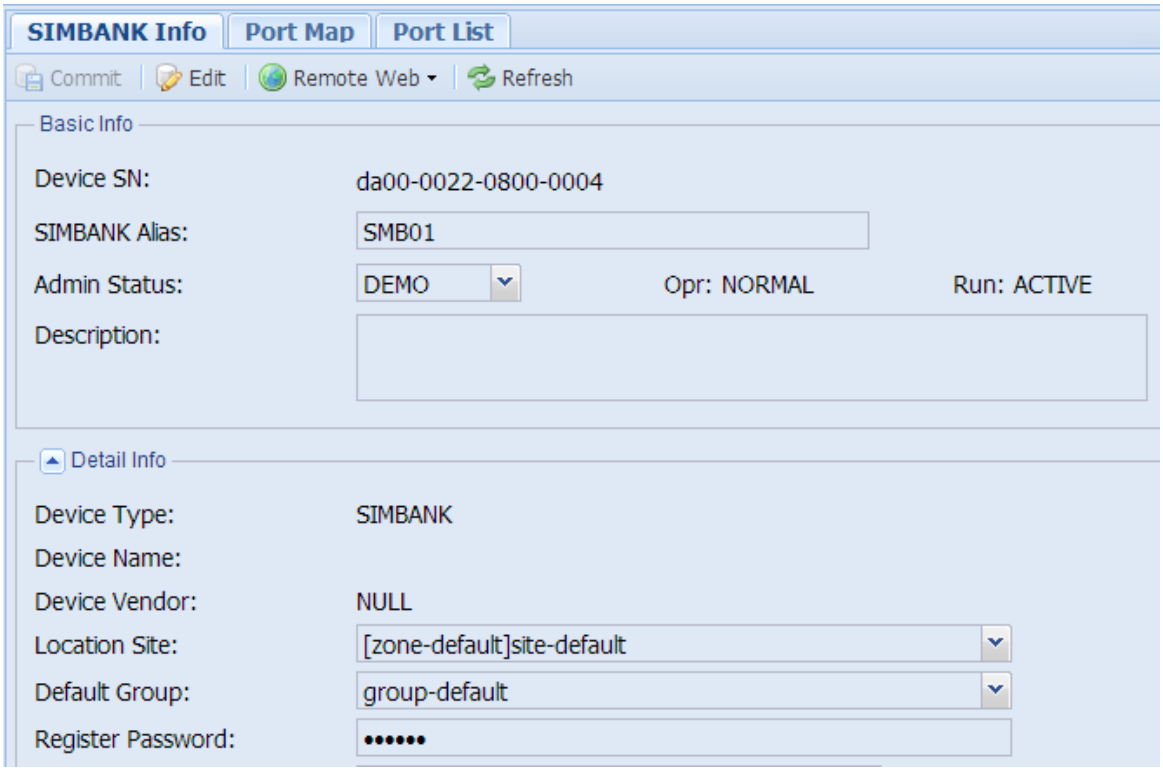
Detail Info:

Item	Description
Module Type	GSM – GSM Module CDMA – CDMA Module
Work Mode	REMOTE-SIMBANK – remote SIM card REMOTE-SIMBOX – external SIM card LOCAL – local SIM card inside DWG
Module Status	REG-OK – registered to operator NOT-REG – can't register to operator SEARCH-NETWORK – search network SIM-AUTH-WAIT – wait authentication SIM-LOAD-OK – SIM card ready SIM-BIND – SIM card bound with DWG NO-SIM – no SIM card
Current IMEI	Current allocated IMEI, used in dynamical IMEI assignment

Local IMEI	Reported IMEI from DWG device
Bind SIMBANK Port	Current SIMBANK port which bound with DWG port
Bind SIM Card	Current SIM card which bound with DWG port
Last Bind Time	Last timestamp of SIM card bound
Last Used Time	Last timestamp of SIM card used
Spec SIM Group (Port Spec Group)	Specific SIM Group of this port, used only for local SIM card, add new SIM card into this group
Spec SIM Policy (Port Spec Policy)	Specific SIM Policy of this port, used only for remote SIM card, choose SIM card by this policy
Lock SIMBANK Port	Used in LOCKED Admin Status, lock DWG port to specific SIMBANK port
Lock SIM Card	Used in LOCKED Admin Status, lock DWG port to specific SIM card, only if no setting in Bind SIMBANK Port
Round Trip Delay	Round trip delay between DWG port and SIMBANK port, shall be less than 500ms
Packet All Count	Statistics of SIM request packets
Packet Retries Count	Statistics of re-sent SIM requests, longer round trip delay, more packet retries
Packet Timeout Count	Statistics of SIM request timeout, shall be zero
Signal Value	0 – no signal 1 – little signal … 31 – full signal 99 – bad signal
BER Value	Signal BER
Module ERROR Count	Statistics of module abnormal status
Current CALL Status	Current CALL status
Current SMS Status	Current SMS status
Current USSD Status	Current USSD status
Current CALL SN	Unique SN of each CALL
Current SMS SN	Unique SN of each SMS
Current USSD SN	Unique SN of each USSD

3.1.8 SIMBANK Device Info

Click **[ZONE/zone-default/site-default/SMB01]** on the Left Tree, show detail information of the SIMBANK device.



Detail Info:

Item	Description
Device Model	SIMBANK
Device Vendor	DINSTAR
Location Site	Belong to which site
Default SIM Group	Default SIM Group for remote SIM card, will add new detected SIM card into this group
Register Password	Authentication password between device and server Default password is 123456

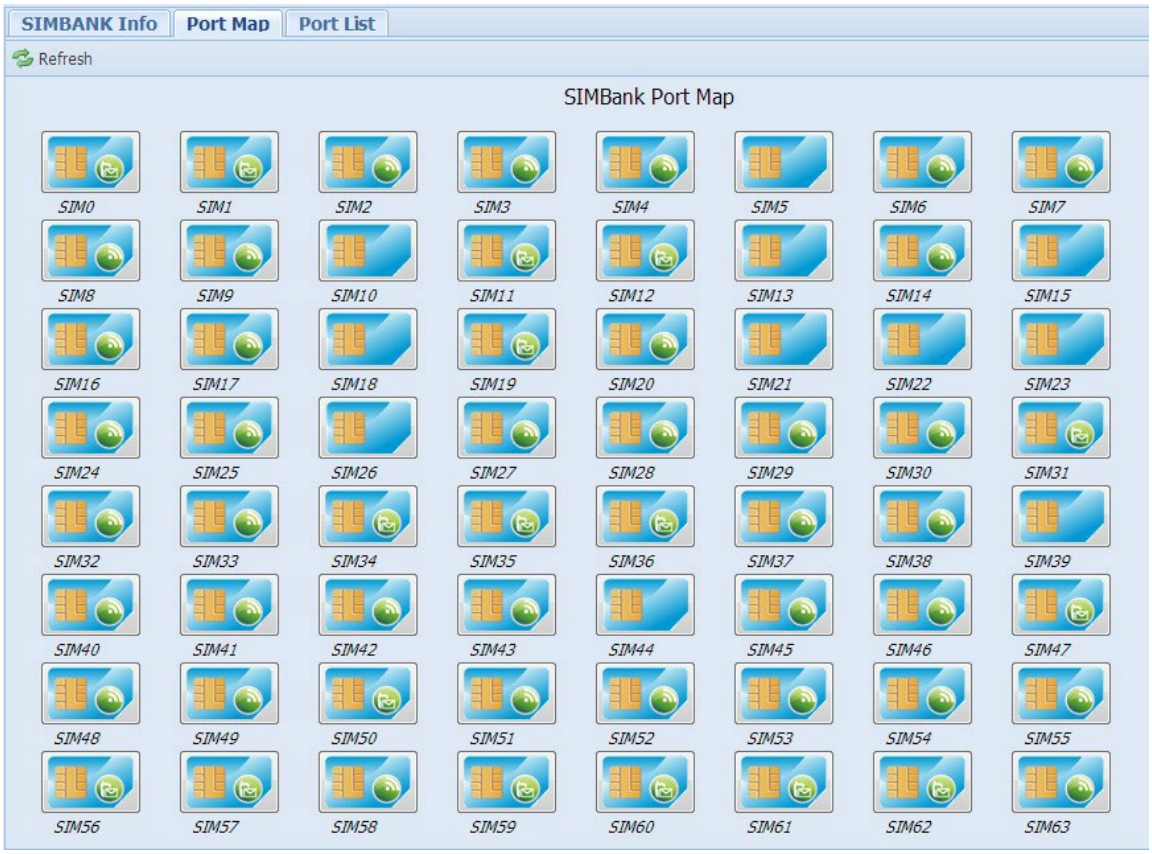
Register Fail Count	Statistics count if device register fail
Last Register Time	Last time of device registered to server
Outer IP Address	Outer device IP address
Software Version	Device firmware version
Software Build Time	Device firmware build time

Provision Setting:

Item	Description
Upgrade Type	DISABLED – not allow to upgrade firmware TO_TARGET_VERSION – allow to upgrade to specific version
Target Version	Specific firmware version
Upgrade Status	NULL – no firmware upgrade ONGOING – in firmware upgrade FINISHED – finished firmware upgrade
Last Upgrade Result	Last result of firmware upgrade
Last Upgrade Time	Last time of firmware upgrade

3.1.9 SIMBANK Port Map

Click **[ZONE/zone-default/site-default/SMB01]** on the Left Tree, then click TAB **[Port Map]**, show detail information of the SIMBANK Port Map.

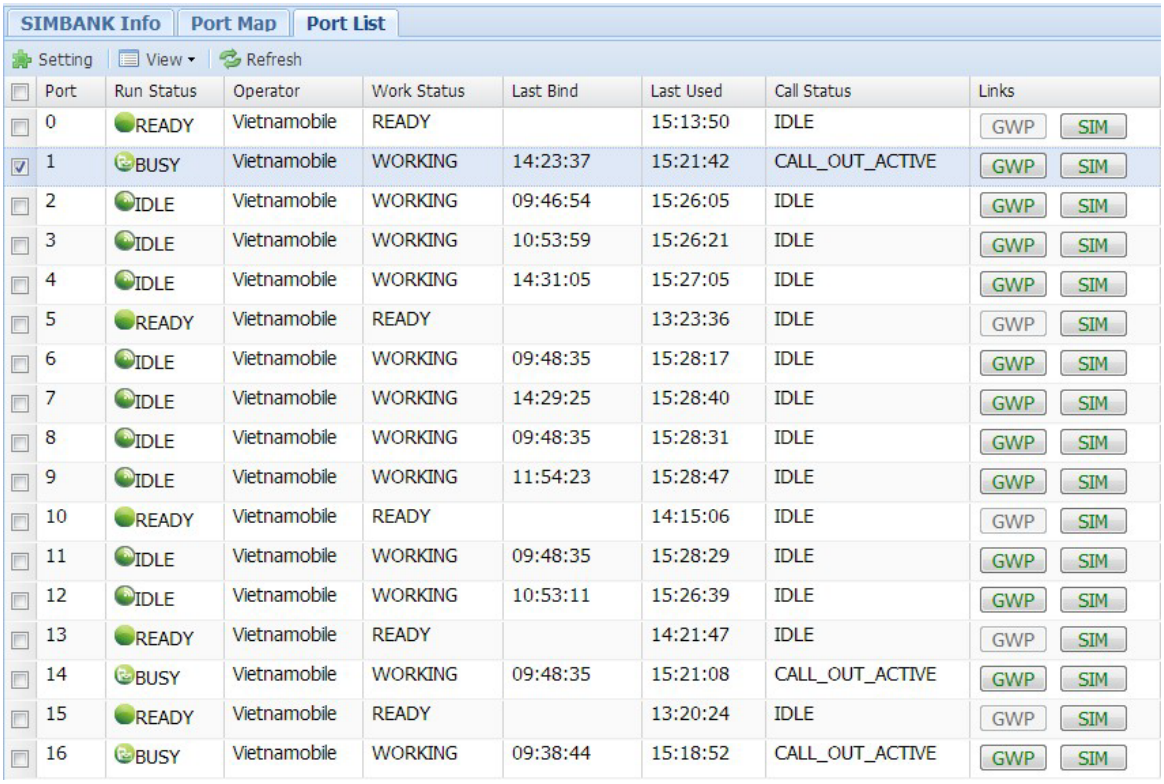


Sample icons refer to:

	ICON	Description	Run Status	ICON	Description
INIT		In initializing stage	**DISABLED**		Related with Admin Status: DISABLED
IDLE		Working normally and service idle	**LOCKED**		Related with Admin Status: LOCKED, only for Port/SIM
BUSY		Working normally and service busy	**NO_BALANCE**		Related with Admin Status: NO_BALANCE, only for Port/SIM
ELEGANT_ STOP		Waiting elegant stop	**FAULT**		Reported fault event from device
STOP		Working normally but service was stopped	**MISMATCH**		Found mismatched information and be abnormal
COMM_FAIL		Lost communication with device	**EMPTY / OFFLINE**		No SIM Card loading

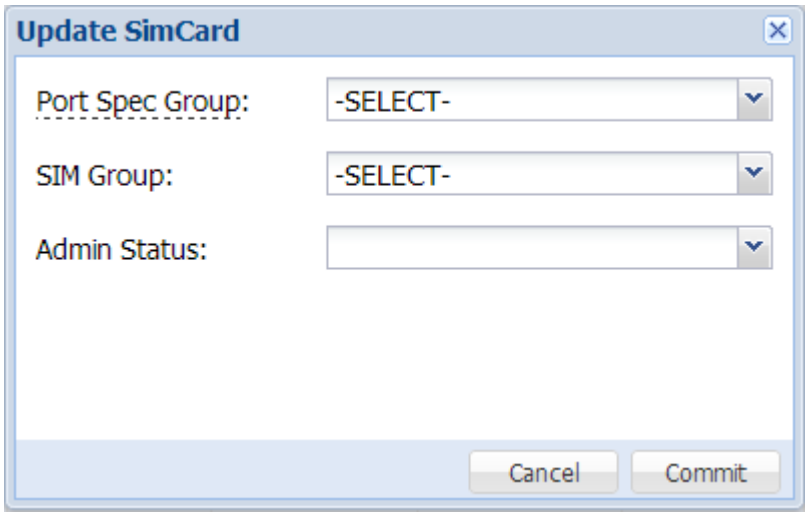
3.1.10 SIMBANK Port List

Click **[ZONE/zone-default/site-default/SMB01]** on the Left Tree, then click TAB **[Port List]**, show detail information of the SIMBANK Port List.



Port	Run Status	Operator	Work Status	Last Bind	Last Used	Call Status	Links
0	READY	Vietnamobile	READY		15:13:50	IDLE	GWP SIM
1	BUSY	Vietnamobile	WORKING	14:23:37	15:21:42	CALL_OUT_ACTIVE	GWP SIM
2	IDLE	Vietnamobile	WORKING	09:46:54	15:26:05	IDLE	GWP SIM
3	IDLE	Vietnamobile	WORKING	10:53:59	15:26:21	IDLE	GWP SIM
4	IDLE	Vietnamobile	WORKING	14:31:05	15:27:05	IDLE	GWP SIM
5	READY	Vietnamobile	READY		13:23:36	IDLE	GWP SIM
6	IDLE	Vietnamobile	WORKING	09:48:35	15:28:17	IDLE	GWP SIM
7	IDLE	Vietnamobile	WORKING	14:29:25	15:28:40	IDLE	GWP SIM
8	IDLE	Vietnamobile	WORKING	09:48:35	15:28:31	IDLE	GWP SIM
9	IDLE	Vietnamobile	WORKING	11:54:23	15:28:47	IDLE	GWP SIM
10	READY	Vietnamobile	READY		14:15:06	IDLE	GWP SIM
11	IDLE	Vietnamobile	WORKING	09:48:35	15:28:29	IDLE	GWP SIM
12	IDLE	Vietnamobile	WORKING	10:53:11	15:26:39	IDLE	GWP SIM
13	READY	Vietnamobile	READY		14:21:47	IDLE	GWP SIM
14	BUSY	Vietnamobile	WORKING	09:48:35	15:21:08	CALL_OUT_ACTIVE	GWP SIM
15	READY	Vietnamobile	READY		13:20:24	IDLE	GWP SIM
16	BUSY	Vietnamobile	WORKING	09:38:44	15:18:52	CALL_OUT_ACTIVE	GWP SIM

Setting for multiple SIMBANK ports:



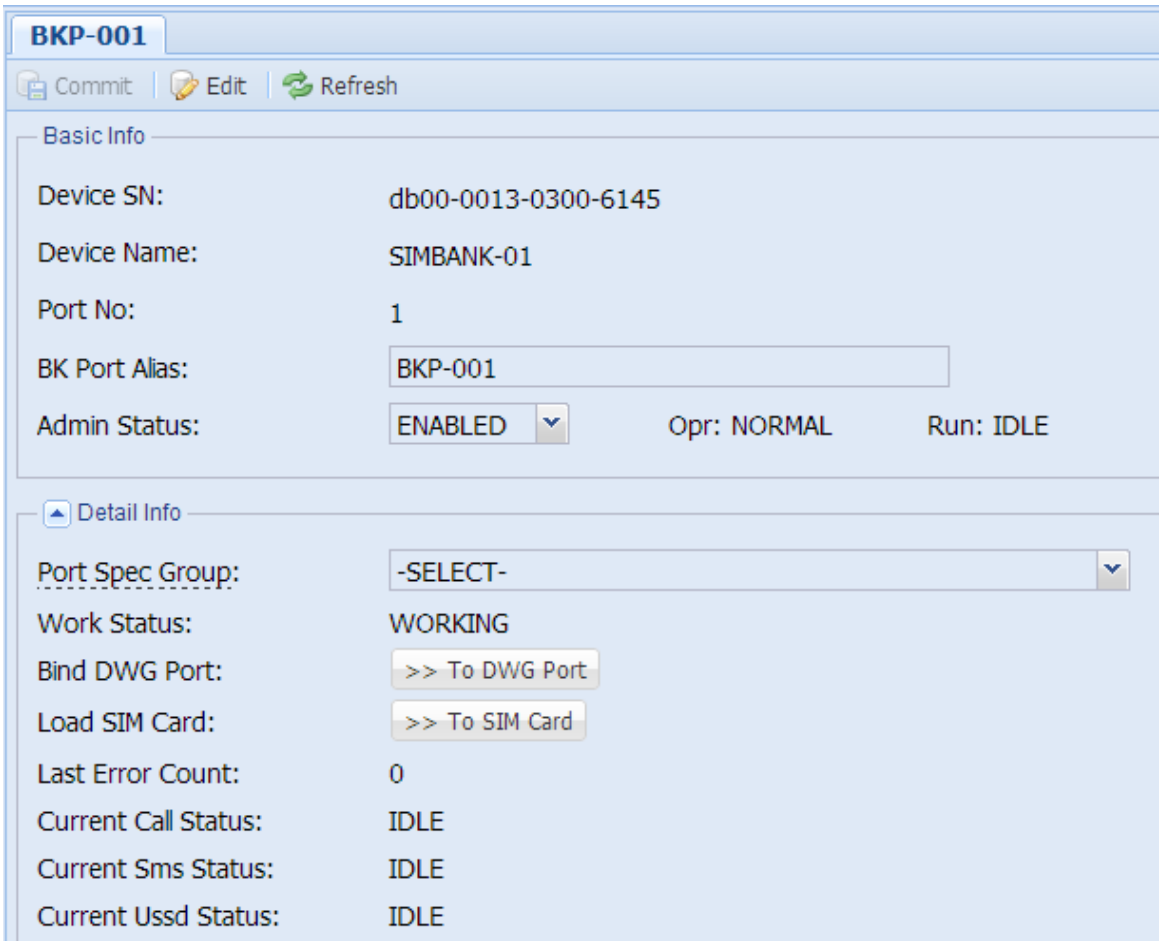
Update Info:

Item	Description

Port Spec Group	Port-based, add new SIM card into this group
SIM Group	Move current SIM cards into specific SIM Group
Admin Status	• ENABLED – enable port • DISABLED – disable port

3.1.11 SIMBANK Port Info

Click **[ZONE/zone-default/site-default/SMB01/BKP-0XX]** on the Left Tree, or double click one in Port List, show detail information of the SIMBANK Port Info.



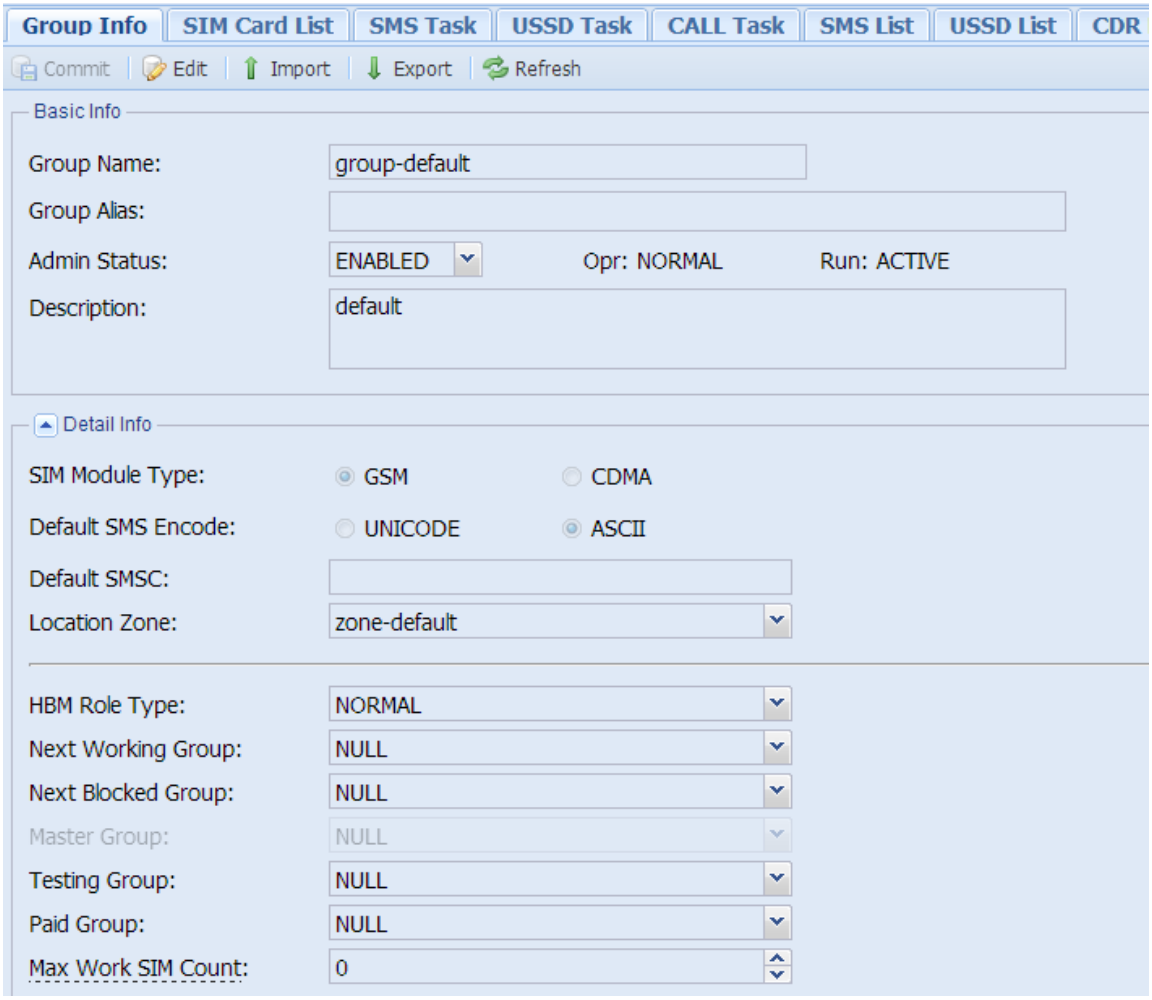
Detail Info:

Item	**Description**
Port Spec Group	Port-based, add new SIM card into this group
Work Status	EMPTY – no SIM card READY – SIM card present, not allocated WORKING – SIM card present and allocated
Bind DWG Port	Current DWG port which bound with SIMBANK port

Load SIM Card	Current SIM card which was loaded in SIMBANK port
Current CALL Status	Current CALL status
Current SMS Status	Current SMS status
Current USSD Status	Current USSD status

3.1.12 SIM Group Info

Click **[SIM GROUP/group-default]** on the Left Tree, show detail information of the SIM Group Info.



