Synway®

Synway UMG Series Gateway

Uniway2000
Uniway2100
Uniway2200

User Manual

Version 1.8.0

Synway Information Engineering Co., Ltd

www.synway.net

Content

Copyright Declaration

Revision History

Version	Date	Comments
Version 1.6.3	2017-3	Initial publication
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Chapter 1 Product Introduction

Thank you for choosing Synway UMG Series Gateway!

The Synway UMG series gateway products (hereinafter referred to as 'UMG gateway') integrate the analog, digital and wireless subboards. It can connect the traditional phone sets, the fax machines, the PSTN and the enterprise PBX as well as the wireless network to implement multiple features of analog, digital and wireless gateways, providing a powerful, reliable and cost-effective VoIP solution for such occasions as IP call centers and multi-branch agencies.

1.1 Typical Application

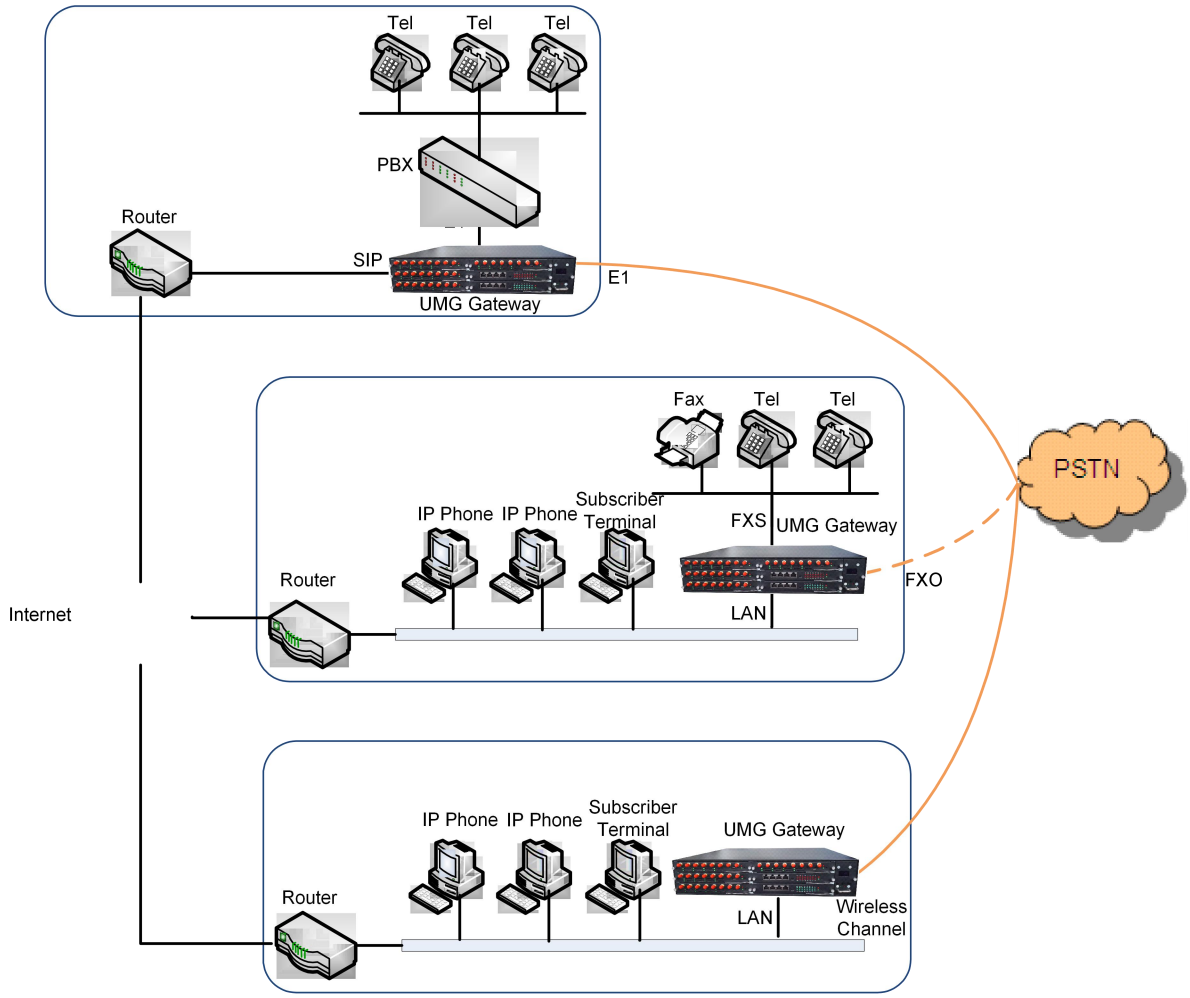


Figure 1- 1 Typical Application

1.2 Feature List

Basic Features	Description
IP Call	Call initiated from IP to a designated SIP trunk for voice communication, via routing and number manipulation.
Number Manipulation	Peels off some digits of a phone number from left/right, or adds a prefix/suffix to a phone number.
VoIP Routing	Routing path: from IP to PSTN or from PSTN to IP.
Fax	Multiple fax parameters: fax mode, maximum fax rate, fax train mode, error correction mode, etc.
Echo Cancellation	Provides the echo cancellation feature for a call conversation.
IMS Network	Registers the gateway to a server under IMS network.
Simultaneous Register to Multiple Servers	Registers the gateway to a master registrar server and a spare registrar server simultaneously.
Signaling & Protocol	**Description**
SIP Signaling	Supported protocol: SIP V1.0/2.0, RFC3261
Voice	CODEC: G.711A, G.711U, G.729, G723, G722, AMR, iLBC DTMF Mode: RFC2833, SIP INFO, INBAND, RFC2833+Signaling, In-band+Signaling
Network	**Description**
Network Protocol	Supported protocol: TCP/UDP, HTTP, ARP/RARP, DNS, NTP, TFTP, TELNET, STUN
Static IP	IP address modification support
DNS	Domain Name Service support
Security	**Description**
Admin Authentication	Support admin authentication to guarantee the resource and data security
Maintain & Upgrade	**Description**
WEB Configuration	Support of configurations through the WEB user interface
Language	Chinese, English
Software Upgrade	Support of user interface, gateway service, kernel and firmware upgrades based on WEB
Tracking Test	Support of Ping and Tracert tests based on WEB
SysLog Type	Three options available: ERROR, WARNING, INFO

1.3 Hardware Description

The UMG gateway features 2U rackmount design and integrates embedded LINUX system within

the POWERPC+DSP hardware architecture. It has 2 Megabit Ethernet ports (LAN1 and LAN2) on the chassis, two fan boxes with removable fans and independent air passages respectively on the front and back panels.

1.3.1 Appearance & Interface Description

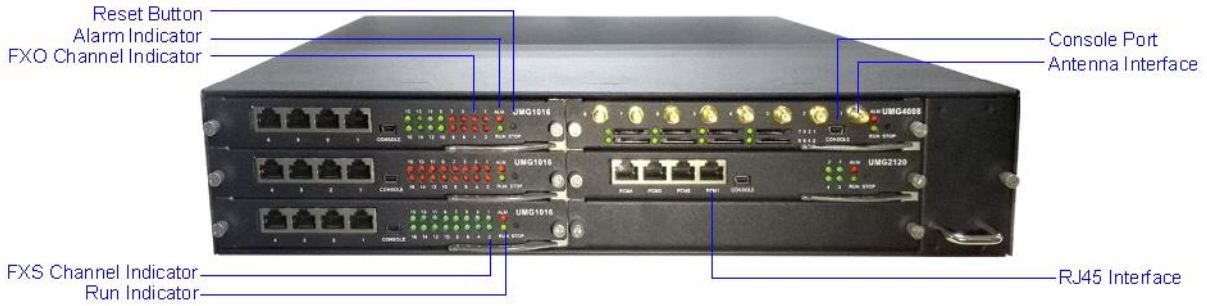
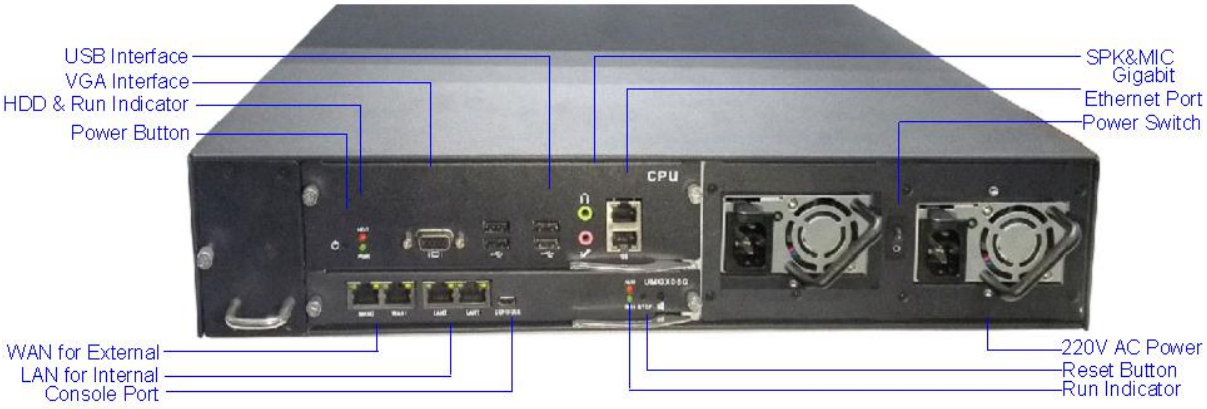


Figure 1-2 Front View for Uniway2000



Note: The Internal LAN is only used to access the inserted subboards.

