NetGate FXS SIP GW Administrator User Manual

FXS-02/FXS-02A/FXS-04A

Application Rom Version: 107

Version 2.3

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RELEASE NOTE:

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2.0	Dec.,17th ,2002	Terry Cho	*1st Revision for FXS SIP Gateway*
2.1	May, 2003	Sabrina Chiu	*2nd Revision for FXS SIP Gateway*
2.2	December, 09th, 2003	Shu-Hui Chen	*3nd Revision for FXS SIP Gateway*
2.3	July 28, 2004	Shu-Hui Chen	*Revision for FXS SIP Gateway for Rom Application version 107a.*

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Preface

Congratulations on your purchase of the VoIP Gateway.

➢ About this User's Manual

This user's guide gives hardware specifications and explains web configuration and command line configuration for the 2FXS, 2AFXS, and 4AFXS.

➢ General Syntax Conventions

- ➢ Mouse action sequences are denoted using a comma. For example, click start, Settings, Control Panel, Network means first you click Start, Click or move the mouse pointer over Settings the click or move the mouse pointer over Control Panel and finally click (or double-click) Network.
- ➢ "Enter" means for your to type one or more characters.

➢ Naming Conventions

- ➢ "2FXS" Gateway provides two Phone port and one Ethernet Port.
- ➢ "2AFXS" Gateway provides two Phone port and one Ethernet Port.
- ➢ "4AFXS" Gateway provides four Phone port and two Ethernet Port.

➢ Related Documentation

- ➢ This user's guide provides hardware connection details and configuration and management instruction for the managements VoIP Gateway.

Part I:

FXS Gateway Overview

This part introduces the general features default settings and hardware of the FXS Gateway.

Chapter 1
VoIP Gateway Overview

The chapter introduces the VoIP Gateway general feature, factory default settings and hardware.

1.1 FXS Gateway Overview

FXS Gateway integrated data and voice in one device, which based on IETF RFC 2543 bis-09 compliance, provides voice and fax over IP networks. Its simplified operation and configuration features are the most suitable for residential and SOHO application. Just an IP address and one phone set bring you to Voice over IP world.

1.2 Features of The FXS Gateway

➢ FXS Gateway Features

- IETF RFC 2543 bis-09 compliance
- 1AFXS: Four 10/100 Base-T Ethernet port
- Configuration interface: RS-232, TELNET and HTTP web management
- Transmit Voice and T.38 f ax simultaneously
- Provides call progress tone
- E.164 Common Dial Pl an
- DTMF Dialing
- Inband / Outband DTMF
- TFTP/FTP software upgrade
- Remote configuration/ reset
- LED indication for system status
- Support Static IP, DHCP and PPPoE
- Dimensions: 165(W) x 29(H) x 139 mm (D)
- Auto RJ-45 cross cable and straight cable switching

➢ Audio feature

- Codec: G.711 a/μlaw, G.723.1 (6.3kbps), G.729A
- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generate)
- G.168/165-compliant adaptive echo cancellation
- Dynamic Jitter Buffer
- Bad Frame Interpolation
- Voice/DTMF Gain Settings

➢ Interface

- Four 10/100 Base-T Ethernet RJ45 ports (Auto LAN MDI/MDIX).
- One DB-9 RS232 COM Port.
- Two/Four RJ11 Telephone Port (FXS).
- DC 12V input.
-

➢ **System Monitoring**

- System status (Link, Ready, Status, TEL, Power).

➢ **Remote Firmware Upgrade**

You can use FTP/TFTP to perform configuration backup/restore and firmware upgrade for the FXS Gateway from a remote location.

➢ **Security**

- Password protection for system management
- VLAN

1.3 Default Settings

The following are the settings of the defualt profile

- Login: root
- Password: Null (default)

1.3.1 IP Parameters

- IP Address = 10.1.1.3
- Subnet mask = 255.0.0.0
- Default gateway = 10.1.1.254

1.3.2 Telnet and Web Login Password

- Login = root
- Password = Null (default)

1.4 Front Panels

The LEDs on the front panel indicate the operational status of the Gateway.

Figure 1-1 2FXS Gateway Front Panel

Figure 1-2 2AFXS Gateway Front Panel

Figure 1-3 4AFXS Gateway Front Panel

1.5 Back Panel Ports

Figure 1-4 2FXS Gateway Back Panel Ports

Figure 1-5 2AFXS Gateway Back Panel Ports

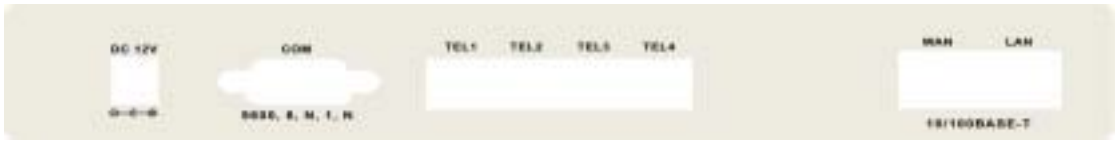

Figure 1-6 4AFXS Gateway Back Panel Ports

1.6 Hardware Specifications

These are the hardware details of the 2FXS, 2AFXS, 4AFXS.

1.6.1 2FXS LEDs

The following table describes the LED functions:

Table 1-1 2FXS LEDs Descriptions

LEDs	Functions	Indicator Status	Active	Description
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.
TEL(1-2)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Proxy when it is in Proxy mode.
			Blinking	The FXS Gateway is not registered to Proxy when it is in

LEDs	Functions	Indicator Status	Active	Description
				Proxy mode. The FXS Gateway is in downloading mode.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Active			Blinking	Ethernet data is being transmitted/received.
Link	LAN	Green	On	The FXS Gateway is physically connected to the Ethernet correctly.
			Off	The 10M LAN is not connected.

1.6.2 2AFXS LEDs

The following table describes the LED functions:

Table 1-2 2AFXS LEDs Functions

LEDs	Functions	Indicator Status	Active	Description
LAN				Switch to another device, such as PC
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not connected.
10/100M	LAN	Green	Off	The 10M LAN is connected.
			On	The 100M LAN is connected.
WAN				Uplink to the HUB/Router directly.
Link/ACT	Link/ACT	Green	Blinking	While plugging on the Ethernet cable, it must light on and the flash if some data is being TX/RX.
			OFF	The Ethernet cable is not

LEDs	Functions	Indicator Status	Active	Description
				connected.
10/100M	WAN	Green	Off	The 10M WAN is connected.
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
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TEL(1-2)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
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1.6.3 4AFXS LEDs

Table 1-3 LEDs Functions

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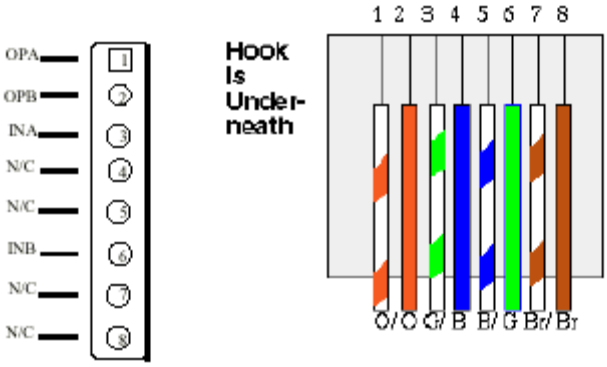
			On	The 100M WAN is connected.
Ready	Ready	Green	Slow Blinking	The FXS Gateway is in normal mode.
			Fast Blinking	The FXS Gateway is in downloading mode.
Status	Status	Green	Off	The FXS Gateway is in Peer-to-Peer Mode.
			On	The FXS Gateway has successfully registered to Proxy when it is in Proxy mode.
			Blinking	The FXS Gateway is not registered to Proxy when it is in Proxy mode. The FXS Gateway is in downloading mode.
TEL(1-4)	TEL	Red	On	The Telephone is Off-Hook.
			Off	The Telephone is On-Hook.
Power	Power	Green	On	The Power adapter is connected to the Gateway.
			Off	The system is off or not receiving power.

1.6.4 Back Panel Port

- **Ethernet Port:**

Ethernet port is for connecting VoIP Gateway to network, transmit rate supports 10/100 Base-T.



Ethernet connector（LAN）

➢ **COM Port:**

RS232 console port (DB-9pin male connector)

Note: use straightforward cable to connect to your computer.

PINOUTS

Pin	Name	Dir	Description
2	RXD	←	Receive Data
3	TXD	→	Transmit Data
5	GND	—	System Ground

TEL Port:

➢ **TEL Port:**

RJ-11 connector, FXS interface. To connect analog phone sets or trunk line of PABX.

➢ **12V DC Port:**

DC Power supply.

1.6.5 Back Panel Connections

This section outlines how to connect your VoIP Gateway to the LAN and the WAN. In the case of connecting a Cable Modem you must connect the coaxial cable from your cable service to the threaded coaxial cable connect

on the back of the cable modem.

Step 1.Connecting the Console Port

For the initial configuration of your VoIP Gateway, you need to use terminal emulator software on a workstation and connect it to the VoIP Gateway the console port. Connect the 9-pin end of the console cable to the console port of the VoIP Gateway and the other end to a serial port (COM1, COM2 or other COM port) of your workstation. You can use an extension RS-232 cable if the enclosed one is too short. After the initial setup, you can modify the configuration remotely through telnet connections.

Step 2.Connect the VoIP Gateway to the WAN port

Connect the WAN port (silver) on the VoIP Gateway to the Ethernet port on the cable modem using the cable that came with your cable modem. The Ethernet port on the cable modem is sometimes labeled “PC” or “Workstation”.

Step 3.Connecting the PC to the LAN

If you have more than one PC, you must use an external hub. Connect the 10/100M LAN Port (gold) on the VoIP Gateway to a port on the hub using a straight through Ethernet cable. If you only have one PC, you can connect the VoIP Gateway to the PC directly without a hub. For a single PC, connect the 10/100M LAN port on the VoIP Gateway to the Network Adapter on the PC using a crossover cable (red tag).

Step 4.Connecting the Power Adapter to your VoIP Gateway

Connect the power adapter to the port labeled **POWER** on the rear panel VoIP Gateway.

Caution: To prevent damage to the VoIP Gateway, first make sure you have the correct AC power adapter. Please see the Appendices for AC power adapter specifications for your region.

Step 5.Grounding the VoIP Gateway

If you want to ground the VoIP Gateway then connect a grounded wire to the F.G. (Frame Ground) of the VoIP Gateway.

1.7 Additional Installation Requirements

In addition to the contents of your package, there are other hardware and software requirements you need before you can install and use your VoIP Gateway. These requirements include:

1. A computer with an Ethernet NIC (Network Interface Card) installed.
2. A computer equipped with communications software configured to the following parameters:
   - ◆ VT100 terminal emulation.

- ◆ 9600 Baud.
- ◆ No parity, 8 Data bits, 1 stop bit, Flow Control set to None.

3. Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.
4. Analog telephone set
5. Software tools: Gatekeeper (optional)

After the VoIP Gateway is properly set up, you can make future changes to the configuration through telnet connections

1.8 Setting Up the TCP/IP Protocol

If you are not sure whether the TCP/IP Protocol has been installed, follow these setups to check, and if necessary, install TCP/IP onto your PCs.

Step 1. Click the [Start] button, Choose [Settings], then [Control Panel]. Double-click the [Network] icon. Your Network window should appear as follows.

Step 2. Select the [Configuration] tab.

Import:

For Windows 2000 & Windows XP Setting, you will find that they differs with Windows 98/ME/NT slightly. See the Following for reference.

Click the “Local Area Connection” icon on the lower right hand side of your desktop screen.

In the [**Local Area Connection Status**] windows, click the [**Properties]** button the your Network windows will appear.

There is only one tab, [**General**], in the Network window.

Step 3. Click whether the TCP/IP Protocol has already been installed onto your computer’s Ethernet card. Note that TCP/IP Protocol an be installed for a computer’s Dial-Up Adapter as well as for the Ethernet cad.

- If yes, go to set 7.
- If no, click the [Add] button

Step 4. Double-click [Protocol] in the Select Network Component Type or highlight [Protocol] then click [Add].

Step 5. Highlight [Microsoft] under the list of manufactures

Step 6. After a new second, you will be returned to the Network window. The TCP/IP Protocol should now be on the list of installed network components.

Step 7. Click the [Properties] button. The TCP/IP Properties windows consist of several tabs. Choose the [IP Address] tab.

Step 8. Select [Specify an IP Address] and enter [10.1.1.1] in the [IP Address] location (where xxx is a number between 2 and 254 used by

the VoIP Gateway to identify each computer), and the default [Subnet Mask: 255.0.0.0]. Note than no two computers on the same LAN can have the same IP address.

Step 9. Click on the [DNS Configuration] tab and select [Enable DNS]. Then click the [Add] button.

Step 10. Click on the [Gateway] tab and enter the High-Performance VoIP Gateway default gateway value 10.1.1.254 in the [new gateway] field, then click [Add] Button.

Step 11. Click [OK] button, Restart your PC to complete the TCP/IP installation.

1.9 Power Up Your VoIP Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The Status LED will come on after the system tests are complete. The WAN LED and one of the LAN LEDs come on immediately after the Status LED come on, if connections have been made to the LAN and WAN ports.

Part II:

Web Configuration with FXS Gateway

This part tells how to access and navigate the web configuration and perform initial configuration. It also describes the Getting Started web configuration when you use the FXS Gateway.

Chapter 2
Web Configuration with FXS Introduction

This Chapter describes how to login into the WEB and navigate through it.

2.1 Web Configuration with FXS Overview

The embedded web configuration allows you to use a web browser to manage the FXS Gateway.

2.2 Accessing the Web Configuration

You will need a computer with and Ethernet 10BaseT, 100Base-TX Network Interface Card (NIC). Connect to the LAN port in the FXS.

Use Internet Explorer 5.5 and later or Netscape Navigator 6 and later versions.

Use the following instructions to login on to the web configuration.

2.3 Login and welcome screen

Step 1. Start your web browser.

Step 2. Launch your web browser and enter [10.1.1.3] (the default IP address of the FXS Gateway) in the **Location** or **Address** field. Press **Enter.**

Step 3. The **Password** screen now appears. Type [**root**] in the user name field (it may display automatically for you) and your password (default [Null]) in the password field.

Step 4. Click **OK.**

Figure 2-1 Login Screen

Step 5. After a successful login, you will see the welcome screen show next.

2.4 Welcome Screen

This is the web configuration welcome screen. Click a link on the navigation panel to go to the corresponding screen.

Figure 2-2 FXS Gateway web configuration welcome screen

The following table describes the screen.

Table 2-1 Navigation Panel Links

LABEL	DESCRIPTION
Network Interface	This link takes you to a screen where you can configure the FXS Gateway Network Interface Information.
SIP Information	This link takes you to a screen where you can setup up SIP Information.
System Configuration	This link takes you to a screen where you can set up System Configuration.
Voice Setting	This link takes you to a screen where you can set up Voice Configuration.
Phone Pattern	This link takes you to a screen where you can set up Phone Pattern Configuration.
Support Function	This link takes you to a screen where you can set up Support Functions Configuration.
Phone Book	This link takes you to a screen where you can set up Phone Book Information.
DSCP Configuration	This link takes you to a screen where you can set up DSCP Configuration.
Password	This link takes you to a screen where you can change passwords.

LABEL	DESCRIPTION
ROM Upgrade	This link takes you to a screen where you can change ROM Upgrade configuration.
Flash Clean	This link takes you to a screen where you can click flash memory information and configuration.
Commit Data	This link takes you to a screen where you can click save your changes to the non-volatile memory.
Reboot System	This link takes you to a screen where you can click to reboot FXS Gateway.