Detail Info:

Item	Description

SIM Module Type	• GSM – GSM Module • CDMA – CDMA Module
Default SMS Encode	• UNICODE – 1~3bytes for special char • ASCII – 1byte(7bit) for one char
Location Zone	Set local timezone of SIM card
HBM Role Type	• NORMAL – for working SIM card • TESTING – for testing SIM card, be used to learn SIM number, and generate bi-directional SMS/CALL • PROMOTION – for SIM card preparation, e.g. applying promotion • MASTER – for master SIM card to apply promotion for other SIM cards
Next Working Group	Move SIM card to next working group if SIM card was NO_BALANCE or GRP_NOT_AVAILABLE
Next Blocked Group	Move SIM card to next blocked group if SIM card was BLOCKED
Master Group	Only used for PROMOTION group
Testing Group	Related TESTING group, used to learn SIM number, generate bi-directional SMS/CALL
Paid Group	Related PAID group, used to do SIM recharge via USSD/SMS/CALL
Max Work SIM	Maximum SIM card in this group 0 - no limitation
SIM Total Count	Current total SIM count
SIM Normal Count	Current normal SIM count
SIM Available Count	Current available SIM count, means normal and allocatable

SIM Card Select Order:

Item	Description
Ascending	Allocate SIM card by ASC order in one group
Descending	Allocate SIM card by DESC order in one group
Random	Allocate SIM card by RANDOM order in one group
Max Unused Time	Allocate SIM card by highest priority for max unused time, means "most break, first use"
Min Call Time	Allocate SIM card by highest priority for min CALL time, means "max balance, first use"
Max Call Time	Allocate SIM card by highest priority for max CALL time, means "min balance, first use", then kick out NO_BALANCE card ASAP
Min Call Count	Allocate SIM card by highest priority for min CALL count
Max Call Count	Allocate SIM card by highest priority for max CALL count

SIM Card Switchover Condition:

Item	Description

By Max Call Count Card	Card limitation of CALL count, set NO_BALANCE if reached
By Max Call Count Once	Once limitation of CALL count, release SIM card if reached, and reset to zero at next allocation
By Max Call Count Day	Day limitation of CALL count, release SIM card if reached, and reset to zero at 00:00 every day
By Max Call Count Month	Month limitation of CALL count, release SIM card if reached, and reset to zero at 1st day of each month
By Max Call Time Card	Card limitation of CALL time, set NO_BALANCE if reached
By Max Call Time Once	Once limitation of CALL time, release SIM card if reached, and reset to zero at next allocation
By Max Call Time Day	Day limitation of CALL time, release SIM card if reached, and reset to zero at 00:00 every day
By Max Call Time Month	Month limitation of CALL time, release SIM card if reached, and reset to zero at 1st day of each month
By Max SMS Count Card	Card limitation of SMS count, set NO_BALANCE if reached
By Max SMS Count Once	Once limitation of SMS count, release SIM card if reached, and reset to zero at next allocation
By Max SMS Count Day	Day limitation of SMS count, release SIM card if reached, and reset to zero at 00:00 every day
By Max SMS Count Month	Month limitation of SMS count, release SIM card if reached, and reset to zero at 1st day of each month
By Max USSD Count Card	Card limitation of USSD count, set NO_BALANCE if reached
By Max USSD Count Once	Once limitation of USSD count, release SIM card if reached, and reset to zero at next allocation
By Max USSD Count Day	Day limitation of USSD count, release SIM card if reached, and reset to zero at 00:00 every day
By Max USSD Count Month	Month limitation of USSD count, release SIM card if reached, and reset to zero at 1st day of each month
By Max Group Time Card	Card limitation of staying in one group, set NO_BALANCE if reached
By Max Work Time Card	Card limitation of allocated and working in one group, set NO_BALANCE if reached
By Max Work Time Once	Once limitation of allocated and working in one group, release SIM card if reached, and reset to zero at next allocation
By Min Break Time Once	Break limitation after SIM card was released, must delay a moment, then allow to allocate it again
By Promotion Work Time	Card limitation of SIM promotion valid time, increasing across several working groups, and set NO_BALANCE if promotion expired
By Promotion Call Time	Card limitation of max CALL time by SIM promotion, increasing across several working groups, and set NO_BALANCE if reached
By Max SIM Register Fail	Card limitation of max register fail, set BLOCKED if reached, kick out abnormal SIM card
By BALANCE_CHECK Delay	Switchover delay by NO_BALANCE or LOW_BALANCE, but LOW_BALANCE condition is optional, depend on next setting

LOW_BALANCE Special Switchover Mode	• NO Switchover – discard LOW_BALANCE condition • DELAY Switchover – delay a moment, e.g. try to check balance firstly, if NO_BALANCE, release SIM card • FORCE Switchover – force to release SIM card, even if SIM card was busy in calling
GRP_NOT_AVAILABLE to Next Working Group	• NO – don't switch to next working group if SIM card was in GRP_NOT_AVAILABLE condition • YES – switch to next working group if SIM card was in GRP_NOT_AVAILABLE condition, e.g. 8:00~18:00 in group-1, and 18:00~8:00 in group-2

Notes:

- If SIM card reached anyone limitation of enabled switchover conditions, release the SIM card, and try to allocate next one!

SIM Card Statistics Condition:

Item	Description
Don't Increase Statistics Data for Failure CDR	• NO – don't discard failure CDR, increasing statistics values of CALL_COUNT_XXX and CALL_TIME_XXX • YES – discard failure CDR, default setting
Call Direction	• CALL_IN – only increasing statistics value by CALL_IN CDR • CALL_OUT – only increasing statistics value by CALL_OUT CDR • CALL_DUAL – increasing statistics value by CALL_IN and CALL_OUT CDR
Call Billing Increment	First billing unit after CALL was connected 30 – default is 30 seconds
Call Billing Period Unit	Next period unit if CALL time was longer than first billing unit 0 – meaningless, use default value as same as first billing unit
Don't Increase Statistics Data for Failure SMS	• NO – don't discard failure SMS, increasing statistics values of SMS_COUNT_XXX • YES – discard failure SMS, default setting
SMS Direction	• SMS_RECV – only increasing statistics value by received SMS • SMS_SEND – only increasing statistics value by sent SMS • SMS_DUAL – increasing statistics value by received and sent SMS
Don't Increase Statistics Data for Failure USSD	• NO – don't discard failure USSD, increasing statistics values of USSD_COUNT_XXX • YES – discard failure USSD, default setting

USSD Direction	• USSD_RECV – only increasing statistics value by received USSD • USSD_SEND – only increasing statistics value by sent USSD • USSD_DUAL – increasing statistics value by received and sent USSD

SIM Advanced Action:

Item	Description
IMEI Assignment Mode	• NULL – do nothing • EACH_LOAD – update IMEI after SIM was inserted into DWG or SIMBANK • EACH_BIND – update IMEI after SIM was allocated
Specific IMEI TACs	IMEI format: TAC(8) + SN(6) + checksum(1) Use comma to separate multiple TACs, e.g. 35421803,35685702,35693603 Randomly choose one TAC from list EMPTY – automatically generate by system
Min IMEI Serial No Max IMEI Serial No	Randomly generate SN by the range [Min … Max] 0 – automatically generate by system
Auto Delete OFFLINE SIM after Pull Out	• NO – don't delete OFFLINE SIM card • YES – automatically delete OFFLINE SIM card after SIM was pulled out from device
Enable SIM Number Learning by Auto Generated SMS	• NO – don't update SIM number • YES – update SIM number by auto generated SMS if SIM number was NULL "auto generated SMS" means SMS from working SIM to testing SIM after working SIM registered or periodically generated
Number Cut Prefix	Cut off specific prefix in SMS From number, e.g. +86xxxxxxxx, set "+86" to cut off EMPTY – do nothing
Number Add Prefix	Add specific prefix into SIM number, e.g. xxxxxxxx, set "33" to add prefix as "33xxxxxxxx" EMPTY – do nothing
Auto Send SMS/USSD after SIM REG-OK	• NO – do nothing • YES – send out SMS or USSD after SIM registered
Only If SIM Number was NULL	Special for learning SIM number by SMS, send out only once if SIM number was empty Notes: send to number MUST be testing SIM card
Send Type	• SMS – send out SMS • USSD – send out USSD
Send Number	Only for SMS, send to number
Send Content	Text content of SMS or USSD
Auto Send SMS/USSD at The End of Call	• NO – do nothing • YES – send out SMS or USSD at the end of call
Send Type	• SMS – send out SMS • USSD – send out USSD
Send Number	Only for SMS, send to number
Send Content	Text content of SMS or USSD

Human Behavior – Abnormal CDR:

Item	Description
Enable Abnormal CDR Monitor	• NO – disabled • YES – enabled, monitor abnormal CDR to kick out not available SIM card
Short CDR Monitor	• NO – disabled • YES – enabled, detect and set "short CDR" as CALL_FAIL
Min Call Duration Max Call Duration	If CALL duration was in the range of [Min … Max], looks the CDR as "Short CDR"
Max Short CDR Count	Limitation of continuously occurred short CDR Notes: excluding failure CDR, and filtered by SIM statistics conditions, but any normal CDR arrived, reset the count to zero
Short CDR Action	• NULL – do nothing, only for statistics • BLOCKED – block SIM if SIM card reached the limitation • NO_BALANCE – set NO_BALANCE if SIM card reached the limitation
Fail CDR Monitor	• NO – disabled • YES – enabled, detect failure CDR
Max Fail CDR Count	Limitation of continuously occurred fail CDR Notes: filtered by SIM statistics conditions, and any short/normal CDR arrived, reset the count to zero
Fail CDR Action	• NULL – do nothing, only for statistics • BLOCKED – block SIM if SIM card reached the limitation • NO_BALANCE – set NO_BALANCE if SIM card reached the limitation
Low ASR Monitor	• NO – disabled • YES – enabled, detect low ASR
Call Count Limitation	Limitation of CALL count in one period, the monitor period is 15 minutes, based on 15M statistics data
Call ASR Limitation	Limitation of CALL ASR in one period, the monitor period is 15 minutes, based on 15M statistics data If CALL count was higher than count limitation and CALL ASR was lower than ASR limitation, looks SIM card as abnormal
Low ASR Action	• NULL – do nothing, only for statistics • BLOCKED – block SIM if SIM card reached the limitation • NO_BALANCE – set NO_BALANCE if SIM card reached the limitation

Human Behavior – Promotion Management:

Item	Description
Enable SIM Promotion Management	• NO – disabled • YES – enabled, only for PROMOTION/MASTER Group

Send Type	• SMS – send request by SMS • USSD – send request by USSD
Send Number	Only for SMS, send to number
Send Content	Text content of SMS/USSD
Confirm Keys-1	Keywords in matched response, use comma to separate multiple keywords, e.g. "hello,promotion type,one day" EMPTY – means no confirm step Notes: matching keywords one by one with strict order, and [SPACE] is sensitive
Reply Info-1	Send reply to operator
Reply Type-1	• DIRECT – send reply content directly • NUMBER – send SIM number • OPTION – send option number by option keywords, e.g. 1 – promotion type one, set reply info as "promotion type one", then system send "1" to operator • NUMBER_UPDATE – update SIM number by response, the number locates after confirm keywords in response, if reply info isn't NULL, will send reply content directly
Confirm Keys-2 Confirm Keys-3 Confirm Keys-4 Confirm Keys-5 Confirm Keys-6	as similar as confirm keys-1, step by step EMPTY – means no confirm-n step
Reply Info-2 Reply Info-3 Reply Info-4 Reply Info-5 Reply Info-6	as similar as reply info -1, step by step
Reply Type-2 Reply Type-3 Reply Type-4 Reply Type-5 Reply Type-6	as similar as reply type-1, step by step
Success Keys-1 Success keys-2	Success matching keywords, any one was matched, means success EMPTY – means no success response, look as success by default
Failure Keys-1 Failure Keys-2 Failure Keys-3 Failure Keys-4 Failure Keys-5	Failure matching keywords, any one was matched, means failure EMPTY – discard
Waiting SIM Balance Check	• NO – no limitation • YES – waiting SIM balance check before applying promotion to avoid applying failure by NO_BALANCE
Apply Request Timeout	Timeout for waiting response from operator 1 – default is 1 minute
Apply Retries Interval	Retries interval from last failure to next apply 1 – default is 1 minute

Max Apply Retries	Limitation of applying retires for each SIM card 3 – default is 3 times
Max Apply Count of Day	Limitation of applying count per day 0 – no limitation

Human Behavior – Auto Generation:

Item	Description
Enable Auto SMS Generation	• NO – disabled • YES – enabled, generate SMS between TESTING group and this group, if no TESTING group, MUST set specific numbers
SMS Direction	• SMS_RECV – generate SMS from TESTING group to this group • SMS_SEND – generate SMS from this group to TESTING group • SMS_DUAL – generate bi-directional SMS between TESTING group and this group
SMS Spec Number	Send to number list, use comma to separate multiple numbers, e.g. 22220001,22220002,22220003,… EMPTY – use TESTING group, no number list required
SMS Interval	Interval of generating SMS
SMS Random	• 0% - disabled • 25% - 25% generating rate • 50% -50% generating rate • 75% -75% generating rate • 100% - 100% generating rate
SIM Switchover while Continuous Loss	• NO – do nothing • YES – working with TESTING group, if SIM reached the limitation of continuous loss, set SIM card as BLOCKED
Max SMS Loss Count	Limitation of continuous loss count
Random Content-1 Random Content-2 Random Content-3 Random Content-4 Random Content-5	Random content to generate auto SMS
Enable Auto CALL Generation	• NO – disabled • YES – enabled, generate CALL between TESTING group and this group, if no TESTING group, MUST set specific numbers
CALL Direction	• CALL_IN – generate CALL from TESTING group to this group • CALL_OUT – generate CALL from this group to TESTING group • CALL_DUAL – generate bi-directional CALL between TESTING group and this group
CALL Spec Number	Call to number list, only for CALL_OUT, use comma to separate multiple numbers, e.g. 22220001,22220002,22220003,… EMPTY – use TESTING group, no number list required
CALL Interval	Interval of generating CALL

CALL Random	• 0% - disabled • 25% - 25% generating rate • 50% -50% generating rate • 75% -75% generating rate • 100% - 100% generating rate
Auto Connection(Off-hook) at Callee Side	• NO – don't connect testing CALL • YES – auto connect for testing CALL
Call Duration	Call duration of testing CALL 0 – default is 0 second, means off-hook at first, then off-hook immediately
Testing Tone Type	• NULL – no testing tone • Random DTMF – play random DTMF to check voice available • Random IVR – play random IVR
SIM Switchover while Continuous CALL Failure	• NO – do nothing • YES – working with TESTING group, if SIM reached the limitation of continuous CALL failure, set SIM card as BLOCKED
Max CALL Fail Count	Limitation of continuous CALL failure

Human Behavior – Balance Check:

Item	**Description**
Enable SIM Balance Check	• NO – do nothing • YES – check SIM balance and update left-time-call by CDR
Initial SIM Balance	Initial balance while SIM card was added into this group 0 – means unknown
Default Billing Rate	Default billing rate of call, if no specific setting in policy rules, use this setting 0 – means unknown
Current Billing Rate	If no specific setting in policy rules, it is as same as default billing rate, otherwise would be updated by specific setting 0 – means unknown
Balance Threshold	Limitation of LOW_BALANCE and NO_BALANCE If actual SIM balance was less than the threshold, set SIM card as NO_BALANCE If calculated SIM balance by CDR was less than the threshold, set SIM card as LOW_BALANCE 0 – means unknown
Auto Inquire SIM Balance by SMS/USSD/CALL	• NO – do nothing • YES – auto inquire SIM balance by specific conditions
Inquire Timeout	Timeout of inquiring SIM balance 1 – default is 1 minute
Max Inquire Retries	Max retries of inquiring SIM balance if no response 0 – default is 0, means inquiring only once, and don't set SIM as BLOCKED if inquire failure

Block SIM Card after Inquire Failure	If SIM card reached the limitation of inquiring retries(>0), set SIM card as BLOCKED
Send Type	• SMS – inquire SIM balance by SMS • USSD – inquire SIM balance by USSD • CALL – inquire SIM balance by CALL
Send Number	Send to number in SMS mode, or CALL to number in CALL mode
Content	Text content of SMS or USSD
Call Connect Flag	• NO – don't connect for inquiring balance call • YES – auto connect for inquiring balance call
Call Duration	Duration of inquiring balance call
Confirm Keys-1	Keywords in matched response, use comma to separate multiple keywords, e.g. "hello,please reply inquire type" EMPTY – means no confirm step Notes: matching keywords one by one with strict order, and [SPACE] is sensitive
Reply Info-1	Send reply to operator
Reply Type-1	• DIRECT – send reply content directly • NUMBER – send SIM number • OPTION – send option number by option keywords, e.g. "1 – master account", set reply info as "master account", then system send "1" to operator
Confirm Keys-2 Confirm Keys-3	as similar as confirm keys-1, step by step EMPTY – means no confirm-n step
Reply Info-2 Reply Info-3	as similar as reply info -1, step by step
Reply Type-2 Reply Type-3	as similar as reply type-1, step by step
Inquire Delay after SIM REG-OK	• NO – disabled • YES – enabled, if SIM card was REG-OK, wait a moment, then auto inquire SIM balance 5 – default is 5 seconds
Inquire Delay after the End of Normal CALL	• NO – disabled • YES – enabled, after the end of normal call, wait a moment, if no CALL arrived, auto inquire SIM balance 60 – default is 60 seconds
Inquire Threshold of Abnormal CDR Count	If abnormal CDR count reached the threshold, auto inquire SIM balance
Inquire Delay after SIM LOW_BALANCE	If SIM was LOW_BALANCE, wait a moment, then auto inquire SIM balance to refresh 5 – default is 5 seconds
Inquire Delay after SIM Recharged	If SIM was recharged, wait a moment, then auto inquire SIM balance to refresh 5 – default is 15 seconds
Send USSD after the End of Each CALL	• NO – do nothing • YES – enabled, try to send out USSD periodically after CALL arrived
Send USSD Interval	Interval of sending out USSD 120 – default is 120 minutes
Send USSD Content	Text content of USSD cmd

Check SMS Balance Info	• NO – discard • YES – enabled, update SIM balance by SMS response
SMS From Numbers	Full number which reporting SIM balance, use comma to separate multiple numbers, e.g. 22220001,22220002,… EMPTY – no limitation
Check USSD Balance Info	• NO – discard • YES – enabled, update SIM balance by USSD response
Balance Prefix Keys-1 Balance Prefix Keys-2 Balance Prefix Keys-3 Balance Prefix Keys-4 Balance Prefix Keys-5	Keywords in matched balance response, use comma to separate multiple keywords, e.g. "hello,current balance is:" Notes: matching keywords one by one with strict order, then get balance after these keywords
Digit Thousand Symbol	Support 3 types of thousand symbol: [.], [,], [SPACE] [,] – default is comma
Digit Decimal Symbol	Support 2 types of decimal symbol: [.], [,] [.] – default is point
Auto Recharge while Balance Less Than Threshold	• NO – do nothing • YES – if SIM balance was less than threshold, means LOW_BALANCE or NO_BALANCE, do recharge automatically
Max Recharge Retries	Max retries to do recharge SIM card 0 – default is 0, means only do recharge once
Recharge Timeout	Timeout of waiting recharge response 1 – default is 1 minute
Recharge Interval	Interval to do recharge SIM card again 3 – default is 3 minutes
Recharge Success Keys	Success matching keywords EMPTY – means no success response, look as success after SENT-OK
Recharge Failure Keys-1 Recharge Failure Keys-2 Recharge Failure Keys-3 Recharge Failure Keys-4 Recharge Failure Keys-5	Failure matching keywords, any one was matched, means recharge failure EMPTY – discard

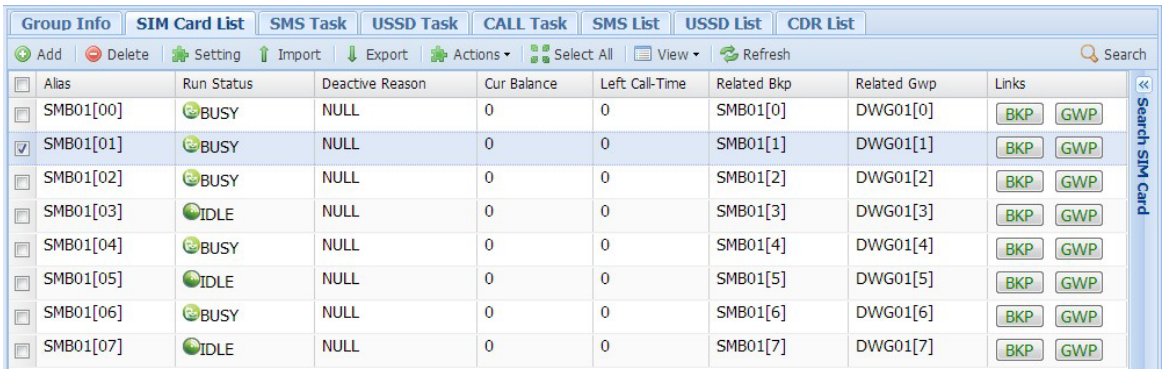
Human Behavior – Blocked:

Item	Description
Enable SIM BLOCKED Monitor	• NO – disabled • YES – enabled, detect SIM BLOCKED notification, then set SIM card as BLOCKED
Check SMS BLOCKED Info	• NO – disabled • YES – enabled, detect SIM BLOCKED notification by SMS
SMS From Numbers	Full number which reporting SIM blocked, use comma to separate multiple numbers, e.g. 22220001,22220002,… EMPTY – no limitation

Check USSD BLOCKED Info	• NO – disabled • YES – enabled, detect SIM BLOCKED notification by USSD
BLOCKED Check Keys-1 BLOCKED Check Keys-2 BLOCKED Check Keys-3	Blocked matching keywords, any one was matched, set SIM card as BLOCKED EMPTY – discard

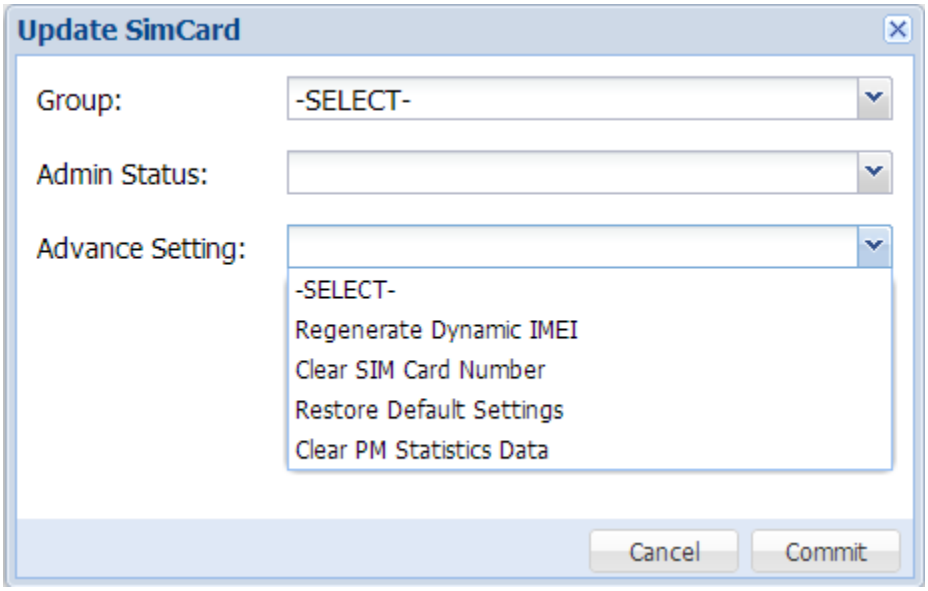
3.1.13 SIM Card List

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[SIM Card List]**, show detail information of the SIM Card List.



Alias	Run Status	Deactive Reason	Cur Balance	Left Call-Time	Related Bkp	Related Gwp	Links
SMB01[00]	BUSY	NULL	0	0	SMB01[0]	DWG01[0]	BKP GWP
SMB01[01]	BUSY	NULL	0	0	SMB01[1]	DWG01[1]	BKP GWP
SMB01[02]	BUSY	NULL	0	0	SMB01[2]	DWG01[2]	BKP GWP
SMB01[03]	IDLE	NULL	0	0	SMB01[3]	DWG01[3]	BKP GWP
SMB01[04]	BUSY	NULL	0	0	SMB01[4]	DWG01[4]	BKP GWP
SMB01[05]	IDLE	NULL	0	0	SMB01[5]	DWG01[5]	BKP GWP
SMB01[06]	BUSY	NULL	0	0	SMB01[6]	DWG01[6]	BKP GWP
SMB01[07]	IDLE	NULL	0	0	SMB01[7]	DWG01[7]	BKP GWP

Setting for multiple SIM cards:

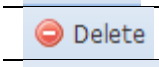
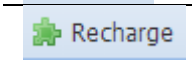
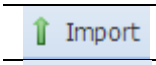
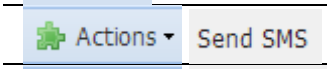
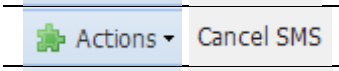
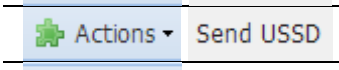
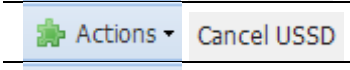
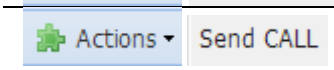
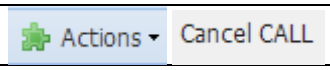


Update Info:

Item	Description
SIM Group	Move SIM card into specific SIM Group

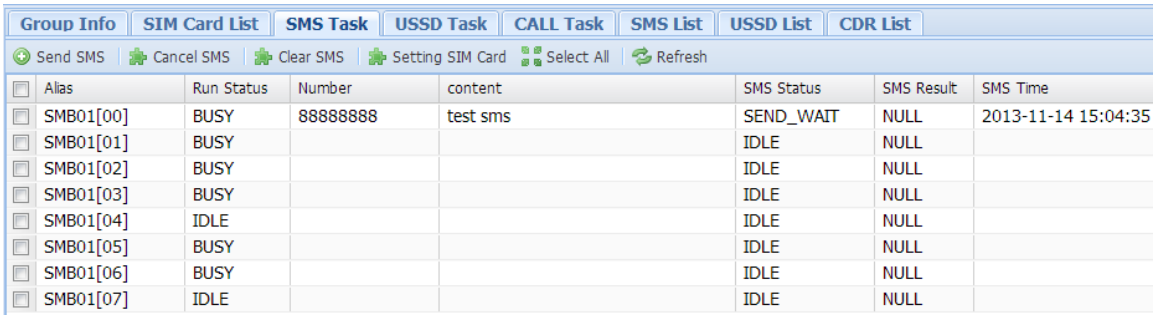
Admin Status	• ENABLED – enable SIM card • DISABLED – disable SIM card • NO_BALANCE – set SIM card as NO_BALANCE
Advanced Setting – Regenerate Dynamic IMEI	Force to update dynamic IMEI for SIM card
Advanced Setting – Clear SIM Card Number	Clear number of SIM card to learn again
Advanced Setting – Restore Default Setting	Restore SIM card to initialized status, e.g. clear BLOCKED status
Advanced Setting – Clear PM Statistics Data	Clear statistics data of SIM card

Actions for multiple SIM cards:

Item	Description
	Add new SIM card into this group
	Delete SIM card from this group
	Do recharge for specific SIM cards, auto allocate one paid info from configured Paid Group
	Import SIM cards from excel file
	Export SIM cards into excel file
	Send SMS via specific SIM cards
	Cancel SMS
	Send USSD via specific SIM cards
	Cancel USSD
	Send Testing CALL via specific SIM cards
	Cancel Testing CALL

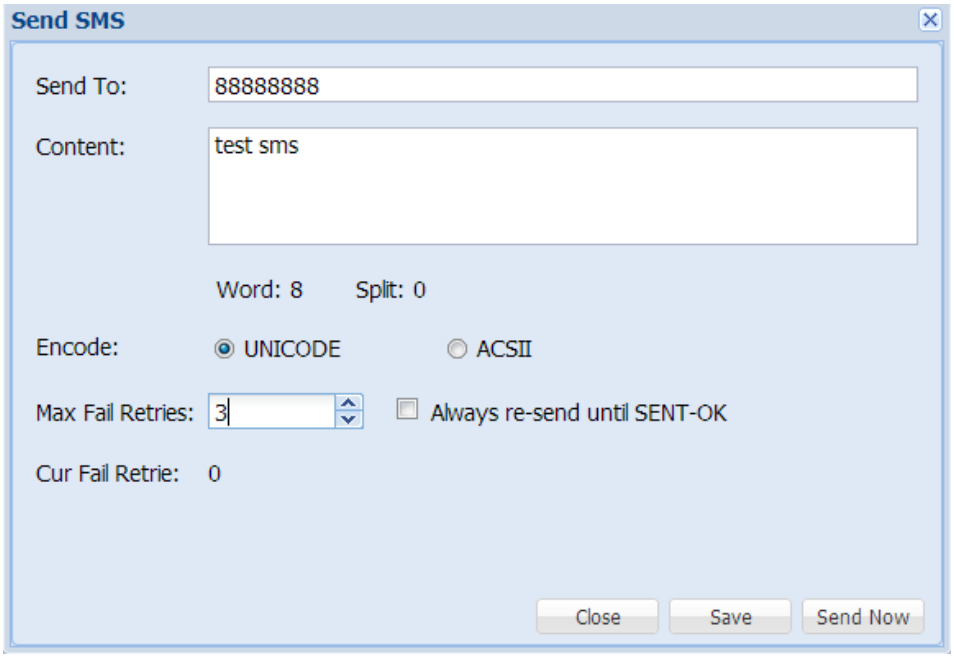
3.1.14 SIM SMS Task

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[SMS Task]**, show detail information of the SMS Task.