Figure 1-3 Rear View for Uniway2000

Figure 1-4 Left View for Uniway2000

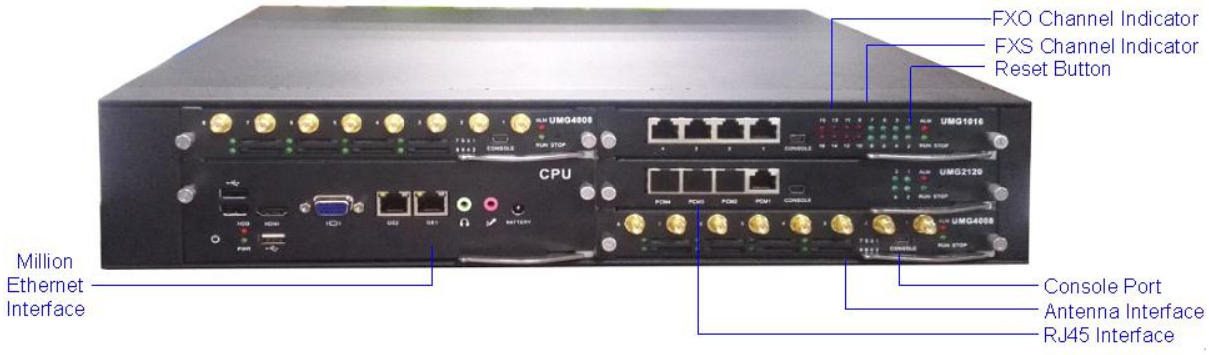


Figure 1-5 Front View for Uniway2100

Figure 1- 6 Rear View for Uniway2100

Figure 1- 7 Left View for Uniway2100

Figure 1- 8 Front View for Uniway2200

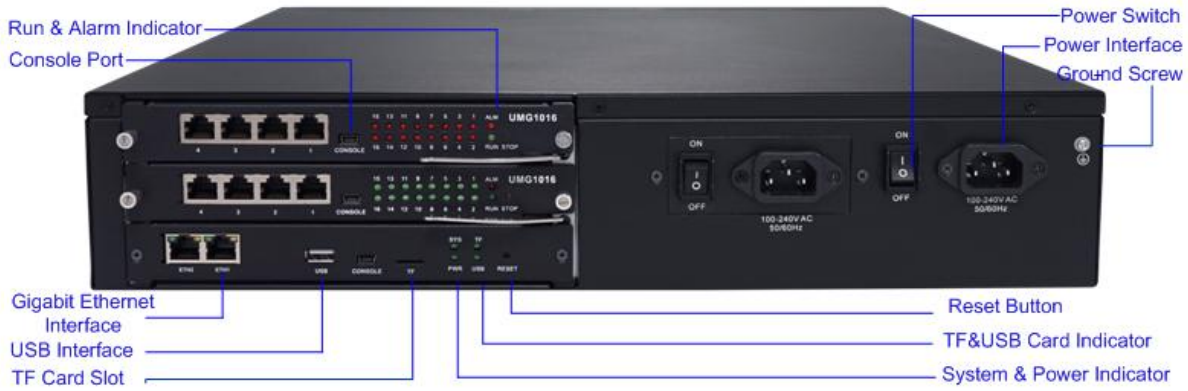


Figure 1- 9 Rear View for Uniway2200

Figure 1- 10 Left View for Uniway2200

The table below gives a detailed introduction to the interfaces, buttons and LEDs illustrated above:

Interface	Description
LAN	Amount: 2
	Type: RJ-45
	Bandwidth: 10/100Mbps
	Self-Adaptive Bandwidth Supported
	Auto MDI/MDIX Supported
Console Port	Amount: 1
	Type: RS-232
	Baud Rate: 115200 bps
	Connector: Mini-USB connecting line
	Data Bits: 8 bits
	Stop Bit: 1 bit
	Parity Unsupported
	Flow Control Unsupported
Button	**Description**
Power Key	The power key for the board power supply
Reset Button	Restore the gateway to factory settings.
LED	**Description**
Power Indicator	Indicates the power state. It lights up when the gateway starts up with the power cord well connected.
Run Indicator	Indicates the running status. For more details, refer to Alarm Info.
Alarm Indicator	Alarms the device malfunction. For more details, refer to Alarm Info.
Link Indicator	The green LED on the left of LAN, indicating the network connection status.
ACT Indicator	The orange LED on the right of LAN, whose flashing tells data are being transmitted.

1.3.2 Hardware Structure

The UMG gateway features 2U rackmount design, which can be inserted with the CPU board, the switching board, analog gateway subboards, digital gateway subboards and wireless gateway subboards. For the Uniway2000 and UNIWAY2200 gateways, there are 6 service board slots in the front, 2 service board slots together with 1 switching board slot at the back. The wider one among the 9 slots is only for the switching board, and the other 8 slots are optional; for the Uniway2100 gateway, it designs 6 service board slots in the front, 1 switching board slot at the back. The descriptions about the subboards are listed below:

The CPU board (Occupied a height of two service boards) based on the X86 architecture is used to run the IVR and other programs developed by customers.

The switching board (Uniway2000: UMG-X08G) based on the MCU03 processor and the 1.2G quad-core ARM processor, is used to run the front-end gateway service program. The assembled switching board for Uniway2000 has 3 independent Kilomega-Ethernet ports which can be self-adaptive the 10/100M network. The switching board for Uniway2100 (UMG-X06) has 2 independent Million-Ethernet ports. The switching board for Uniway2200 has 2 independent Kilomega-Ethernet ports. It provides a high-performance, embedded CPU to manage all the devices, and all service boards interact with the outside through it. The digital gateway subboards

(UMG2120) support 1E1, 2E1s and 4E1s, with the type of UMG-2030, UMG-2060 and UMG-2120.

The analog gateway subboards (UMG1016) now support up to 16 analog channels, with the types of UMG1016-16S (16-channels FXS port), UMG1016-8S8O (8-channels FXS port and 8-channels FXO port) and UMG1016-16O (16-channels FXO port).

The wireless gateway subboards (UMG4008) now support up to 8 wireless channels, with the type of UMG-4008_8G, UMG-4008_8C, UMG-4008_8W, UMG-4008_4G, UMG-4008_4C and UMG-4008_4W.

The 8 optional slots on Uniway2000/Uniway2200 can be inserted with any subboards according to your requirement. The common settings are: 1 CPU board + 1 switching board + 6 available service boards; 2 CPU boards + 1 switching board + 4 available service boards; 1 switching board + 8 available service boards.

The 6 optional slots on Uniway2100 can be inserted with any subboards according to your requirement. The common settings are: 1 CPU board + 1 switching board + 4 available service boards; 2 CPU boards + 1 switching board + 2 available service boards; 1 switching board + 6 available service boards.See the hardware architecture below:

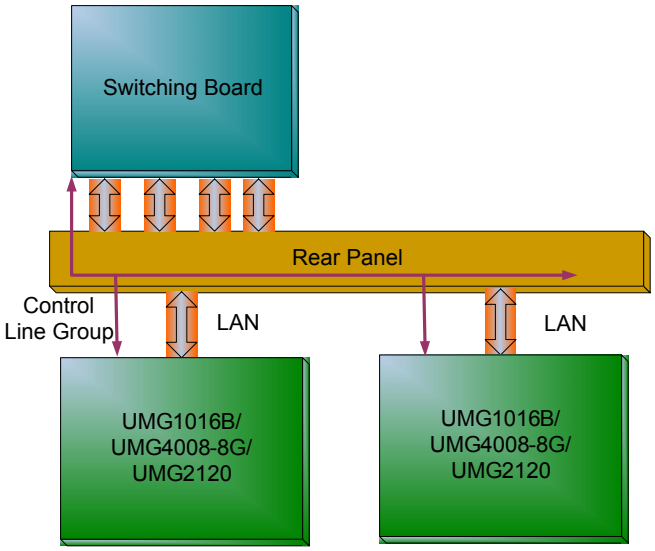


Figure 1- 11 UMG Gateway Hardware Architecture

1.4 Alarm Info

The UMG gateways UNIWAY2000 and UNIWAY2100 are equipped with two indicators denoting the system's running status: Run Indicator (green) and Alarm Indicator (red). The UMG gateway UNIWAY2200 is equipped only one indicator denoting the system's running status: System Indicator (green). The table below explains the states and meanings of the indicators.

LED	State	Description
Run Indicator	Go out	System is not yet started.
	Light up and flash fast	System is starting.
	Flash slowly	System is normal.
Alarm Indicator	Go out	System is normal.
	Light up	Upon startup: System is normal. In runtime: System is abnormal.
	Flash	System is abnormal.
System Indicator	Go out	System is not yet started.

	Light up and flash fast	Upon startup: System is normal. In runtime: System is abnormal.
	Flash slowly	System is normal.

Note:

- The startup process consists of two stages: System Booting and Gateway Service Startup. For UNIWAY2000 and UNIWAY2100, the system booting costs about 1 minute and once it succeeds, both the run indicator and the alarm indicator light up. Then after the gateway service is successfully started and the device begins to work normally, the run indicator flashes and the alarm indicator goes out. For UNIWAY2200, after the system boots up successfully, the system indicator will flash fast during the gateway service startup process. Then after the service is successfully started and the device begins to work normally, the system indicator will turn to a slow flash.
- During runtime, if the alarm indicator lights up or flashes, it indicates that the device goes abnormal. If you cannot figure out and solve the problem by yourself, please contact our technicians for help. Go to Appendix C Technical/sales Support to find the contact way.

Chapter 2 Quick Guide

This chapter is intended to help you grasp the basic operations of the UMG gateway in the shortest time.

Step 1: Confirm that your packing box contains all the following things.

- UMG Gateway *1
- Angle Bracket *2, Rubber Foot Pad *4, Screw for Angle Bracket *8
- 220V Power Cord *2
- Warranty Card *1
- Installation Manual *1

Step 2: Properly fix the UMG gateway.

If you do not need to place the gateway on the rack, simply fix the 4 rubber foot pads. Otherwise, you should first fix the 2 angle brackets onto the chassis and then place the chassis on the rack.

Step 3: Connect the power cord.

Make sure the device is well grounded before you connect the power cord. Check if the power socket has the ground wire.

Note: UNIWAY2000 and UNIWAY2200 both have two power interfaces to meet the requirement for power supply hot backup. As long as you properly connect and turn on these two power keys, either power supply can guarantee the normal operation of the gateway even if the other fails.

Step 4: Connect the network cable.

Step 5: Log in the gateway.

Enter the original IP address of the UMG gateway (Uniway2000 WAN1, Uniway2100 ETH1 and Uniway2200 ETH1: 192.168.1.101; or Uniway2000 WAN2, Uniway2100 ETH2 and Uniway2200 ETH2: 192.168.0.101) in the browser to go to the WEB interface. The original username and password of the gateway are both 'admin'. For detailed instructions about login, refer to System Login. We suggest you change the initial username and password via 'System Tools → Change Password' on the WEB interface as soon as possible after your first login. For detailed instructions about changing the password, refer to Change Password. After changing the password, you are required to log in again.

Step 6: Modify IP address of the gateway.

You can modify the IP address of the gateway via 'System Tools → Network' on the WEB interface to put it within your company's LAN. Refer to Network for detailed instructions about IP modification. After changing the IP address, you shall log in the gateway again using your new IP address.

Step 7: Check the connection of subboards.

After the gateway starts successfully with the subboards, you can go 'Gateway → Subboard Gateway' on the WEB interface to check if all the subboards are well connected.

Step 8: Set routing rules for calls.

Go to the route setting interface of each subboard to set the routing rules. Please refer to the user manual of each gateway for detailed information.

Special Instructions:

- The chassis of the UMG gateway must be grounded for safety reasons, according to

standard industry requirements. A simple way is earthing with the third pin on the plug. No or improper grounding may cause instability in operation as well as decrease in lightning resistance.