2.5 Saving Your Configuration

Click OK to save your changes back to the VoIP Gateway volatile memory. The VoIP Gateway loses these changes if it is turned off or loses power, so use the [Commit Data] link on the navigation panel to the left to save your changes to the non-volatile memory when your are done configuring.

2.6 Navigating the Web Configurator

The web configuration uses one level. For example, to configure [Network Interface], click the link on the navigation panel to open the configuration screen.

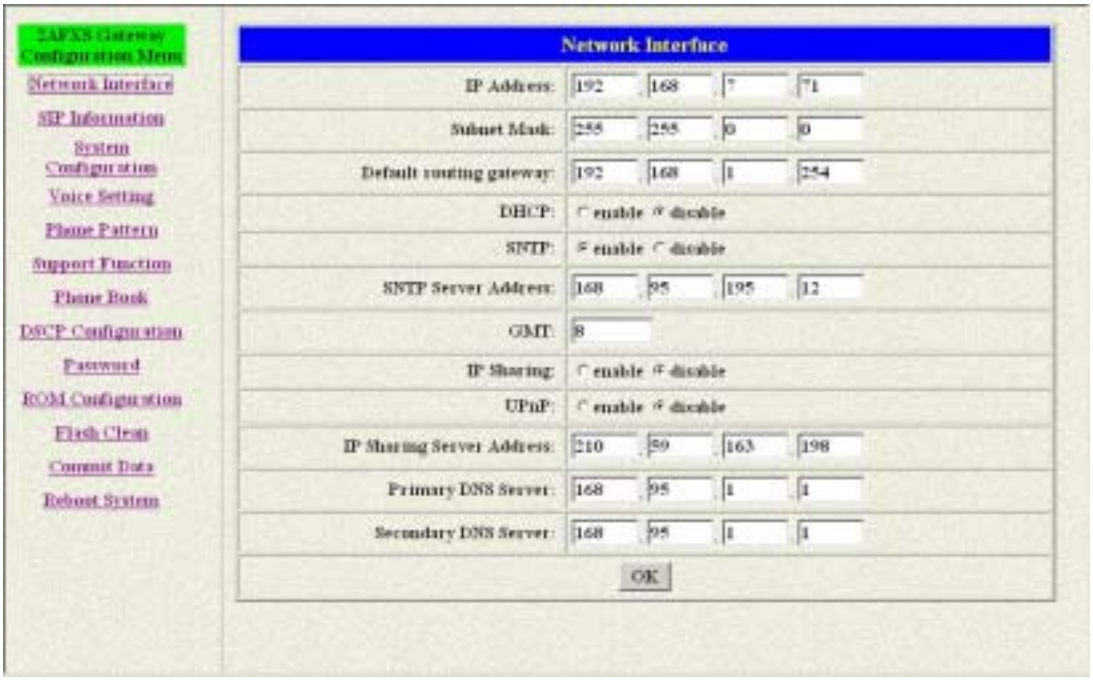


Figure 2-3 Network Interface Screen

Chapter 3
Initial Configuration

This Chapter covers the basic configuration needed to set up and use the FXS Gateway. Refer to the other part describes about individual fields within screens.

3.1 Initial Configuration Overview

This chapter describes the procedure for the initial configuration of the VoIP Gateway. Refer to the relevant chapters in this User's Guide for descriptions of the fields and buttons within individual screens.

3.2 General Configuration

The FXS Gateway the factory with a default IP address of 10.1.1.3 and a subnet mask of 255.0.0.0.

3.3 Static IP address

Step 1. Configuration the VoIP Gateway IP address. Click [Network Interface] on the navigation panel. In the Network Interface screen, type a new IP address, subnet mask and the default routing gateway (e.g. IP Address: 192.168.13.80, Subnet mask: 255.255.248.0, Default routing gateway: 192.168.8.254) and click the OK button.

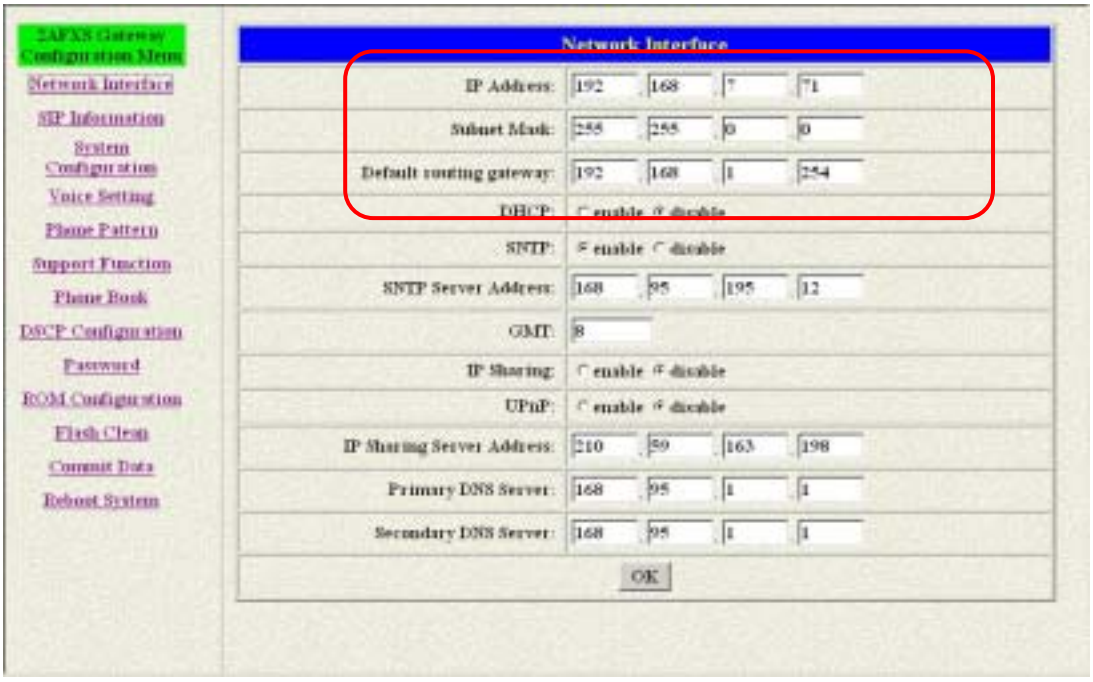


Figure 3-1 Network Interface

Step 2. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the [Commit] button. In the Commit Configuration Data screen to Display [Commit to Flash OK!], When the Commit Data Ok.

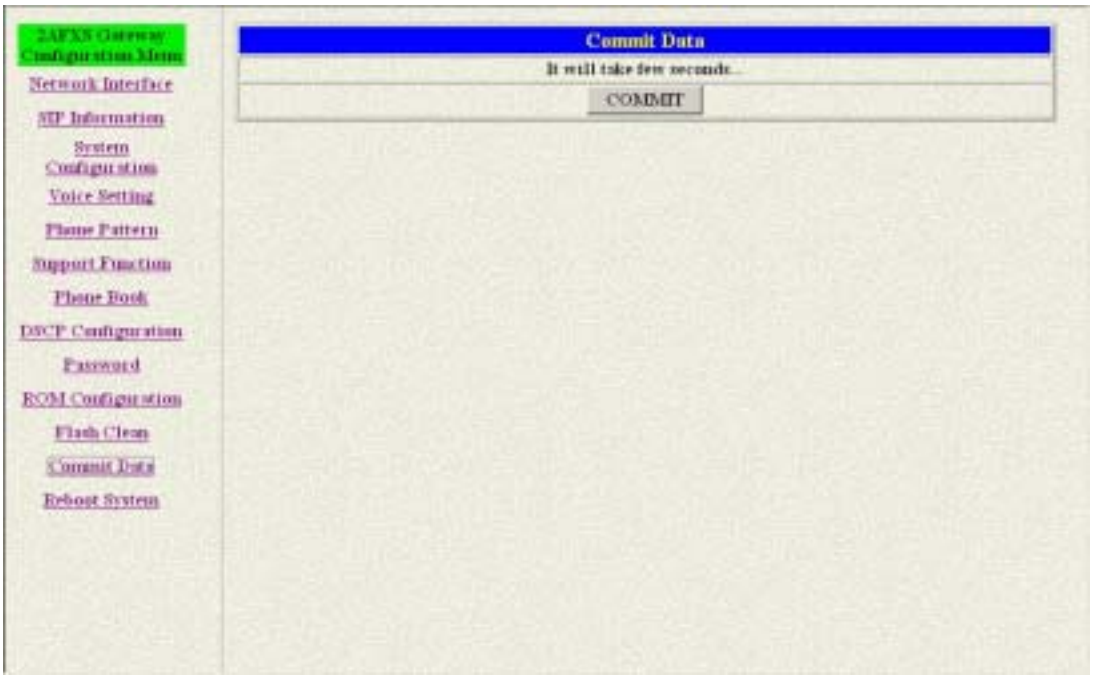


Figure 3-2 Commit Configuration Data

Step 3. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

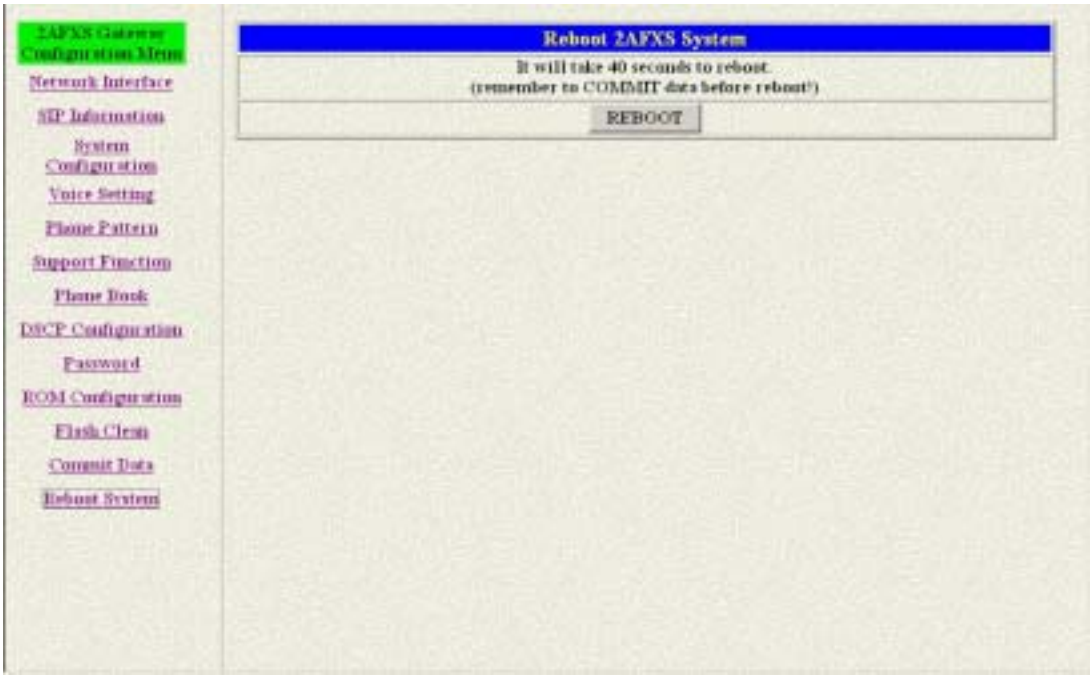


Figure 3-3 Reboot FXS System

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

3.4 DHCP mode

Step 1. Configuration the FXS Gateway IP address for DHCP Mode. Click [Network Interface] on the navigation panel. In the Network Interface screen, enable the DHCP function if you are using the cable modem or

DHCP server and click the [OK] button.

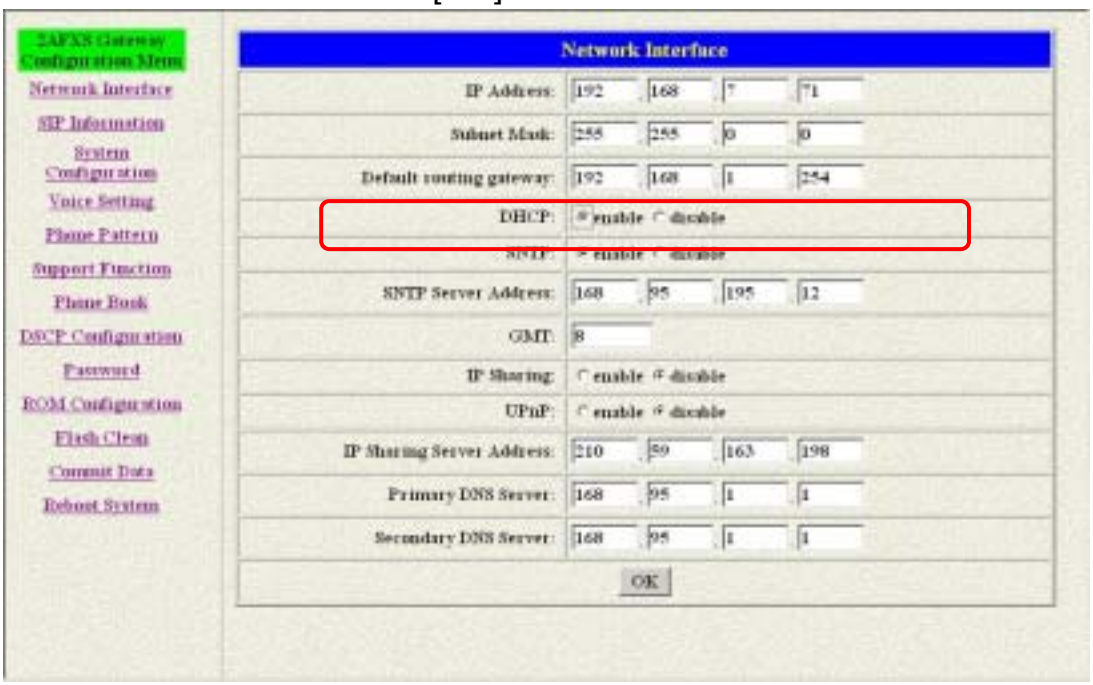


Figure 3-4 Network Interface

Step 2. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the Commit button. In the Commit Configuration Data screen to Display [Commit to Flash OK!], When the Commit Data Ok.

Step 3. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 4. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

3.5 IP Sharing Configuration

3.5.1 One Sets FXS Gateway

The function is only for the user who is using the IP Sharing device. It is said Gateway is connected to the IP Sharing device.

The IP Sharing Device must support the DMZ or Virtual server functions An e.g. such as ADSL network is in the following.

Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

Step 3. One can also assign a fixed IP address, which belongs to the same network segment as the LAN interface of IP Sharing device.

Step 4. FXS Gateway must enable the IP Sharing function for the fixed / dynamic WAN IP Address.

Note:

With Dynamic WAN IP Address, a valid Gatekeeper for FXS Gateway to get register on is a must. In other word, it is not workable in Peer-to-Peer mode while dynamic WAN IP Address.

Step 5. IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP message to 192.168.1.5.

Please see following for example:

>Advanced setting > NAT setting > DMZ Host setting

DMZ Host setting

☐ **Activate DMZ**

DMZ Host IP: 192.168.1.5

Step 6. Configuration the FXS Gateway IP address for IP Sharing Mode. Click [Network Interface] on the navigation panel. In the Network Interface screen, enter the IP address, Subnet mask and the default gateway in the network table. Please follow up your IP Sharing device

Step 7. Enable the IP sharing function and put the static IP address in the IP Sharing server address (e.g. 210.59.163.198) and click the OK button.