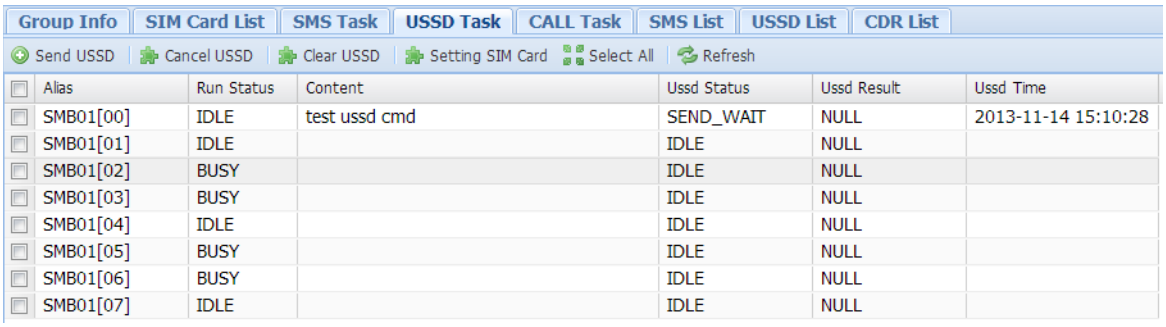
Alias	Run Status	Number	content	SMS Status	SMS Result	SMS Time
SMB01[00]	BUSY	88888888	test sms	SEND_WAIT	NULL	2013-11-14 15:04:35
SMB01[01]	BUSY			IDLE	NULL	
SMB01[02]	BUSY			IDLE	NULL	
SMB01[03]	BUSY			IDLE	NULL	
SMB01[04]	IDLE			IDLE	NULL	
SMB01[05]	BUSY			IDLE	NULL	
SMB01[06]	BUSY			IDLE	NULL	
SMB01[07]	IDLE			IDLE	NULL	

Send SMS dialog:



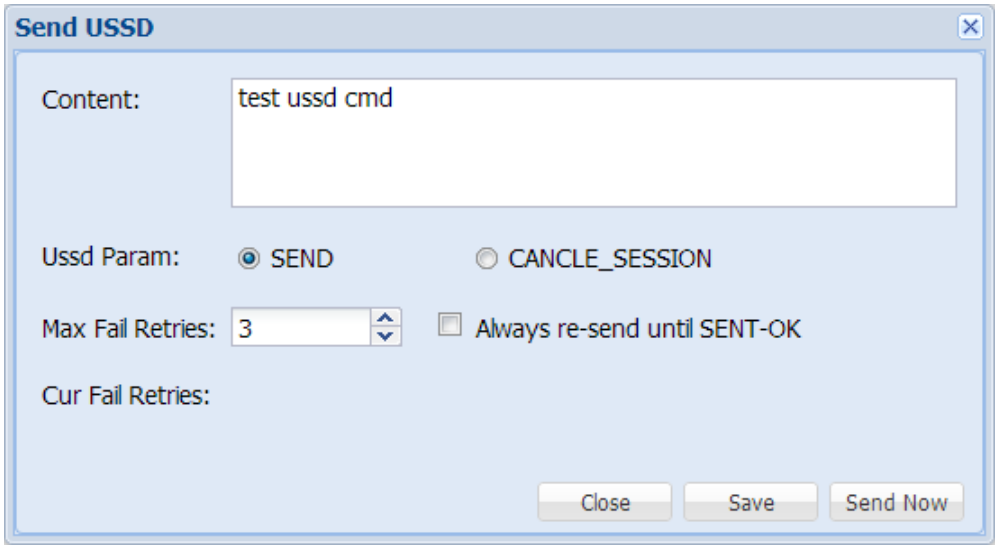
3.1.15 SIM USSD Task

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[USSD Task]**, show detail information of the USSD Task.



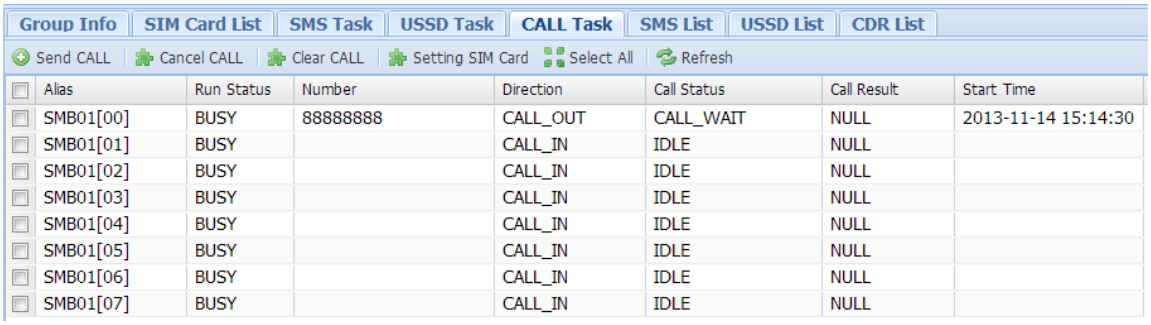
Alias	Run Status	Content	Ussd Status	Ussd Result	Ussd Time
SMB01[00]	IDLE	test ussd cmd	SEND_WAIT	NULL	2013-11-14 15:10:28
SMB01[01]	IDLE		IDLE	NULL	
SMB01[02]	BUSY		IDLE	NULL	
SMB01[03]	BUSY		IDLE	NULL	
SMB01[04]	IDLE		IDLE	NULL	
SMB01[05]	BUSY		IDLE	NULL	
SMB01[06]	BUSY		IDLE	NULL	
SMB01[07]	IDLE		IDLE	NULL	

Send USSD dialog:



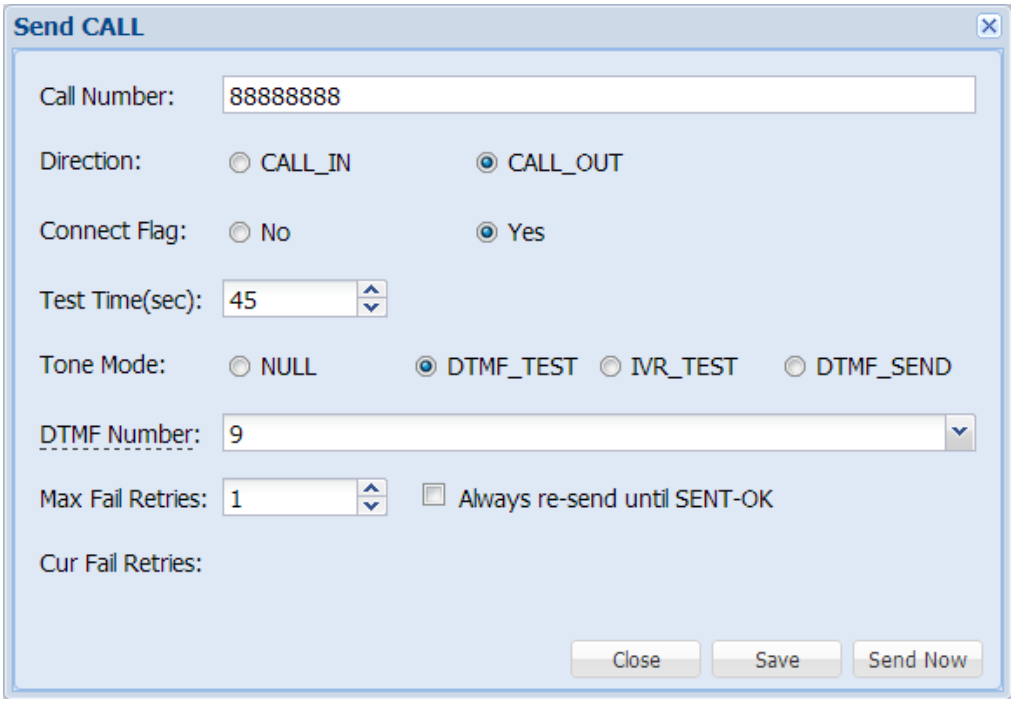
3.1.16 SIM CALL Task

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[CALL Task]**, show detail information of the CALL Task.



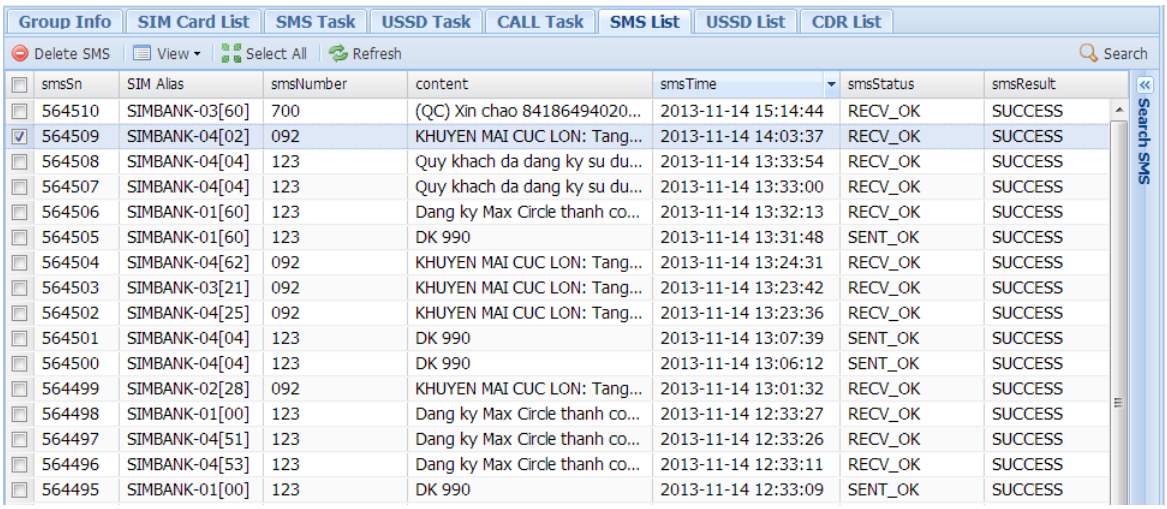
Alias	Run Status	Number	Direction	Call Status	Call Result	Start Time
SMB01[00]	BUSY	88888888	CALL_OUT	CALL_WAIT	NULL	2013-11-14 15:14:30
SMB01[01]	BUSY		CALL_IN	IDLE	NULL	
SMB01[02]	BUSY		CALL_IN	IDLE	NULL	
SMB01[03]	BUSY		CALL_IN	IDLE	NULL	
SMB01[04]	BUSY		CALL_IN	IDLE	NULL	
SMB01[05]	BUSY		CALL_IN	IDLE	NULL	
SMB01[06]	BUSY		CALL_IN	IDLE	NULL	
SMB01[07]	BUSY		CALL_IN	IDLE	NULL	

Send CALL dialog:



3.1.17 SIM SMS List

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[SMS List]**, show history information of the SMS List.

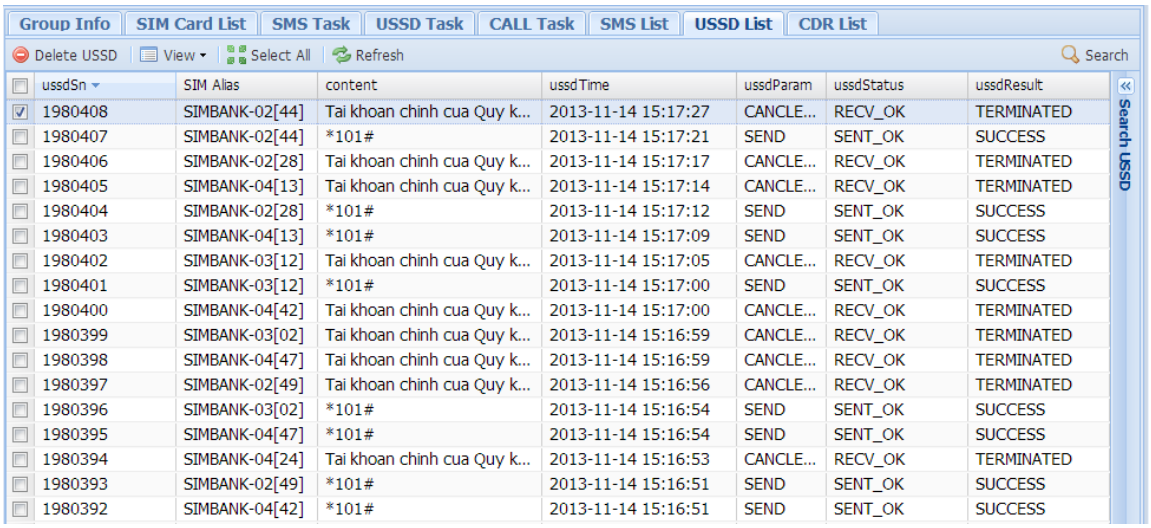


smsSn	SIM Alias	smsNumber	content	smsTime	smsStatus	smsResult
564510	SIMBANK-03[60]	700	(QC) Xin chao 84186494020...	2013-11-14 15:14:44	RECV_OK	SUCCESS
564509	SIMBANK-04[02]	092	KHUYEN MAI CUC LON: Tang...	2013-11-14 14:03:37	RECV_OK	SUCCESS
564508	SIMBANK-04[04]	123	Quy khach da dang ky su du...	2013-11-14 13:33:54	RECV_OK	SUCCESS
564507	SIMBANK-04[04]	123	Quy khach da dang ky su du...	2013-11-14 13:33:00	RECV_OK	SUCCESS
564506	SIMBANK-01[60]	123	Dang ky Max Circle thanh co...	2013-11-14 13:32:13	RECV_OK	SUCCESS
564505	SIMBANK-01[60]	123	DK 990	2013-11-14 13:31:48	SENT_OK	SUCCESS
564504	SIMBANK-04[62]	092	KHUYEN MAI CUC LON: Tang...	2013-11-14 13:24:31	RECV_OK	SUCCESS
564503	SIMBANK-03[21]	092	KHUYEN MAI CUC LON: Tang...	2013-11-14 13:23:42	RECV_OK	SUCCESS
564502	SIMBANK-04[25]	092	KHUYEN MAI CUC LON: Tang...	2013-11-14 13:23:36	RECV_OK	SUCCESS
564501	SIMBANK-04[04]	123	DK 990	2013-11-14 13:07:39	SENT_OK	SUCCESS
564500	SIMBANK-04[04]	123	DK 990	2013-11-14 13:06:12	SENT_OK	SUCCESS
564499	SIMBANK-02[28]	092	KHUYEN MAI CUC LON: Tang...	2013-11-14 13:01:32	RECV_OK	SUCCESS
564498	SIMBANK-01[00]	123	Dang ky Max Circle thanh co...	2013-11-14 12:33:27	RECV_OK	SUCCESS
564497	SIMBANK-04[51]	123	Dang ky Max Circle thanh co...	2013-11-14 12:33:26	RECV_OK	SUCCESS
564496	SIMBANK-04[53]	123	Dang ky Max Circle thanh co...	2013-11-14 12:33:11	RECV_OK	SUCCESS
564495	SIMBANK-01[00]	123	DK 990	2013-11-14 12:33:09	SENT_OK	SUCCESS

3.1.18 SIM USSD List

Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[USSD List]**,

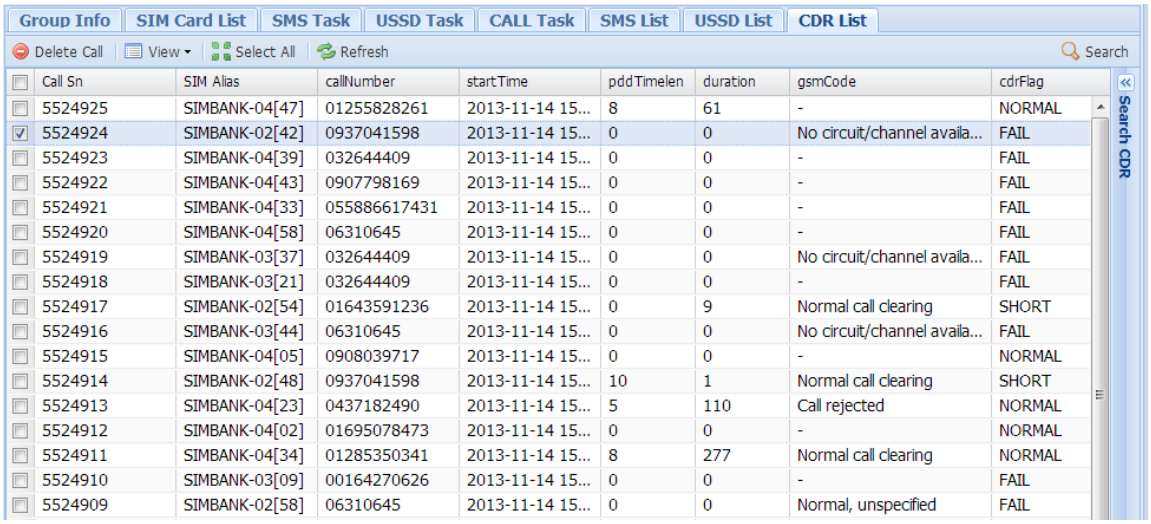
show history information of the USSD List.



ussdSn	SIM Alias	content	ussdTime	ussdParam	ussdStatus	ussdResult
1980408	SIMBANK-02[44]	Tai khoan chinh cua Quy k...	2013-11-14 15:17:27	CANCLE...	RECV_OK	TERMINATED
1980407	SIMBANK-02[44]	*101#	2013-11-14 15:17:21	SEND	SENT_OK	SUCCESS
1980406	SIMBANK-02[28]	Tai khoan chinh cua Quy k...	2013-11-14 15:17:17	CANCLE...	RECV_OK	TERMINATED
1980405	SIMBANK-04[13]	Tai khoan chinh cua Quy k...	2013-11-14 15:17:14	CANCLE...	RECV_OK	TERMINATED
1980404	SIMBANK-02[28]	*101#	2013-11-14 15:17:12	SEND	SENT_OK	SUCCESS
1980403	SIMBANK-04[13]	*101#	2013-11-14 15:17:09	SEND	SENT_OK	SUCCESS
1980402	SIMBANK-03[12]	Tai khoan chinh cua Quy k...	2013-11-14 15:17:05	CANCLE...	RECV_OK	TERMINATED
1980401	SIMBANK-03[12]	*101#	2013-11-14 15:17:00	SEND	SENT_OK	SUCCESS
1980400	SIMBANK-04[42]	Tai khoan chinh cua Quy k...	2013-11-14 15:17:00	CANCLE...	RECV_OK	TERMINATED
1980399	SIMBANK-03[02]	Tai khoan chinh cua Quy k...	2013-11-14 15:16:59	CANCLE...	RECV_OK	TERMINATED
1980398	SIMBANK-04[47]	Tai khoan chinh cua Quy k...	2013-11-14 15:16:59	CANCLE...	RECV_OK	TERMINATED
1980397	SIMBANK-02[49]	Tai khoan chinh cua Quy k...	2013-11-14 15:16:56	CANCLE...	RECV_OK	TERMINATED
1980396	SIMBANK-03[02]	*101#	2013-11-14 15:16:54	SEND	SENT_OK	SUCCESS
1980395	SIMBANK-04[47]	*101#	2013-11-14 15:16:54	SEND	SENT_OK	SUCCESS
1980394	SIMBANK-04[24]	Tai khoan chinh cua Quy k...	2013-11-14 15:16:53	CANCLE...	RECV_OK	TERMINATED
1980393	SIMBANK-02[49]	*101#	2013-11-14 15:16:51	SEND	SENT_OK	SUCCESS
1980392	SIMBANK-04[42]	*101#	2013-11-14 15:16:51	SEND	SENT_OK	SUCCESS

3.1.19 SIM CDR List

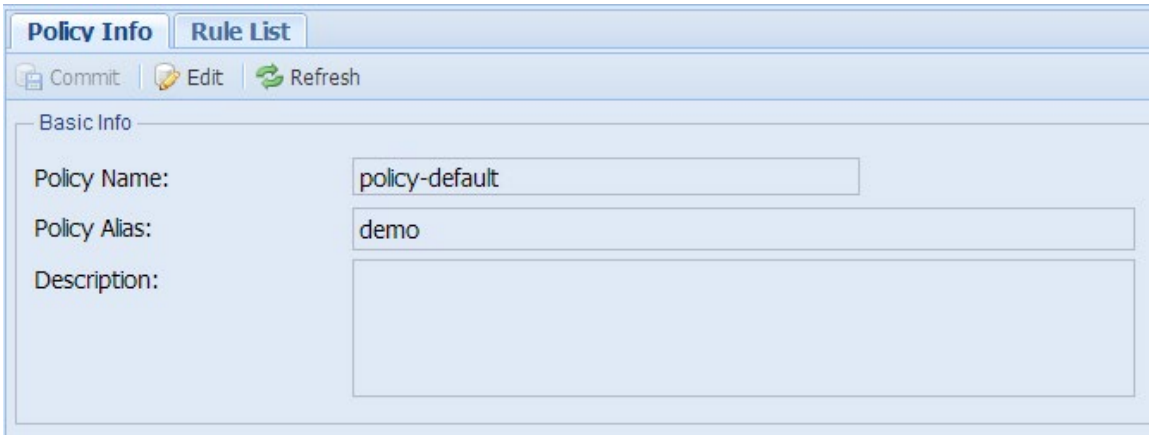
Click **[SIM GROUP/group-default]** on the Left Tree, then click TAB **[CDR List]**, show history information of the CDR List.



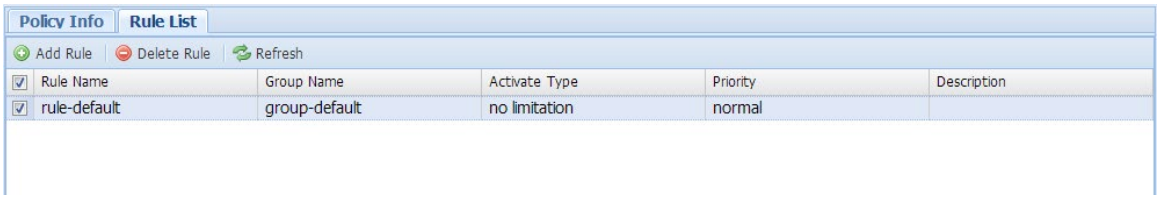
Call Sn	SIM Alias	callNumber	startTime	pddTimelen	duration	gsmCode	cdrFlag
5524925	SIMBANK-04[47]	01255828261	2013-11-14 15...	8	61	-	NORMAL
5524924	SIMBANK-02[42]	0937041598	2013-11-14 15...	0	0	No circuit/channel availa...	FAIL
5524923	SIMBANK-04[39]	032644409	2013-11-14 15...	0	0	-	FAIL
5524922	SIMBANK-04[43]	0907798169	2013-11-14 15...	0	0	-	FAIL
5524921	SIMBANK-04[33]	055886617431	2013-11-14 15...	0	0	-	FAIL
5524920	SIMBANK-04[58]	06310645	2013-11-14 15...	0	0	-	FAIL
5524919	SIMBANK-03[37]	032644409	2013-11-14 15...	0	0	No circuit/channel availa...	FAIL
5524918	SIMBANK-03[21]	032644409	2013-11-14 15...	0	0	-	FAIL
5524917	SIMBANK-02[54]	01643591236	2013-11-14 15...	0	9	Normal call clearing	SHORT
5524916	SIMBANK-03[44]	06310645	2013-11-14 15...	0	0	No circuit/channel availa...	FAIL
5524915	SIMBANK-04[05]	0908039717	2013-11-14 15...	0	0	-	NORMAL
5524914	SIMBANK-02[48]	0937041598	2013-11-14 15...	10	1	Normal call clearing	SHORT
5524913	SIMBANK-04[23]	0437182490	2013-11-14 15...	5	110	Call rejected	NORMAL
5524912	SIMBANK-04[02]	01695078473	2013-11-14 15...	0	0	-	NORMAL
5524911	SIMBANK-04[34]	01285350341	2013-11-14 15...	8	277	Normal call clearing	NORMAL
5524910	SIMBANK-03[09]	00164270626	2013-11-14 15...	0	0	-	FAIL
5524909	SIMBANK-02[58]	06310645	2013-11-14 15...	0	0	Normal, unspecified	FAIL

3.1.20 SIM Policy Info

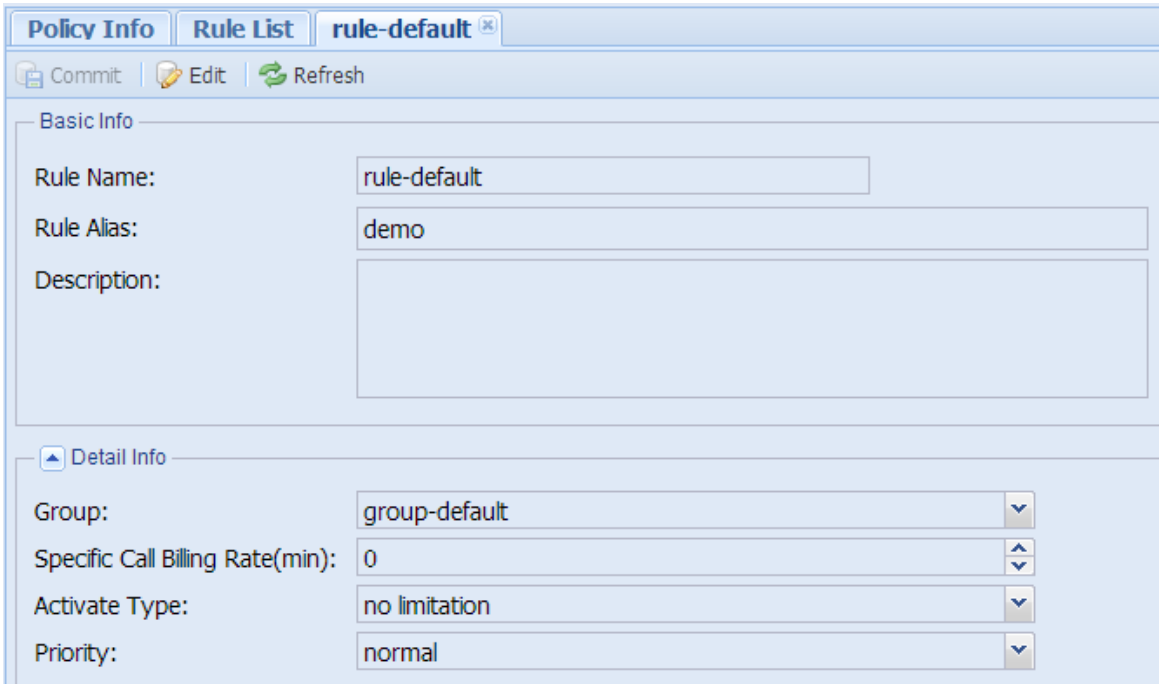
Click **[SIM POLICY/policy-default]** on the Left Tree, then click TAB **[Policy Info]**, show detail information of the SIM Policy.