- As the device will gradually heat up while being used, please maintain good ventilation to prevent sudden failure, ensuring that the ventilation holes (see Figure 1-4) are never jammed.
- During runtime, if the alarm indicator lights up or flashes, it indicates that the device goes abnormal. If you cannot figure out and solve the problem by yourself, please contact our technicians for help. Otherwise it may lead to a drop in performance or unexpected errors.

Chapter 3 WEB Configuration

3.1 System Login

Type the IP address into the browser and enter the login interface. See Figure 3- 1.

Figure 3- 1 Login Interface

The gateway only serves one user, whose original username and password are both ‘admin’. You can change the username and the password via ‘System Tools → Change Password’ on the WEB interface. For detailed instructions, refer to Change Password.

After login, you can see the main interface as below.

Figure 3- 2 Main Interface

3.2 Operation Info

Operation Info shows the current running status of the gateway. See Figure 3-3.

Figure 3-3 Operation Info

3.2.1 System Info

Figure 3-4 System Info Interface

See Figure 3-4 for the system info interface. You can click ***Refresh*** to obtain the latest system information, click ***Version Detail*** to obtain the detailed information of WEB, Gateway, Uboot and Kernel. The table below explains the items shown in Figure 3-4.

Item	Description
MAC Address	MAC address of LAN 1 or LAN 2.
IP Address	The three parameters from left to right are IP address, subnet mask and default gateway of LAN 1 or LAN 2.

DNS Server	DNS server address of LAN 1 or LAN 2.
Receive Packets, Transmit Packets	The amount of receive/transmit packets after the gateway's startup, including three categories: All, Error and Drop.
Current Speed	The current speed of data receiving and transmitting.
Work Mode	The work mode of the network, including six options: 10 Mbps Half Duplex, 10 Mbps Full Duplex, 100 Mbps Half Duplex, 100 Mbps Full Duplex, 1000 Mbps Full Duplex and Disconnected. Note: The mode of 1000 Mbps Full Duplex is unavailable for the Uniway2100 gateway.
Runtime	Time of the gateway keeping running normally after startup. This parameter updates every 2s.
CPU Temperature	Display the real time temperature of the CPU.
Serial Number	Unique serial number of an UMG gateway.
WEB	Current version of the WEB interface.
Gateway	Current version of the gateway service.
Uboot	Current version of Uboot.
Kernel	Current version of the system kernel on the gateway.
Firmware	Current version of the firmware on the gateway.

3.2.2 Board State

Board Status

Slot No.	Type	Status
1	---	Disconnected
2	---	Disconnected
3	---	Disconnected
4	---	Disconnected
5	---	Disconnected
6	---	Disconnected

Figure 3- 5 Board Status List

See Figure 3- 5 for the Board Status List. It displays the online status of each board connected to the gateway, telling the board type for each slot number as well as if the board is connected or not.

3.2.3 Warning Info

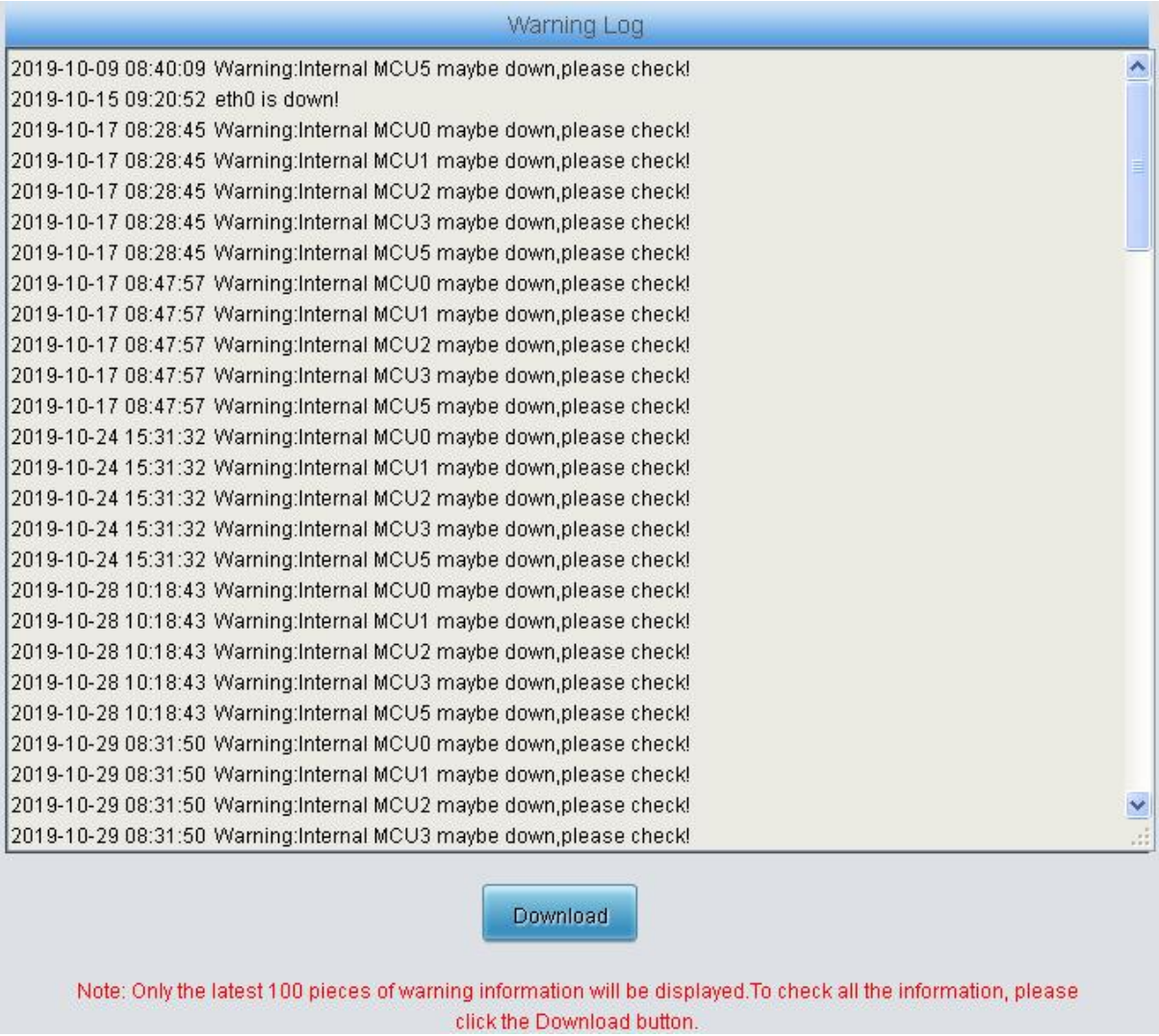


Figure 3-6 Warning Info Interface

See Figure 3-6 for the Warning Information interface. It displays all the warning information on the gateway.

3.3 Gateway Setting

SIP Settings includes ***Board Setting*** and ***Board Information***. See Figure 3-7.

Figure 3-7 Gateway Settings

3.3.1 Board Setting

The Board Setting interface displays all the board types of the UMG gateway. See Figure 3-8. Click ***Configuration*** to go to the configuration interface of each board. You can refer to the

corresponding gateway's manual for detailed operations.

Figure 3- 8 Board Setting Interface

3.3.2 Board Information

The Board Information interface displays all the route and port information. See Figure 3- 9 below.

Figure 3- 9 Board Information Interface

3.4 Board Group

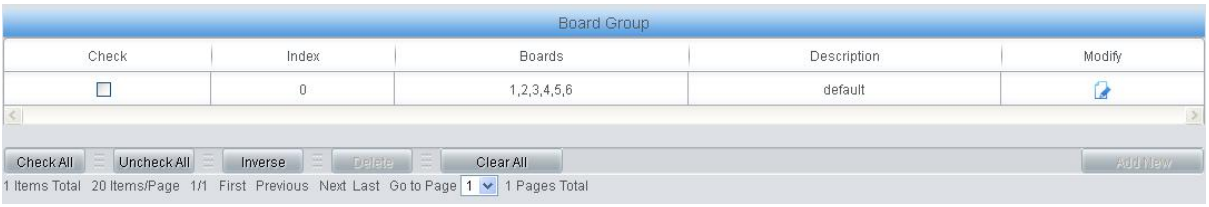


Figure 3- 10 Board Group Settings

See Figure 3- 10 for the Board Group Setting interface. A new board group can be added by the ***Add New*** button on the bottom right corner of the list in the above figure. See Figure 3- 11 for the Board Group Adding interface.

Figure 3- 11 Add New Board Group

The table below explains the items shown in Figure 3- 11.

Item	Description
Index	The unique index of each board group, which is mainly used in the configuration of routing rules and number manipulation rules to correspond to board groups.
Description	More information about each board group.
Boards	The boards in the board group. If the checkbox before a board is grey, it indicates that the board has been occupied. The ticked boards herein will be displayed in the column 'Boards' in Figure 3- 10.

After configuration, click ***Save*** to save the settings into the gateway or click ***Close*** to cancel the settings.

Click ***Modify*** in Figure 3- 10 to modify a board group. The configuration items on the board group modification interface are the same as those on the ***Board Group Adding*** interface.

To delete a board group, check the checkbox before the corresponding index in Figure 3- 10 and click the ***Delete*** button. ***Check All*** means to select all available items on the current page; ***Uncheck All*** means to cancel all selections on the current page; ***Inverse*** means to uncheck the selected items and check the unselected. To clear all board groups at a time, click the ***Clear All*** button in Figure 3- 10.

3.5 Route Settings

Route Settings is used to specify the routing rules for calls from IP to TEL/PSTN. See Figure 3- 12.

Figure 3- 12 Route Settings

3.5.1 IP to TEL/PSTN

By default, there is no IP→TEL/PSTN routing rule available on the gateway. Click ***Add New*** to add some manually. See Figure 3- 13 for the IP→TEL/PSTN routing rule adding interface.

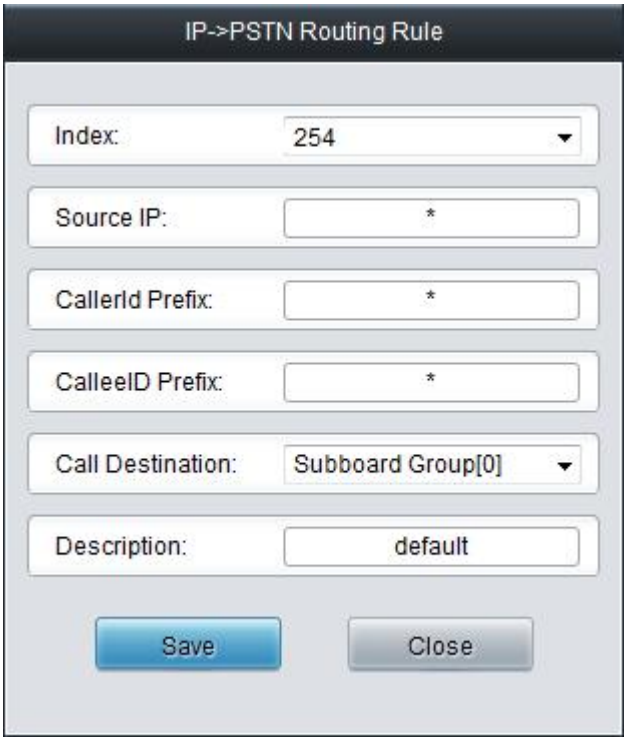


Figure 3- 13 Add New Routing Rule (IP→TEL/PSTN)

The table below explains the items shown in the above figure.