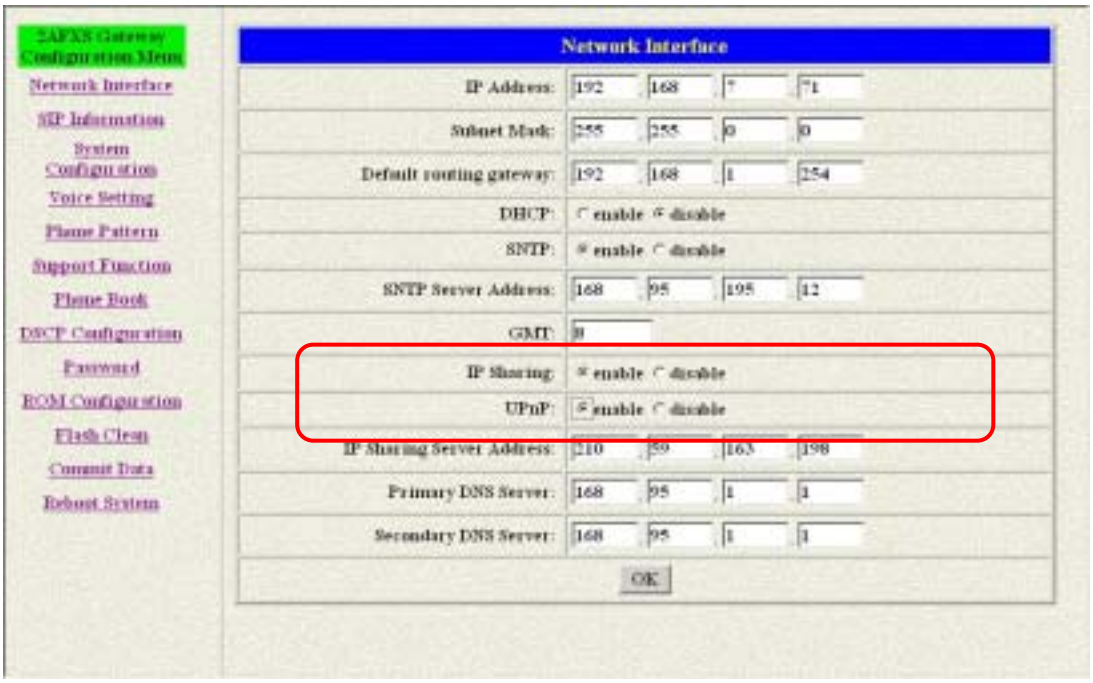


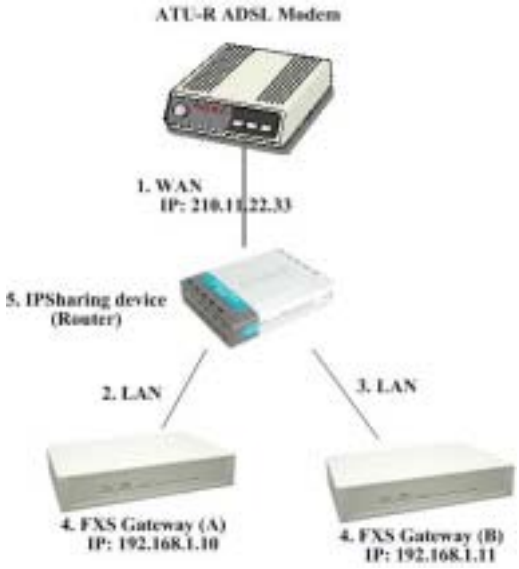
Figure 3-5 Enable the IP sharing function

Step 8. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the Commit button. In the Commit Configuration Data screen to Display [Commit to Flash OK!], When the Commit Data Ok.

Step 9. Click [Reboot System] on the navigation panel. In the VoIP Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 10. Close the current browser windows and launch your web browser again. Enter the new IP address in the Location or Address field.

3.5.2 Two sets attached to IP Sharing Device(Router)



1. Assign a IP address to each set using DHCP or fixed address.
2. Enable the IP Sharing function for each set using following command.
   Fixed IP Address – *usr/config$ ifaddr –ipsharing 1 210.11.22.33*
3. Configure separate SIP port and RTP port for each set to prevent from port conflict. For example, if set A uses the default settings (SIP port: 5060, RTP port: 16384), you must change set B's setting to SIP port equal to 5061 and RTP port equal to 26384 for instance.
   Change SIP port – *usr/config$sip –port 5061*
   Change RTP port– *usr/config$sip –rtp 26384*
4. Use the Port Forwarding or Port Redirection function provided by IP Sharing device(Router). See following for example.

>Advanced setting > NAT setting > Port Redirection

Active Configuration

Items	Service name	Protocol	Actual Port	Virtual IP	Virtual Port	Enable
1	1	UDP	5060	192.168.1.10	5060	V
2	2	UDP	16384	192.168.1.10	16384	V
3	3	UDP	16394	192.168.1.10	16394	V
4	4	UDP	5061	192.168.1.11	5061	V
5	5	UDP	26384	192.168.1.11	26384	V
6	6	UDP	26394	192.168.1.11	26394	V
7		---	0		0	X

8		---	0		0	X
9		---	0		0	X
10		---	0		0	X

Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

1. Different Vendor's Router will have different appearance of setting.
2. Once you set the DMZ Host, you don't need to configure the Port Forwarding and vice versa.
3. If there is only one FXS Gateway attached to the IP Sharing device, it is recommended to use DMZ Host setting to enable the NAT traverse and disable the Port Forwarding.
4. If there are two or more sets of FXS Gateway attached to the IP-Sharing device, please configure the Port Redirection (Forwarding) to enable the NAT traverse and disable the DMZ Host.
5. After the IP Sharing configuration of FXS Gateway and IP Sharing device is complete, you must reboot the FXS Gateway to activate the new settings.

Chapter 4
Making a VoIP Call

This Chapter covers the basic configuration the gateway for making VoIP calls. One is the Peer-to-Peer mode, Proxy routed mode and Gateway mode. The configurations and functions are different. Please make sure about the mode you want and follow up the step to configure your gateway.

4.1 Configure the gateway into the Peer-to-Peer mode

Step 1. Configuration the FXS Gateway SIP information. Click [SIP information] on the navigation panel. In the SIP information screen, select Peer-to-Peer Mode function, set line number (e.g. Line1 Number 6091, Line2 Number: 6092) and click the [OK] button.

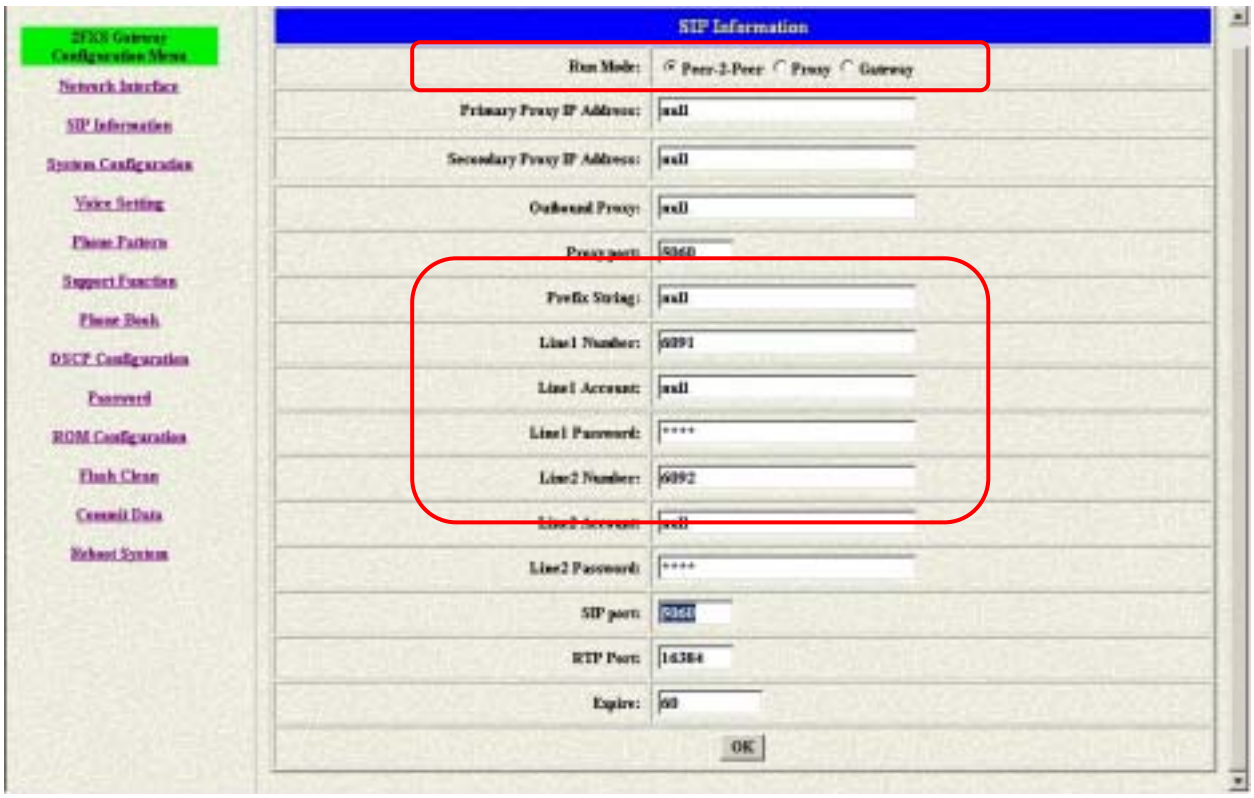


Figure 4-1 SIP Configuration – Peer to Peer mode Screen

Step 2. Configuration the FXS Gateway Phone Book. Click [Phone Book] on the navigation panel. In the Phone Book screen, enter the Index, Name, IP address and e164 (phone number) of the destination and click the Add Data button.

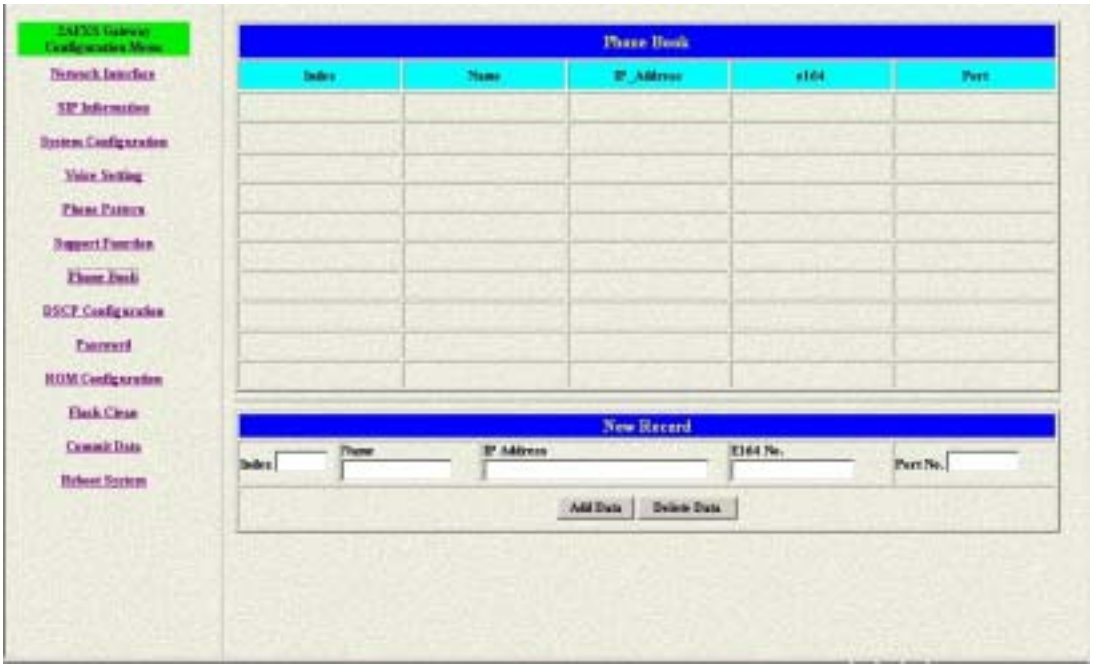


Figure 4-2 Phone Book

Step 3.E.g. enter the Index: 1, Name: test, e164 No.: 608, IP address: 192.168.13.75 and of the destination and click the [Add Data] button.

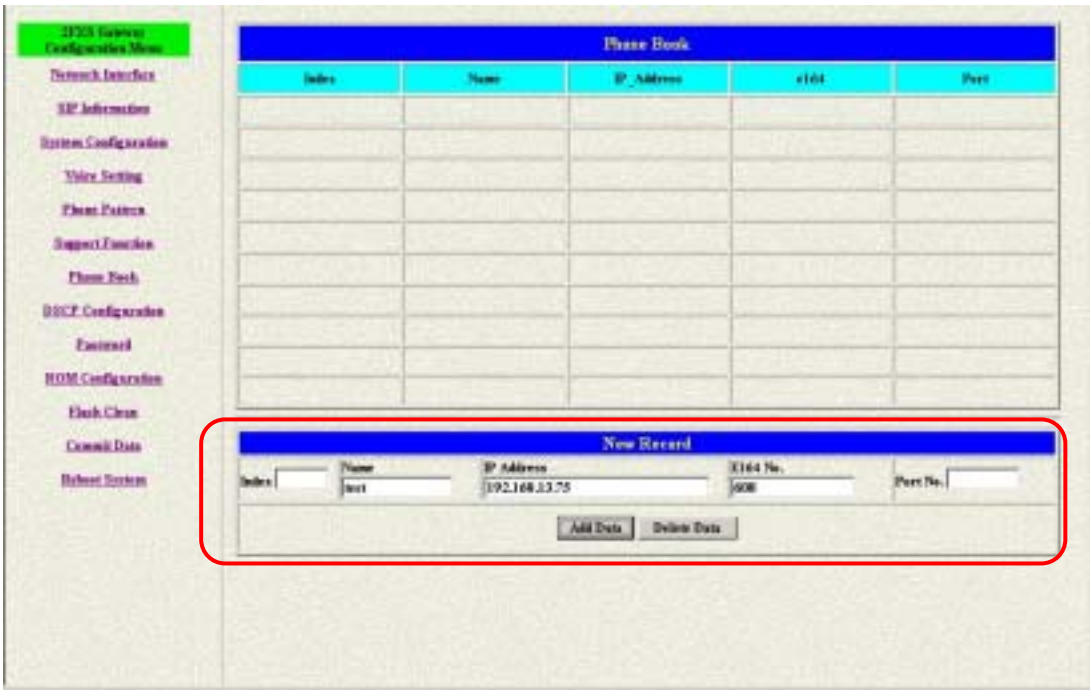


Figure 4-3 Phone Book – New Record

Step 3. On table will display on the first index.

Figure 4-4 Phone Book

Step 5. Click [Commit Data] on the navigation panel. In the Commit Configuration Data screen, click the [Commit] button. In the Commit Configuration Data screen to Display [Commit to Flash OK!], When the Commit Data Ok.

Step 6. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

4.2 Configure the gateway into the Proxy routed mode

Step 1. Configuration the FXS Gateway SIP Configuration. Click SIP Information on the navigation panel. In the SIP Information screen, select Proxy routed Mode function.

Step 2. To change the SIP information from your service provider Proxy IP Address, Line1 Number, Lin1 Account, Line1 Password, (e.g. Proxy IP Address: 192.168.14.155, (e.g. Line1 Number: 6091, Line1 Account: 6091, Line1 Password: 6092, Line2 Number: 6092, Line2 Account: 6092, Line2 Password: 6092), and click the OK button.