One SIM policy supports up to 16 rules, and each rule includes one SIM group, click TAB **[Rule List]**, show detail information of the rules.



Double click one rule, show detail information of the rule.



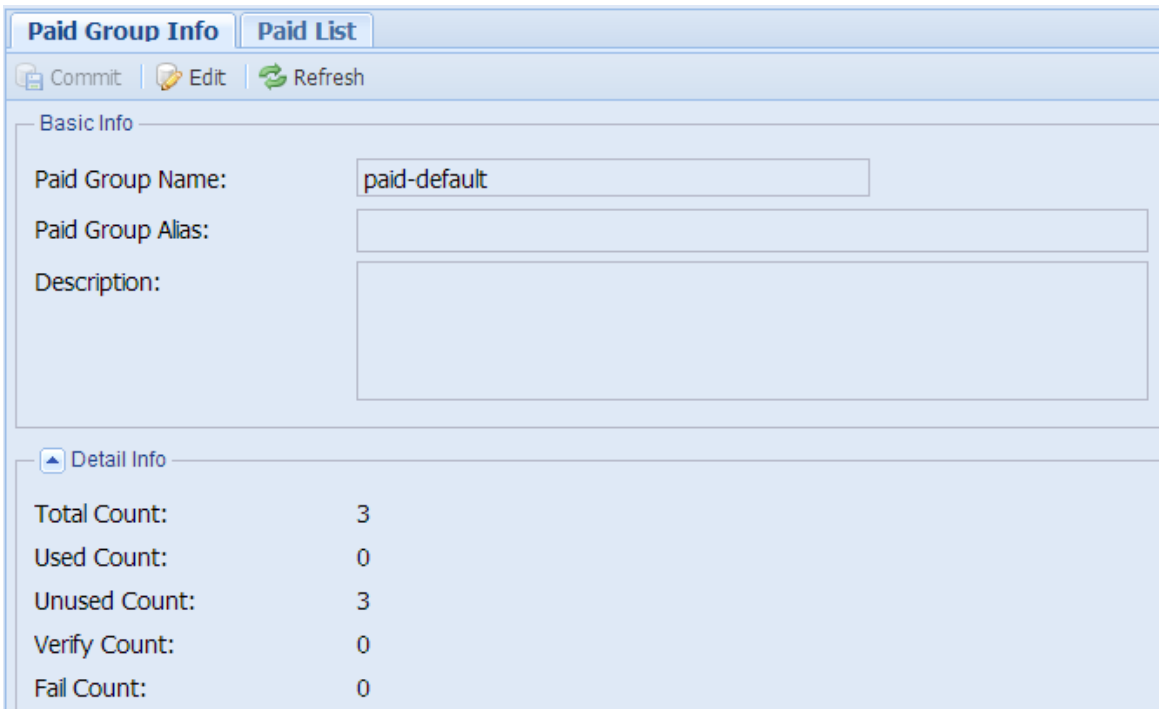
Detail Info:

Item	Description

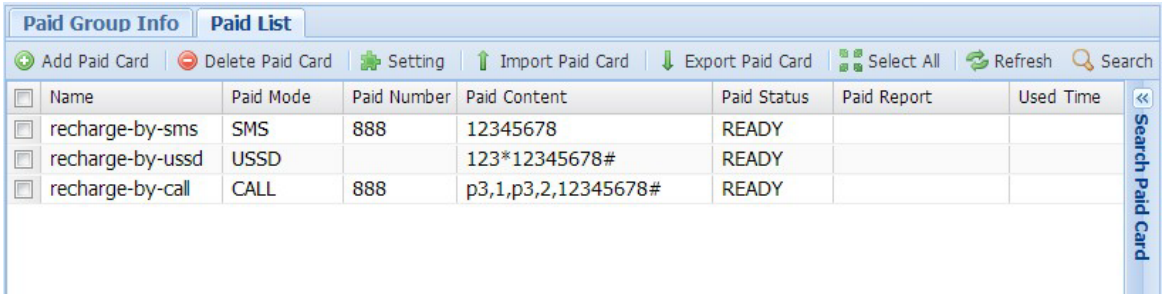
SIM Group	Specific SIM group for this rule
Specific CALL Billing Rate	Support time-based variable billing rate, if one rule was activated, update billing rate into specific SIM group
Activate Type	• No Limitation – always activated • By Time – begin time to end time • By Work Day – Sun,Mon,Tue,…,Sat
Rule Priority	Support 5 priorities: highest, higher, normal, lower, lowest If highest group has available SIM cards, will allocate these SIM cards firstly

3.1.21 SIM Paid Group

Click **[PAID GROUP/paid-default]** on the Left Tree, then click TAB **[Paid Group Info]**, show detail information of the Paid Group.



Click TAB **[Paid List]**, show detail information of the Paid List.



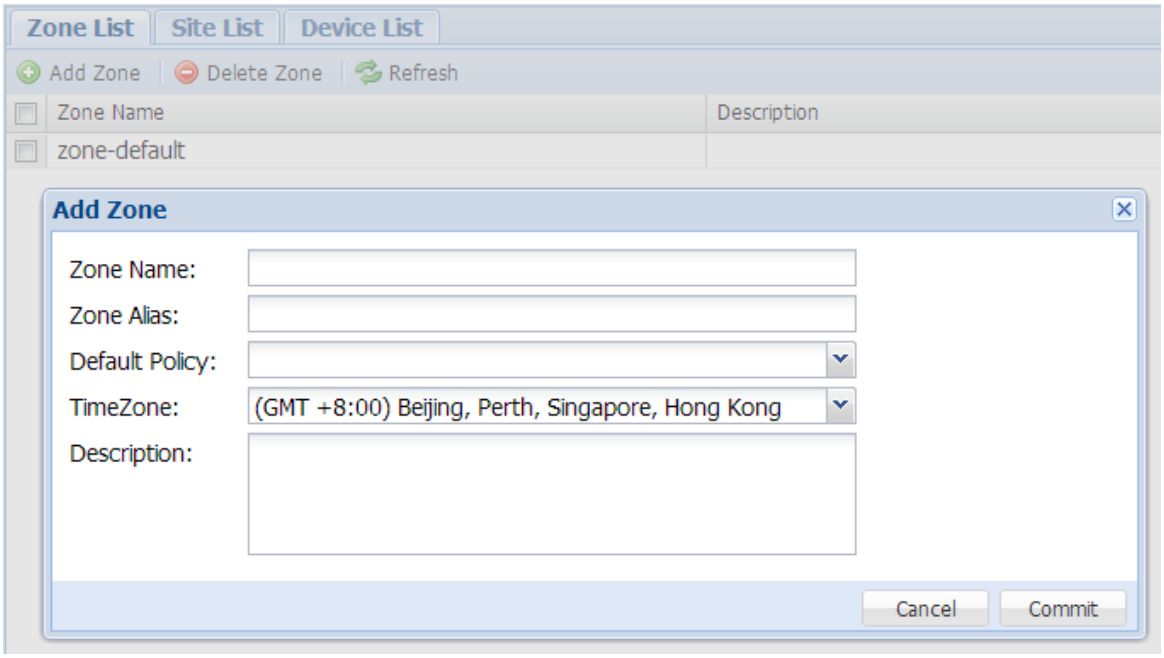
Detail Info:

Item	Description
Name	Name of paid list
Paid Mode	• SMS – recharge by SMS • USSD – recharge by USSD • CALL – recharge by CALL, support interactive DTMF sequence
Send Number	For SMS and CALL, send to number
Send Content	For SMS/USSD, means text content For CALL, means interactive DTMF sequence
Paid Status	• NULL – initial status • READY – available • VERIFY – used, need to confirm recharge result • FAIL – used, recharge failure • OK – used, recharge success

3.2 Add Configuration

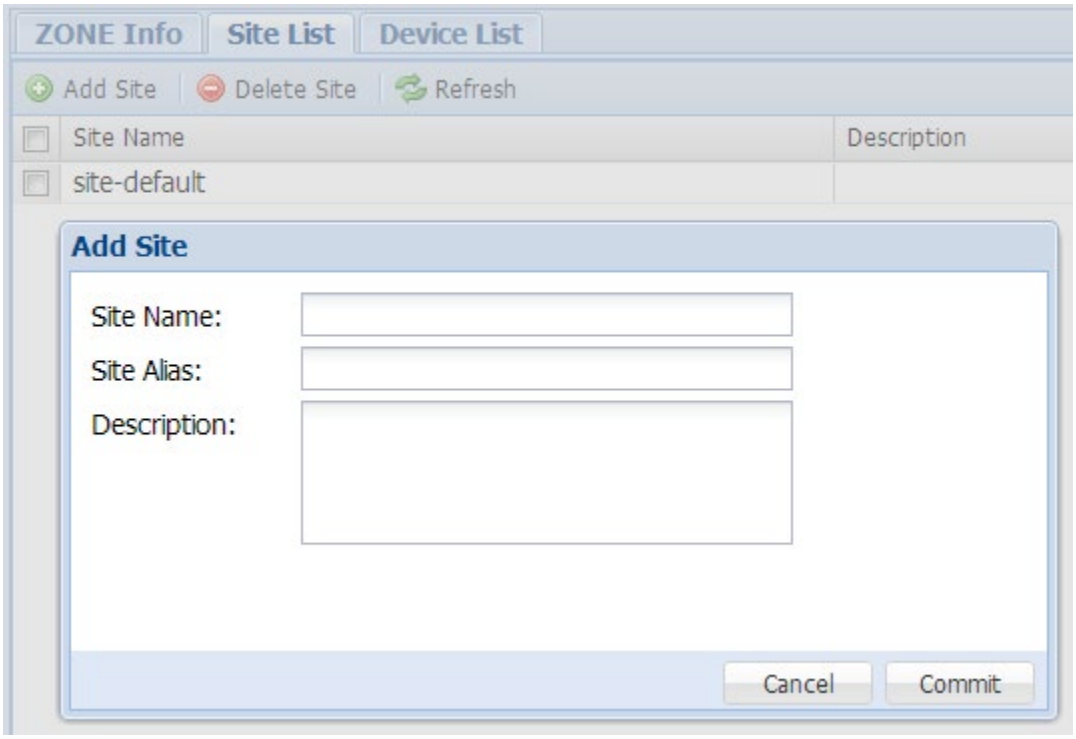
3.2.1 Add New Zone

Click **[ZONE]** on the Left Tree, show Zone List, then add new zone.



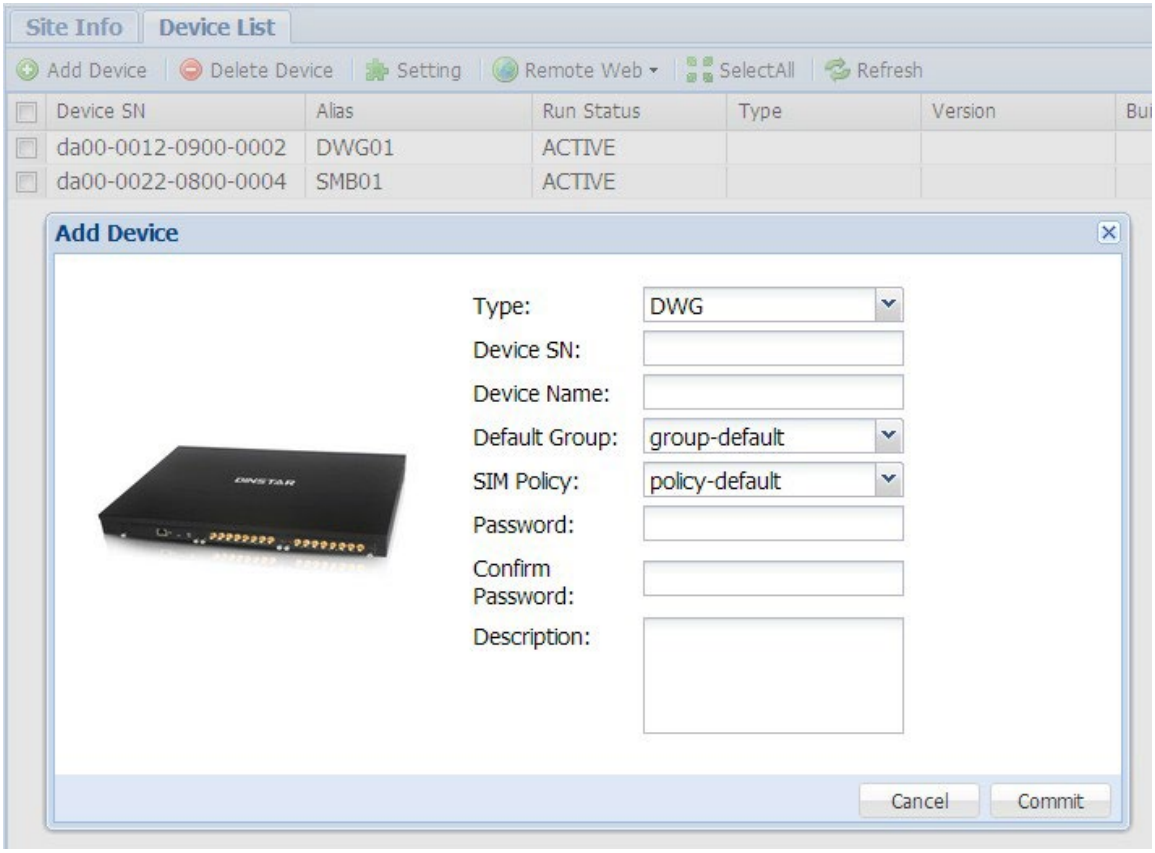
3.2.2 Add New Site

Click **[ZONE/zone-default]** on the Left Tree, and click TAB **[Site List]**, then add new site.



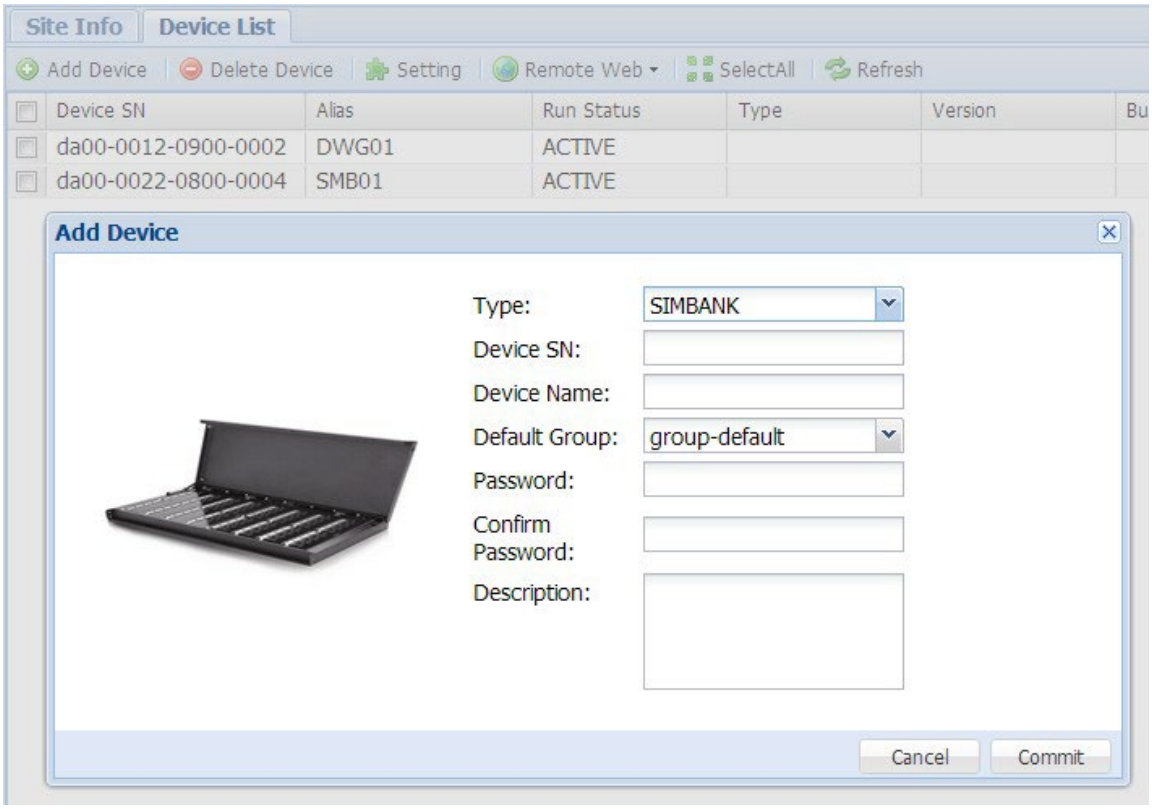
3.2.3 Add New DWG

Click **[ZONE/zone-default/site-default]** on the Left Tree, and click TAB **[Device List]**, then add new DWG device.



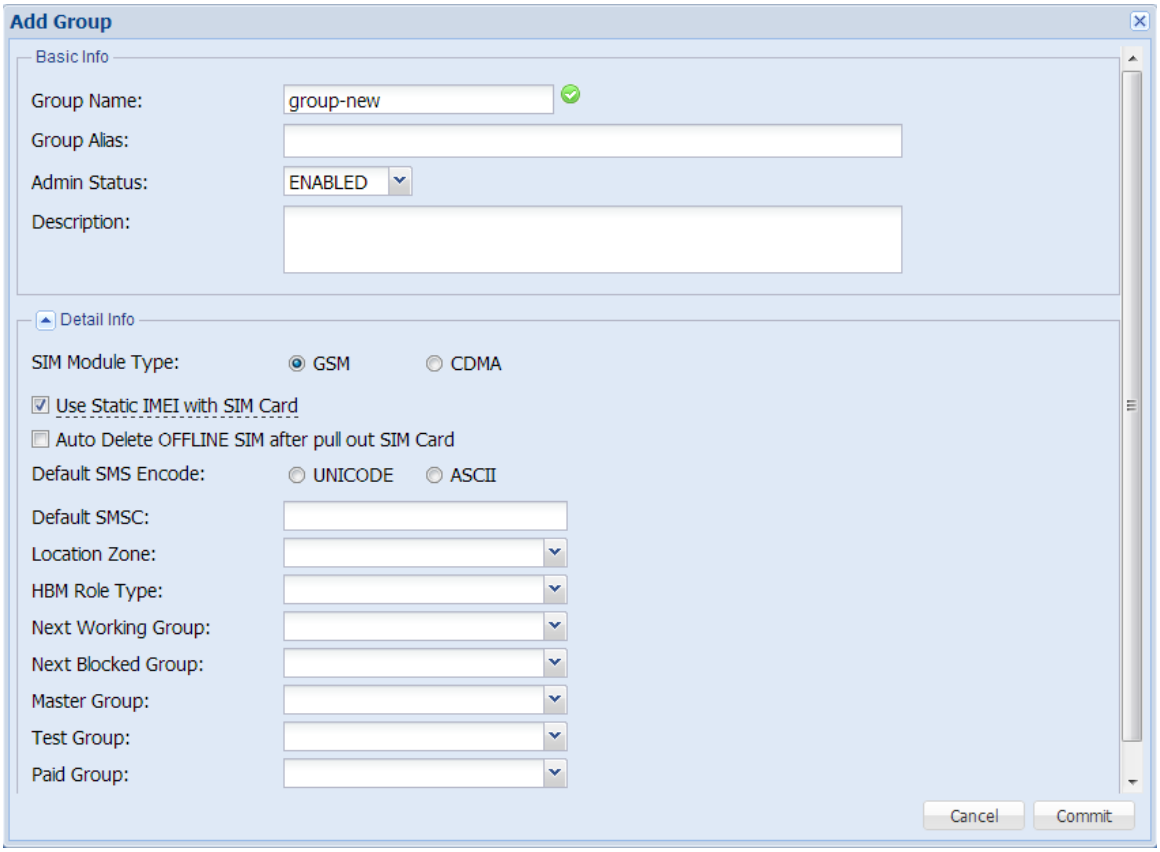
3.2.4 Add New SIMBANK

Click **[ZONE/zone-default/site-default]** on the Left Tree, and click TAB **[Device List]**, then add new SIMBANK device.



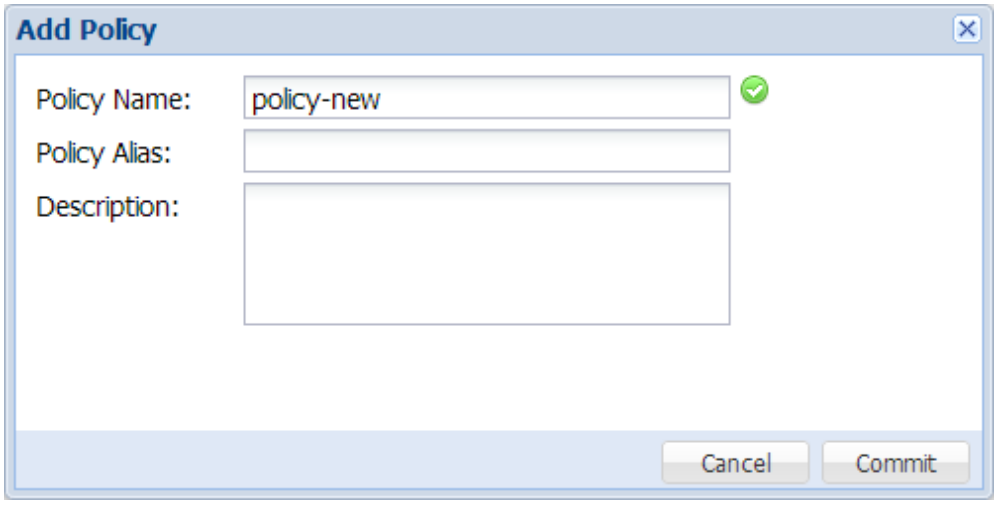
3.2.5 Add SIM Group

Click **[SIM GROUP]** on the Left Tree, then add new SIM Group.



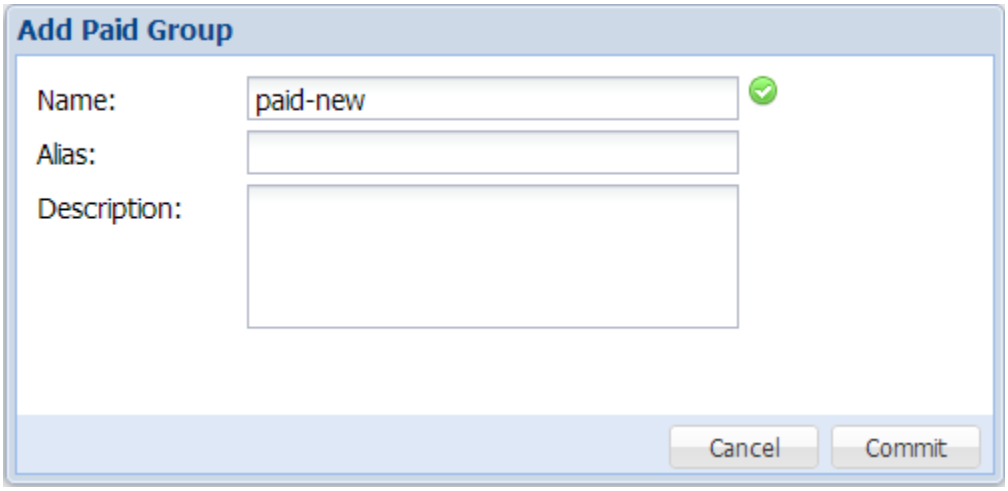
3.2.6 Add SIM Policy

Click **[SIM POLICY]** on the Left Tree, then add new SIM Policy.



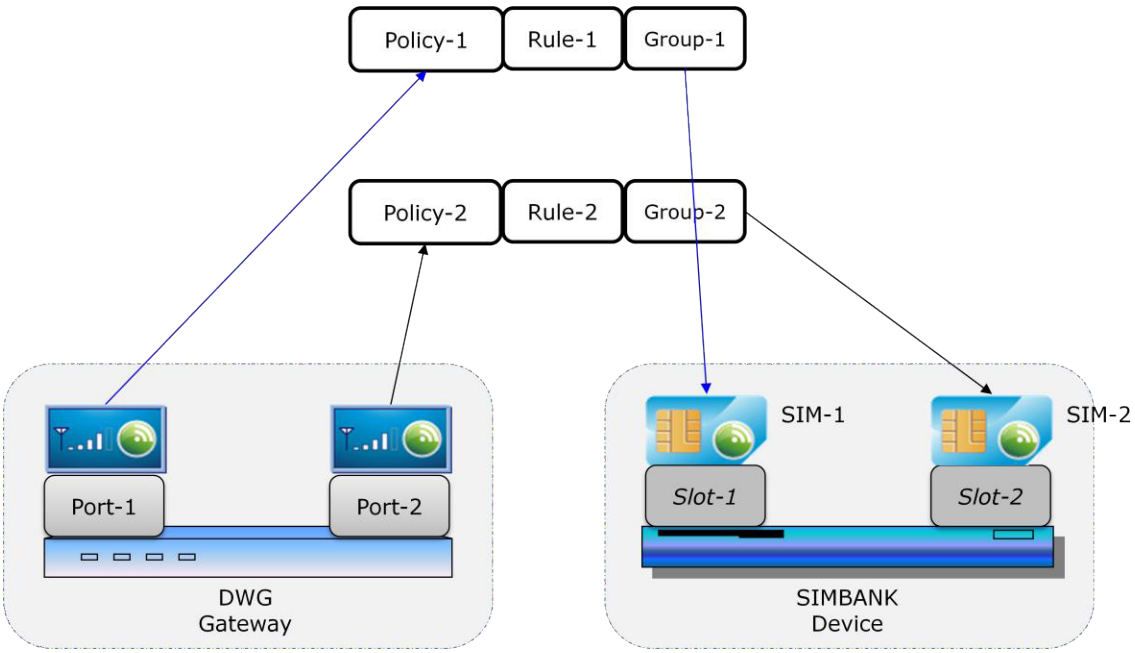
3.2.7 Add Paid Group

Click **[PAID GROUP]** on the Left Tree, then add new Paid Group.