Item	Description
Index	The unique index of each routing rule, which denotes its priority. A routing rule with a smaller index value has a higher priority. If a call matches several routing rules, it will be processed according to the one with the highest priority.
Source IP	The IP address where the calls come from.

<table>
<tr><td>CallerID Prefix,
CalleeID Prefix</td><td>A string of numbers at the beginning of the calling/called party number. This item can be set to a specific string or “*” which indicates any string. These two configuration items together with Call Initiator can specify the calls which apply to a routing rule.
Rule Explanation:<table><tr><th>Character</th><th>Description</th></tr><tr><td>“0”~”9”</td><td>Digits 0～9.</td></tr><tr><td>“[ ]”</td><td>‘[ ]’ is used to define the range for a number. Values within it only can be digits ‘0~9’, punctuations ‘-’ and ‘,’. For example, [1-3,6,8] indicates any one of the numbers 1, 2, 3, 6, 8.</td></tr><tr><td>“-”</td><td>’-’ is used only in ‘[ ]’ between two numbers to indicates any number between these two numbers.</td></tr><tr><td>“ ”
’</td><td>’,’ is used to separate numbers or number ranges, representing alternatives.</td></tr></table>Example: Rule “0[0-3,7][6-9]” denotes the prefix is 006, 016, 026, 036, 007, 017, 027, 037, 008, 018, 028, 038, 009, 019, 029, 039, 076, 077, 078, 079.
Note: Multiple rules are supported for CallerID/CalleeID prefix. They are separated by “:”.</td></tr>
<tr><td>Call Destination</td><td>Board group to which the call will be routed.</td></tr>
<tr><td>Description</td><td>More information about each routing rule.</td></tr>
</table>

After configuration, click ***Save*** to save the settings into the gateway or click ***Close*** to cancel the settings. See Figure 3- 14 for the IP→TEL/PSTN Routing Rule Configuration Interface.

Figure 3- 14 IP→TEL/PSTN Routing Rule Configuration Interface

Click ***Modify*** in Figure 3- 14 to modify a routing rule. The configuration items on the IP → TEL/PSTN routing rule modification interface are the same as those on the ***Add New Routing Rule (IP→TEL/PSTN)*** interface. Note that the item ***Index*** cannot be modified.

To delete a routing rule, check the checkbox before the corresponding index in Figure 3- 14 and click the ***Delete*** button. ***Check All*** means to select all available items on the current page; ***Uncheck All*** means to cancel all selections on the current page; ***Inverse*** means to uncheck the selected items and check the unselected. To clear all routing rules at a time, click the ***Clear All*** button in Figure 3- 14.

3.6 System Tools

System Tools is mainly for gateway maintenance. It provides such features as IP modification, time synchronization, data backup, log inquiry and connectivity check. See Figure 3- 15 for details.

Figure 3- 15 System Tools

3.6.1 Network

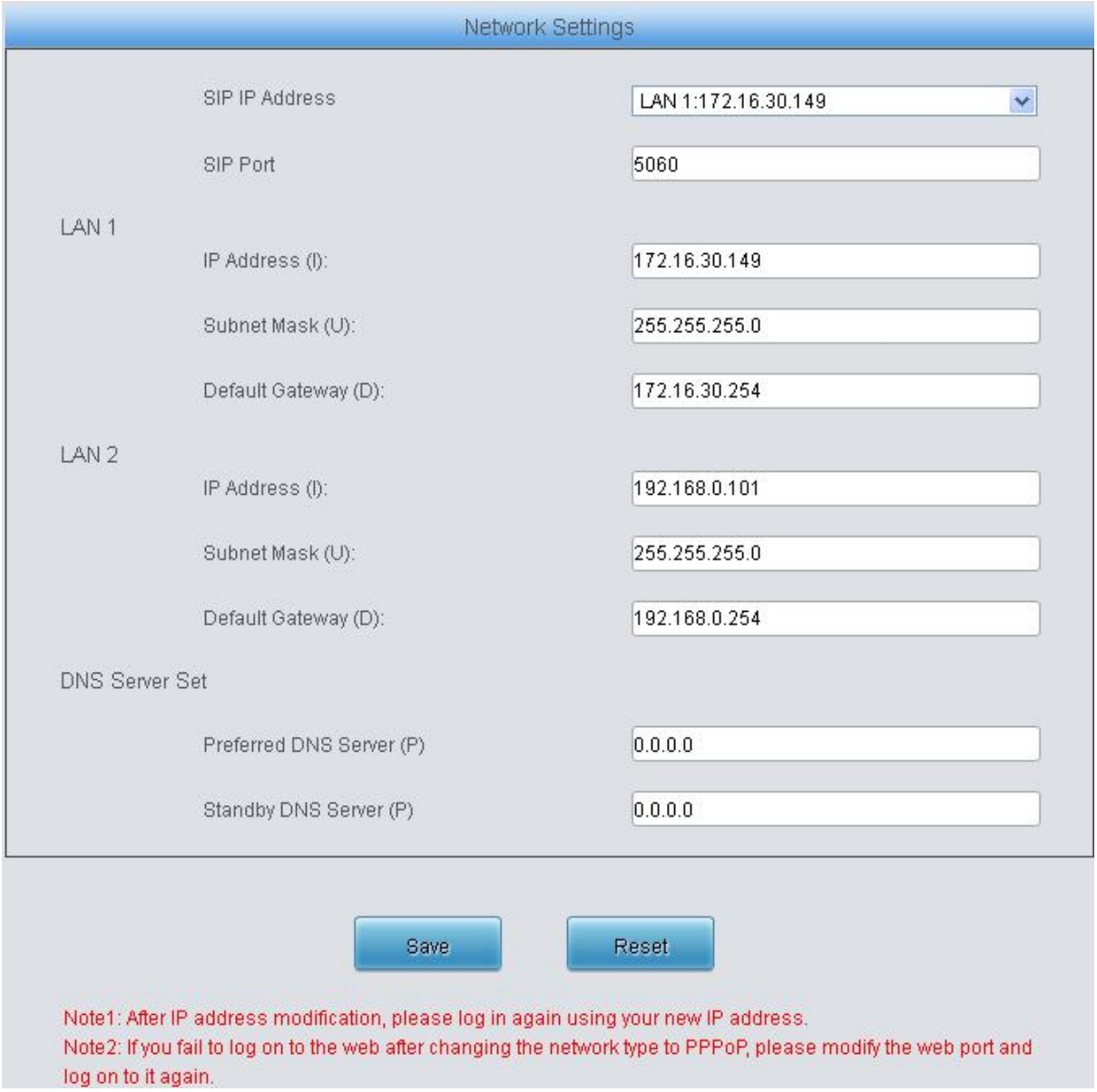


Figure 3- 16 Network Settings Interface

See Figure 3- 16 for the network settings interface. A gateway has two LANs, each of which can be configured with independent IP address, subnet mask, default gateway and DNS server. On this interface, SIP Address is used to select the IP address for SIP signaling, using LAN 1 by default; SIP Signaling Port is used to set the monitoring port for SIP signaling, with the value range of 5001~65535 and the default value of 5060.

Note: 1. The two configuration items IP Address and Default Gateway cannot be the same for NET 1 and NET 2.

2. By default, *Speed and Duplex Mode* is hidden, set to Automatic Detection, and you can click 'F' to let it display. We suggest you do not modify it because the non-automatic detection may cause abnormity in network interface.

After configuration, click ***Save*** to save the above settings into the gateway or click ***Reset*** to restore the configurations. After changing the IP address, you shall log in the gateway again using your new IP address.

3.6.2 Management

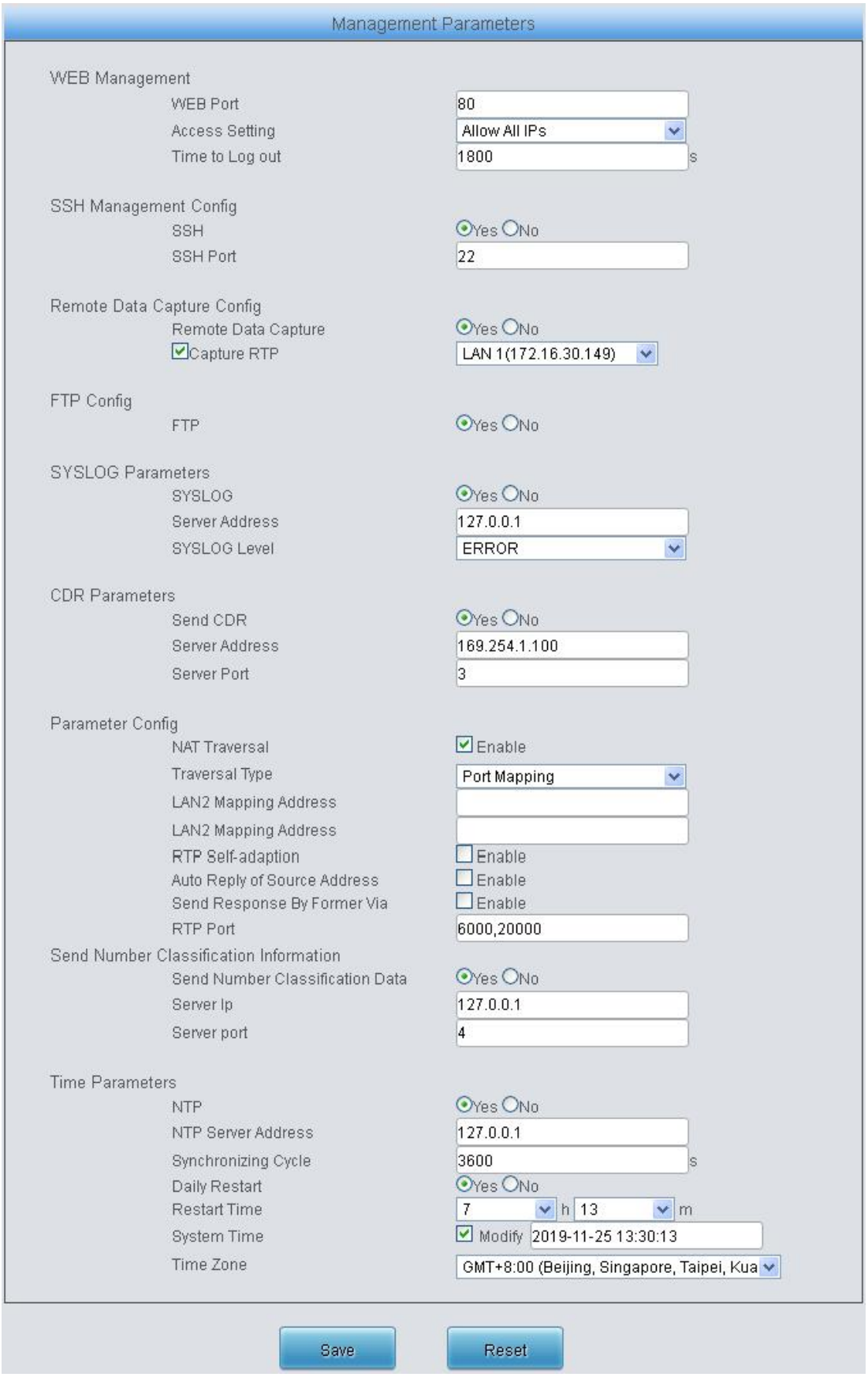


Figure 3- 17 Management Parameters Setting Interface

See Figure 3-17 for the Management Parameters Setting interface. The table below explains the items shown in the above figure.