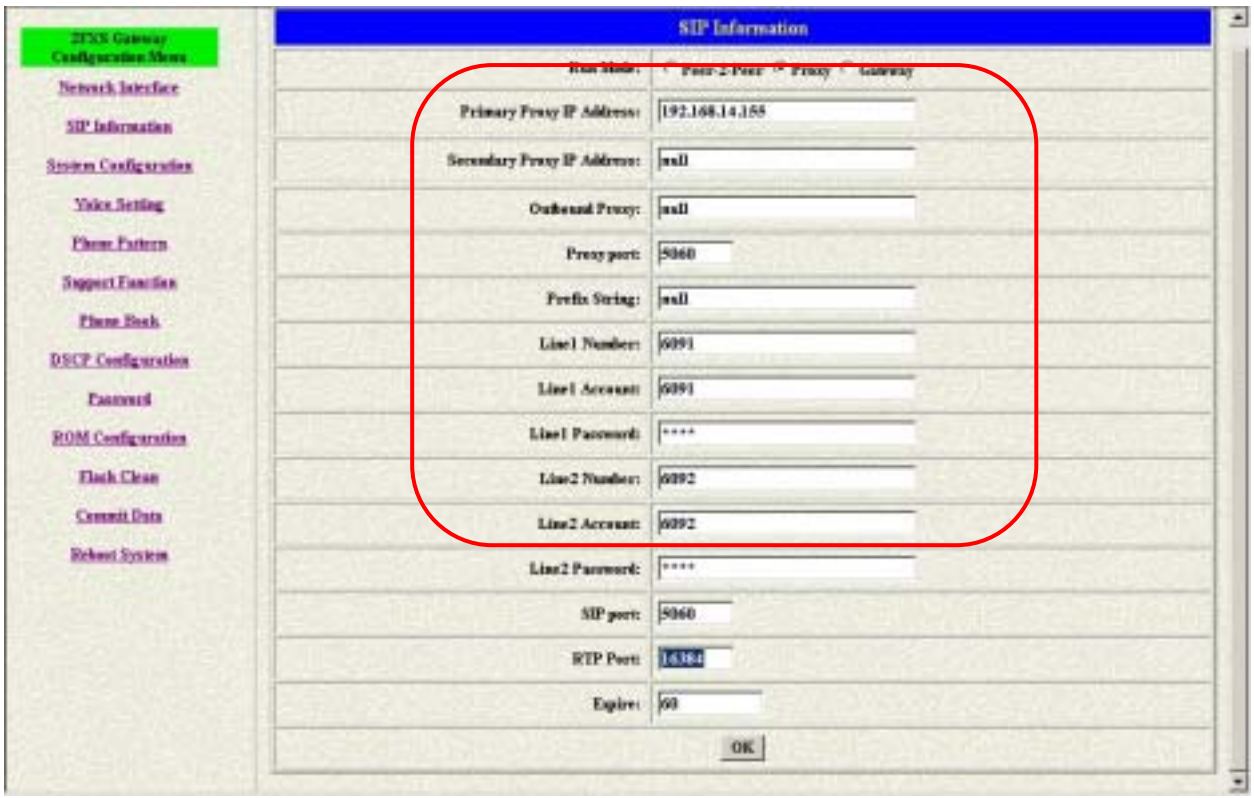


Figure 4-5 Configure the Proxy info

Step 3. Click Commit Data on the navigation panel. In the Commit Data screen, click the Commit button. In the Commit Data screen to Display Commit to Flash OK!, When the Commit Data Ok.

Step 3. Click Reboot Data on the navigation panel. In the Reboot FXS System screen, click the Reboot button. It will take 40 seconds to reboot.

4.3 Configure the gateway into the Gateway routed mode

Step 1. Configuration the FXS Gateway SIP Configuration. Click SIP Information on the navigation panel. In the SIP Information screen, select Gateway routed Mode function.

Step 2. To change the SIP information from your service provider Proxy IP Address, Line1 Number, Lin1 Account, Line1 Password, (e.g. Proxy IP Address: 192.168.14.155, (e.g. Line1 Number: 6091, Line1 Account: 6091, Line1 Password: 6092), and click the OK button.

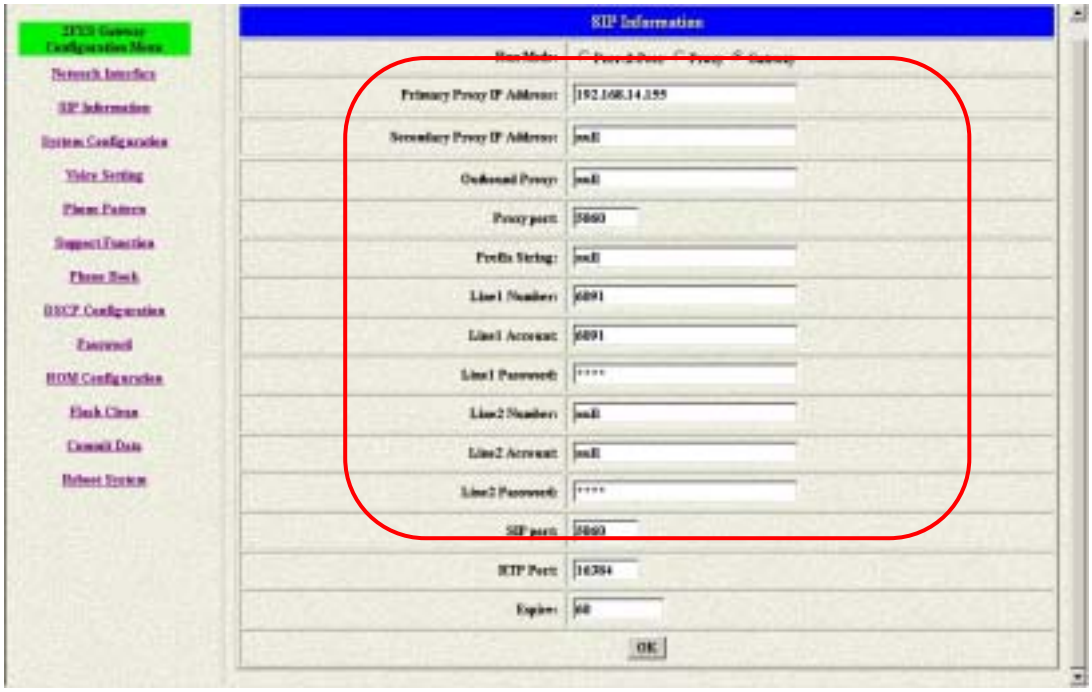


Figure 4-6 Configure the Proxy info

Step 3. Click Commit Data on the navigation panel. In the Commit Data screen, click the Commit button. In the Commit Data screen to Display Commit to Flash OK!, When the Commit Data Ok.

Step 3. Click Reboot Data on the navigation panel. In the Reboot FXS System screen, click the Reboot button. It will take 40 seconds to reboot.

Chapter 5
Upgrade ROM Version

This Chapter covers the basic how to upgrade FXS Gateway ROM Version.

5.1 Before you start downloading

Step 1. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.

Step 2. Remember the current configuration, such as [SIP Information], [Phone Book].

5.2 Update Application Version

Step 1. Update the FXS Gateway ROM Version. Click [ROM Upgrade] on the navigation panel. In the [ROM Configuration] screen, type a Server IP address, Target File Name, Method, Target File Type (e.g. Server IP Address: 192.168.4.71, Target File Name: 4afxs.204, Method: TFTP, Target File Type: Application image) and click the [OK] button.

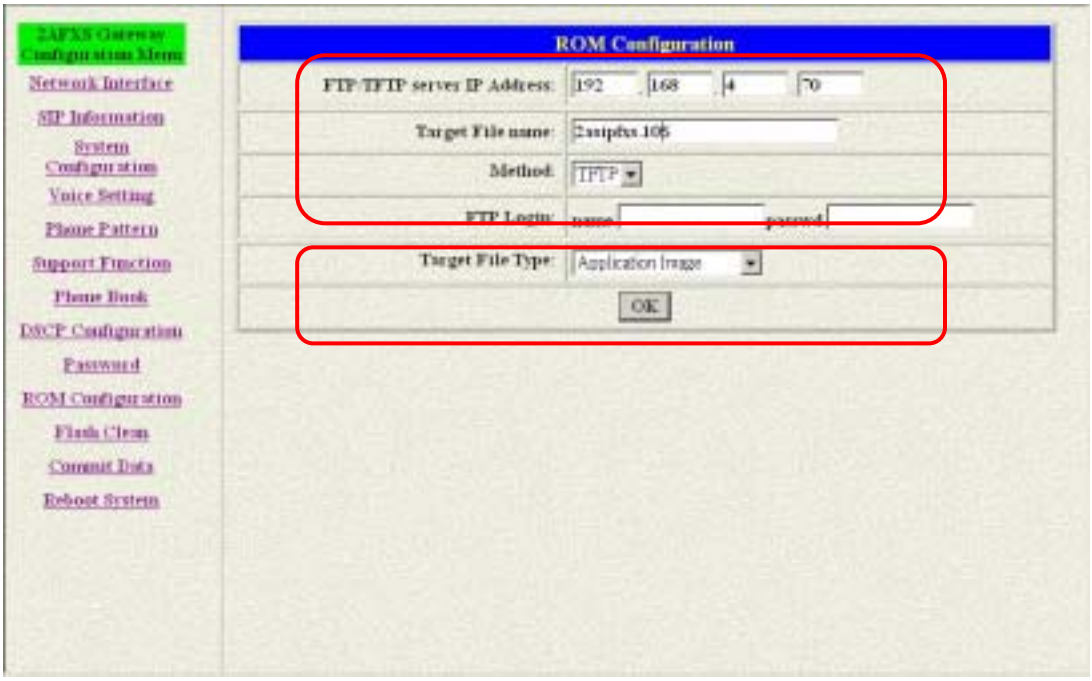


Figure 5-1 ROM Configuration

Step 2. In the screen to Display [Please issue FLASH CLEAN to consist software version.] information. When the ROM Upgrade file ok.

Figure 5-2 ROM File Upgrade ok

Step 3. Click [Flash Clean] on the navigation panel. In the Flash Clean screen, click the [CLEAN] button.

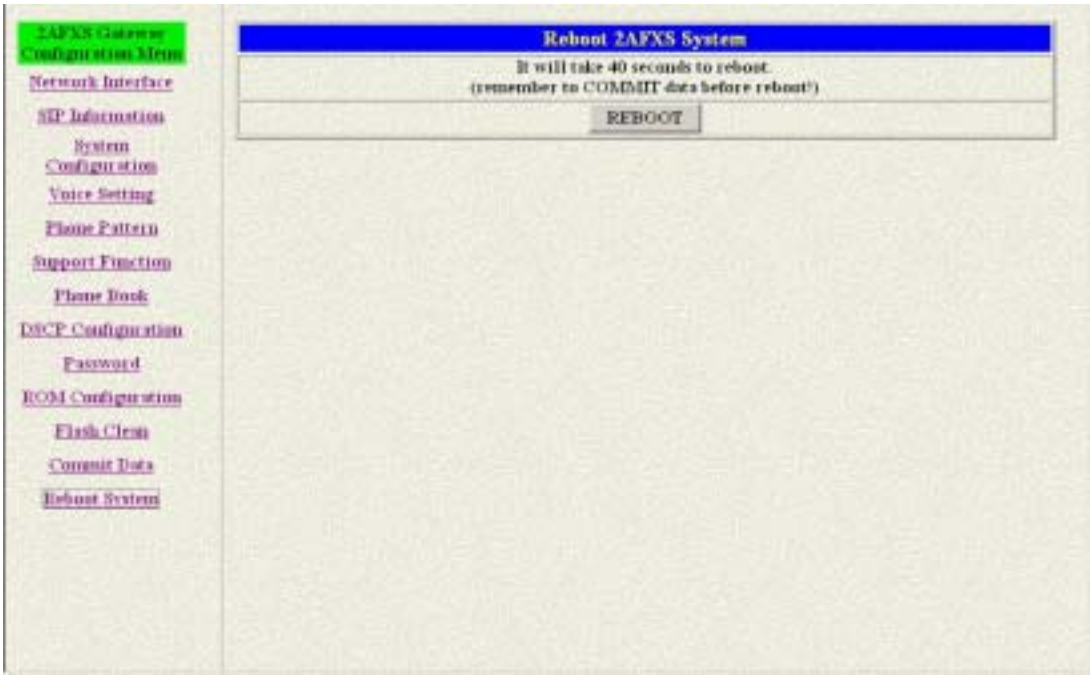


Figure 5-3 Flash Clean

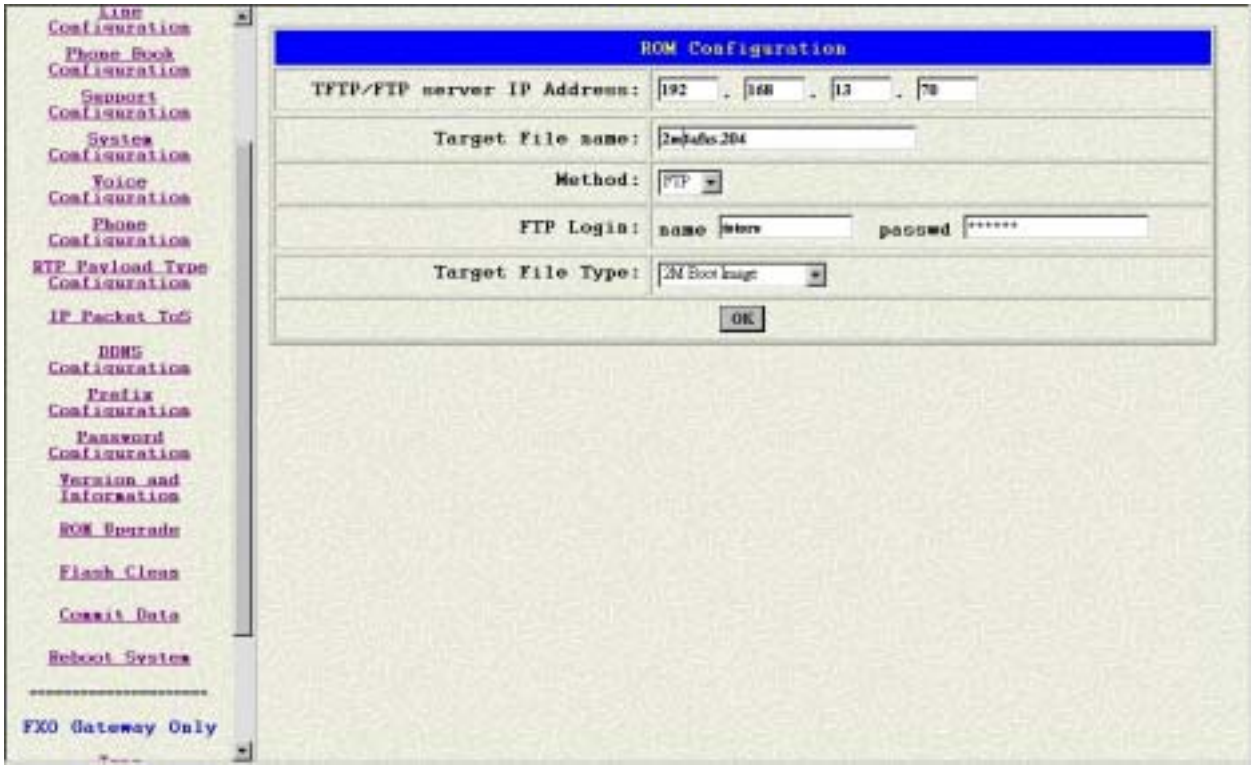
Step 4. In the Flash Clean screen to Display [Flash cleaned!! Please reboot your system!!], When the Flash Clean Ok.

Step 5. Click [Reboot System] on the navigation panel. In the Reboot FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 6. Close the current browser windows and launch your web browser again. Enter the IP address in the Location or Address field.