3.3 Advanced Configuration

3.3.1 Port-based Policy and Group



DWG port allocates SIM card thru SIM policy, if there are more than one SIM policy,

DWG ports can configure different SIM policies by port-based setting.

As a sample of above figure, configure DWG device as below:

DWG Device Info:

Class	Item	Value
Detail Info	SIM Policy	Policy-1, as default setting of whole DWG device

DWG Port Info(Port-2):

Class	Item	Value
Detail Info	Spec SIM Policy (Port Spec Policy)	Policy-2, special policy for this port

Notes:

- If Spec SIM Policy is NULL, will use Policy-1 by default.

To manage different type SIM cards, configure SIMBANK device to add new SIM card into different SIM groups.

SIMBANK Device Info:

Class	Item	Value
Detail Info	Default SIM Group	Group-1, as default setting of whole SIMBANK device

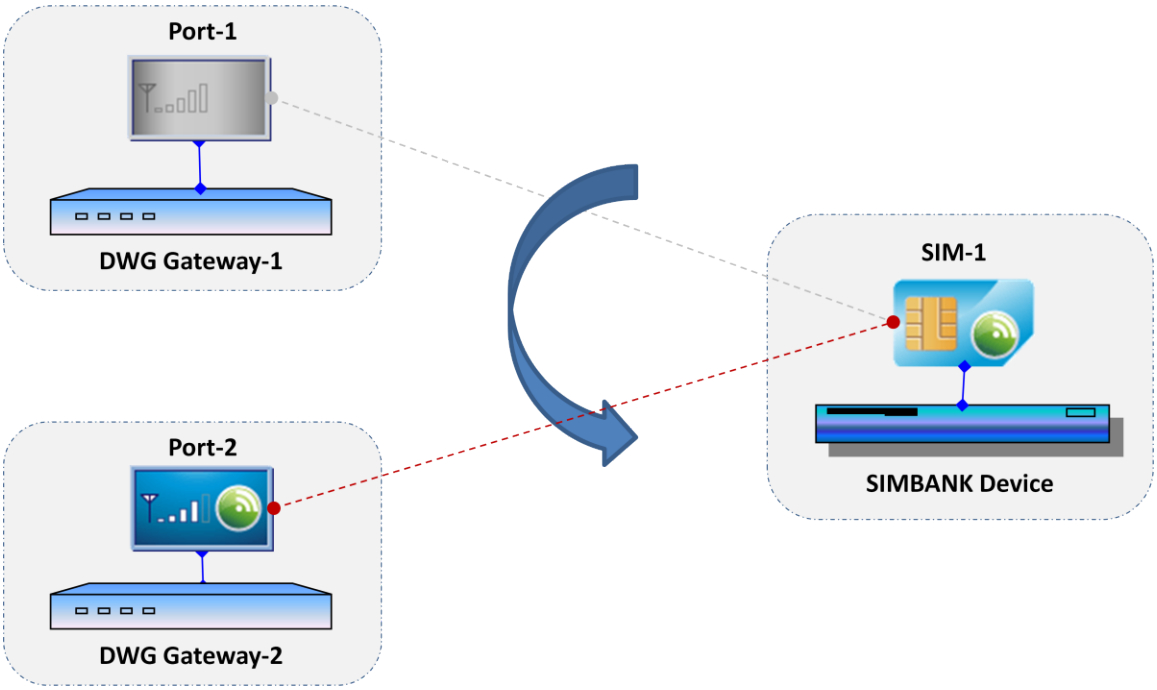
SIMBANK Port Info(Slot-2):

Class	Item	Value
Detail Info	Port Spec Group	Group-2, special group for this port

Notes:

- If Port Spec Group is NULL, will use Group-1 by default.

3.3.2 Smart IMEI Auto Updating



There are different ways to control IMEI with SIM card, specially for remote SIM card.

- Use fixed IMEI with specific SIM card
- Update IMEI while allocating SIM card

3.3.2.1 Use Fixed IMEI with SIM Card

Wherever SIM card works upon which DWG device, it always uses fixed IMEI, system generates IMEI for new SIM card only once.

IMEI Format: TAC(8 digits) + Serial No(6 digits) + checksum(1 digit)

SIM Group setting of IMEI update (sample only):

Class	Item	Value
SIM Advanced Actions	IMEI Assignment Mode	EACH_LOAD
	Specific IMEI TACs	35421803,35685702
	Min IMEI Serial No	100000
	Max IMEI Serial No	999999

Notes:

- Only for GSM SIM Card.

3.3.2.2 Update IMEI while Allocating SIM

If need to update IMEI frequently, system supports to update IMEI while allocating SIM card.

IMEI Format: TAC(8 digits) + Serial No(6 digits) + checksum(1 digit)

SIM Group setting of IMEI update (sample only):

Class	Item	Value
SIM Advanced Actions	IMEI Assignment Mode	EACH_BIND
	Specific IMEI TACs	35421803,35685702
	Min IMEI Serial No	100000
	Max IMEI Serial No	999999

Notes:

- Only for GSM SIM Card.

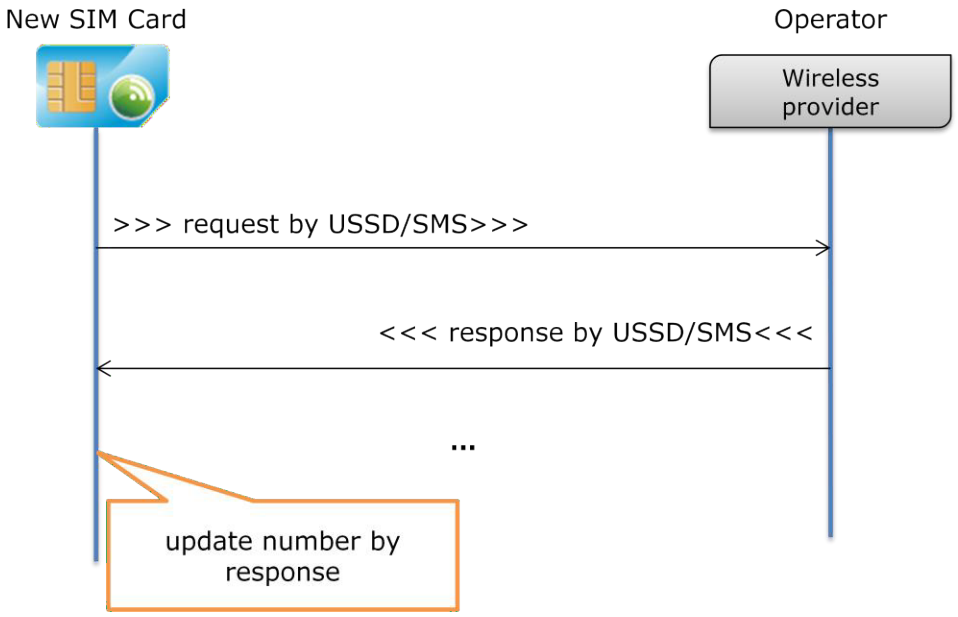
3.3.3 SIM Number Auto Learning

Usually new SIM card has no number, this issue would make trouble to do SMS/CALL simulation.

There are two ways to get number of new SIM card:

- by promotion
- by auto SMS

3.3.3.1 Learning Number By Promotion



If operator supports number query via USSD/SMS, new SIM card can get number by USSD/SMS request and response, e.g.

Request by USSD : 123#
Response by USSD : your mobile number is 88888888

To learn SIM number by promotion procedure, set up two SIM groups:

- Group-number: PROMOTION group, new SIM card shall be added into this group by default
- Group-working: NORMAL group, working after learning number

Group-number setting:

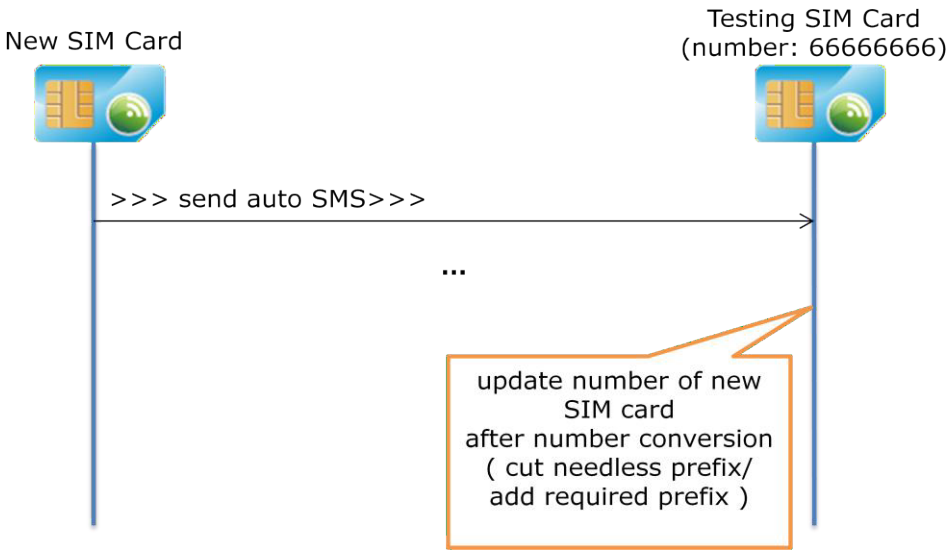
Class	Item	Value
Detail info	HBM Role Type	PROMOTION
	Next Working Group	Group-working
Human Behavior – Promotion Management	Enable SIM Promotion Management	YES
	Send Type	USSD
	Send Content	123#
	Confirm Keys-1	your mobile number is
	Reply Info-1	*(keep blank)*
	Reply Type-1	NUMBER_UPDATE
	Waiting SIM Balance Check	NO
	Apply Request Timeout	1
	Apply Retries Interval	1

	Max Apply Retries	3
	Max Apply Count of Day	0

Notes:

- If learning number fail after 3 retries, set new SIM card as BLOCKED;
- If learning number success, move SIM card to group-working.

3.3.3.2 Learning Number By Auto SMS



If operator doesn't support number query via USSD/SMS, new SIM card can get number by auto generated SMS from new SIM card to testing SIM card.

Only testing SIM card supports to update number of new SIM card by received auto SMS, it uses "From Number" as original number, and sometimes needs to do number conversion to cut off needless prefix and add required prefix, then updates new SIM card's number.

To learn SIM number by auto SMS detection, set up two SIM groups:

- Group-testing: TESTING group, including testing SIM card to learn number
- Group-working: NORMAL group, new SIM card shall be added into this group by default

Group-testing setting:

Class	Item	Value
Detail info	HBM Role Type	TESTING

Notes:

- Make sure testing SIM card is in group-testing, and has a known number, e.g. 66666666.

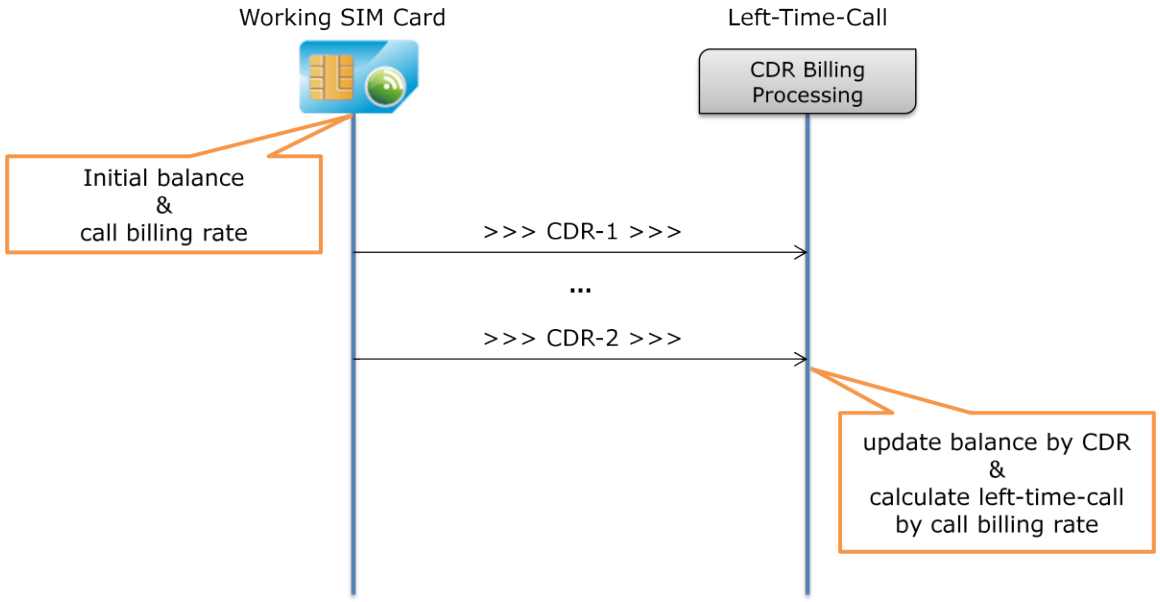
Group-working setting:

Class	Item	Value
Detail info	HBM Role Type	NORMAL
	Testing Group	Group-testing
SIM Advanced Action	Enable SIM Number Learning by Auto Generated SMS	YES
	Number Cut Prefix	***
	Number Add Prefix	***
	Auto Send SMS/USSD after SIM REG-OK	YES
	Only If SIM Number was NULL	YES
	Send Type	SMS
	Send Number	66666666
	Send Content	e.g. my number?

Notes:

- Auto generated SMS include "auto SMS after REG-OK", "auto SMS at the end of CALL" and "auto SMS generation" between working SIM cards and testing SIM cards.

3.3.4 SIM Left-Time Auto Updating



To calculate left-time-call of each SIM card, configure SIM Group as below:

SIM Group setting (sample only):

Class	Item	Value
SIM Card Statistics Condition	Don't Increase Statistics Data for Failure CDR	YES
	Call Direction	CALL_OUT
	Call Billing Increment	60 sec
	Call Billing Period Unit	6 sec
Human Behavior – Balance Check	Enable SIM Balance Check	YES
	Initial SIM Balance	100
	Default Billing Rate	0.1 per min

Notes:

- For new SIM card, total CALL time is 1000 minutes;
- Do "Clear PM Statistics Data" action to restore SIM balance to 100.

If CALL billing rate is time-based variable, can configure more than one rule for one SIM Group, then set different billing rates for exact calculation.

SIM Policy setting, rule-1a(sample only):

Class	Item	Value
Detail Info (rule-1a)	SIM Group	Group-1
	Specific CALL Billing Rate	0.20
	Activate Type	By Time
	Begin -> End	8:00 ~ 20:00

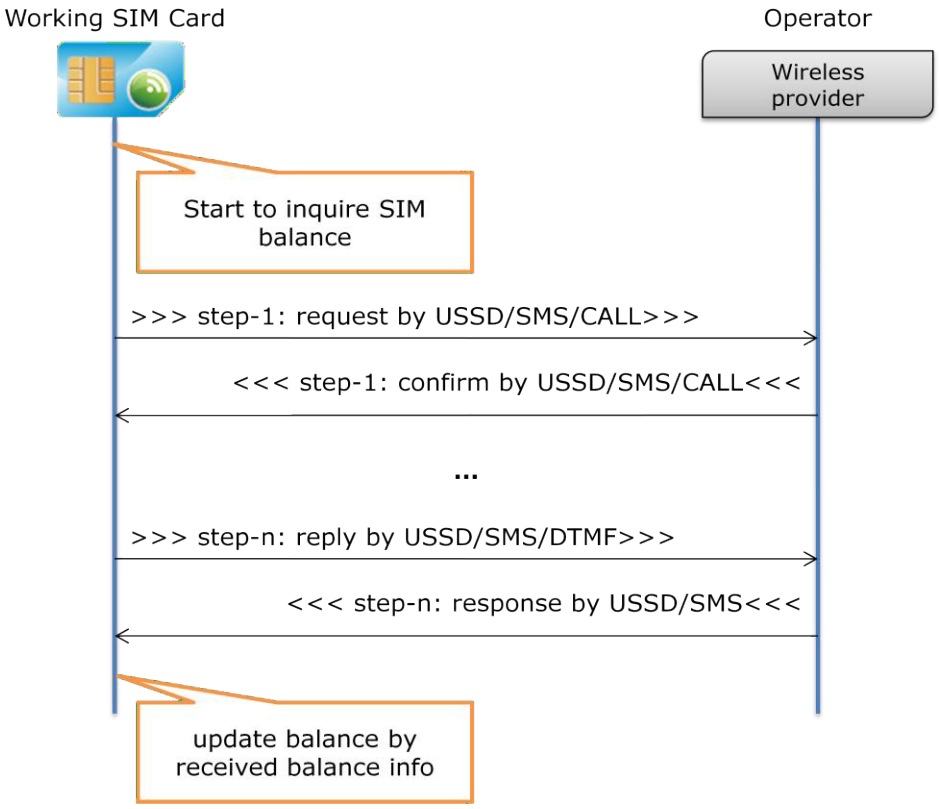
SIM Policy setting, rule-1b(sample only):

Class	Item	Value
Detail Info (rule-1b)	SIM Group	Group-1
	Specific CALL Billing Rate	0.10
	Activate Type	By Time
	Begin -> End	20:00 ~ 8:00

Notes:

- If Spec Billing Rate is 0, will use the default billing rate of SIM Group;
- Actual billing rate is shown as "Current Billing Rate" in SIM Group.

3.3.5 SIM Balance Auto Checking



Usually operator supports balance query by USSD/SMS/CALL, but there are several steps to get SIM balance, so it is difficult to manually check SIM balance one by one.

System supports auto balance checking to update SIM balance, and controls balance checking frequency by smart conditions.

SIM Group setting of balance query conditions(sample only):

Class	Item	Value
Human Behavior – Balance Check	Inquire Delay after SIM REG-OK	YES, 5 sec
	Inquire Delay after the End of Normal CALL	NO
	Inquire Threshold of Abnormal CDR Count	YES, 5 times
	Inquire Delay after SIM LOW_BALANCE	YES, 5 sec
	Inquire Delay after SIM Recharged	YES, 5 sec

Notes:

- If operator push balance info automatically, needn't to enable query conditions;
- Use delay seconds to make smooth inquiring;
- If lack balance SIM made many failure CDRs, strongly suggest to enable "Human Behavior – Abnormal CDR" and set threshold of abnormal CDR to check balance;
- LOW_BALANCE was calculated by CDR, not by actual SIM balance.

One sample for describing the balance inquiring procedure.

Balance inquiring steps of one SIM card:
Step 1: send USSD cmd "123#" to operator;
Step 2: receive confirm info from operator:
please select query type:
1 – voice account;
2 – data account.

Need to reply 2.
Step 3: receive balance info from operator:
Your balance is 1,023.50 …

Need to parse text info for balance as "1023.50"

SIM Group setting of balance inquiring steps(sample only):

Class	Item	Value
Human Behavior – Balance Check	Auto Inquire SIM Balance by SMS/USSD/CALL	YES
	Inquire Timeout	1 min
	Max Inquire Retries	3
	Block SIM Card after Inquire Failure	YES
	Send Type	USSD
	Send Content	123#
	Confirm Keys-1	please select query type
	Reply Info-1	voice account
	Reply Type-1	OPTION

Notes:

- Limit max inquire retries to avoid dead loop if SIM card was blocked.

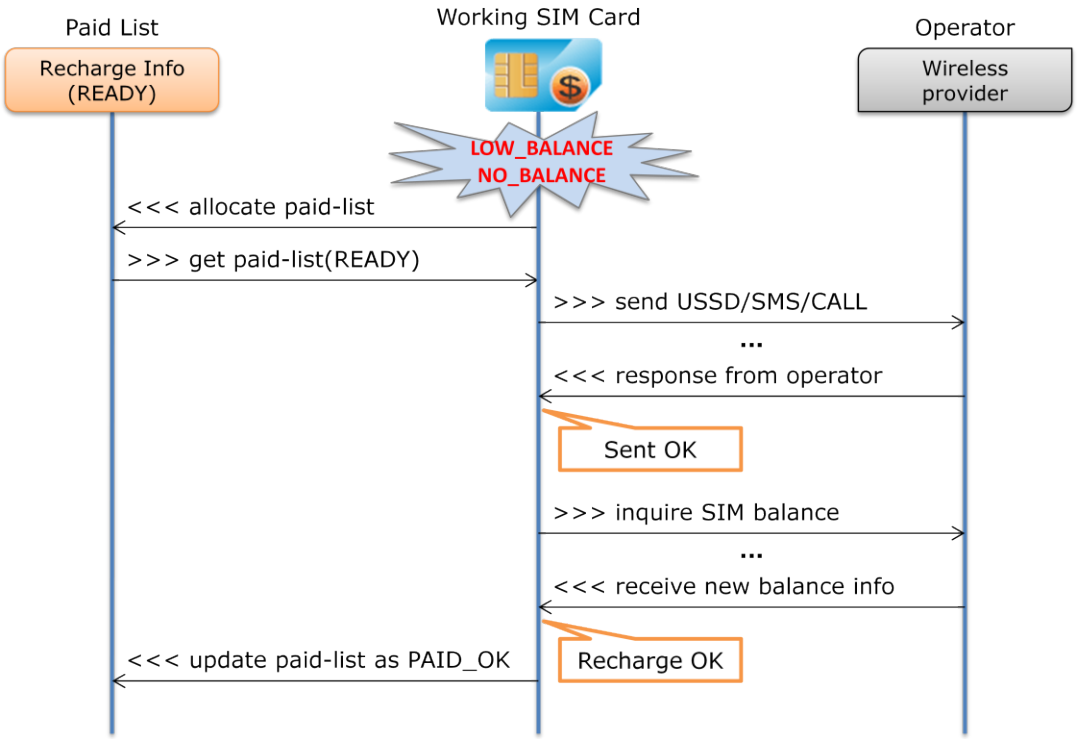
SIM Group setting of balance text parsing (sample only):

Class	Item	Value
Human Behavior – Balance Check	Check USSD Balance Info	YES
	Balance Prefix Keys-1	Your balance is
	Digit Thousand Symbol	,
	Digit Decimal Symbol	.

Notes:

- Get value after balance prefix keys.

3.3.6 SIM Balance Auto Recharging



Usually operator supports SIM recharge by USSD/SMS/CALL, but there are several steps and different recharge info are required, so it is not easy to do manual recharge one by one.

System supports auto recharge by SMS/USSD/CALL, under CALL recharge mode, supports long DTMF numbers to send recharge into to operator.

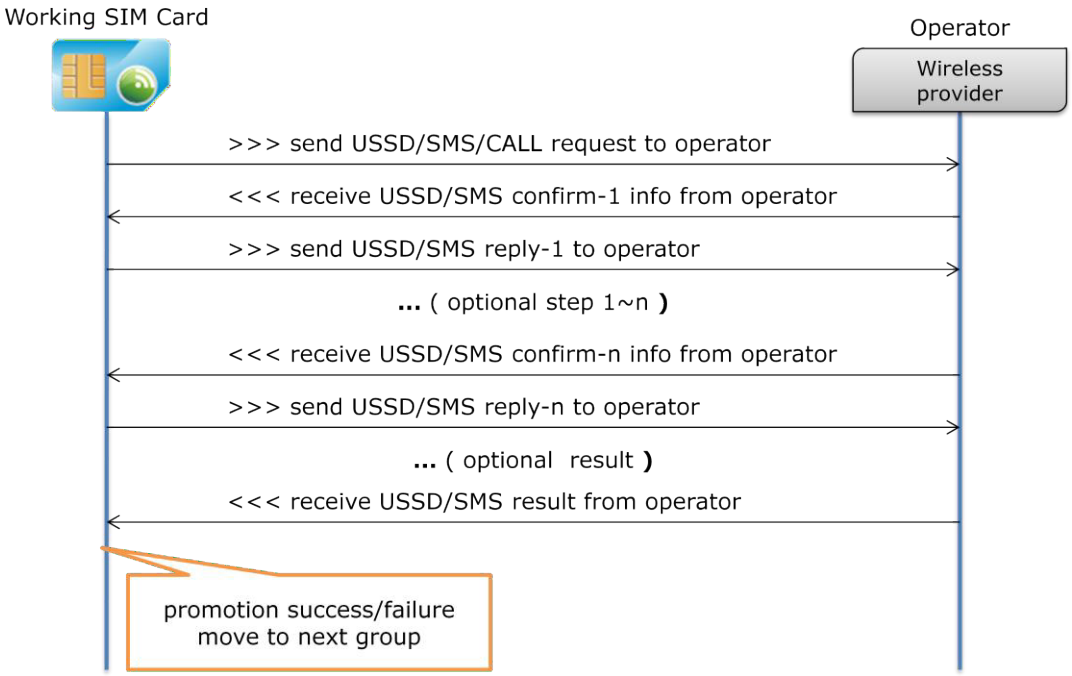
SIM Group setting of auto recharge (sample only):

Class	Item	Value
Detail Info	Paid Group	paid-default
SIM Card Switchover Condition	Switchover by BALANCE_CHECK Delay	5 min
	LOW_BALANCE, special switchover mode	DELAY Switchover
Human Behavior – Balance Check	Auto Recharge while balance was less than Low Balance Threshold	YES
	Max Recharge Retries	3 times
	Recharge Timeout	1 min
	Recharge Interval	1 min
	Recharge Success Keys	recharge ok
	Recharge Failure Keys-1	invalid pre-paid card
	Recharge Failure Keys-2	already used
	Recharge Failure Keys-3	not allowed

Notes:

- Need to configure specific Paid Group, allocating recharge info from Paid Group;
- Don't do immediately switchover if SIM card was LOW_BALANCE or NO_BALANCE, so delay 5 minutes for auto recharge, or set to NO Switchover while LOW_BALANCE;
- Limit recharge retries to avoid dead loop if something was wrong;
- Support 5 recharge failure keys to skip unavailable recharge info;
- If no recharge success keys, need to inquire SIM balance to confirm recharge result.

3.3.7 SIM Promotion Auto Applying



Usually operator provides , but there are several steps and different recharge info are required, so it is not easy to do manual recharge one by one.

System supports auto recharge by SMS/USSD/CALL, under CALL recharge mode, supports long DTMF numbers to send recharge into to operator.

One sample for describing the promotion applying procedure.

Promotion applying steps of one SIM card:
Step 1: send USSD cmd "123#" to operator;
Step 2: receive confirm info from operator:
please select promotion type:
1 – daily promotion;
2 – monthly promotion.

Need to reply 1.

Step 3: receive confirm info from operator:

please select daily promotion type:

1 – 10.00 for 60 minutes;

2 – 50.00 for 500 minutes.

Need to reply 2.

Step 4: receive promotion success info from operator:

Congratulations, you have daily promotion with 500 minutes, valid in 24 hours, will expire at 2013-11-16 10:15, please send "121#" to inquire your left time, …

Need to parse success info for "Congratulations".