Item	Description
WEB Port	The port which is used to access the gateway via WEB. The default value is 80.
Access Setting	Sets the IP addresses which can access the gateway via WEB. By default, all IPs are allowed. You can set an IP whitelist to allow all the IPs within it to access the gateway freely. Also you can set an IP blacklist to forbid all the IPs within it to access the gateway.
Time to Log Out	The gateway will log out automatically if it is not operated during a time longer than the value of this item, calculated by s, with the default value of 1800ms.
SSH	Sets whether to enable the gateway to be accessed via SSH, with the default value of *No*.
SSH Port	The port which is used to access the gateway via SSH.
Remote Data Capture	After this feature is enabled, you can obtain the gateway data via a remote capture tool. The default value is *No*.
Capture RTP	Sets whether to capture RTP. Once this feature is enabled, the RTP package will also be captured by the selected network.
FTP	Sets whether to enable the FTP server, with the default value of *Yes*.
SYSLOG	Sets whether to enable SYSLOG. It is required to fill in ***SYSLOG Server Address*** and ***SYSLOG Level*** in case SYSLOG is enabled. By default, ***SYSLOG*** is disabled.
Server Address	Sets the SYSLOG server address for log reception.
SYSLOG Level	Sets the SYSLOG level. There are three options: *ERROR*, *WARNING* and *INFO*.
Send CDR	Sets whether to enable the feature of sending CDR. It is required to fill in ***Server Address*** and ***Server Port*** in case Send CDR is enabled. By default, ***Send CDR*** is disabled.
Server Address	The address of the server to receive CDR.
Server Port	The port of the server to receive CDR.
NAT Traversal, Traversal Type	Sets whether to enable the NAT traversal. By default this feature is disabled. There is only one traversal type: *Port Mapping*.
LAN1 Mapping Address, LAN2 Mapping Address	The mapping addresses of LAN1 and LAN2 in case the NAT traversal is enabled. If the port mapping is selected as the traversal type, you are required to set the mapping address on the router and fill in the corresponding information here as well. By default, only the IP address need be filled in, and the port value is just the same as the SIP signaling port.
RTP Self-adaption	When this feature is enabled, the RTP reception address or port carried by the signaling message from the remote end, if not consistent with the actual state, will be updated to the actual RTP reception address or port. By default, this feature is *disabled*.
Auto Reply of Source Address	Once this feature is enabled, the gateway will reply the source address in the invite message. The default value is *disabled*.
Send Response By Former Via	To IP->PSTN calls, enabling this feature means to close the automatic modification on the Via header of the response message. By default it is disabled.

RTP Port	Supported RTP port range for the IP end to establish a call conversation. Range of value: 5000~60000, with the lower limit of 6000 and the upper limit of 20000 by default.The difference between is not less than 4096.
NTP	Sets whether to enable the NTP time synchronization feature. It is required to fill in ***NTP Server Address***, ***Synchronizing Cycle*** and ***Time Zone*** in case NTP is enabled. By default, ***NTP*** is disabled.
NTP Server Address	Sets the Server address for NTP time synchronization.
Synchronizing Cycle	Sets the cycle for NTP time synchronization.
Daily Restart	Sets whether to restart the gateway regularly every day at the preset ***Restart Time***. By default, this feature is disabled.
Restart Time	Sets the time to restart the gateway regularly.
System Time	The system time. Check the checkbox before ***Modify*** and change the time in the edit box.
Time Zone	The time zone of the gateway.

3.6.3 IP Routing Table

IP Routing Table is allowed to be set. The gateway will, according to the IP routing table, send the IP packages via a specified route to the destination network segment. By default, there is no routing information available on the gateway, click ***Add New*** to add manually. See Figure 3- 18.

Figure 3- 18 Add Routing Table Interface

The table below explains the items shown in above figures.

Item	Description
No.	The number of the routing for the LAN in routing table.
Destination	The network segment the in which the IP address is accessible for the network port.
Subnet Mask	The subnet mask of the network segment.
Network Port	The corresponding network port of the routing.

After configuration, click ***Save*** to save the settings into the gateway or click ***Close*** to cancel the settings. See Figure 3- 19 for the Routing Table List.

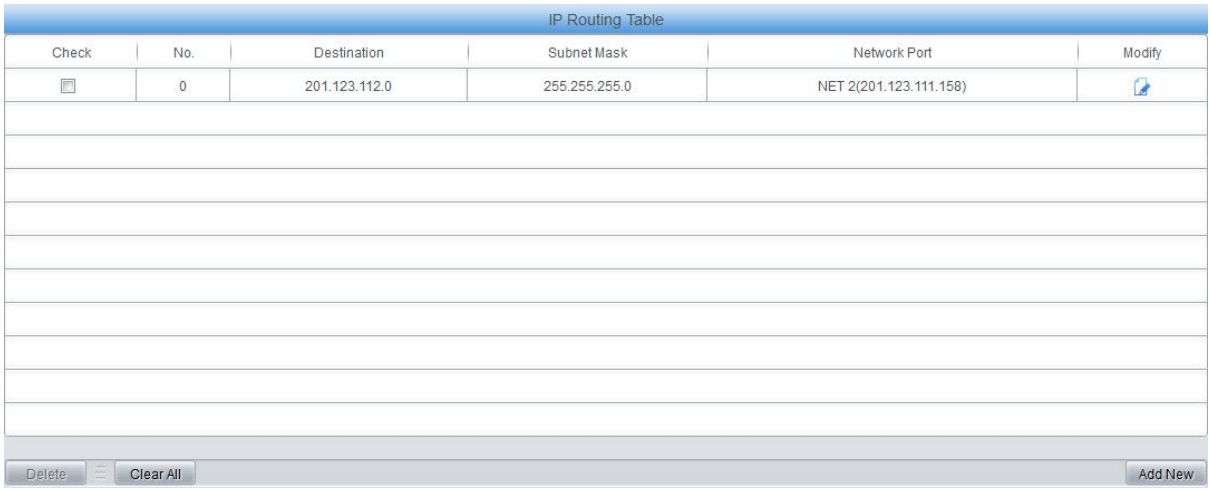


Figure 3- 19 Routing Table List

Click ***Modify*** in Figure 3- 19 to modify a routing. The configuration items on the routing table modification interface are the same as those on the ***Add Routing Table*** interface. Note that the item ***No.*** cannot be modified.

To delete a routing, check the checkbox before the corresponding index in Figure 3- 19 and click the ***Delete*** button. To clear all number manipulation rules at a time, click the ***Clear All*** button in Figure 3- 19.

3.6.4 Access Control

Figure 3- 20 Access Control List Interface

On the Access Control List interface, once you add a piece of command to ACL, the network flow will be restricted, only the particular devices allowed to visit the gateway and only the data packages on the designated ports be forwarded. Click ***Add New*** to add a new piece of command.

Figure 3- 21 Add Access Control Command

Input a piece of command into the Command item and click ***Save*** to save the settings to the gateway. Click ***Close*** to cancel your settings. After that, click ***Apply*** to make the new command

valid.

Click ***Modify*** to modify a command. The configuration items on the Access Control Command Modification interface are the same as those on the ***Add Access Control Command*** interface. Note that the item ***Index*** cannot be modified.

To delete an Access Control Command, check the checkbox before the corresponding index and click the ***Delete*** button, and then click the ***Apply*** button to make the deleted command invalid. ***Check All*** means to select all available items on the current page; ***Uncheck All*** means to cancel all selections on the current page; ***Inverse*** means to uncheck the selected items and check the unselected. To clear all access control commands at a time, click the ***Clear All*** button.

Note: 1. Currently, only the command iptables is supported by the gateway.

2. When you add or modify or delete commands manually, don't forget to click the ***Apply*** button to make your settings valid. However, when the gateway restarts or the configuration is leading-in, you need not click the ***Apply*** button and the commands will get valid automatically.