5.3 Update Boot2m Version

Step 1. Update the FXS Gateway 2mROM Version. Click [ROM Upgrade] on the navigation panel. In the [ROM Configuration] screen, type a Server IP address, Target File Name, Method, Target File Type (e.g. Server IP Address: 192.168.4.71, Target File Name: 2m4afxs.204, Method: FTP, FTP Login name: totoro, passwd: totoro, Target File Type: 2m Boot image) and click the [OK] button.



Step 2. In the screen to Display [Please issue FLASH CLEAN to consist software version] information. When the ROM Upgrade file ok.

Figure 5-4 ROM File Upgrade ok

Step 3. Click [Flash Clean] on the navigation panel. In the Flash Clean screen, click the [CLEAN] button.

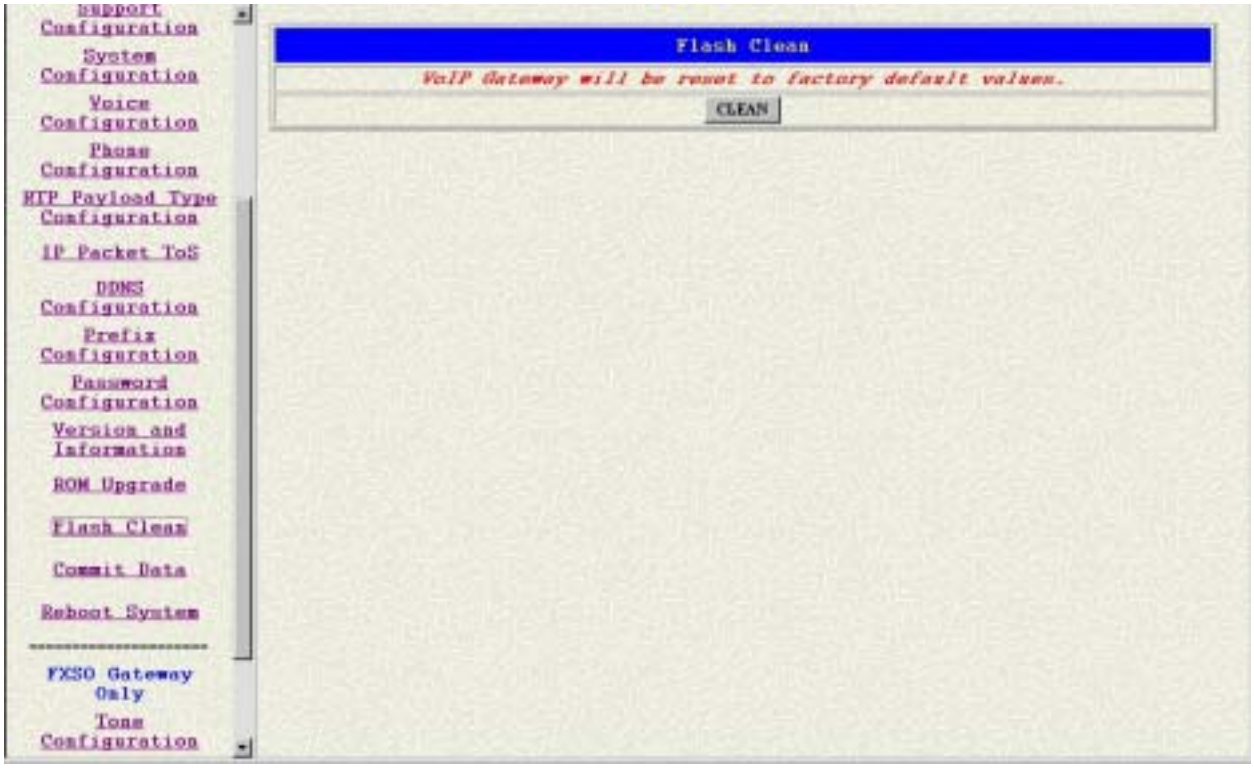


Figure 5-5 Flash Clean

Step 4. In the Flash Clean screen to Display [Flash cleaned!! Please reboot your system!!], When the Flash Clean Ok.

Figure 5-6 Flash Clean OK

Step 5. Click [Reboot system] on the navigation panel. In the Reboot FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

Step 6. Close the current browser windows and launch your web browser again. Enter the IP address in the Location or Address field.

Chapter 6
Network Interface Screen

This Chapter covers setup Network Interface identification information for FXS Gateway.

6.1 Network Interface Overview

The web configuration provides Network Interface screen.

6.2 Network Interface Screen

Click [Network Interface] in the navigation panel and open the Network Interface Screen.

Use this screen to setup Network Interface identification information for the FXS Gateway.

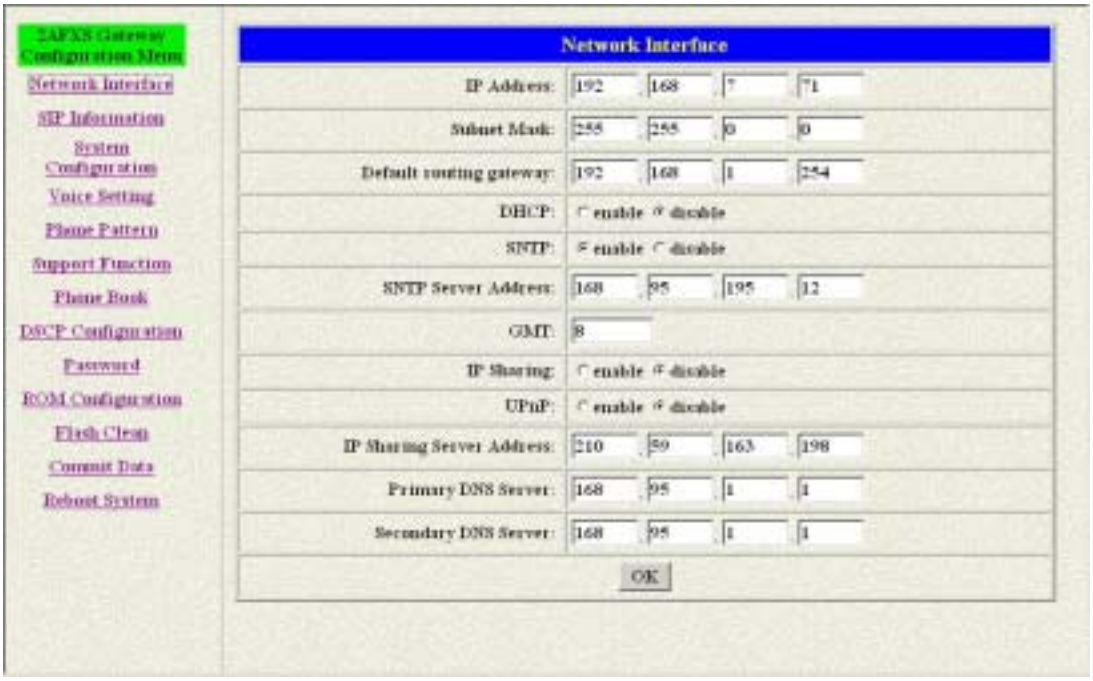


Figure 6-1 Network Interface

The following table describes this screen.

Table 6-1 Network Interface

LABEL	DESCRIPTION
IP Address	Enter the IP Address of the FXS Gateway in dotted decimal notation for e.g. 192.168.4.92. Range of IP Address setting (0.0.0.0~255.255.55.255).
Subnet Mask	Enter the IP Subnet Mask of your FXS Gateway in dotted decimal notation for e.g. 255.255.0.0.
Default Routing Gateway	Enter the IP Address of the default-outgoing gateway of your FXS Gateway in dotted decimal notation for e.g.

LABEL	DESCRIPTION
	192.168.1.254.
DHCP	Select enable/disable Dynamic Host Configuration.
SNTP	Select enable/disable Simple Network Time Protocol.
SNTP Server Address	Set specifies a SNTP Server as network time source in dotted decimal notation for e.g. 168.95.192.12.
GMT	Set local time zone according to GMT e.g. 8.
IP Sharing	Select enable IP Sharing function, when you specify usage of and IP Sharing device.
UPnP	Select enable/disable UpnP function.
IP Sharing Server Address	Enter specify a global fixed IP Address, user can add this IP Address in dotted decimal notation for e.g. 210.11.22.33. However, dynamic IP Address is not working in Peer-to-Peer mode.
Primary DNS primary	Enter the DNS IP Address in dotted decimal notation for e.g. 168.95.1.1
Secondary DNS Secondary	Enter the DNS secondary IP Address in dotted decimal notation for e.g. 168.95.1.1
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 7
SIP Information Screen

This Chapter covers setup SIP related parameters.

7.1 SIP Information Overview

The web configurator provides SIP Configuration screen.

7.2 SIP Information Screen

Click [SIP Configuration] in the navigation panel and open the SIP Information Screen.

Figure 7-1 SIP Information

The following table describes this screen.

Table 7-1 SIP Information

LABEL	DESCRIPTION
RUN Mode	Select Proxy mode, Gateway mode or Peer-to-Peer mode. Select Gateway only setting channel 1 line number, account, password.
Proxy IP Address	Set Proxy IP Address in dotted decimal notation e.g.192.168.4.71.
Second Proxy IP Address	Set redundancy second 2 Gatekeeper IP Address in dotted decimal notation e.g.192.168.4.71.
Outbound Proxy	Set IP Address or URL address (Domain Name Server must be configured. Please refer to Network Configure) of outbound Proxy server.

LABEL	DESCRIPTION
Proxy Port	SIP local UDP port number (5060~5070), default: 5060.
Prefix String	Set specify prefix string, use it when UserID contains alphabets.
Line X Number	Set Line X Number.
Line X Account	Set Line X Account Name.
Line X Password	Set Line X Account Password.
SIP Port	Set SIP port number, example 5060.
RTP Port	Set RTP port number, example 16384.
Expire	Used to inform proxy server the valid duration of the registration information.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 8
System Configuration Screen

This Chapter covers System Information and configuration.

8.1 System Configuration Overview

The web configuration provides System Configuration screen.

8.2 System Configuration Screen

Click [System Configuration] in the navigation panel and open the [System Configuration] Screen.

Figure 8-1 System Configuration

The following table describes this screen.

Table 8-1 System Configuration

LABEL	DESCRIPTION
Keypad Type	Select In-Band, RFC2833 on DTMF replay type
RFC2833 Payload Type	RFC2833 Payload Type (range:96~128 inter-used:100,102~105)
FAX Payload Type	Set Fax Payload Type (range: 96 or 101, default: 101)
Inter Digit Time	Set the DTMF inter digit time (second)
CallerID Type	Set CallerID Type (Disable, FSK, DTMF). Support Bell Core and DTMF callerID function. After the first ring at destination site, device will send line number as callerID to called site.
Busy Forward	Set enable or disable to route the call to the next line (While

LABEL	DESCRIPTION
	the line number is not matched or engaged).
End of Dial Digit	Set end of dial key as NONE, *, or #.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 9
Voice Configuration Screen

This Chapter covers voice is associated with the audio setting information.

9.1 Voice Configuration Overview

The web configuration provides Voice Configuration screen.

9.2 Voice Configuration Screen

Click [Voice Configuration] in the navigation panel and open the [Voice Configuration] Screen.

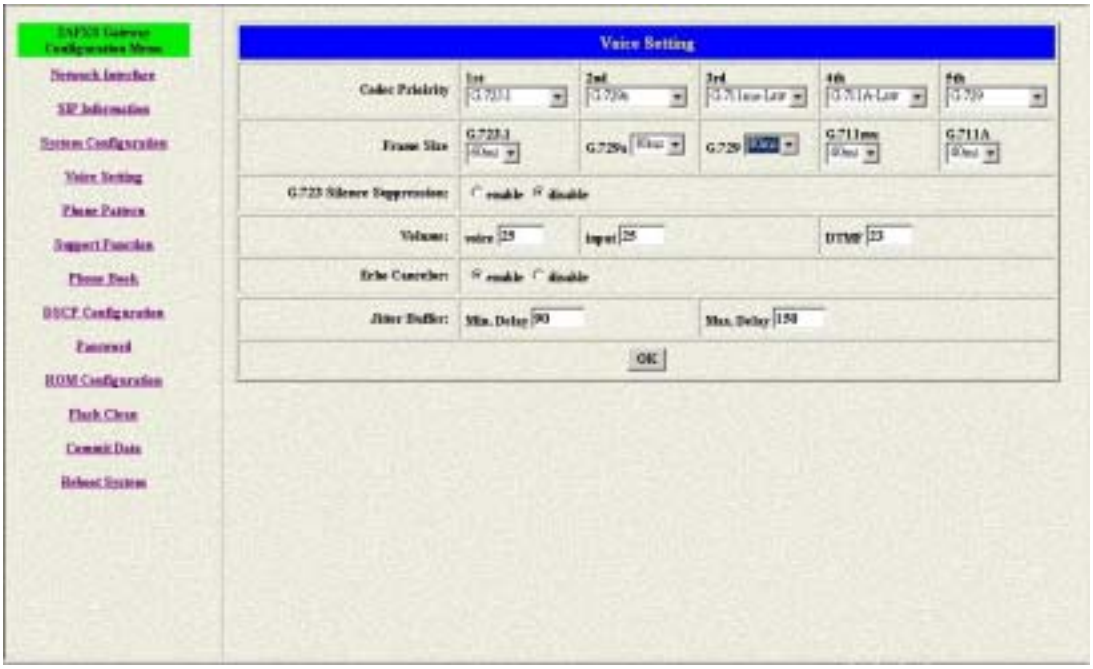


Figure 9-1 Voice Configuration

The following table describes this screen.

Table 9-1 Voice Configuration

LABEL	DESCRIPTION
Codec Priority	Set priority preference of installed codes, G.723, G.711A, G.711U, G.729.
Frame Size	Set Specify sending packet size, G.723: 30/60/90, G.711A, G.711U, G.729: 20/40/60/80ms, G.729A: 20/40/60/80ms. The smaller the packet size, the shorter the delay time. If network is in good condition, smaller sending packet size is recommended.
G723 Silence Suppression	Select enable/disable for G723 Silence Suppression function.
Volume	Set voice volume stands for volume, which can be heard

LABEL	DESCRIPTION
	from FXS Gateway side (0~63, default: 28). Set input gain stands for volume, which the opposite party hears (0~38, default: 28). Set dtmf volume stands for DTMF volume/level (0~31, default: 23).
Echo Canceller	Setting enable/disable of echo canceller.
Jitter Buffer	Setting of jitter buffer min/max delay.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

Well the application before you change voice parameters, because this might cause incompatibility.

Chapter 10
Phone Configuration Screen

This Chapter covers FXS Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according to their own country's tone specification or users-defined tone specification.

10.1 Phone Configuration Overview

The web configurator provides [Phone Configuration] screen.

10.2 Phone Configuration Screen

Click [Phone Configuration] in the navigation panel and open the [Phone Configuration] Screen.

Figure 10-1 Phone Pattern

The following table describes this screen.

Table 10-1 Phone Configuration

LABEL	DESCRIPTION
Ring Tone	Setting the played tone type, when FXS Gateway is receiving a call.
Ring Back Tone	Setting the played tone type, when FXS Gateway receives a Q.931 Alerting message. In condition that FXS Gateway is the originate side.
Busy Tone	Setting the played tone type, when destination is busy.
Dial Tone	Setting the played tone type, when hook off a phone set of

LABEL	DESCRIPTION
	workable FXS Gateway.
2nd Dial Tone	To configure the value of the local 2nd dial tone.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

For tone simulation, FXS Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

- ringing frequency: 15 ~ 100 (Unit: Hz)
- ringing ring ON/OFF: 0 ~ 8000 (Unit: ms)
- ringing level: 0 ~ 94 (Unit: V)
- tone frequency: 0 ~ 65535 (Unit: Hz)
- tone freqLevel: 0 ~ 65535 (Unit: mVrms)
- tone Tone ON/OFF: 0 ~ 8000 (Unit: ms)

Chapter 11
Support Configuration Screen

This Chapter provides some extra functions that might be needed by users.