PROMOTION group supports applying procedure for SIM card, after promotion success, move SIM card into next group for running service.

- Group-promotion: PROMOTION group, do applying procedure, new SIM card shall be added into this group by default;
- Group-working: NORMAL group, after promotion success, move SIM card into this group;
- Group-paused: NORMAL group, before promotion expired time, move NO_BALANCE SIM card from Group-working into this group, after promotion expired time, jump to Group-promotion for cycle again.

Group-promotion setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	PROMOTION
	Next Working Group	Group-working
Human Behavior – Promotion Management	Enable SIM Card Promotion Management	YES
	Send Type	USSD
	Send Content	123#
	Confirm Keys-1	select promotion type
	Reply Info-1	1
	Reply Type-1	DIRECT
	Confirm Keys-2	daily promotion type
	Reply Info-2	2
	Reply Type-2	DIRECT
	Apply Success Keys-1	Congratulations
	Apply Success Keys-2	Already applied
	Apply Failure Keys-1	Insufficient balance
	Apply Failure Keys-2	Not supported
	Waiting SIM Card Balance Check before Promotion Apply	NO
	Apply Request Timeout	3 min
	Apply Retries Interval	1 min
	Max Apply Fail Retries	3 times

	Max Apply Count of Day	0

Notes:

- Limit applying retries to avoid dead loop if something was wrong;
- If balance check was enabled, please set "waiting SIM balance check" to YES to avoid insufficient balance issue;
- Applying request timeout depends on operator's behavior, sometimes need to set longer time;
- Limit daily applying count of each SIM card for special purpose, 0 means no limitation.

Group-working setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-paused
SIM Card Switchover Condition	by Promotion Working Time	YES, 1440 min
	by Promotion Call Time	YES, 500 min
	by BALANCE_CHECK Delay	1 min
	LOW_BALANCE, special switchover mode	FORCE Switchover
SIM Card Statistics Condition	Don't Increase Statistics Data for Failure CDR	YES
	Call Direction	CALL_OUT
	Call Billing Increment	60 sec
	Call Billing Period Unit	0 sec
Human Behavior - Balance Check	Enable SIM Balance Check	YES
	Initial SIM Balance	500
	Default Billing Rate	1.00 per min
	Check SMS Balance Info	NO
	Check USSD Balance Info	NO

Notes:

- Promotion working time controls expired time after 24 hours;
- Promotion CALL time limits max CALL time of daily promotion;
- Initial SIM balance 500 and default billing rate 1.00, only be used to calculate left-time-call.

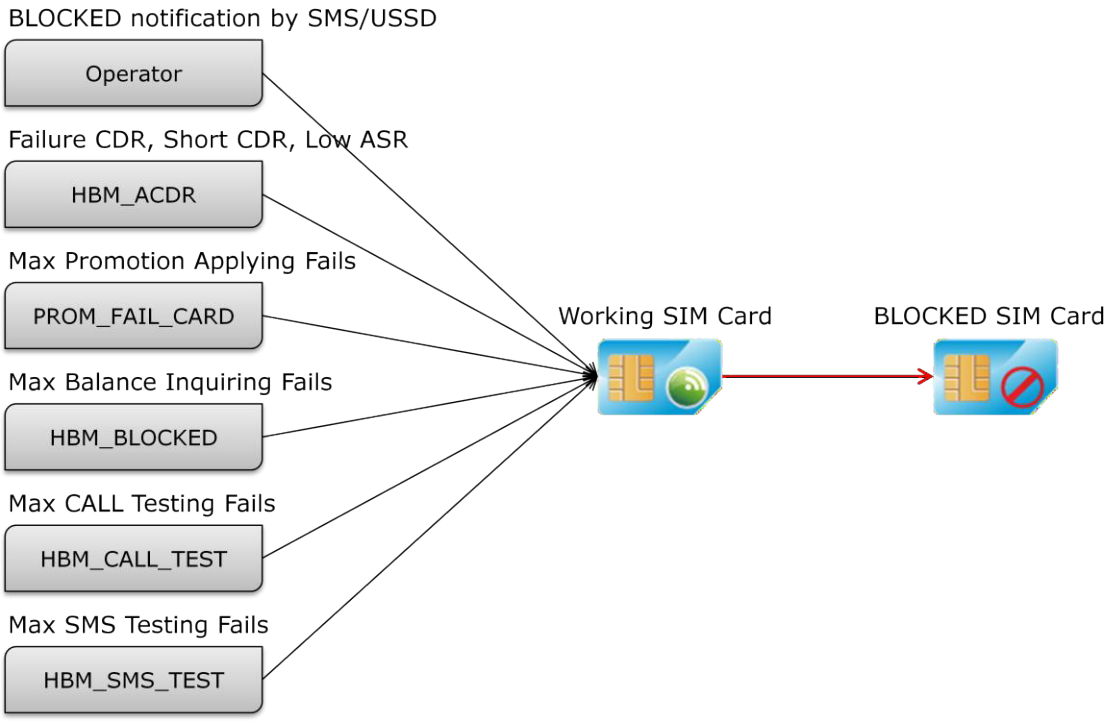
Group-paused setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-promotion
SIM Card Switchover Condition	by Promotion Working Time	YES, 1440 min

Notes:

- Promotion working time controls expired time after 24 hours;
- No left-time-call in this group, just keep waiting to apply next daily promotion;
- It is a virtual group, no DWG device required by this group.

3.3.8 SIM Blocked Auto Detecting



Detecting BLOCKED SIM card is very important for ASR and ACD, usually many CALL fails were caused by unavailable SIM card, so firstly need to kick out all "BLOCKED" SIM card from working SIM group.

System supports smart ways to kick out BLOCKED SIM card.

- by Human Behavior - Blocked Monitor
- by Human Behavior - Abnormal CDR Monitor
- by Human Behavior - Promotion Management, max applying fails
- by Human Behavior – Balance Check, max inquiring fails
- by Human Behavior - Auto Generation, max CALL testing fails
- by Human Behavior - Auto Generation, max SMS testing fails

3.3.8.1 Detecting by Blocked Monitor

For a example, SIM card can receive BLOCKED SMS from operator while it is unavailable:

BLOCKED SMS from number 888: "Your number is forbidden to … "

SIM Group setting (sample only):

Class	Item	Value
Detail Info	Next Blocked Group	Group-blocked
Human Behavior – Blocked Monitor	Enable SIM BLOCKED Monitor	YES
	Check SMS BLOCKED Info	YES
	SMS From Numbers	888
	BLOCKED Check Keys-1	Your number,forbidden

Notes:

- Next Blocked Group is optional.

3.3.8.2 Detecting by Abnormal CDR Monitor

For a example, need to set SIM card as BLOCKED after 10 continuous short CDRs.

SIM Group setting (sample only):

Class	Item	Value
Detail Info	Next Blocked Group	Group-blocked
Human Behavior – Abnormal CDR Monitor	Enable Abnormal CDR Monitor	YES
	Short CDR Monitor	YES
	Range of Call Duration	0 ~ 12 sec
	Max Short CDR Count	10
	Short CDR Action	BLOCKED

Notes:

- Call Duration 0 sec, means CALL was connected, but disconnected immediately.

3.3.8.3 Detecting by Promotion Management

For a example, need to set SIM card as BLOCKED after 3 promotion applying fails.

SIM Group setting (sample only):

Class	Item	Value
Detail Info	Next Blocked Group	Group-blocked
Human Behavior - Promotion Management	Max Apply Fail Retries	3

Notes:

- Fail Retries 0, means no limitation.

3.3.8.4 Detecting by Balance Check

For a example, need to set SIM card as BLOCKED after 3 balance inquiring.

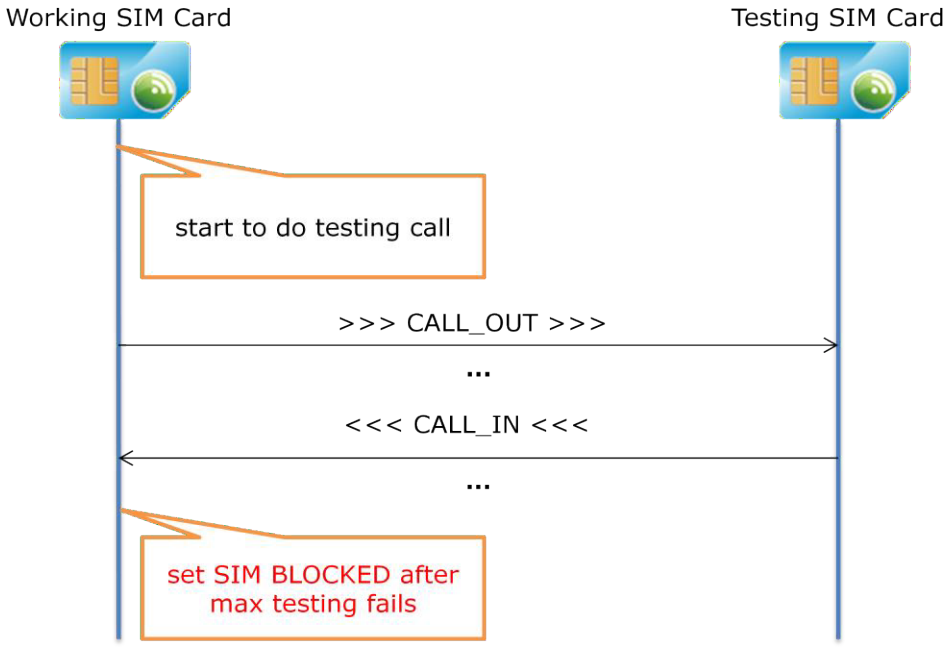
SIM Group setting (sample only):

Class	Item	Value
Detail Info	Next Blocked Group	Group-blocked
Human Behavior – Balance Check	Max Inquire Retries	3
	Block SIM Card after Inquire failure	YES

Notes:

- Max Inquire Retries 0, means no limitation.

3.3.8.5 Detecting by Auto Generation CALL



For a example, need to set SIM card as BLOCKED after 3 testing CALL fails.

To do testing CALL, set up two SIM groups:

- Group-testing: TESTING group, including testing SIM card;
- Group-working: NORMAL group, SIM card start to do testing CALL in this group.

Group-testing setting:

Class	Item	Value
Detail info	HBM Role Type	TESTING

Notes:

- Make sure testing SIM card is in group-testing, and has a known number.

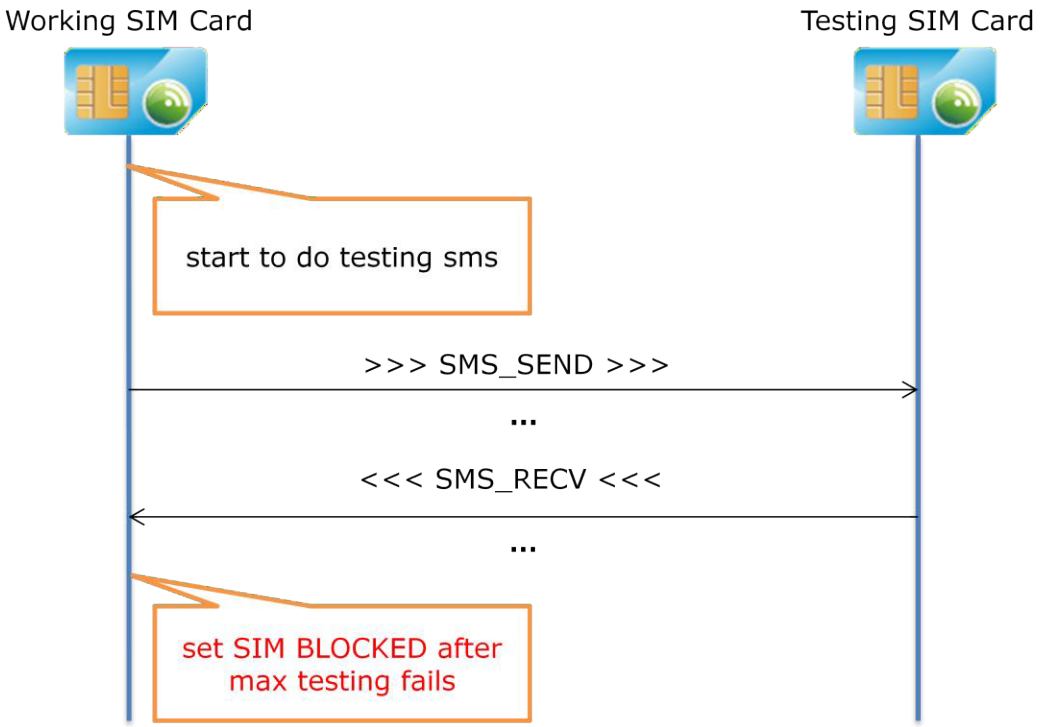
Group-working setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Blocked Group	Group-blocked
Human Behavior - Auto Generation	Enable Auto CALL Generation	YES
	Call Direction	CALL_DUAL
	Call Interval	120 min
	Call Random	80%
	Callee Auto Off-hook	YES
	Call Duration	45
	Tone Type	Random DTMF
	SIM Switchover If Continuous Call Failure	YES
	Max Call Fail Count	3

Notes:

- CALL_DUAL means random CALL_OUT and CALL_IN;
- Call Interval 120 min, means starting testing CALLs every 2 hours;
- Max Call Fail Count 3, means 3 retries while testing CALL was failed;
- If SIM Switchover was NO, means generating testing CALLs only, no BLOCKED detecting.

3.3.8.6 Detecting by Auto Generation SMS



For a example, need to set SIM card as BLOCKED after 3 testing SMS fails.

To do testing SMS, set up two SIM groups:

- Group-testing: TESTING group, including testing SIM card;
- Group-working: NORMAL group, SIM card start to do testing SMS in this group.

Group-testing setting:

Class	Item	Value
Detail info	HBM Role Type	TESTING

Notes:

- Make sure testing SIM card is in group-testing, and has a known number.

Group-working setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Blocked Group	Group-blocked
Human Behavior - Auto Generation	Enable Auto SMS Generation	YES
	SMS Direction	SMS_DUAL

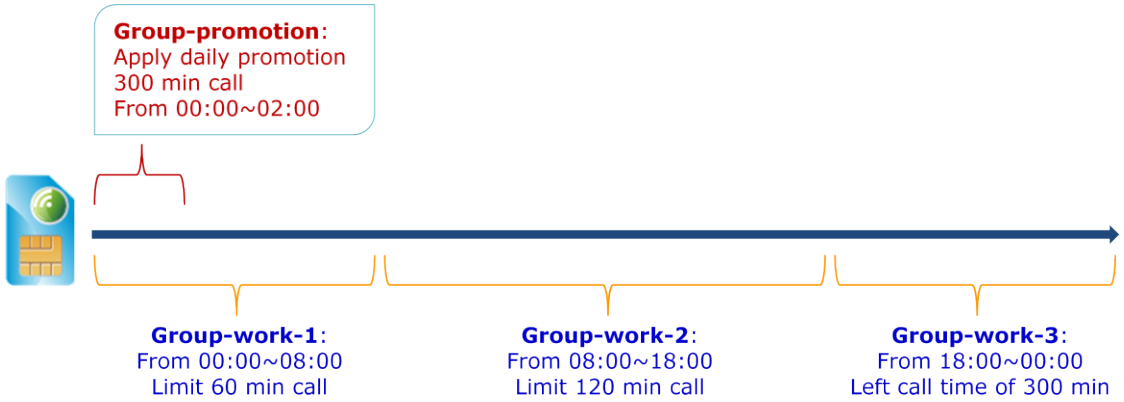
	SMS Interval	120 min
	SMS Random	80%
	SIM Switchover If Continuous SMS Loss	YES
	Max SMS Loss Count	3
	Random Content-1	How are you?
	Random Content-2	Fine, thanks
	Random Content-3	Have time today?
	Random Content-4	Yes, of cause
	Random Content-5	Let's go …

Notes:

- SMS_DUAL means random SMS_SEND and SMS_RECV;
- SMS Interval 120 min, means starting testing SMS every 2 hours;
- Max SMS Loss Count 3, means 3 retries while testing SMS was failed;
- If SIM Switchover was NO, means generating testing SMS only, no BLOCKED detecting;
- 5 random contents be used for testing SMS, don't leave it as empty.

3.4 Working with Typical Application

3.4.1 Daily Promotion Solution



1. Group-promotion setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	PROMOTION
	Next Working Group	Group-work-1
Human Behavior – Promotion Management	Enable SIM Card Promotion Management	YES
	…	…

Related policy rule setting:

Class	Item	Value
	Activate Type	By Time
	Range of Time	00:00 ~ 02:00
	Rule Priority	Normal

Notes:

- Apply daily promotion from 00:00 to 02:00 every day.

2. Group-work-1 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-work-2
SIM Card Switchover Condition	by Promotion Call Time	300 min
	GRP_NOT_AVAILABLE,switchover to next working group	YES
Human Behavior – Balance Check	Enable SIM Balance Check	YES
	Initial SIM Balance	60
	Balance Threshold	2
	Default Billing Rate	1.00 per min

Related policy rule setting:

Class	Item	Value
	Activate Type	By Time
	Range of Time	00:00 ~ 08:00
	Rule Priority	Normal

Notes:

- Virtual balance control for 60 min limitation;
- If LOW_BALANCE, move SIM card into next group;
- If GRP_NOT_AVAILABLE, means time expired, move SIM card into next group.

3. Group-work-2 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-work-3
SIM Card Switchover Condition	by Promotion Call Time	300 min
	GRP_NOT_AVAILABLE,switchover to next working group	YES
Human Behavior – Balance Check	Enable SIM Balance Check	YES
	Initial SIM Balance	120

	Balance Threshold	2
	Default Billing Rate	1.00 per min

Related policy rule setting:

Class	Item	Value
	Activate Type	By Time
	Range of Time	08:00 ~ 18:00
	Rule Priority	Normal

Notes:

- Virtual balance control for 120 min limitation;
- If LOW_BALANCE, move SIM card into next group;
- If GRP_NOT_AVAILABLE, means time expired, move SIM card into next group.

4. Group-work-3 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-promotion
SIM Card Switchover Condition	by Promotion Call Time	300 min
	GRP_NOT_AVAILABLE,switchover to next working group	YES

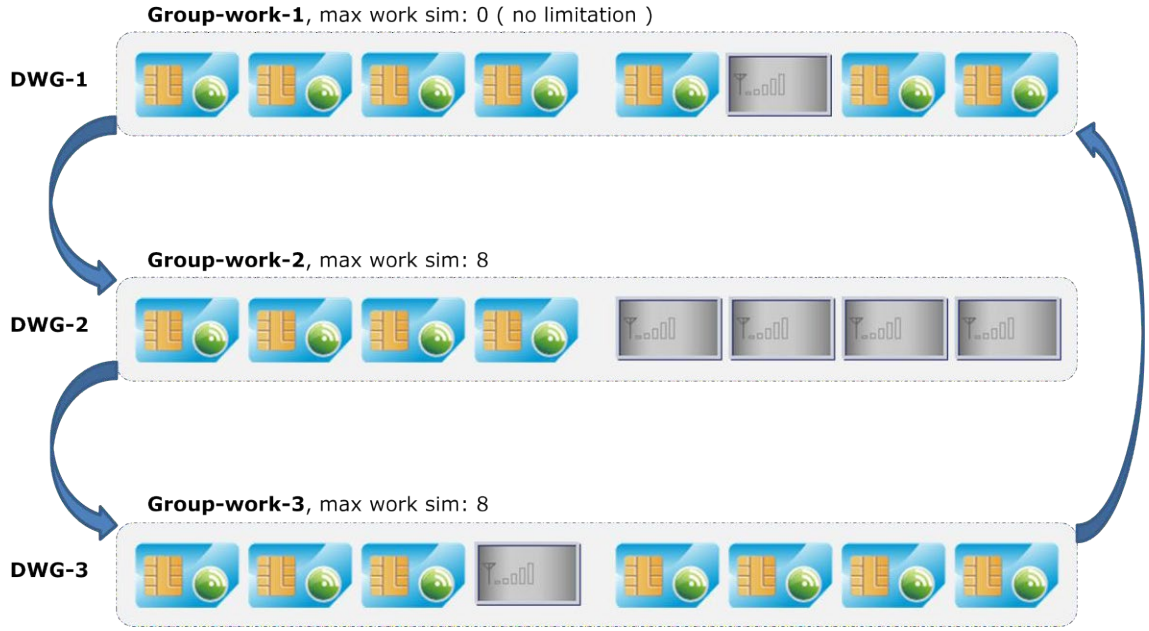
Related policy rule setting:

Class	Item	Value
	Activate Type	By Time
	Range of Time	18:00 ~ 00:00
	Rule Priority	Normal

Notes:

- Increasing promotion CALL time after daily promotion applying;
- Use promotion CALL time to control total 300 minutes call;
- If LOW_BALANCE, move SIM card into next group;
- If GRP_NOT_AVAILABLE, means time expired, move SIM card into next group.

3.4.2 SIM Site Roaming Solution



SIM Site Roaming requires multiple DWG devices, and DWG devices locate at different locations, make sure these DWG devices use different wireless base stations.

Under remote SIM card mode, system supports SIM Site Roaming by multiple SIM Groups.

Moving SIM cards across these SIM Groups, means SIM cards running upon these DWG devices one by one, and all SIM cards are flexibly controlled by SIM Switchover Conditions.

By the limitation of Max Work SIM, system strictly controls all SIM card queues of these SIM Groups, ensure each DWG device has available SIM cards at any time.

If next group is full, system will discard NO_BALANCE/ GRP_NOT_AVAILABLE conditions as below, and keep SIM working till next group releases one SIM card.

Discard switchover conditions by queue full:

- *By Max Call Count Card – CALL_COUNT_CARD*
- *By Max Call Time Card – CALL_TIME_CARD*
- *By Max SMS Count Card – SMS_COUNT_CARD*
- *By Max USSD Count Card – USSD_COUNT_CARD*
- *By Max Group Time Card – GROUP_TIME_CARD*
- *By Max Work Time Card – WORK_TIME_CARD*
- *By GRP_NOT_AVAILABLE - GRP_NOT_AVAILABLE*

1. Group-work-1 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-work-2
	Max Work SIM Count	0
SIM Card Switchover Condition	by Max Call Time Card	60 min
	by Max Group Time Card	120 min

Notes:

- First SIM Group, MUST set "Max Work SIM" as 0 (no limitation), otherwise SIM cards would freeze if all queues were full.

2. Group-work-2 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-work-3
	Max Work SIM Count	8
SIM Card Switchover Condition	by Max Call Time Card	60 min
	by Max Group Time Card	120 min

3. Group-work-3 setting (sample only):

Class	Item	Value
Detail Info	HBM Role Type	NORMAL
	Next Working Group	Group-work-1
	Max Work SIM Count	8
SIM Card Switchover Condition	by Max Call Time Card	60 min
	by Max Group Time Card	120 min

Notes:

- Circle step to first SIM group.

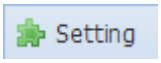
3.5 Maintenance

3.5.1 Device Upgrade

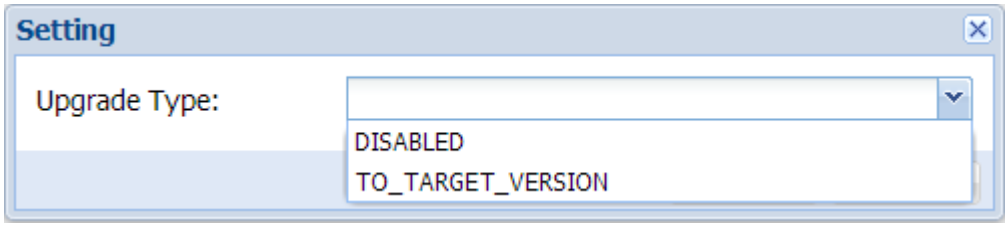
Step 1: configure device upgrade type

Open 

module, click **[SYS SETTING/Device Upgrade]** on the Left Tree, then click TAB **[Device List]**, show upgrade setting in the Device List.

Select specific device, click 

to configure device upgrade type.



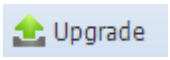
Notes:

- Only administrator can change device upgrade type;
- DISABLED, means not allowed to update device firmware;
- TO_TARGET_VERSION, means allowed to update device firmware to specific version.

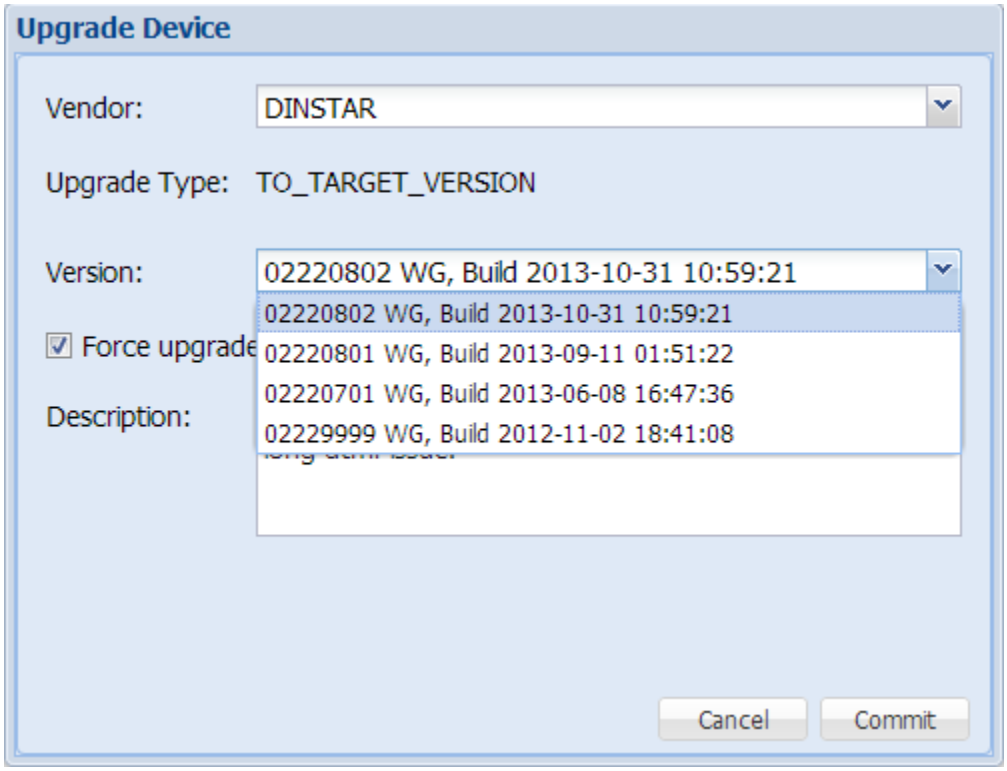
Step 2: update device firmware by online provision server

Open 

module, click **[SYS MAINTENANCE/Device Upgrade]** on the Left Tree, then click TAB **[Device List]**, show upgrade status in the Device List.