3.6.5 Centralized Manage

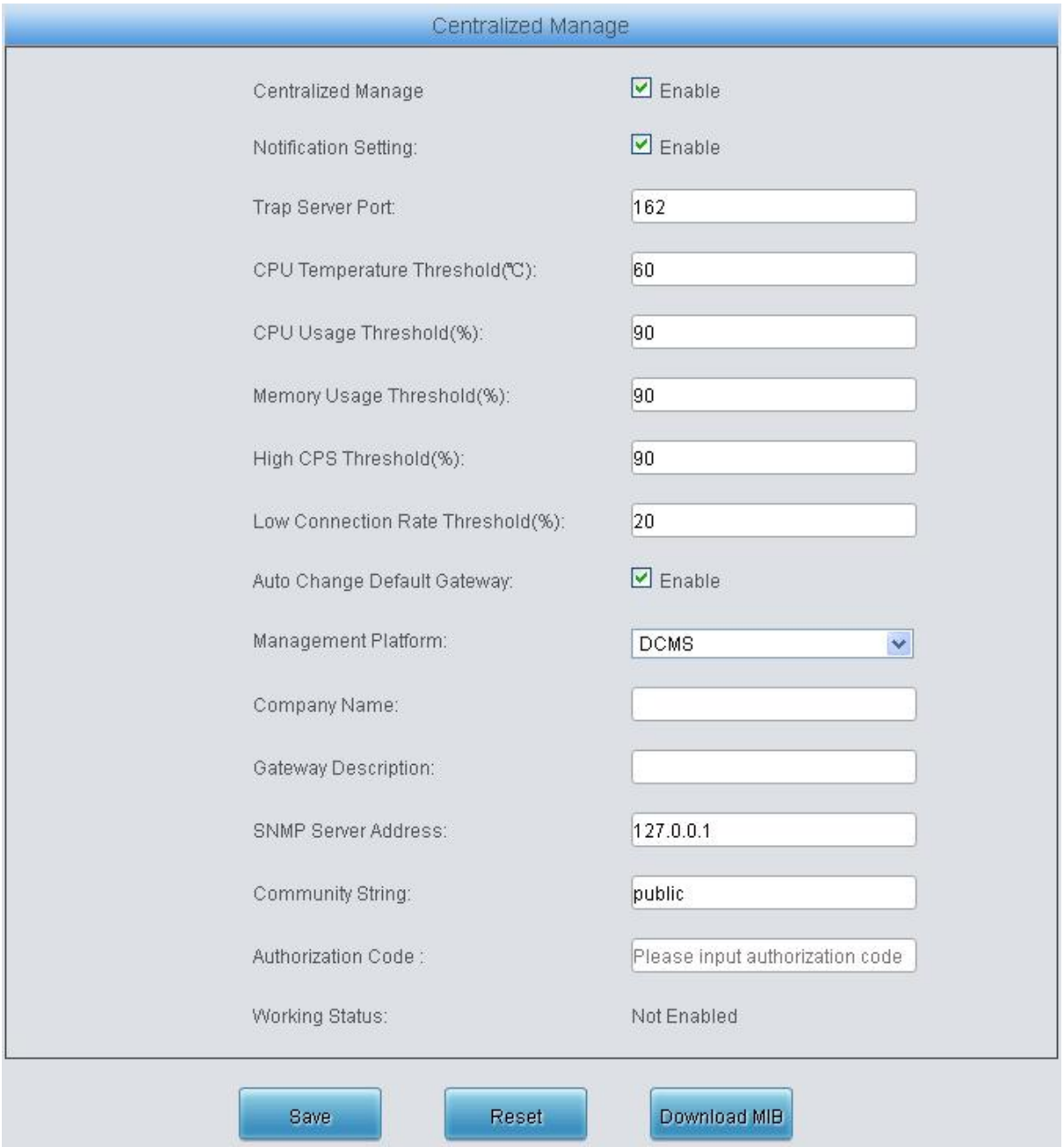


Figure 3- 22 Centralized Management Setting Interface

The Centralized Management Setting interface is used to configure parameters about centralized management. The gateway can register to a centralized management platform and accept the management of the platform. The table below explains the items shown in this interface.

Item	Description
Notification Setting	If it is enabled, the gateway will send the SNMP TRAP warning information automatically.
Trap Server Port	The server port to receive the warning information, with the default value of 162.

CPU Temperature Threshold	The warning on high CPU temperature.
CPU Usage Threshold	The warning on high CPU utilization.
Memory Usage Threshold	The warning on high memory usage.
High CPS Threshold	The warning on high CPS.
Low Connection Rate Threshold	The warning on low connection rate.
Auto Change Default Gateway	Once this feature is enabled, the gateway will connect the DCMS via another network port automatically once the connected network cable is loosen or drawn out. The default value is disabled.
Management Platform	Select a management platform for the gateway to register.
Company Name	The company name used to register the gateway to DCMS, only valid when DCMS is selected.
Gateway Description	The description displayed on DCMS after the gateway is registered to DCMS, giving an easy identification of the gateway in device grouping. This item is only valid when DCMS is selected.
Centralized Management Protocol	Sets the centralized management protocol. It only supports SNMP currently.
SNMP Version	Sets the version of SNMP, three options available: V1, V2 and V3, with the default value of V2.
SNMP Server Address	IP address of SNMP.
Monitoring Port	Monitoring Port for SNMP on the gateway.
Community String	Community string used for information acquisition.
Account	The account of SNMP, only valid when the SNMP version is set to V3.
Grade	The grade of SNMP, three options available: Neither authenticated nor encrypted, Authenticated but not encrypted and Authenticated and encrypted, with the default value of *Neither authenticated nor encrypted*. It is only valid when the SNMP version is set to V3.
Authentication Password	The authentication password required to enter when the item Grade is set to Authenticated but not encrypted or Authenticated and encrypted.
Encryption Password	The encryption password required to enter when the item Grade is set to Authenticated and encrypted.

Authorization Code	The maximum length of the authorization code is 64 bits. There is no limitation on the input content. When connecting to the centralized management server for the first time, you can enter the connection by entering the correct authorization code. After the connection is successful, you can always connect even if you change to the wrong authorization code, but the centralized management feature with the wrong authorization code cannot be turned off.
Working Status	The status of the connection between the gateway and the centralized management server. It is only valid when DCMS is selected.

3.6.6 Configuration File

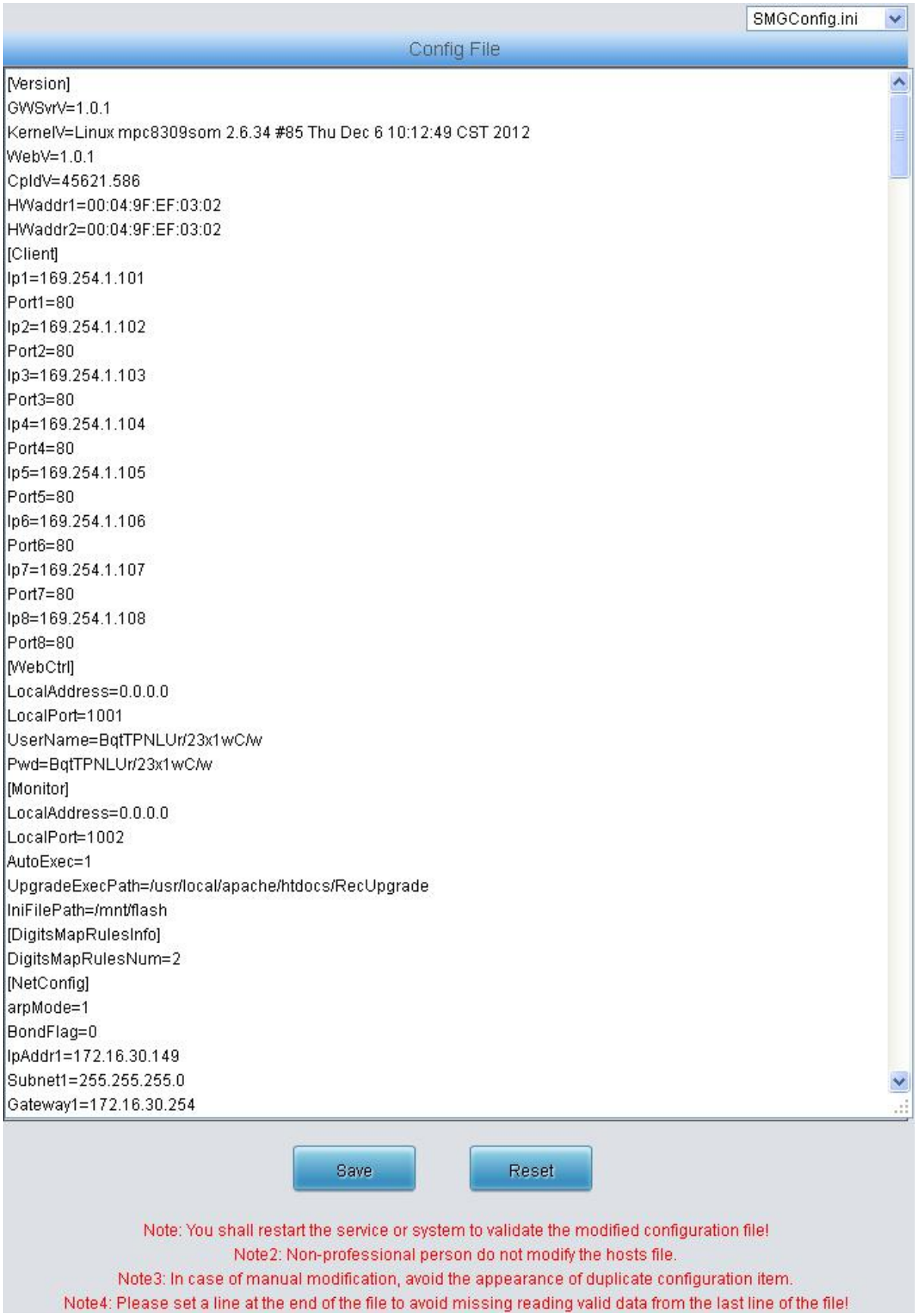


Figure 3- 23 Configuration File Interface

See Figure 3-23 for the Configuration File interface where you can check and modify some relative configuration files, including SMGConfig.ini and ShConfig.ini. Configurations about the gateway server, such as route rules, number manipulation, number filter and so on, are included in SMGConfig.ini; Configurations about the board are included in ShConfig.ini. You can modify these configurations on the interface directly, and then click ***Save*** to save the above settings into the gateway or click ***Reset*** to restore the configurations.

3.6.7 Signaling Capture

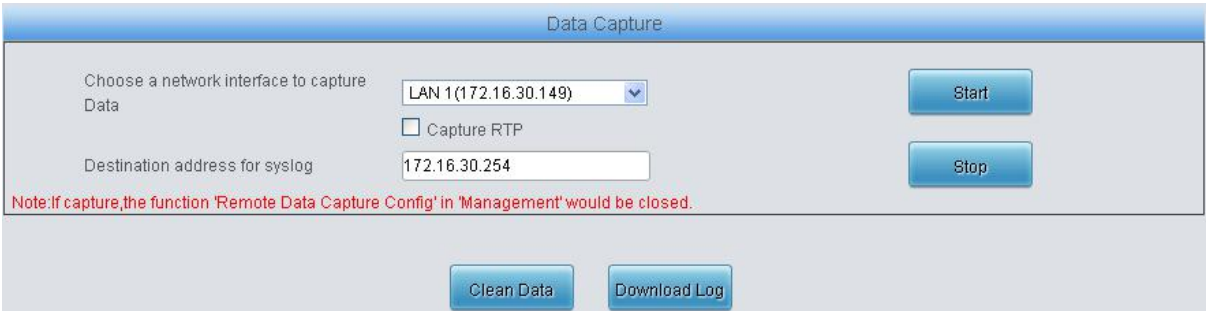


Figure 3-24 Signaling Capture Interface

See Figure 3-24 for the Signaling Capture interface. Data Capture is used to capture data on the network interface you choose. Click ***Start*** to start capturing data (1024000 packets at most) on the corresponding network interface. SIP and SysLog are supported at present. You can enter the Syslog destination address to send Syslog to wherever required. Click ***Stop*** to stop data capture and download the captured packets.

Click ***Clean Data*** to clean all the captured packages. Click ***Download Log*** to download such logs as core files, configuration files, error information and so on.