11.1 Support Configuration Overview

The web configuration provides Support Configuration screen.

11.2 Support Configuration Screen

Click [Support configuration] in the navigation panel and open the [Support Configuration] Screen.

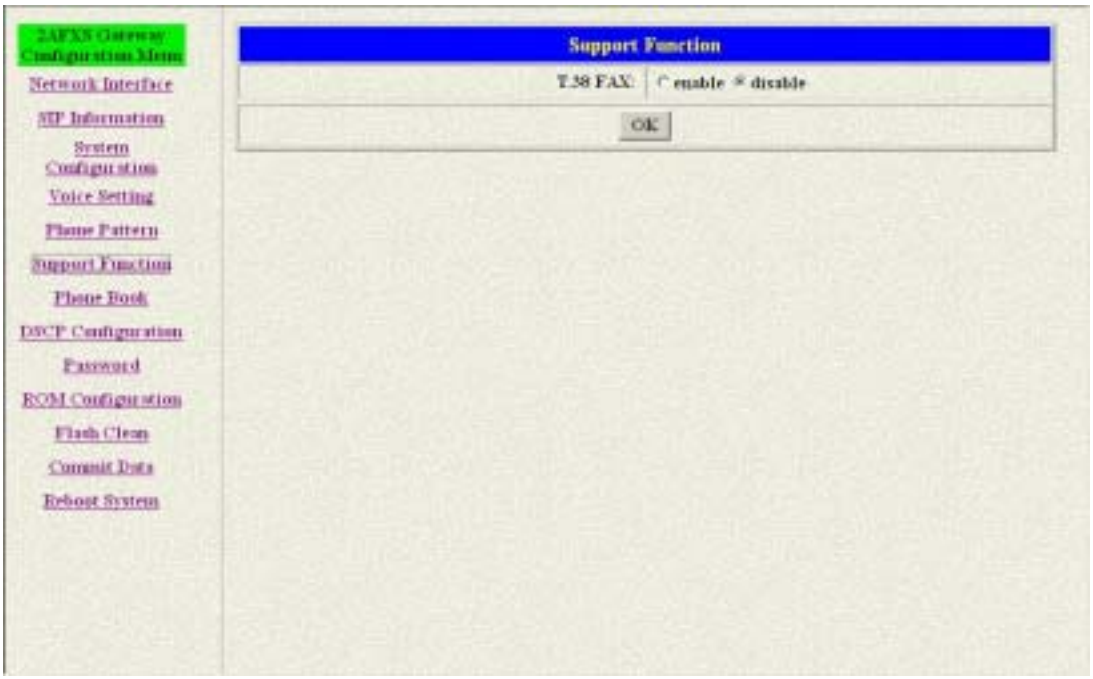


Figure 11-1 Support Configuration

The following table describes this screen.

Table 11-1 Support Configuration

LABEL	DESCRIPTION
T.38 FAX	Select enable/disable for T.38 FAX function. When T.38 ability is on, FXS Gateway will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 12
Phone Book Configuration Screen

This Chapter covers Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

12.1 Phone Book Configuration Overview

The web configuration allows you to Set up Phone Book that tell the FXS Gateway how to call management traffic when you configuration P2P mode.

12.2 Phone Book Configuration Screen

Click [Phone Book Configuration] in the navigation panel and open the [Phone Book] Screen.

Figure 12-1 Phone Book

The following table describes this screen.

Table 12-1 Phone Book

LABEL	DESCRIPTION
Index	The field displays the index number.
Name	The field displays the descriptive name.
IP Address	The field displays the IP Address or Domain name.
E164	The field displays the descriptive E164 number.
Port No.	The field displays the Call signal port number of caller
New Record	

LABEL	DESCRIPTION
Index	Set up an Index number from 1 to 100, to the parameter to show specific phone number.
Name	Set up a descriptive name (max 20 byte).
IP Address	Set up IP Address or Domain Name.
E164	Set up e164 (telephone) number (max 20 digits)
Port No.	Call signal port number of caller
Add Data [button]	Click [Add Data] button to insert the information table.
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Note:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination's IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

Chapter 13
DSCP Configuration Screen

IP Packet ToS(type of Service)/Differentiated Service configuration.

13.1 DSCP Configuration

The web configurator provides DSCP Configuration screen.

13.2 DSCP Configuration Screen

Click **DSCP Configuration** in the navigation panel and open the **DSCP Configuration** Screen.

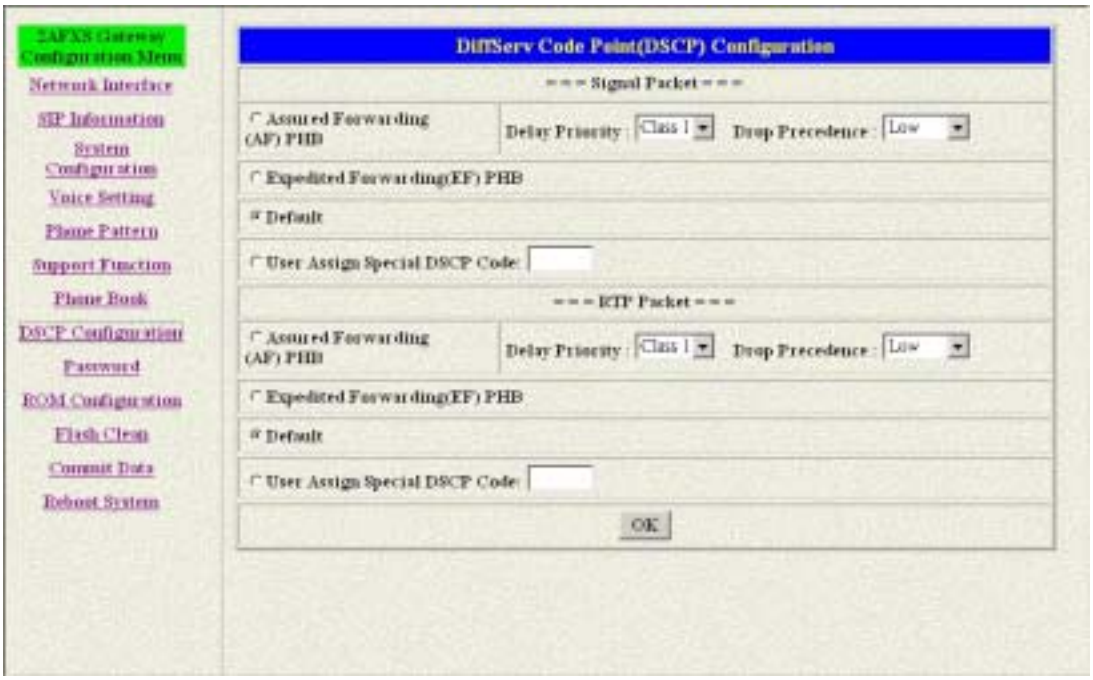


Figure 13-1 DSCP Configuration

The following table describes this screen.

Table 13-1 DSCP Configuration

LABEL	DESCRIPTION
Assured Forwarding (AF) PHB	Select Delay priority and Drop Precedence.
Expedited Forwarding (EF) PHB	Select TOS value as EF.
Default	Select TOS value as 0.
User Assign Special DSCP Code	User can set other unspecified value here.

LABEL	DESCRIPTION
OK [button]	Click [OK] button to save your changes back to the FXS Gateway volatile memory.

Chapter 14
Password Configuration Screen

This Chapter explains how to change the FXS Gateway password.

14.1 Password Configuration Overview

The Password screen allows you to configure the administrator password.

14.2 Password Configuration Screen

Click [Password configuration] in the navigation panel to open the [Password Configuration] screen.

Use the [Password Configuration] to set root and administrator password for the FXS Gateway.

It is highly recommended that you change the default password ([Null]].

Figure 14-1 Password Configuration

The following table describes this screen.

Table 14-1 Password Configuration

LABEL	DESCRIPTION
Username	Select root or administrator different options from the drop-down list box.
Current Password	Type the existing system password ([Null] is the default password when shipped).
New Password	Type your new system password.

LABEL	DESCRIPTION
Confirm New Password	Confirm your new system password for confirmation.
CHANGE [button]	Click [CHANGE] to save your change back to the FXS Gateway volatile memory.
ABORT [button]	Click [ABORT] to clean type data this page afresh.

Chapter 15
ROM Upgrade Screen

This Chapter explains how to Update FXS Gateway Version.

15.1 ROM Configuration Overview

The web configuration provides Update FXS Gateway ROM Version.

15.2 ROM Configuration Screen

Click [ROM Upgrade] in the navigation panel and open the [ROM Configuration] Screen.

Figure 15-1 ROM Configuration

The following table describes this screen.

Table 15-1 ROM Configuration

LABEL	DESCRIPTION
Server IP Address	Enter the FTP or TFTP Server IP Address.
Target File Name	Enter the file name prepared to upgrade.
Method	Select download method as FTP or TFTP.
FTP Login Name	Enter the FTP Login name (max 14 byte)
FTP Login Password	Enter the FTP Login password (max 14 byte)
Target File Type	Select download Target File Type on 2M Boot Image, DSP Application Image, DSP Core Image, DSP Test Image different options from the drop-down list box.
OK [button]	Click [OK] button to save your changes back to the FXS

LABEL	DESCRIPTION
	Gateway volatile memory.

Note:

Most of all, the Rom file needed to get upgrade is App or Boot2m. Please check the exactly Rom file before doing download procedure.

Chapter 16
Flash Clean Screen

This Chapter covers save change and clean the entire user defined value in factory default mode.

16.1 Flash Clean Overview

The web configuration provides Flash Clean screen.

16.2 Flash Clean Screen

Click [Flash Clean] in the navigation panel and open the [Flash Clean] Screen.

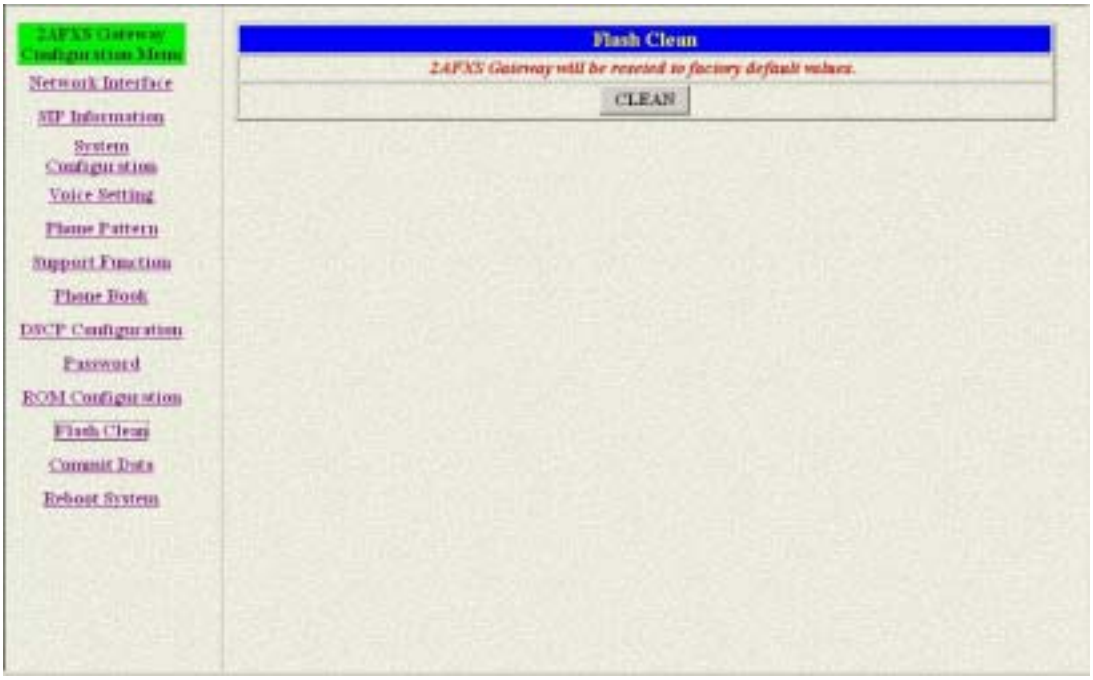


Figure 16-1 Flash Clean

The following table describes this screen.

Table 16-1 Flash Clean

LABEL	DESCRIPTION
Clean [button]	Clean all configuring FXS Gateway stored.

Note:

User whose login name is root only executes it. All configurations in [Network Interface] will be kept.

Chapter 17
Commit Data Screen

This Chapter covers save change after configuring FXS Gateway.

17.1 Commit Configuration Data Overview

The web configuration provides Commit Configuration Data screen.

17.2 Commit Configuration Data Screen

Click [Commit Data] in the navigation panel and open the [Commit Configuration Data] Screen.

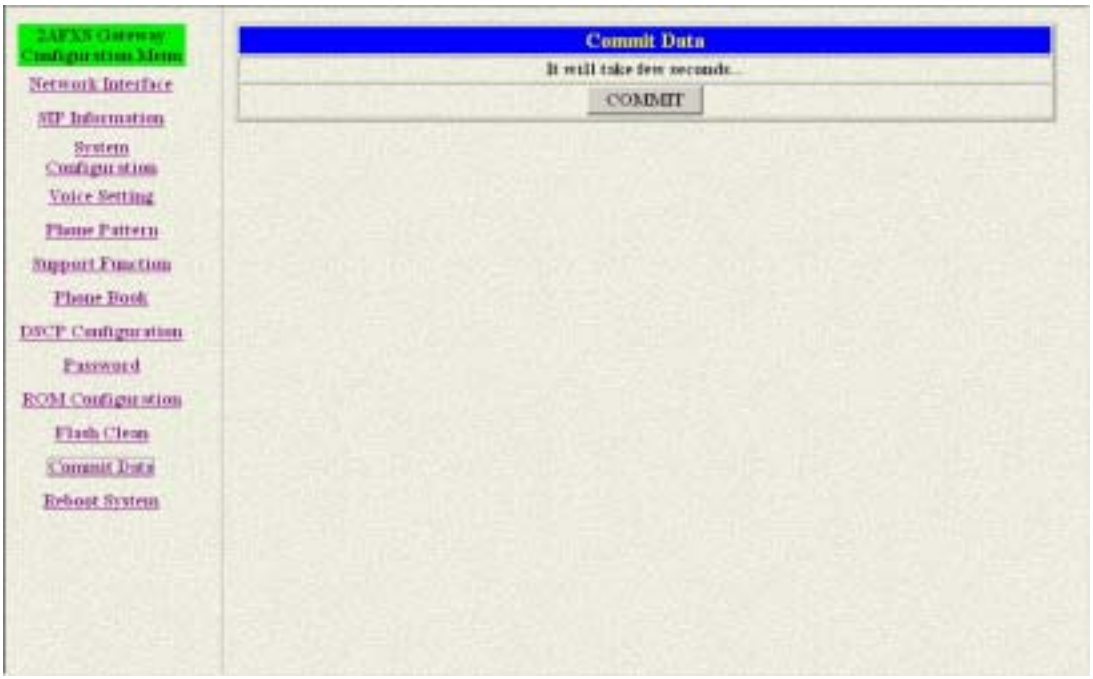


Figure 17-1 Commit Data

The following table describes this screen.