Select specific device, click 

to update device firmware.



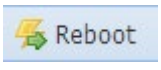
Notes:

- Choose target version from version list;
- Device gets new firmware from online provision server, so make sure "ping test ok" at device side, e.g. ping server02.dinstarcloud.com;
- Sometimes "ping test fail" was caused by wrong DNS server at device side, please change to use 8.8.8.8 and 8.8.4.4 as DNS server.

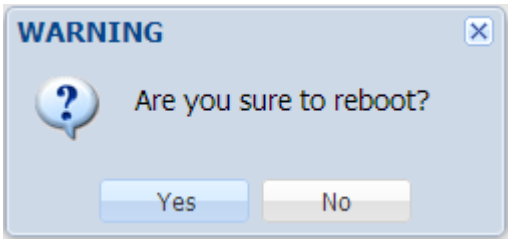
3.5.2 Device Reboot

Open 

module, click **[ZONE]** on the Left Tree, then click TAB **[Device List]**, show device status in the Device List.

Select specific device, click 

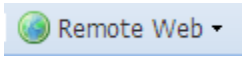
to reboot device.



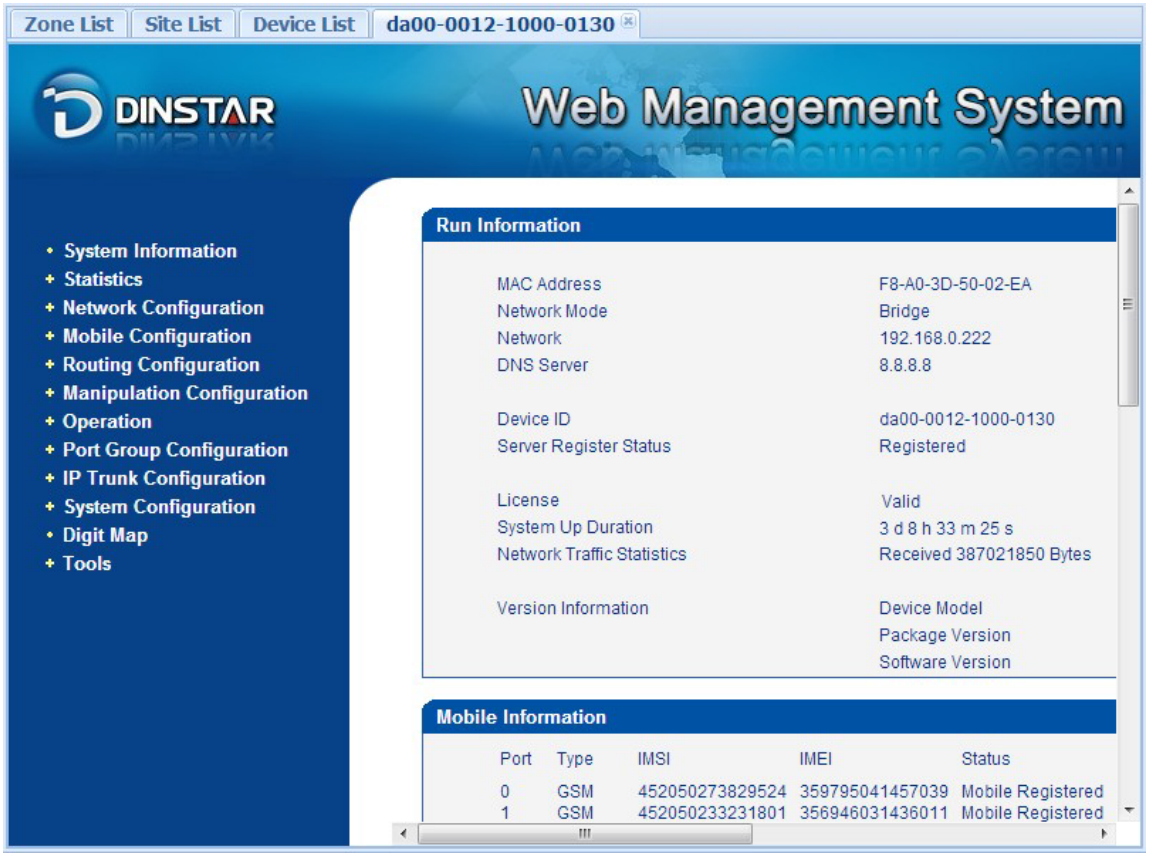
3.5.3 Device Remote-Web

Open 

module, click **[ZONE]** on the Left Tree, then click TAB **[Device List]**, show device status in the Device List.

Select specific device, click 

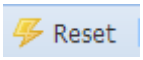
to open remote-web of device, remote-web supports NAT traversal, can manage device with private IP address.



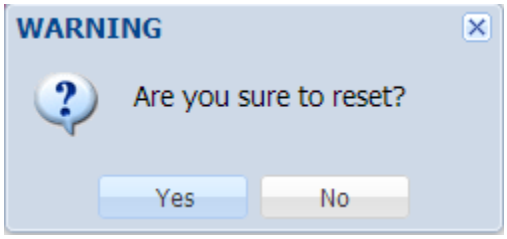
3.5.4 Device Port Reset

Open 

module, click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, then click TAB **[Port List]**, show port status in the Port List.

Select specific ports, click 

to reset ports.



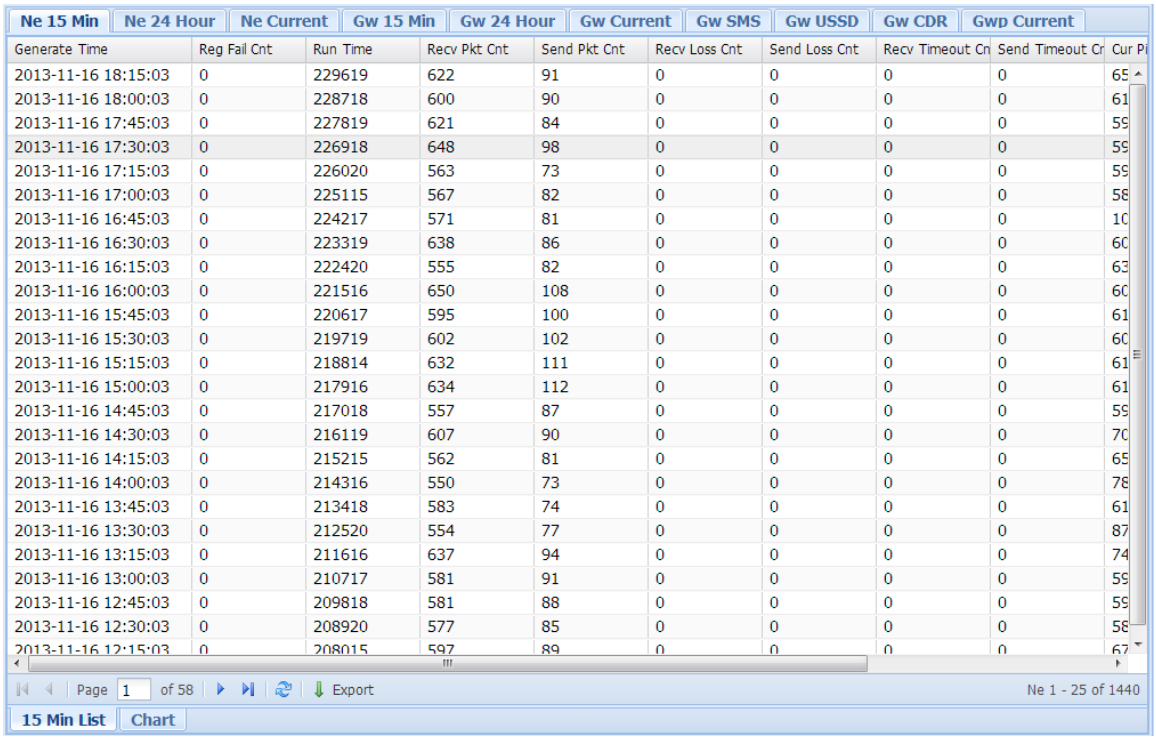
3.6 Performance

3.6.1 Device Comm. Statistics

Open 

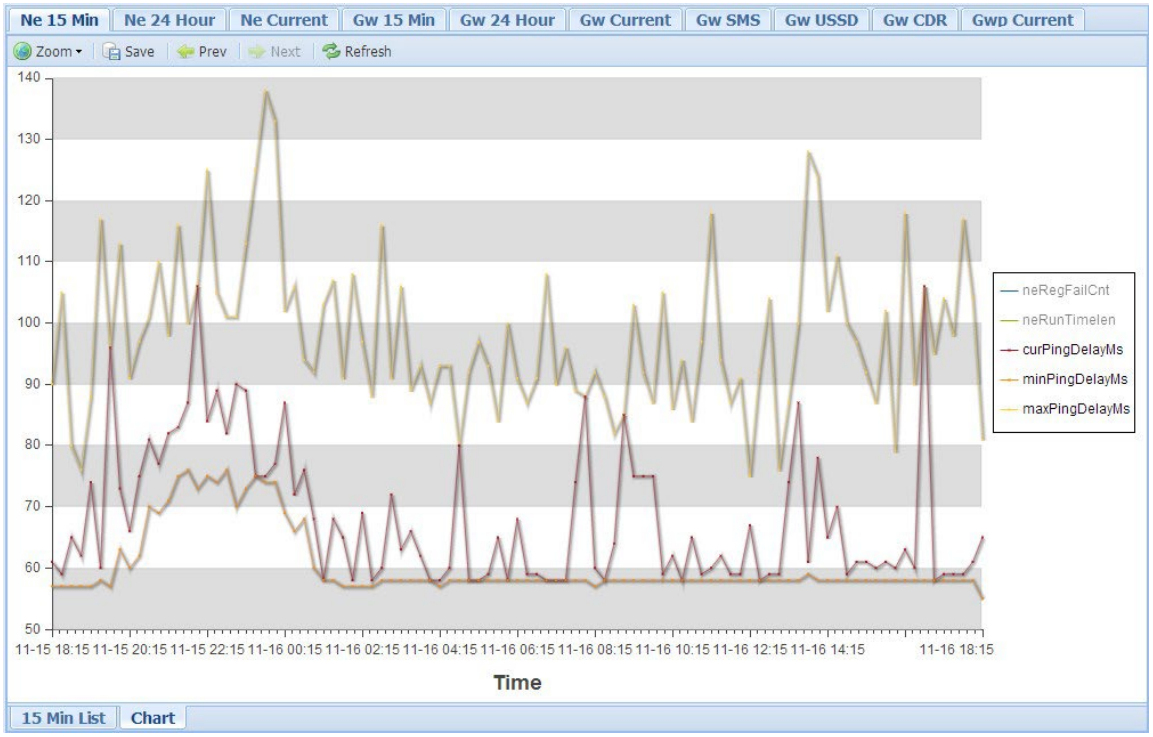
module, click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, then click TAB **[Ne 15 Min]**, show comm. statistics of the Device.

Show statistics data by default:



Generate Time	Reg Fail Cnt	Run Time	Recv Pkt Cnt	Send Pkt Cnt	Recv Loss Cnt	Send Loss Cnt	Recv Timeout Cn	Send Timeout Cr	Cur Pi
2013-11-16 18:15:03	0	229619	622	91	0	0	0	0	65
2013-11-16 18:00:03	0	228718	600	90	0	0	0	0	61
2013-11-16 17:45:03	0	227819	621	84	0	0	0	0	59
2013-11-16 17:30:03	0	226918	648	98	0	0	0	0	59
2013-11-16 17:15:03	0	226020	563	73	0	0	0	0	59
2013-11-16 17:00:03	0	225115	567	82	0	0	0	0	58
2013-11-16 16:45:03	0	224217	571	81	0	0	0	0	10
2013-11-16 16:30:03	0	223319	638	86	0	0	0	0	60
2013-11-16 16:15:03	0	222420	555	82	0	0	0	0	63
2013-11-16 16:00:03	0	221516	650	108	0	0	0	0	60
2013-11-16 15:45:03	0	220617	595	100	0	0	0	0	61
2013-11-16 15:30:03	0	219719	602	102	0	0	0	0	60
2013-11-16 15:15:03	0	218814	632	111	0	0	0	0	61
2013-11-16 15:00:03	0	217916	634	112	0	0	0	0	61
2013-11-16 14:45:03	0	217018	557	87	0	0	0	0	59
2013-11-16 14:30:03	0	216119	607	90	0	0	0	0	70
2013-11-16 14:15:03	0	215215	562	81	0	0	0	0	65
2013-11-16 14:00:03	0	214316	550	73	0	0	0	0	78
2013-11-16 13:45:03	0	213418	583	74	0	0	0	0	61
2013-11-16 13:30:03	0	212520	554	77	0	0	0	0	87
2013-11-16 13:15:03	0	211616	637	94	0	0	0	0	74
2013-11-16 13:00:03	0	210717	581	91	0	0	0	0	59
2013-11-16 12:45:03	0	209818	581	88	0	0	0	0	59
2013-11-16 12:30:03	0	208920	577	85	0	0	0	0	58
2013-11-16 12:15:03	0	208015	597	89	0	0	0	0	67

Click  to show statistics chart:



Notes:

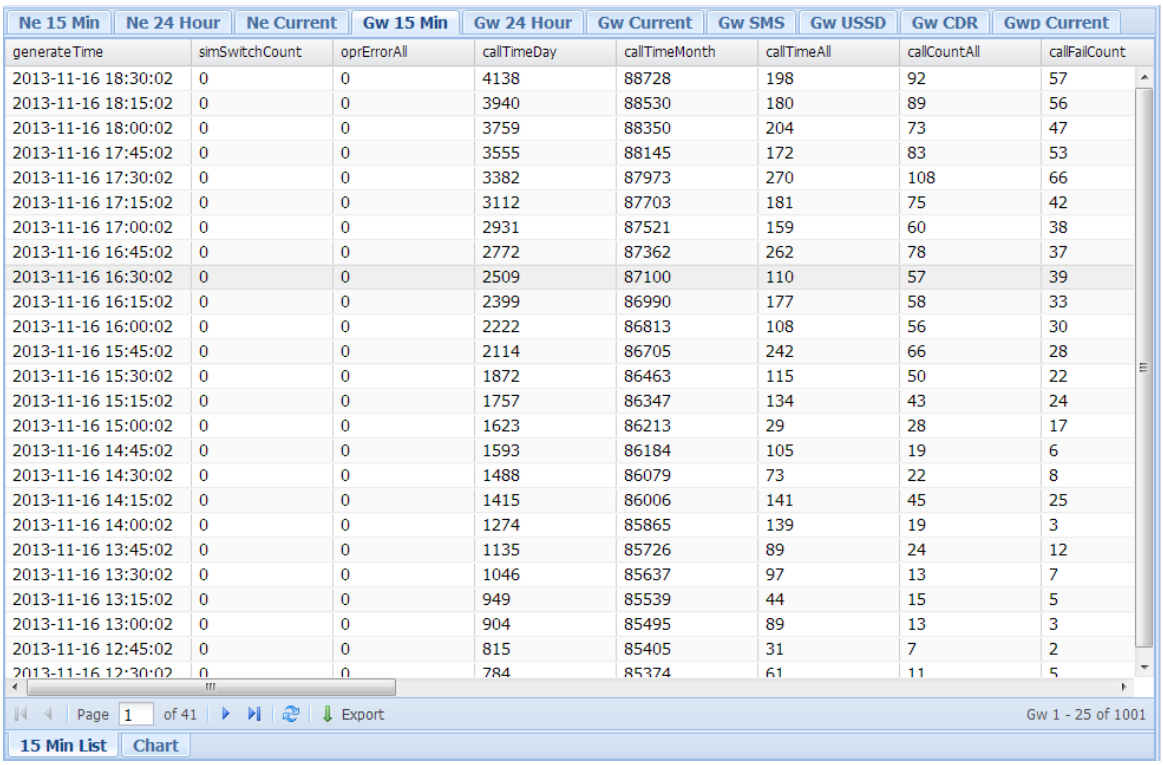
- Broken Running Time means the device registered to SIM Server again, usually was caused by network broken or device reboot;
- Recv Loss and Send Loss means packet loss between SIM Server and the device;
- Use Zoom to enlarger or shrink the chart.

3.6.2 Device Service Statistics

Open 

module, click **[ZONE/zone-default/site-default/DWG01]** on the Left Tree, then click TAB **[Gw 15 Min]**, show service statistics of the Device.

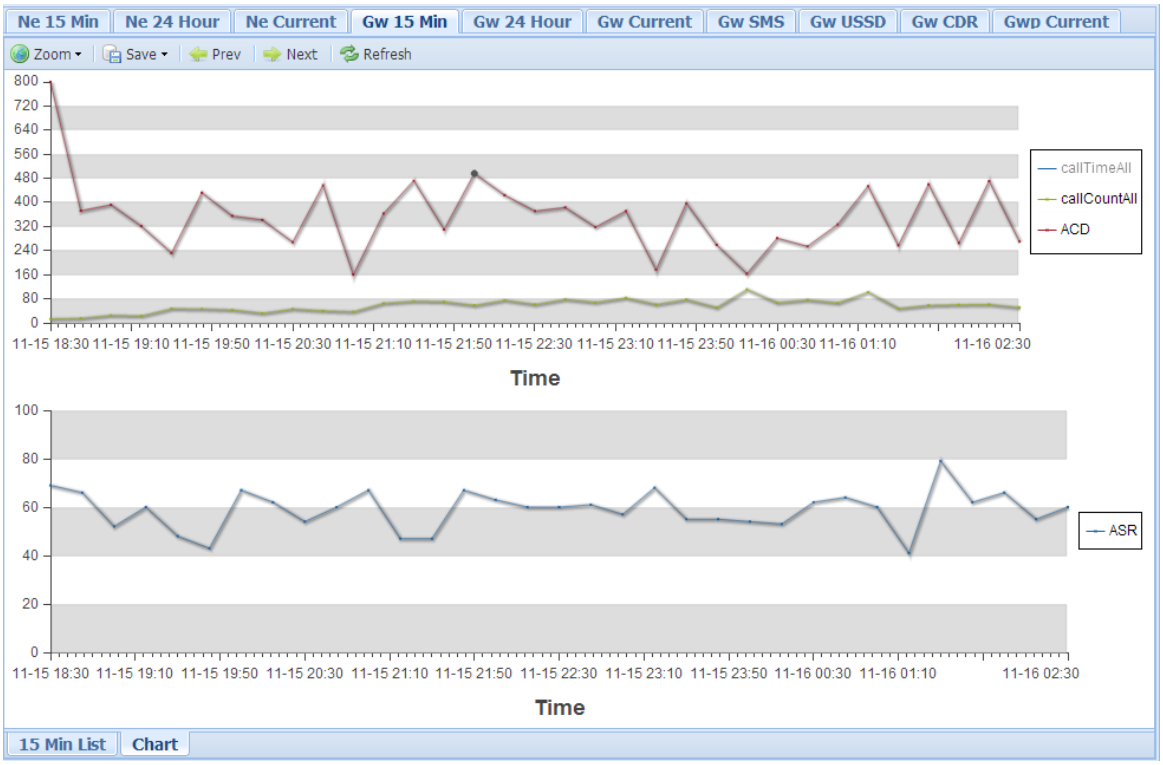
Show statistics data by default:



generateTime	simSwitchCount	oprErrorAll	callTimeDay	callTimeMonth	callTimeAll	callCountAll	callFailCount
2013-11-16 18:30:02	0	0	4138	88728	198	92	57
2013-11-16 18:15:02	0	0	3940	88530	180	89	56
2013-11-16 18:00:02	0	0	3759	88350	204	73	47
2013-11-16 17:45:02	0	0	3555	88145	172	83	53
2013-11-16 17:30:02	0	0	3382	87973	270	108	66
2013-11-16 17:15:02	0	0	3112	87703	181	75	42
2013-11-16 17:00:02	0	0	2931	87521	159	60	38
2013-11-16 16:45:02	0	0	2772	87362	262	78	37
2013-11-16 16:30:02	0	0	2509	87100	110	57	39
2013-11-16 16:15:02	0	0	2399	86990	177	58	33
2013-11-16 16:00:02	0	0	2222	86813	108	56	30
2013-11-16 15:45:02	0	0	2114	86705	242	66	28
2013-11-16 15:30:02	0	0	1872	86463	115	50	22
2013-11-16 15:15:02	0	0	1757	86347	134	43	24
2013-11-16 15:00:02	0	0	1623	86213	29	28	17
2013-11-16 14:45:02	0	0	1593	86184	105	19	6
2013-11-16 14:30:02	0	0	1488	86079	73	22	8
2013-11-16 14:15:02	0	0	1415	86006	141	45	25
2013-11-16 14:00:02	0	0	1274	85865	139	19	3
2013-11-16 13:45:02	0	0	1135	85726	89	24	12
2013-11-16 13:30:02	0	0	1046	85637	97	13	7
2013-11-16 13:15:02	0	0	949	85539	44	15	5
2013-11-16 13:00:02	0	0	904	85495	89	13	3
2013-11-16 12:45:02	0	0	815	85405	31	7	2
2013-11-16 12:30:02	0	0	784	85374	61	11	5

Click 

to show statistics chart:



Notes:

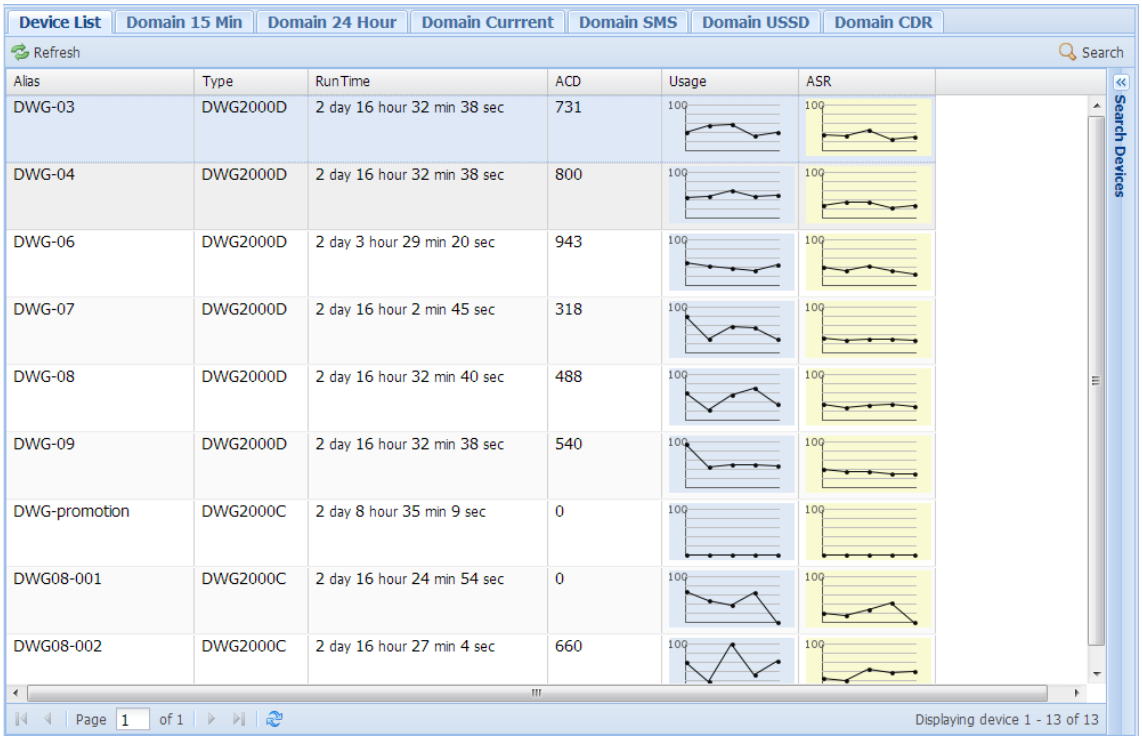
- Use Zoom to enlarger or shrink the chart.

System provides detail statistics data of whole Domain, SIM Group, Device, Device Port(optional), and SIM Card(optional).

Item	Description
simSwitchCount	SIM Card Switchover Count
oprErrorAll	SIM Operation Fail Count
callTimeDay	Call Time in one day
callTimeMonth	Call Time in one month
callTimeAll	Call Time in statistics period
callCountAll	Call Count in statistics period
callFailCount	Call Fail Count in statistics period
callShortCount	Call Short-Cut Count in statistics period
callNormalCount	Call Normal Count in statistics period
callSuccRate	Call Success Rate in statistics period
smsCountDay	SMS Send Count in one day
smsCountMonth	SMS Send Count in one month
smsCountAll	SMS Send Count in statistics period
smsFailCount	SMS Send Fail Count in statistics period
smsSuccRate	SMS Send Success Rate in statistics period
oprErrorOnce	SIM Operation Fail Count after SIM Card Binding

pktCountOnce	Packet Count between DWG Port and SIM Card after SIM Card Binding
pktRetriesOnce	Packet Retries Count between DWG Port and SIM Card after SIM Card Binding
pktLossOnce	Packet Loss Count between DWG Port and SIM Card after SIM Card Binding
curSignalVal	Current Wireless Signal Value in statistics period
minSignalVal	Minimum Wireless Signal Value in statistics period
maxSignalVal	Maximum Wireless Signal Value in statistics period
curBerVal	Current Wireless BER Value in statistics period
minBerVal	Minimum Wireless BER Value in statistics period
maxBerVal	Maximum Wireless BER Value in statistics period
curRoundDelay	Current Round-Trip Delay between DWG Port and SIM Card in statistics period
minRoundDelay	Minimum Round-Trip Delay between DWG Port and SIM Card in statistics period
maxRoundDelay	Maximum Round-Trip Delay between DWG Port and SIM Card in statistics period
callTimeOnce	Call Time after SIM Card Binding
smsCountOnce	SMS Send Count after SIM Card Binding

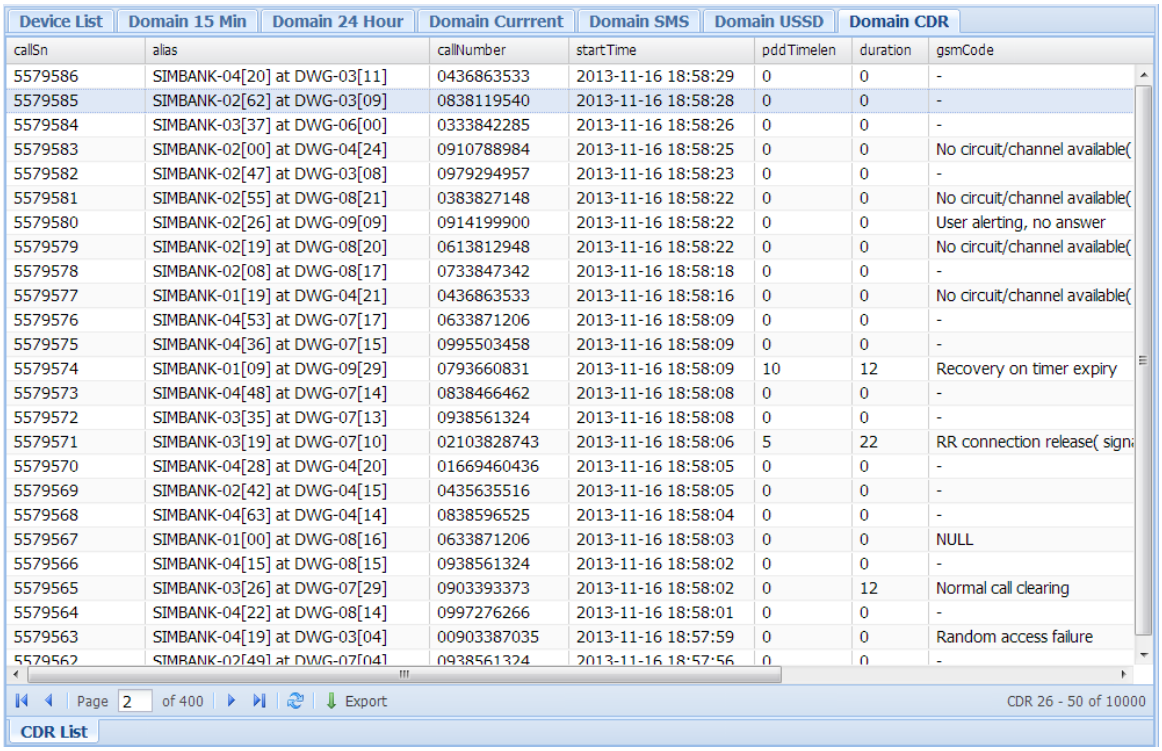
Click **[demo]** on the Left Tree, then click TAB **[Device List]**, show brief service statistics reports.