3.6.8 PING Test

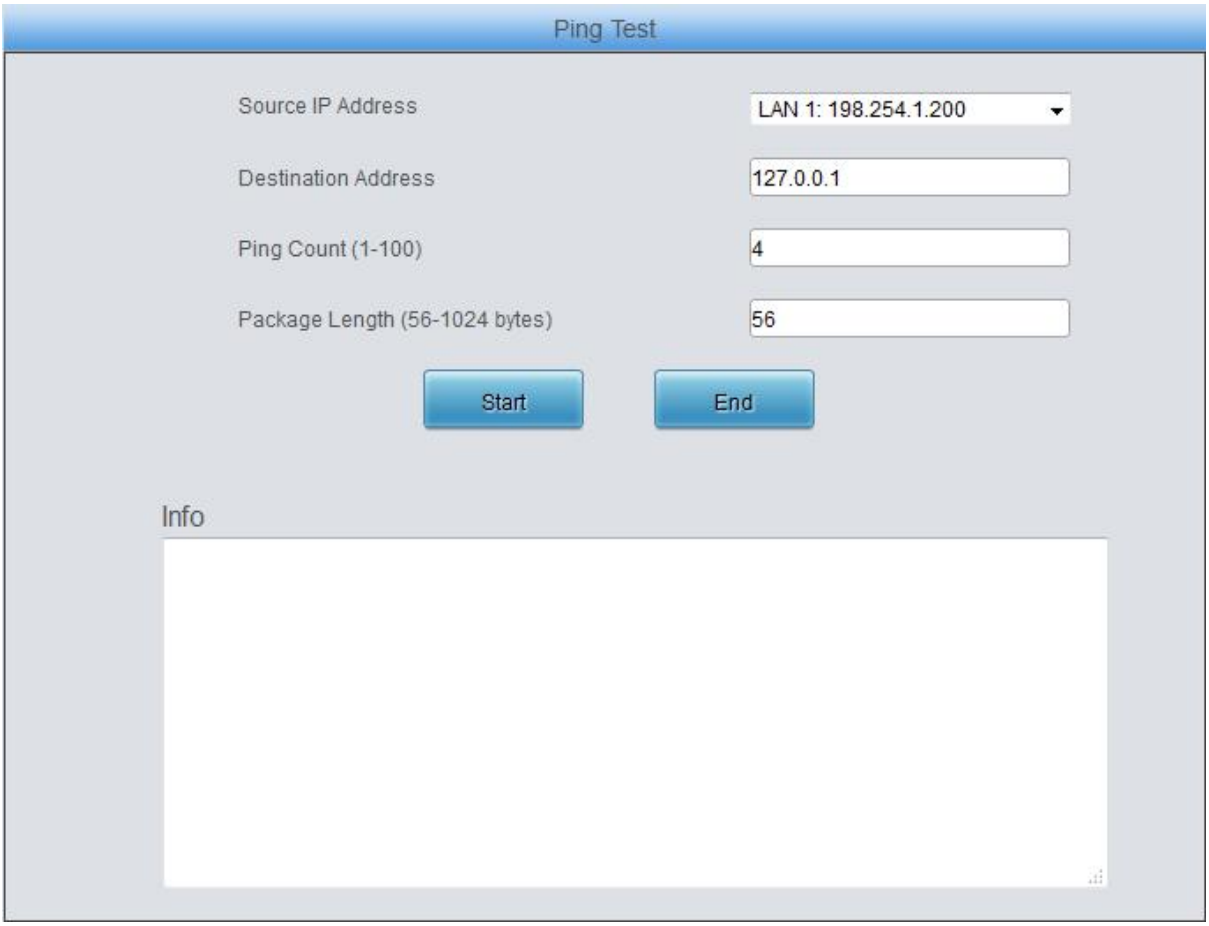


Figure 3- 25 Ping Test Interface

See Figure 3- 25 for the Ping Test interface. A Ping test can be initiated by the gateway on a designated IP address to check the connection status between them. The table below explains the configuration items shown in the above figure.

Item	Description
Source IP Address	Source IP address where the Ping test is initiated.
Destination Address	Destination IP address on which the Ping test is executed.
Ping Count	The number of times that the Ping test should be executed. Range of value: 1~100.
Package Length	Length of a data package used in the Ping test. Range of value: 56~1024 bytes.
Info	The information returned during the Ping test, helping you to learn the network connection status between the gateway and the destination address.

After configuration, click ***Start*** to execute the Ping test; click ***End*** to terminate it immediately.

3.6.9 TRACERT Test

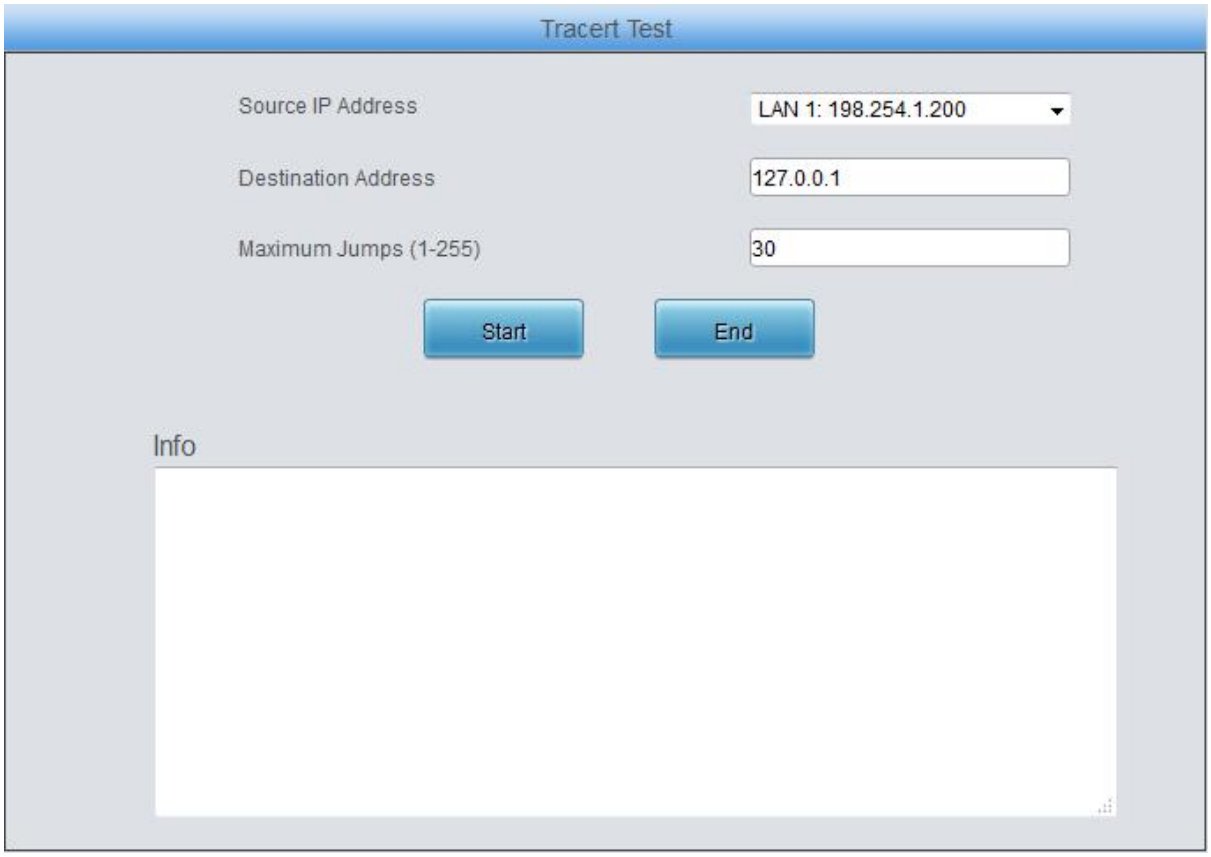


Figure 3- 26 Tracert Test Interface

See Figure 3- 26 for the Tracert Test interface. A Tracert test can be initiated by the gateway on a designated IP address to check the routing status between them. The table below explains the configuration items shown in the above figure.

Item	Description
Source IP Address	Source IP address where the Tracert test is initiated.
Destination Address	Destination IP address on which the Tracert test is executed.
Maximum Jumps	Maximum number of jumps between the gateway and the destination address, which can be returned in the Tracert test. Range of value: 1~255.
Info	The information returned during the Tracert test, helping you to learn the detailed information about the jumps between the gateway and the destination address.

After configuration, click ***Start*** to execute the Tracert test; click ***End*** to terminate it immediately.

3.6.10 Modification Record

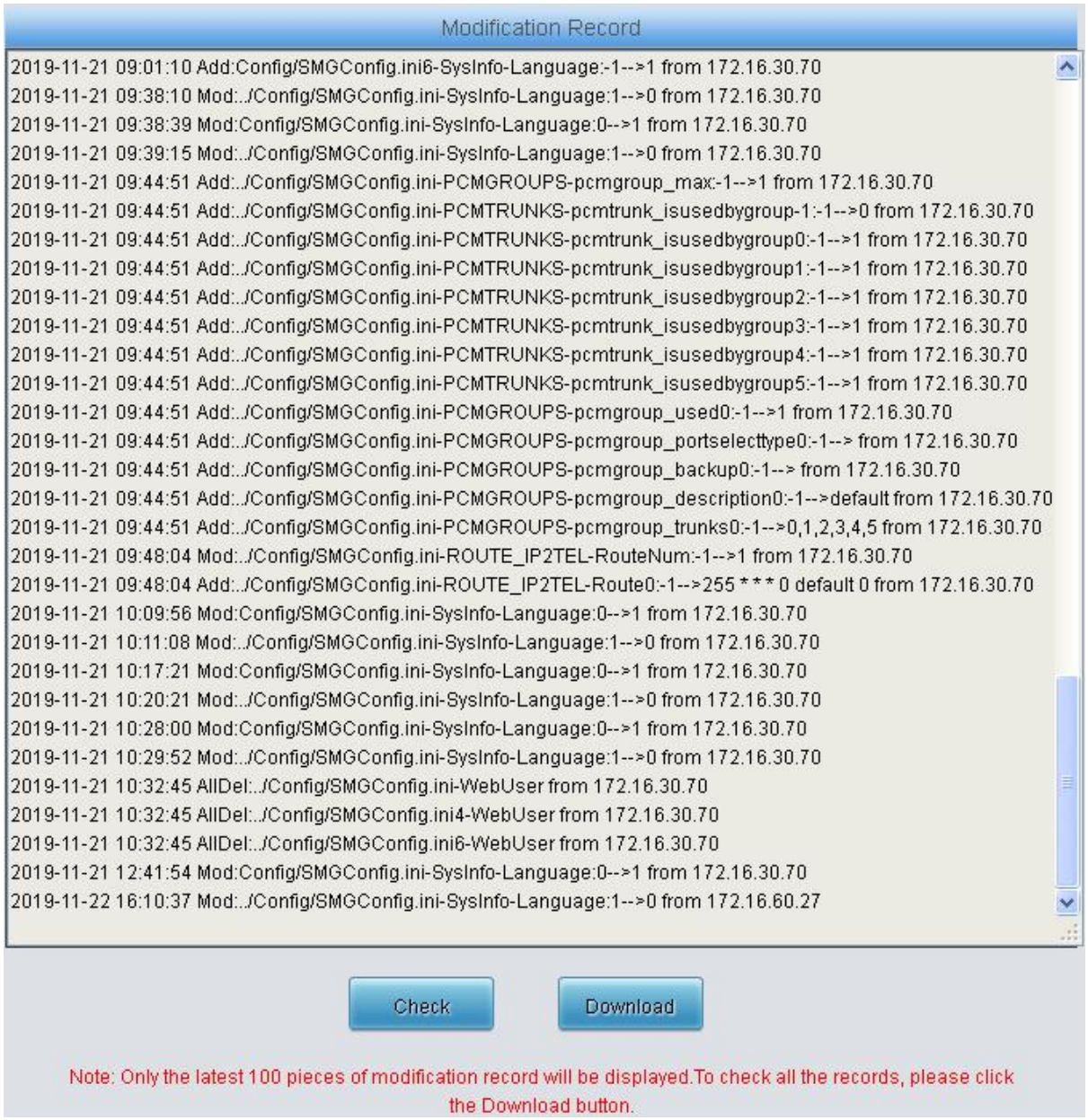


Figure 3-27 Modification Record Interface

The Modification Record interface is used to check the modification record on the web configuration. Click ***Check*** and the modification record will be shown on the dialog box. See Figure 3-27. Click ***Download*** to download the record file.