Table 17-1 Commit Configuration Data

LABEL	DESCRIPTION
Commit [button]	Save changes after configuring FXS Gateway.

Chapter 18
Reboot System Screen

This Chapter covers reboot to reload FXS Gateway in new configuration.

18.1 Reboot FXS Gateway Overview

The web configuration provides Reboot FXS Gateway screen.

18.2 Reboot FXS System screen

Click [Reboot System] in the navigation panel and open the [Reboot FXS Gateway] Screen.

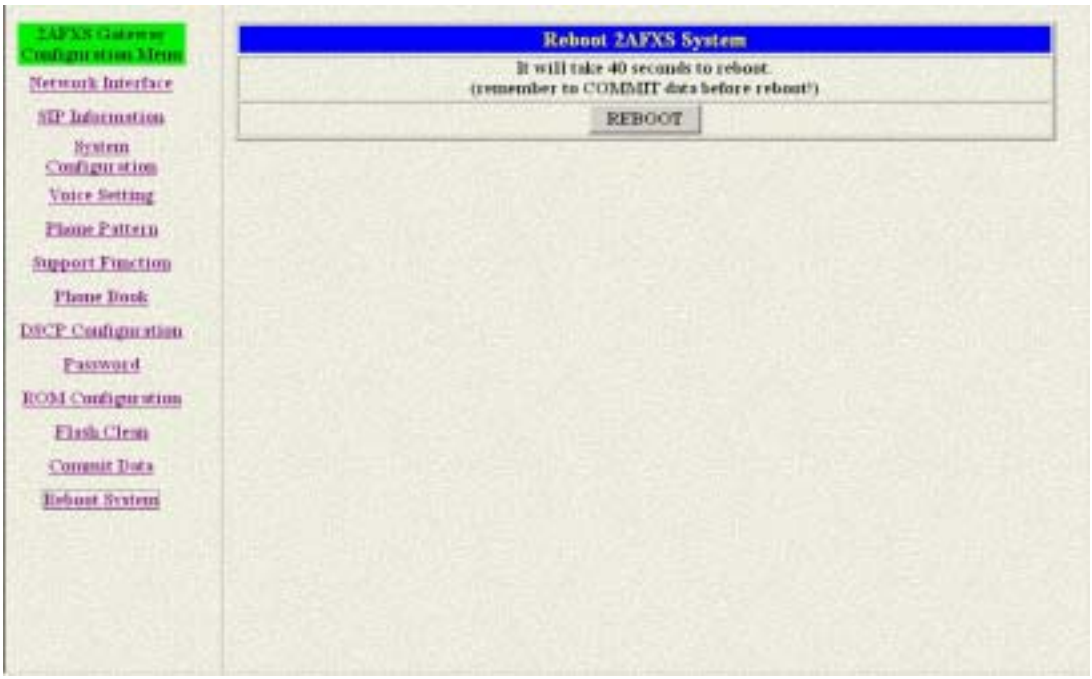


Figure 18-1 Reboot FXS System

The following table describes this screen.

Table 18-1 Reboot FXS System

LABEL	DESCRIPTION
Reboot [button]	After commit command, type reboot to reload FXS Gateway in new configuration. The procedure is as below:

Part III:

Command with FXS Gateway

This part gives information on commands to use.

Chapter 19
Command List

This section introduces the command line interface and lists all of the c ommands.

19.1 Hyper Terminal Setting

A terminal emulator is needed when using RS-232 port to configure Gateway. There are kinds of terminal emulator software. Here, we use Microsoft HyperTerminal to depict how to set up terminal emulator:

Step 1. Execute the Hyper Terminal program, and then the following windows will pop-up on the screen (START→Program files→Accessories→ Communication →Hyper Terminal).

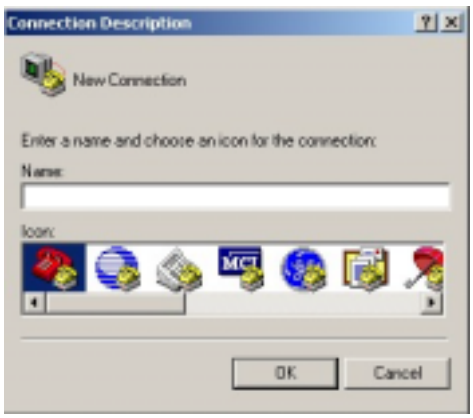


Figure 19-1 Connection Description

Step 2. Define a name such as [3502] for this new connection, after pressing [OK] button.

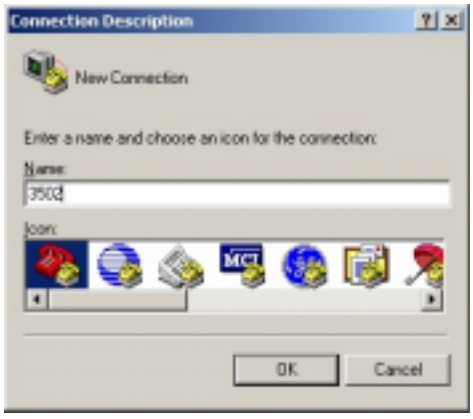


Figure 19-2 Connection Description

Step 3. The next windows appear, and then choose COM1/2 Port, which you are going to use.

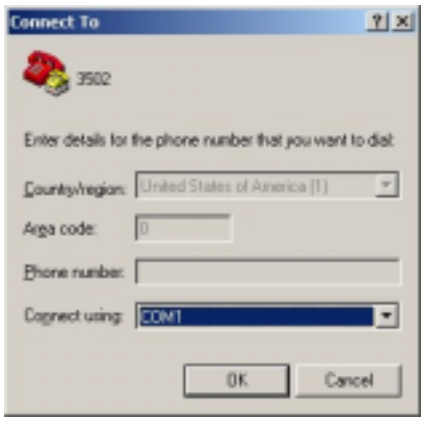


Figure 19-3 Connect To

Step 4. Configure the COM Port Properties as following: Bits per second: 9600, Flow control: None, Press [OK] button, and then start to configure Gateway.

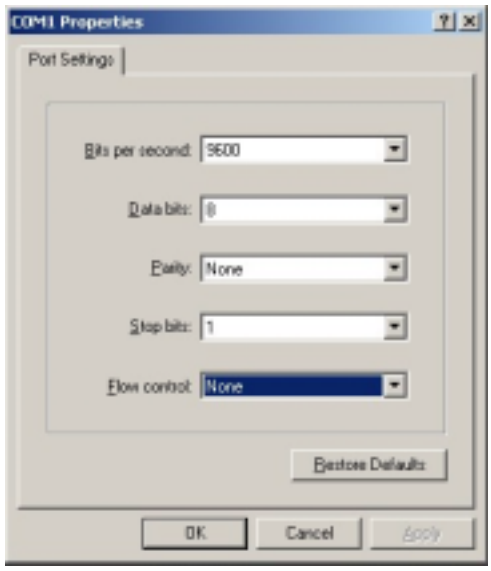


Figure 19-4 Com Properties

19.2 Power Up Your Gateway

At this point, you should have connected the console port, the LAN Port, the WAN port and the power port to the appropriate devices or lines. Plug the power adapter into a wall outlet. The Power LED should be on. The [Status LED] will come on after the system tests are complete. The WAN LED and one of the LAN LED come on immediately after the [Status LED] come on, if connections have been made to the LAN and WAN ports.

➢ Initial Screen

When you power on your Gateway it performs server internal tests as well as line initialization.

After the tests, the Gateway asks you to enter the Login, as shown.

```
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 19-5 Initial Screen

➢ Entering Login

For you first login, enter the login [root] and default password [Null]. As you type the password, the screen displays and (*) for each character you type.

```
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login: root
Welcome to Terminal Configuration Mode
Please enter your configuration item
```

```
usr/config$
```

Figure 19-6 Login Screen

Note:

Login account [root] or [administrator] is the default login account and there is no password needed.

➢ **Set Password**

To set your own password in root login name, just input command [passwd –set root ****]. For example, if password of root account is prepared as [voip], configuration it. When set password ok, you can see ok message.

```
usr/config$ passwd -set root voip

Setting
Login: root
Password: voip
OK

usr/config$
```

Figure 19-7 Change password Screen

19.3 Command Structure with Gateway

19.3.1 Setup IP Address

Use command [ifaddr] to configure Gateway IP Address and related information.

For example:

Step 1. Setting IP address

```
usr/config$ ifaddr –ip 192.168.1.11 –mask 255.2555.255.0 –gate
192.168.1.254
```

Description:

This is to configure Gateway IP Address as [192.168.1.11], subnet mask as [255.255.255.0], default router gateway as [192.168.1.254].

Step 2. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Note:

After configured the IP Address and input the [commit], then [reboot] process, user can start to do other configurations via HTTPD.

19.3.2 Application Mode Configuration

It is including Basic mode, such as Gatekeeper and Peer-to-Peer, and Advanced mode, such as Hotline mode and IP-Sharing mode. It will be detailed in the next Chapter.

19.3.3 Saving Your Configuration

Save the change of configurations for Gateway and apply the new configurations by rebooting the device.

Step 1. Confirm the changed configurations, input [commit] and press [enter] key to save it.

Step 2. Input [reboot] then press [enter] key to restart Gateway.

Step 3. After around 40 seconds, Gateway will take effect in new configurations.

These commands save all system configuration into nonvolatile memory. Nonvolatile memory refers to the Gateway storage that remains even if the Gateway power is turned of. Run Time (memory) is lost when the Gateway power is turned off. You must use the command to save any configuration that you make, otherwise the Gateway will return to its default setting when it is restarted.

Do not turn off your Gateway or remove the Gateway while saving your configuration.

19.4 Application modes

This Chapter will introduce the four application modes users often use. Particularly the Proxy/Gateway and Peer-to-Peer mode are the basic application mode. User would like to set as advanced application mode, such as PPPoE Mode and Behind IP-Sharing mode, please refer to the basic application mode for more information.

19.4.1 Proxy mode

Proxy mode means that there will be an intermediate Proxy Server between FXS Gateway and the remote entity. While operating at this mode, FXS Gateway will first register to the Proxy Server located at the ISP side. For the following operation, it sends the INVITE message to the Proxy Server once you initiate a session. Then the Proxy server will forward the INVITE message to the right place. And the Response message from the remote

entity will be forwarded back to you via Proxy server.

Step 1. If you have one or more accounts included user name and password, you need to configure the accounts using “security” command. For detail, please refer to Chapter 19.7.13 [security] command.

An example is demonstrated below:

```
usr/config$ security –line 1 –name 12345 –password 12345
```

Note:

This is to set username (userid) as “12345”, password as “12345” into line1, which means line1 can accept incoming calls after successfully registered to Proxy server. If you have another account and set into line2 as shown below.

```
usr/config$ security –line 2 –name 54321 –password 54321
```

Note:

This is to set username (user id) as “54321”, password as “54321” into line2. Then, both lines can accept incoming calls after registration.

Step 2. You must specify Proxy address obtained from your service provider. And the Proxy address can be IPv4 address as well as DNS name. For detail, please refer to Chapter 19.7.12 [sip] command.

Several important SIP parameters are listed below when setting proxy mode:“–px”, ”–line1” and ”–line2”.

An example is demonstrated below:

```
usr/config$ sip –px 210.68.222.33 -line1 0506 –line2 0507
```

Note:

1. This is to set proxy address as “210.68.222.23”, line1 number as “0506”, line2 number as “0507”
2. The line number of line1 and line2 depends on what you get from your service provider.

Step 3. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 4. Wait for FXS Gateway initializing in Proxy mode. It should take around 40 seconds. And you will see the below information displayed on Hyper-Terminal if the registration is successful.

```
usr/config$
. Rebooting...It will take 40 seconds....Attached TCP/IP interface
to cpm unit 0
Attaching interface lo0...done
 WorkMode : PROXY_MODE
```

```
 Start registering to Proxy server

HTTPD initialized...

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

19.4.2 Gateway mode

Gateway mode means that all chanel use only account registartion proxy server, but proxy must provide this function.

Step 1. If you have one accounts included user name and password, you need to configure the accounts using “security” command.

An example is demonstrated below:

```
usr/config$ security –line 1 –name 12345 –password 12345
```

Note:

This is to set username (userid) as “12345”, password as “12345” into line1, which means line1 can accept incoming calls after successfully registered to Proxy server.

Step 2. You must specify Proxy address obtained from your service provider. And the Proxy address can be IPv4 address as well as DNS name.

Several important SIP parameters are listed below when setting proxy mode:“–px”, ”–line1” and ”–line2”.

An example is demonstrated below:

```
usr/config$ sip –mode 2
usr/config$ sip –px 210.68.222.33 -line1 0506 –line2 0507
```

Note:

1. This is to set proxy address as “210.68.222.23”, line1 number as “0506”, line2 number as “0507”
2. The line number of line1 and line2 depends on what you get from your service provider.

Step 3. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 4. Wait for FXS Gateway initializing in Proxy mode. It should take around 40 seconds. And you will see the below information displayed on Hyper-Terminal if the registration is successful.

```
usr/config$
. Rebooting...It will take 40 seconds....Attached TCP/IP interface
to cpm unit 0
Attaching interface lo0...done
 WorkMode : PROXY_MODE
 Start registering to Proxy server

HTTPD initialized...

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

19.4.3 Peer-to-Peer Mode

Peer-to-Peer Mode allows users to call other VoIP devices without the proxy server. When in Peer-To-Peer mode, FXS Gateway use Phone Book, which will dial predefined phone number, and press "#" (optional, to accelerate the dial) as end of dial.

To configure Peer-To-Peer Mode in FXS Gateway, follow the steps below:

To configure Peer-To-Peer Mode in Gateway, follow the steps below:

Step 1. Set Peer-To-Peer Mode, using "sip" command

```
usr/config$ sip –mode 0
```

Note:

mode 0 is for Peer-To-Peer mode, while mode 1 is for Proxy mode.

Step 2. Configure Phone Book, using "pbook" command.

Users can refer to chapter 19.7.9 [pbook] command for more information.

```
usr/config$ pbook –add name TEST1 ip 10.1.1.1 e164 10
```

Note:

The command is to add a record onto PhoneBook. After the command completed, you can type "pbook –print" to see if the input

record is correct.

When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately. For phonebook configuration, please refer to Chapter 19.7.9.

19.4.4 Hotline Mode

The Hotline Mode is applied in limited two peers. User just picks up the phone set and then hears ring back tone or dial tone depended on configurations of destination device.

Step 1. Set gateway under P2P mode.

Step 2. Create phone book table with [pbook] command.

Step 3. Create a Hotline table with [line] command.

```
usr/config$ sip –mode 0
usr/config$ sysconf –service 2
usr/config$ bureau –hotline 1 10.2.2.2 201
```

In this example means: if user picks up phone set of FXS Line1, gateway will automatically dial out IP address of [1001].

Step 4. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

19.4.5 Behind IP-Sharing Mode

One Sets FXS Gateway

The function is for user whose network environment is behind IP Sharing device. It is said Gateway is connected to the IP Sharing device.

An example such as ADSL network is in the following.

Figure 19-8 One Sets FXS Gateway

Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

Step 3. One can also assign a fixed IP address, which belongs to the same network segment as the LAN interface of IP Sharing device.

Step 4. FXS Gateway must enable the IP Sharing function for the fixed / dynamic WAN IP Address.

Fixed IP Address:

```
usr/config$ ifaddr –ipsharing 1 210.11.22.33
```

Dynamic IP Address:

```
usr/config$ ifaddr –ipsharing 1
```

Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

Step 5. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 6. IP Sharing device must have a function to do IP/Port mapping. Some is named as DMZ, some is named as virtual server whatever. The VoIP messages from WAN have to completely pass forward to the LAN. It is

said if the FXS Gateway is assigned a virtual fixed IP Address such as 192.168.1.5, IP Sharing device must forward the VoIP message to 192.168.1.5.

Please see following for example:

>Advanced setting > NAT setting > DMZ Host setting

DMZ Host setting

☐ **Activate DMZ**

DMZ Host IP: 192.168.1.5

Two Sets FXS Gateway

Figure 19-9 Two Sets FXS Gateway

Step 1. The WAN IP Address obtained from ADSL has two kinds of methods. One is fixed IP Address, while user applies for one or more fixed IP Addresses. Another is dynamic IP Address while user applies for dial-up connection way.

Another is dynamic IP Address while user applies for dial-up connection way.

Step 2. The LAN IP Address of User's PC can be set as DHCP client in order to gain a valid one.

Step 3. Assign an IP address to each set using DHCP or fixed address.

Step 4. Enable the IP Sharing function for each set using following

command.