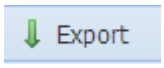
3.6.3 Export History CDR Records

Open 

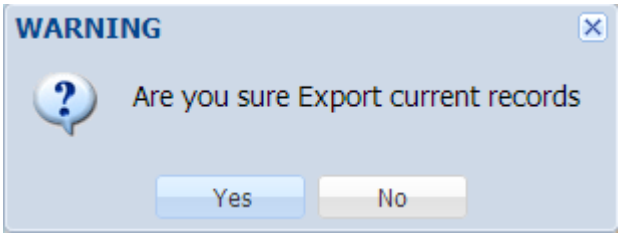
module, click **[demo]** on the Left Tree, then click TAB **[Domain CDR]**, show history CDR records.



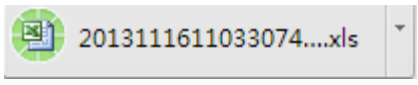
callSn	alias	callNumber	startTime	pddTimelen	duration	gsmCode
5579586	SIMBANK-04[20] at DWG-03[11]	0436863533	2013-11-16 18:58:29	0	0	-
5579585	SIMBANK-02[62] at DWG-03[09]	0838119540	2013-11-16 18:58:28	0	0	-
5579584	SIMBANK-03[37] at DWG-06[00]	0333842285	2013-11-16 18:58:26	0	0	-
5579583	SIMBANK-02[00] at DWG-04[24]	0910788984	2013-11-16 18:58:25	0	0	No circuit/channel available(
5579582	SIMBANK-02[47] at DWG-03[08]	0979294957	2013-11-16 18:58:23	0	0	-
5579581	SIMBANK-02[55] at DWG-08[21]	0383827148	2013-11-16 18:58:22	0	0	No circuit/channel available(
5579580	SIMBANK-02[26] at DWG-09[09]	0914199900	2013-11-16 18:58:22	0	0	User alerting, no answer
5579579	SIMBANK-02[19] at DWG-08[20]	0613812948	2013-11-16 18:58:22	0	0	No circuit/channel available(
5579578	SIMBANK-02[08] at DWG-08[17]	0733847342	2013-11-16 18:58:18	0	0	-
5579577	SIMBANK-01[19] at DWG-04[21]	0436863533	2013-11-16 18:58:16	0	0	No circuit/channel available(
5579576	SIMBANK-04[53] at DWG-07[17]	0633871206	2013-11-16 18:58:09	0	0	-
5579575	SIMBANK-04[36] at DWG-07[15]	0995503458	2013-11-16 18:58:09	0	0	-
5579574	SIMBANK-01[09] at DWG-09[29]	0793660831	2013-11-16 18:58:09	10	12	Recovery on timer expiry
5579573	SIMBANK-04[48] at DWG-07[14]	0838466462	2013-11-16 18:58:08	0	0	-
5579572	SIMBANK-03[35] at DWG-07[13]	0938561324	2013-11-16 18:58:08	0	0	-
5579571	SIMBANK-03[19] at DWG-07[10]	02103828743	2013-11-16 18:58:06	5	22	RR connection release(sign
5579570	SIMBANK-04[28] at DWG-04[20]	01669460436	2013-11-16 18:58:05	0	0	-
5579569	SIMBANK-02[42] at DWG-04[15]	0435635516	2013-11-16 18:58:05	0	0	-
5579568	SIMBANK-04[63] at DWG-04[14]	0838596525	2013-11-16 18:58:04	0	0	-
5579567	SIMBANK-01[00] at DWG-08[16]	0633871206	2013-11-16 18:58:03	0	0	NULL
5579566	SIMBANK-04[15] at DWG-08[15]	0938561324	2013-11-16 18:58:02	0	0	-
5579565	SIMBANK-03[26] at DWG-07[29]	0903393373	2013-11-16 18:58:02	0	12	Normal call clearing
5579564	SIMBANK-04[22] at DWG-08[14]	0997276266	2013-11-16 18:58:01	0	0	-
5579563	SIMBANK-04[19] at DWG-03[04]	00903387035	2013-11-16 18:57:59	0	0	Random access failure
5579562	SIMBANK-02[49] at DWG-07[04]	0938561324	2013-11-16 18:57:56	0	0	-

Then click 

to export history CDR records into a excel file.



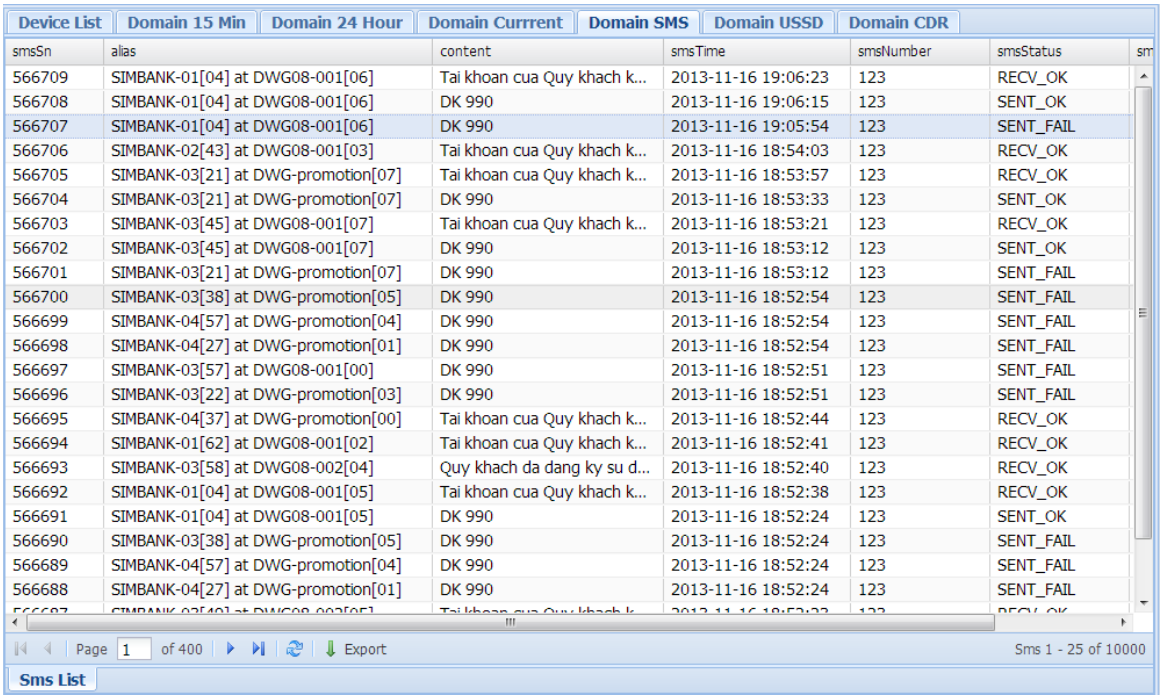
Click **[Yes]**, wait a moment…

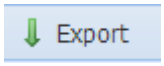
Will download a excel file like: 

3.6.4 Export History SMS Records

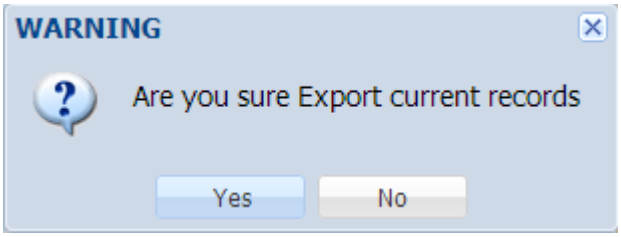
Open 

module, click **[demo]** on the Left Tree, then click TAB **[Domain SMS]**, show history SMS records.

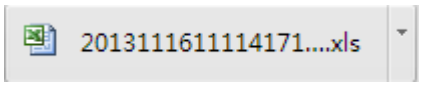


Then click 

to export history SMS records into a excel file.



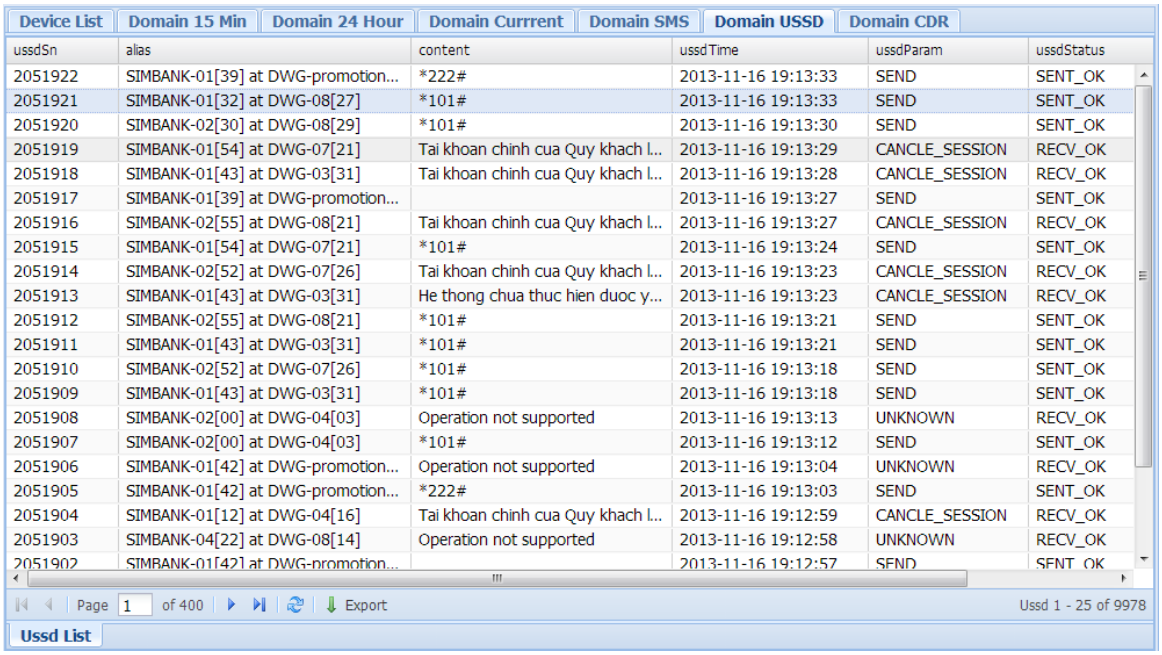
Click **[Yes]**, wait a moment…

Will download a excel file like: 

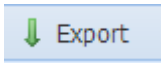
3.6.5 Export History USSD Records

Open 

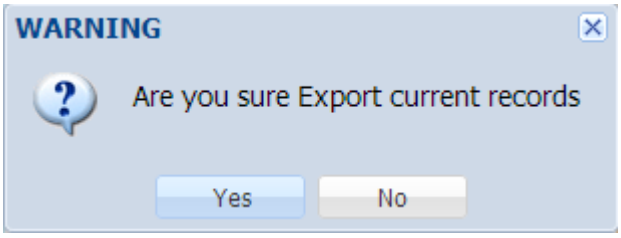
module, click **[domain]** on the Left Tree, then click TAB **[Domain USSD]**, show history USSD records.



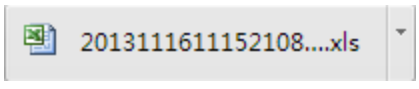
ussdSn	alias	content	ussdTime	ussdParam	ussdStatus
2051922	SIMBANK-01[39] at DWG-promotion...	*222#	2013-11-16 19:13:33	SEND	SENT_OK
2051921	SIMBANK-01[32] at DWG-08[27]	*101#	2013-11-16 19:13:33	SEND	SENT_OK
2051920	SIMBANK-02[30] at DWG-08[29]	*101#	2013-11-16 19:13:30	SEND	SENT_OK
2051919	SIMBANK-01[54] at DWG-07[21]	Tai khoan chinh cua Quy khach l...	2013-11-16 19:13:29	CANCLE_SESSION	RECV_OK
2051918	SIMBANK-01[43] at DWG-03[31]	Tai khoan chinh cua Quy khach l...	2013-11-16 19:13:28	CANCLE_SESSION	RECV_OK
2051917	SIMBANK-01[39] at DWG-promotion...		2013-11-16 19:13:27	SEND	SENT_OK
2051916	SIMBANK-02[55] at DWG-08[21]	Tai khoan chinh cua Quy khach l...	2013-11-16 19:13:27	CANCLE_SESSION	RECV_OK
2051915	SIMBANK-01[54] at DWG-07[21]	*101#	2013-11-16 19:13:24	SEND	SENT_OK
2051914	SIMBANK-02[52] at DWG-07[26]	Tai khoan chinh cua Quy khach l...	2013-11-16 19:13:23	CANCLE_SESSION	RECV_OK
2051913	SIMBANK-01[43] at DWG-03[31]	He thong chua thuc hien duoc y...	2013-11-16 19:13:23	CANCLE_SESSION	RECV_OK
2051912	SIMBANK-02[55] at DWG-08[21]	*101#	2013-11-16 19:13:21	SEND	SENT_OK
2051911	SIMBANK-01[43] at DWG-03[31]	*101#	2013-11-16 19:13:21	SEND	SENT_OK
2051910	SIMBANK-02[52] at DWG-07[26]	*101#	2013-11-16 19:13:18	SEND	SENT_OK
2051909	SIMBANK-01[43] at DWG-03[31]	*101#	2013-11-16 19:13:18	SEND	SENT_OK
2051908	SIMBANK-02[00] at DWG-04[03]	Operation not supported	2013-11-16 19:13:13	UNKNOWN	RECV_OK
2051907	SIMBANK-02[00] at DWG-04[03]	*101#	2013-11-16 19:13:12	SEND	SENT_OK
2051906	SIMBANK-01[42] at DWG-promotion...	Operation not supported	2013-11-16 19:13:04	UNKNOWN	RECV_OK
2051905	SIMBANK-01[42] at DWG-promotion...	*222#	2013-11-16 19:13:03	SEND	SENT_OK
2051904	SIMBANK-01[12] at DWG-04[16]	Tai khoan chinh cua Quy khach l...	2013-11-16 19:12:59	CANCLE_SESSION	RECV_OK
2051903	SIMBANK-04[22] at DWG-08[14]	Operation not supported	2013-11-16 19:12:58	UNKNOWN	RECV_OK
2051902	SIMBANK-01[42] at DWG-promotion...		2013-11-16 19:12:57	SEND	SENT_OK

Then click 

to export history USSD records into a excelfile.



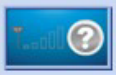
Click **[Yes]**, wait a moment…

Will download a excel file like: 

4 Appendix

4.1 Run Status Definitions

4.1.1 Run Status of DWG Port

Run Status	ICON	Description	Run Status	ICON	Description
INIT		In initializing stage	DISABLED		Related with Admin Status: DISABLED
IDLE		Working normally and service idle	LOCKED		Related with Admin Status: LOCKED, only for Port/SIM
BUSY		Working normally and service busy	NO_BALANCE		Related with Admin Status: NO_BALANCE, only for Port/SIM
ELEGANT_ STOP		Waiting elegant stop	FAULT		Reported fault event from device
STOP		Working normally but service was stopped	MISMATCH		Found mismatched information and be abnormal
COMM_FAIL		Lost communication with device	EMPTY		No SIM Card binding

4.1.2 Run Status of SIMBANK Port

Run Status	ICON	Description	Run Status	ICON	Description
INIT		In initializing stage	DISABLED		Related with Admin Status: DISABLED
IDLE		Working normally and service idle	LOCKED		Related with Admin Status: LOCKED, only for Port/SIM
BUSY		Working normally and service busy	NO_BALANCE		Related with Admin Status: NO_BALANCE, only for Port/SIM
ELEGANT_ STOP		Waiting elegant stop	FAULT		Reported fault event from device
STOP		Working normally but service was stopped	MISMATCH		Found mismatched information and be abnormal
COMM_FAIL		Lost communication with device	EMPTY / OFFLINE		No SIM Card loading

4.2 Performance Statistics Definitions

4.2.1 Domain/SIM Group/DWG Device

Domain/SIM Group/DWG Device	Description
simSwitchCount	SIM Card Switch Count
oprErrorAll	SIM Operation Fail Count
callTimeDay	Call Time in one day
callTimeMonth	Call Time in one month
callTimeAll	Call Time in statistics period
callCountAll	Call Count in statistics period
callFailCount	Call Fail Count in statistics period
callShortCount	Call Short-Cut Count in statistics period
callNormalCount	Call Normal Count in statistics period
callSuccRate	Call Success Rate in statistics period

smsCountDay	SMS Send Count in one day
smsCountMonth	SMS Send Count in one month
smsCountAll	SMS Send Count in statistics period
smsFailCount	SMS Send Fail Count in statistics period
smsSuccRate	SMS Send Success Rate in statistics period

4.2.2 DWG Port/SIM Card

DWG Port/SIM Card	Description
oprErrorOnce	SIM Operation Fail Count after SIM Card Binding
pktCountOnce	Packet Count between DWG Port and SIM Card after SIM Card Binding
pktRetriesOnce	Packet Retries Count between DWG Port and SIM Card after SIM Card Binding
pktLossOnce	Packet Loss Count between DWG Port and SIM Card after SIM Card Binding
curSignalVal	Current Wireless Signal Value in statistics period
minSignalVal	Minimum Wireless Signal Value in statistics period
maxSignalVal	Maximum Wireless Signal Value in statistics period
curBerVal	Current Wireless BER Value in statistics period
minBerVal	Minimum Wireless BER Value in statistics period
maxBerVal	Maximum Wireless BER Value in statistics period
curRoundDelay	Current Round-Trip Delay between DWG Port and SIM Card in statistics period
minRoundDelay	Minimum Round-Trip Delay between DWG Port and SIM Card in statistics period
maxRoundDelay	Maximum Round-Trip Delay between DWG Port and SIM Card in statistics period
callTimeOnce	Call Time after SIM Card Binding
smsCountOnce	SMS Send Count after SIM Card Binding

4.3 Variable Definitions

4.3.1 AdminStatus

Configurable AdminStatus of device, port, GWP and BKP objects.

AdminStatus	Usages	Description
ENABLED	device, port, GWP, BKP	default setting
DISABLED	device, port, GWP, BKP	all service is disabled
LOCKED	GWP, BKP	specific binding between GWP and BKP
NO_BALANCE	GWP, BKP	service calling is not allowed, but support to do recharge by SMS/USSD/CALL

4.3.2 RunStatus

Read-only RunStatus of device, port, GWP and BKP objects.

RunStatus	Usages	Description
INIT	device, port, GWP, BKP	initializing stage
AUTH	device	authentification stage
ACTIVE	device, port	working normal
FAULT	device, port, GWP, BKP	working fault
COMM_FAIL	device, port, GWP, BKP	lost communication with device
MISMATCH	GWP, BKP	mismatched configuration
FAC_FAULT	port, GWP, BKP	port fault
DISABLED	device, port, GWP, BKP	be set by AdminStatus: DISABLED
EMPTY	BKP	no SIM card loaded
READY	port, GWP, BKP	port is available
IDLE	port, GWP, BKP	working normally and service idle
BUSY	port, GWP, BKP	working normally and service busy
OFFLINE	port, GWP, BKP	SIM card pull-out
LOCKED	port, GWP, BKP	specific binding, don't switchover
ELEGANT_STOP	device, port, GWP, BKP	wait elegant stop
STOPPED	device, port, GWP, BKP	working normally but service was stopped
NO_BALANCE	port, GWP, BKP	no balance, service is not available
BLOCKED	port, GWP, BKP	blocked, service is not available
EXPIRED	domain	expired, and limited functions

TESTING	device, port, GWP, BKP	only for testing
REBOOT	device	wait device reboot

4.3.3 DeviceType

Read-only DeviceType of one device.

DeviceType	Description
DWG	including DWG-8, DWG-16 and DWG-32
SIMBANK	including SIMBANK-32, SIMBANK-64
DAG	AG series products
MTG	TG series products

4.3.4 PortType

Read-only PortType of one port.

PortType	Description
GWP	DWG port type
BKP	SIMBANK port type
AGP	DAG port type
TGP	MTG port type

4.3.5 ModuleType

Read-only ModuleType of one port.

PortType	Description
GSM	GSM module
CDMA	CDMA module

4.3.6 WorkMode(GWP)

Read-only WorkMode of one GWP port.

PortType	Description
LOCAL	DWG uses local SIM card
REMOTE_SIMBANK	DWG uses remote SIM card of SIMBANK

4.3.7 WorkStatus(GWP)

Read-only WorkStatus of one GWP port.

PortType	Description
NO_SIM	no SIM card
NOT_REG	SIM card is not registered
SEARCHING	searching network
REG_OK	SIM card is registered

4.3.8 WorkStatus(BKP)

Read-only WorkStatus of one BKP port.

PortType	Description
NO_SIM	no SIM card
READY	SIM card is present, but not used
WORKING	SIM card is used by GWP
DISABLED	BKP is disabled

4.3.9 SmsDirection

SMS direction.

CallDirection	Description
SMS_RECV	Received SMS from operator
SMS_SEND	Sent SMS to operator

4.3.10 SmsEncode

SMS encode of one SMS content.

PortType	Description
UNICODE	UCS2
ASCII	GSM

4.3.11 SmsStatus

Read-only SMS status.

SmsStatus	Description
NULL	NA
SEND_WAIT	Wait processing by server
SENDING	Sending SMS to operator
SENT_OK	Device reported sent ok
SENT_FAIL	Server/Device reported sent fail
SENT_RECEIPT	Received SMS receipt from operator
RECV_OK	Received SMS from operator
RECV_FAIL	Unused

4.3.12 SmsResult

Read-only SMS result.

SmsStatus	Description
NULL	NA
INVALID_PORT	GWP is invalid, can't send SMS
BUSY_PORT	GWP is busy, can't send SMS
NOT_AVAILABLE	GWP is not available, can't send SMS
...	
SUCCESS	send/recv ok
FAILURE	send/recv failure
TIMEOUT	sending timeout
ACK_ERROR	can't send SMS at device side
RESULT_ERROR	sent failure at device side, caused by GWP not available or no balance
...	
INVALID_NUMBER	invalid sent-to number
TOO_LONG	too long SMS content

4.3.13 UssdDirection

SMS direction.

CallDirection	Description
USSD_RECV	Received USSD from operator
USSD_SEND	Sent USSD to operator

4.3.14 UssdStatus

Read-only USSD status.

UssdStatus	Description
NULL	NA
SEND_WAIT	Wait processing by server
SENDING	Sending USSD to operator
SENT_OK	Device reported sent ok
SENT_FAIL	Server/Device reported sent fail
RECV_OK	Received USSD from operator
RECV_FAIL	Unused

4.3.15 UssdResult

Read-only USSD result.

UssdStatus	Description
NULL	NA
INVALID_PORT	GWP is invalid, can't send SMS
BUSY_PORT	GWP is busy, can't send SMS
NOT_AVAILABLE	GWP is not available, can't send SMS
...	
SUCCESS	send/recv ok
FAILURE	send/recv failure
TIMEOUT	sending timeout
ACK_ERROR	can't send SMS at device side
RESULT_ERROR	sent failure at device side, caused by GWP not available or no balance
...	
NOT_SUPPORTED	operation is not supported by network

4.3.16 CallDirection

CALL direction.

CallDirection	Description
CALL_IN	call in from operator
CALL_OUT	call out to operator

4.3.17 CallStatus

Read-only CALL status.

CallStatus	Description
NULL	NA
CALL_WAIT	Wait processing by server
CALL_ONGOING	Send testing CALL to operator
CALL_OK	Testing CALL result ok
CALL_FAIL	Testing CALL result fail
CALL_OUT_START	Device reported CALL_OUT started
CALL_OUT_ALERT	Device reported CALL_OUT alerted
CALL_OUT_ACTIVE	Device reported CALL_OUT actived
CALL_OUT_END	Device reported CALL_OUT ended
CALL_IN_RING	Device reported CALL_IN ringing
CALL_IN_ACTIVE	Device reported CALL_IN actived
CALL_IN_END	Device reported CALL_IN ended

4.3.18 CallResult

Read-only CALL result.

CallStatus	Description
NULL	
INVALID_PORT	GWP is invalid, can't do call
BUSY_PORT	GWP is busy, can't do call
NOT_AVAILABLE	GWP is not available, can't do call
...	
SUCCESS	call ok
FAILURE	call failure
TIMEOUT	call timeout
ACK_ERROR	can't do CALL at device side
...	
INVALID_NUMBER	invalid CALL number
SIG_ERROR	call failure by signal error
DTMF_ERROR	call failure by DTMF testing error

4.3.19 CdrFlag

Read-only CDR result.

CdrFlag	Description
NULL	NA
NORMAL	normal CDR
FAILURE	fail CDR

SHORT	short CDR
FORCE_CUT	force cut CDR
LONG_CUT	long cut CDR

4.4 Glossary

Term	Description
DWG	Wireless VoIP Gateway
SIMBANK	SIMBANK Device
GWP	DWG Port
BKP	SIMBANK Port