3.6.11 Backup & Upload

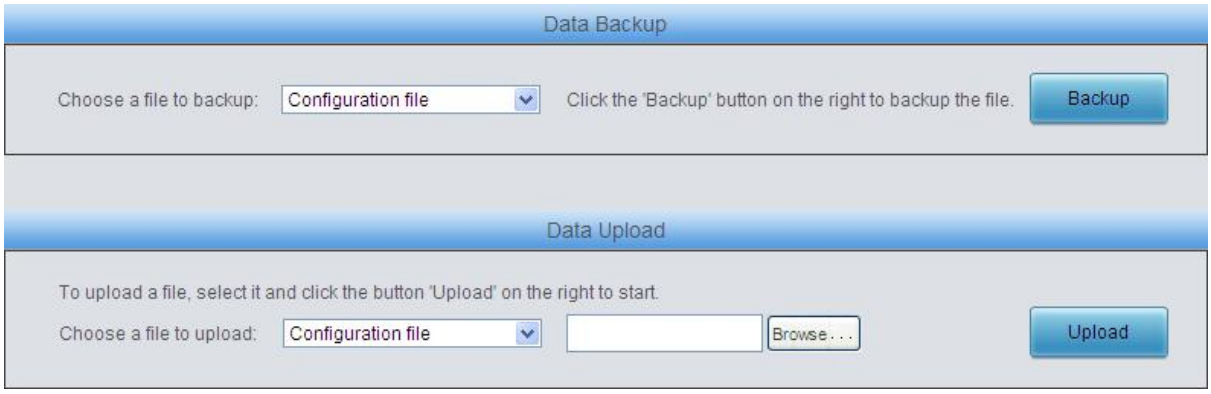


Figure 3-28 Backup & Upload Interface

See Figure 3-28 for the Backup and Upload interface. To back up data to your PC, you shall first choose the file in the pull-down list and then click ***Backup*** to start. To upload a file to the gateway, you shall first choose the file type in the pull-down list, then select it via ***Browse…***, and at last click ***Upload***. The gateway will automatically apply the uploaded data to overwrite the current configurations.

3.6.12 Factory Reset

Figure 3-29 Factory Reset Interface

See Figure 3-29 for the Factory Reset interface. Click ***Reset*** to restore all configurations on the gateway to factory settings.

3.6.13 Upgrade

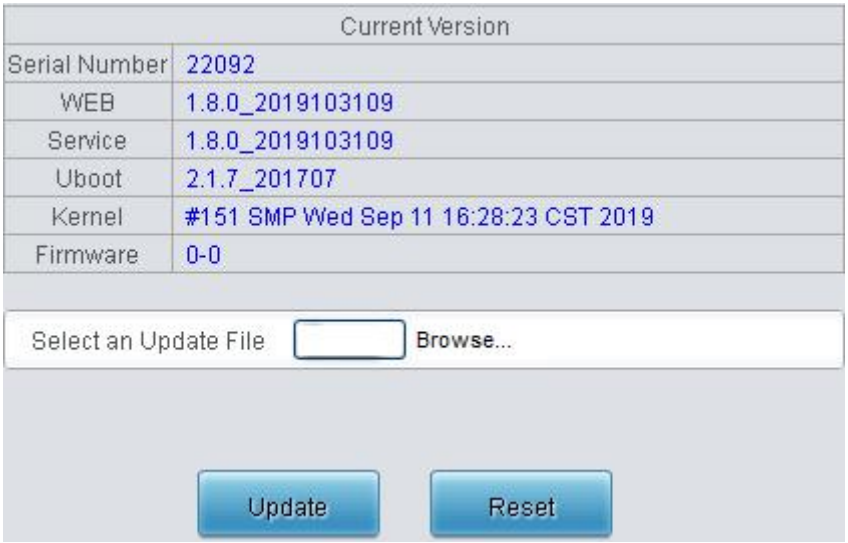


Figure 3-30 Upgrade Interface

See Figure 3-30 for the upgrade interface where you can upgrade the WEB, gateway service, kernel and firmware to new versions. Select the upgrade package "*.tar.gz" via ***Browse…*** and click ***Update*** (The gateway will do MD5 verification before upgrading and will not start to upgrade until it passes the verification). Wait for a while and the gateway will finish the upgrade automatically. Note that clicking ***Reset*** can only delete the selected update file but not cancel the operation of ***Update***.

3.6.14 Account Manage

Figure 3-31 Account Management Interface

See Figure 3-31 for the Account Management interface. By default, there is no user information available on the gateway, click ***Add*** to add a piece of information.

Figure 3-32 User Information Adding Interface

The table below explains the configuration items shown on the interface.

Item	Description
Index	The unique index of each user information, starting from 0 and supporting up to 64 pieces of user information to add.
User Name/Password	User name and password for WEB login. Only numbers, letters and underscores are supported.
Authority	Operation rights, including two options *Read* and *Read/Write*.

After configuration, click ***Save*** to save the settings into the gateway or click ***Close*** to cancel the settings. See Figure 3-33 for the user information list.

Figure 3-33 User Information List

Click ***Modify*** in Figure 3-33 to modify a piece of user information. The configuration items on the user information modification interface are the same as those on the ***User Information Adding*** interface. Note that the item ***Index*** cannot be modified.

To delete a piece of user information, check the checkbox before the corresponding index in Figure 3-34 and click the ***Delete*** button. ***Check All*** means to select all available items on the current page; ***Uncheck All*** means to cancel all selections on the current page; ***Inverse*** means to uncheck the selected items and check the unselected. To clear all user information at a time, click the ***Clear All*** button.

3.6.15 Change Password

Figure 3-35 Password Changing Interface

See Figure 3-35 for the Password Changing interface where you can change username and password of the gateway. Enter the current password, the new username and password, and then confirm the new password. After configuration, click ***Save*** to apply the new username and password or click ***Reset*** to restore the configurations. After changing the username and password, you are required to log in again.

3.6.16 Restart

Figure 3- 36 Service/System Restart Interface

See Figure 3- 36 for the Restart interface. Click ***Restart*** on the service restart interface to restart the gateway service or click ***Restart*** on the system restart interface to restart the whole gateway system.

Appendix A Technical Specifications

Dimensions

Uniway2000: 440×88×470 mm³

Uniway2100: 440×88×372 mm³

Uniway2200: 440×88×472 mm³

Weight:

UMG-1016: about 0.5kg

UMG-4008: about 0.5kg

Sucker antenna (singleton): about 0.045kg

Uniway2000 (one switching board included): about 8.5kg

Uniway2100 (one IPPBX board included): about 5.4kg

Uniway2200 (one switching board included): about 7.5kg

Environment

Operating temperature: 0℃—40℃

Storage temperature: -20℃—85℃

Humidity: 8%— 90% non-condensing

Storage humidity: 8%— 90% non-condensing

LAN

UNIWAY2100: 2 (10/100 BASE-TX (RJ-45))

UNIWAY2000, UNIWAY2200: 2 (10/100 BASE-TX (RJ-45))

Self-adaptive bandwidth supported

Auto MDI/MDIX supported

Console Port

Amount: 1 (RS-232)

Baud rate: 115200bps

Connector: Mini USB connecting line

Data bits: 8 bits

Stop bit: 1 bit

Parity unsupported

Flow control unsupported

Note: Follow the above settings to configure the console port; or it may work abnormally.

Power Requirements

Input power: 100~240V AC

Maximum power consumption：≤360W

Signaling & Protocol

SS7: TUP, ISUP

ISDN: ISDN User Side, ISDN Network Side

SS1: SS1 Signaling

SIP signaling: SIP V1.0/2.0, RFC3261

Audio Encoding & Decoding

G.711A	*64 kbps*
G.711U	*64 kbps*
G.729A/B	*8 kbps*
G723	*5.3/6.3 kbps*
G722	*64 kbps*
AMR	*4.75/5.15/5.90/6.70/7.40/7.95/10.20/12.20 kbps*
iLBC	*13.3/15.2 kbps*

Sampling Rate

8kHz

Safety

Lightning resistance: Level 4

Appendix B Troubleshooting

1. What to do if I forget the IP address of the UMG gateway?

Long press the Reset button on the gateway to restore to factory settings. Thus the IP address will be restored to its default value:

Uniway2000 WAN1: 192.168.1.101

Uniway2000 WAN2: 192.168.0.101

Uniway2100 ETH1: 192.168.1.101

Uniway2100 ETH2: 192.168.0.101

Uniway2200 ETH1: 192.168.1.101

Uniway2200 ETH2: 192.168.0.101

2. In what cases can I conclude that the UMG gateway is abnormal and turn to Synway's technicians for help?

a) During runtime, the run indicator does not flash or the alarm indicator lights up or flashes, and such error still exists even after you restart the device or restore it to factory settings.

Other problem such as failed registrations is probably caused by configuration errors. We suggest you refer to Chapter 3 WEB Configuration for further examination. If you still cannot figure out or solve your problems, please feel free to contact our technicians.

3. What to do if I cannot enter the WEB interface of the UMG gateway after login?

This problem may happen on some browsers. To settle it, follow the instructions here to configure your browser. Enter 'Tools > Internet Options >Security Tab', and add the current IP address of the gateway into 'Trusted Sites'. If you change the IP address of the gateway, add your new IP address into the above settings.

Appendix C Technical/sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you.

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