```
Fixed IP Address
usr/config$ ifaddr –ipsharing 1 210.11.22.33
```

Step 5. Configure separate SIP port and RTP port for each set to prevent from port conflict. For example, if set A uses the default settings (SIP port: 5060, RTP port: 16384), you must change set B's setting to SIP port equal to 5061 and RTP port equal to 26384 for instance.

```
Change SIP port – usr/config$sip –port 5061
Change RTP port– usr/config$sip –rtp 26384
```

Step 6. Use the Port Forwarding or Port Redirection function provided by IP Sharing device (Router). See following for example.

>Advanced setting > NAT setting > Port Redirection

Active Configuration

Items	Service name	Protocol	Actual Port	Virtual IP	Virtual Port	Enable
1	1	UDP	5060	192.168.1.10	5060	V
2	2	UDP	16384	192.168.1.10	16384	V
3	3	UDP	16394	192.168.1.10	16394	V
4	4	UDP	5061	192.168.1.11	5061	V
5	5	UDP	26384	192.168.1.11	26384	V
6	6	UDP	26394	192.168.1.11	26394	V
7		---	0		0	X
8		---	0		0	X
9		---	0		0	X
10		---	0		0	X

Note:

With Dynamic WAN IP Address, when the WAN IP is changed, we need to change the external IP of FXS Gateway using above command.

1. Different Vendor's Router will have different appearance of setting.
2. Once you set the DMZ Host, you don't need to configure the Port Forwarding and vice versa.
3. If there is only one FXS Gateway attached to the IP Sharing device, it is recommended to use DMZ Host setting to enable the NAT traverse and disable the Port Forwarding.

4. If there are two or more sets of FXS Gateway attached to the IP-Sharing device, please configure the Port Redirection (Forwarding) to enable the NAT traverse and disable the DMZ Host.
5. After the IP Sharing configuration of FXS Gateway and IP Sharing device is complete, you must reboot the FXS Gateway to activate the new settings.

19.4.6 PPPoE Mode

Figure 19-10 PPPoE Mode

Step 1. Set PPPoE mode, using [pppoe]

```
usr/config$ pppoe –dve 1 (PPPoE used)
usr/config$ pppoe –open (PPPoE open)
```

Step 2. Input the user id & password provided by your ISP, using [pppoe]

```
usr/config$ pppoe –id 123@hinet.net (PPPoE login account)
usr/config$ pppoe –pwd 123 (PPPoE login Passowd)
```

Step 3. Reboot the device once after disconnection, using [pppoe]

```
usr/config$ pppoe –reboot 1 (Enable)
```

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
    Device          : Enabled
    Status          : Not initialized
    User name       : 84460791@hinet.net
    Password        : ********
    Reboot          : Yes
```

```
usr/config$
```

Step 4. Ather the configuration [commit] and [reboot] the device.

```
usr/config$ commit
usr/config$ reboot
```

Step 5. When Gateway connection success.

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
    Device          : Enabled
    Status          : Ready
    User name       : 84460791@hinet.net
    Password        : ********
    Reboot          : Yes
    IP address      : 218.160.239.35
    Destination     : 61.223.128.254
    DNS primary     : 168.95.1.1
    Subnet Mask     : 255.255.255.255
    Authenticate    : PAP
    Protocol        : TCP/IP
    Device          : PPP/PPPoE

usr/config$
```

19.4.7 H.450 Call Hold, Transfer and Forward Mode

Gateway provides H.450 function including call hold, transfer and forward. Please be noted that both calling and called site have to support H.450 feature. For call forward function, it only works under Proxy mode. Of course, Proxy must support H.450 feature.

It is better for user to prepare a telephone set supported [FLASH] function on keypad. If telephone set does not support [FLASH] function on keypad, user is possible to click the Hook quickly by sending FLASH message. The default FLASH value for Gateway is between 100ms to 300 ms. It is said the value of Gateway is subject to the telephone set.

- **Call Hold – press [FLASH]**

By pressing the FLASH after making a call, both site shall hear the 2nd dial tone generated by Gateway. To retrieve the call back, just press the

FLASH again.

- **Call Transfer – press [FLASH], then [transferring number]**

For example, A call B, B transfer to C

A make call to B, B press FLASH. A and B hear 2nd dial tone. B presses the C's number. C ringing and A hear the RingBack tone. B Hang up its call. A and C Make call.

- **Call Forward:**
  - Busy Forward: *77 [Forward No.] #; Cannel Busy Forward: #77#
  - No response/ Answer: *76 [Forward No.] #; Cannel No response/ Answer: #76#
  - Unconditional: *75 [Forward No.] #; Cannel Unconditional: #75#

It is important to send an activate/deactivate call forward message before setting up the forward number. This function is only available under Proxy mode, and the Proxy supports H.450 Call Forward function. There are three conditions for user to set a forwarding number.

Step 1. Busy Forward: while line is engaged or phone set is off-hook.

Step 2. No response/Answer: while no one answers the call.

Step 3. Unconditional: forward it unconditionally.

19.5 How to upgrade

- **Before you start downloading**

Step 1. Please confirm Host PC, which is installed as TFTP / FTP server and device is in available network.

Step 2. Remember the current configuration, such as [sip], [security], [pbook], and you change configuration data.

Step 3.It will list current version and default download method. Please check the **Application Rom** in particular, it is showed version list, as well as the most common one you have to upgrade.

Step 4.General speaking, App Rom is named including product name and version and size is under 1MB, such as **4asipfxs.106.** 2MB Rom is named such as **2m4asipfxs.106**. Please be very careful of the prepared Rom file while upgrading.

Step 5.Check Application Rom Version, input [rom –print] command

For example:

```
usr/config$ rom –print
```

```
    Download Method   :   TFTP
           Boot Rom   :   sdboot.200
    Application Rom   :   4asipfxs.106
            DSP App   :   48302ce3.140
         DSP Kernel   :   48302ck.140
      DSP Test Code   :   483cbit.bin

      Hold Tone   :   holdtone.101
usr/config$
```

Step 6. Prepare FTP or TFTP server ready.

➢ Upgrade steps: FTP Mode (Application Rom)

Step 1.Choose Download Method: FTP method

1. [-method]: Choose download method: FTP method,
2. input the FTP Login name and password
3. [rom -print]: check configuration data

```
usr/config$ rom –method 1
usr/config$ rom –ftp id password
usr/config$ rom –print
```

For example:

```
usr/config$ rom –print

    Download Method   :   FTP
   FTP username   :   test
   FTP password   :   test

           Boot Rom   :   sdboot.200
    Application Rom   :   4asipfxs.106.bin
            DSP App   :   48302ce3.140
         DSP Kernel   :   48302ck.140
      DSP Test Code   :   483cbit.bin

      Hold Tone   :   holdtone.101
usr/config$
```

Step 2.Application Rom upgrade

1. [-app]: Choose means the prepared upgrade Rom.
2. [-s]: input the FTP Server IP Address.

3. [-f]: input the Rom files name

```
usr/config$ rom –app –s 192.168.1.1 –f 4asipfxs.106a
```

Step 3.flash –clean

Command [flash -clean] to clear old configurations. It will keep all configurations in [ifaddr].

```
usr/config$ flash –clean
```

- **Upgrade steps: TFTP Mode (Boot2m)**

Step 1.Choose Downlaod Method: TFTP method (default)

1. [-method]: Choose download method: TFTP method,
2. [rom -print]: check configuration data

```
usr/config$ rom –method 0
usr/config$ rom –print
```

For example:

```
usr/config$ rom –print
    Download Method   :   TFTP
           Boot Rom   :   sdboot.200
    Application Rom   :   4asipfxs.106
            DSP App   :   48302ce3.140
         DSP Kernel   :   48302ck.140
      DSP Test Code   :   483cbit.bin

      Hold Tone   :   holdtone.101
usr/config$
```

Step 2.Boot2m upgrade

1. [-boot2m]: Choose means the prepared upgrade Rom.
2. [-s]: input the FTP Server IP Address.
3. [f]: input the Rom files name

```
usr/config$ rom –boot2m –s 192.168.1.1 –f 2m4asipfxs.106a
```

Step 3.Find out MAC Address:

There are 12 digits on label on the back panel of the device, or command as [ifaddr -ifshow] (find the list information of Ethernet address, it is MAC Address).

```
usr/config$ ifaddr –ifshow
```

For example:

```
usr/config$ ifaddr -ifshow

cpm (unit number 0):
      Flags: (0x8063) UP BROADCAST MULTICAST ARP RUNNING
      Type: ETHERNET_CSMACD
      Internet address: 192.168.13.80
      Broadcast address: 192.168.15.255
      Netmask 0xfffff800 Subnetmask 0xfffff800
      Ethernet address is 00:01:a8:00:27:43
      Metric is 0
      Maximum Transfer Unit size is 1500
      0 octets received
      0 octets sent
      221 packets received
      0 packets sent
      221 unicast packets received
      0 unicast packets sent
      0 non-unicast packets received
      0 non-unicast packets sent
      0 input discards
      0 input unknown protocols
      0 input errors
      138 output errors
      0 collisions; 0 dropped
```

Step 4.Set MAC Address:

```
usr/config$ setmac
- enter mac address (xxxxxxxxxxxx):
```

For example:

```
usr/config$ setmac
- enter mac address (xxxxxxxxxxxx):0001a8002743
- the mac address is 00 01 a8 00 27 43
- if mac address is correct,please press 'y' to
   setup configuration,else press 'n' to continue
y
- mac address configuraton OK.
usr/config$
```

Step 5.Set IP Address:

```
usr/config$ ifaddr –ip xxx.xxx.xxx.xxx –mask xxx.xxx.xxx.xxx –gate
xxx.xxx.xxx.xxx
```

Step 6.commit, reboot

```
usr/config$ commit
usr/config$ reboot
```

19.6 Commands with FXS Gateway

The following table lists all of the commands that you can use with the Gateway. Refer to the following chapters for descriptions of commonly used commands.

This user's guide describes commands that are helpful for configuring the Gateway. Using commands not documented in the user's guide can damage the unit and possibly render it unusable.

Table 19-1 Commands with FXS Gateway

Command	DESCRIPTION
help	help/man/?[command]
quit	quit/exit/close.
debug	Show debug message.
reboot	Reboot local machine.
flash	Clean configuration from flash rom.
commit	Commit flash rom data.
ifaddr	Internet address manipulation.
time	Show current time.
ping	Test that a remote host is reachable.
pbook	Phonebook information and configuration.
pppoe	PPPoE stack manipulation.
sysconf	System information manipulation.
sip	This command is to configure SIP related parameters.
security	This command is used to configure the account information included username and password obtained from the service provider.
voice	Voice information manipulation.
support	Special Voice function support manipulation.
tos	TOS service allows users to achieve QoS on IP network.
phone	Setup of call progress tones and ringing (SLIC control).
bureau	To set Hotline function must be under Peer-to-Peer mode

Command	DESCRIPTION
	and switch to hotline mode.
rom	ROM file update.
passwd	Password setting information and configuration.

19.7 System Commands Overview

19.7.1 [quit]

Type [quit] will quit the Gateway configuration mode. And turn back to login prompt.

```
usr/config$ quit

Disconnecting..
login: root
Welcome to Terminal Configuration Mode
Please enter your configuration item

usr/config$
```

Figure 19-11 quit commend

Note:

It is recommended that type the [quit] command before you leave the console. If so, Gateway will ask password again when next user connects to console port.

19.7.2 [debug]

Open debug message will show up specific information while Gateway is in operation. After executing the debug command, it should execute command [debug –open] as well.

```
usr/config$ debug

Debug message information and configuration
Usage:
debug [-add type1 [[type2]...]] | -open | -close | -status

    -status     Display the enabled debug flags.
    -add         Add debug flag.
    -delete     Remove specified debug flag.
    -open        Start to show debug messages.
```

```
    -close      Stop showing debug messages.
Example:
    debug -add sip msg
    debug -open

usr/config$
```

Figure 19-12 debug commend list

Parameter Usages:

-status: Display the enabled debug flags.

-add: Add debug flag.

-- sip: sip related information

-- msg: voice related information

-delete: Remove specified debug flag.

-open: Start to show debug messages.

-close: Stop showing debug messages.

In this example, user open debug flags including sip, vp, msg.

```
usr/config$ debug -add sip msg
usr/config$ debug –open
```

For example:

```
usr/config$ debug -status

Current debug type enabled :
Debug Mode is open
DEBUG-> SIP   MSG
usr/config$
```

Figure 19-13 debug –status commend

19.7.3 [reboot]

After [commit] command, type [reboot] to reload Gateway in new configuration. The procedure is as below:

```
usr/config$ reboot

 Start to Unregister ...
 Unregister complete...
. Rebooting...It will take 40 seconds....Attached TCP/IP interface to
cpm unit 0
```

```
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open sucessfully.

login:
```

Figure 19-14 reboot commend

19.7.4 [flash]

Clean the configuration stored in flash.

```
usr/config$ flash

Flash memory information and configuration
Usage:
flash [-clean]
flash -clean   Clean the configuration stored.

Note:
      This command will clean the configuration stored in
      the flash and reboot it.

usr/config$
```

Figure 19-15 flash commend list

Parameter Usages:

-clean: clean all the user defined value, and reboot Gateway in factory default mode.

Note:

It is recommended that use [flash –clean] after application firmware id

upgraded.

Warning:

User whose login name is root only executes it. All configurations in command [ifaddr] and [pppoe] will be kept.

For example:

```
usr/config$ flash -clean

Flash clean start
Flash clean success!!



!! rebooting ...
Attached TCP/IP interface to cpm unit 0
Attaching interface lo0...done

HTTPD initialized...
Flash Check
 WorkMode : PROXY_MODE
 Start registering to Proxy server

 AC4804[0] is ok
 AC4804[1] is ok
 successful 2 2
 Initialize OSS libraries...OK!
VP v1.42 stack open successfully.

login:
```

Figure 19-16 flash –clean commend

19.7.5 [commit]

Save changes after configuring Gateway.

```
usr/config$ commit

This may take a few seconds, please wait..
Commit to flash memory ok!
```

```
usr/config$
```

Figure 19-17 commit commend

Note:

Users shall use [commit] to save modified value, or they will not be activated after system reboot.

19.7.6 [ifaddr]

Configure and display Gateway network information.

```
usr/config$ ifaddr

LAN information and configuration
Usage:
ifaddr [-print]|[-dhcp used]|[-sntp mode [server]]
ifaddr [-ip ipaddress] [-mask subnetmask] [-gate defaultgateway]
ifaddr [-dns index [dns server address]]

    -print      Display LAN information and configuration.
    -ip         Specify ip address.
    -mask       Set Internet subnet mask.
    -gate       Specify default gateway ip address
    -dhcp       Set DHCP client service flag (On/Off).
    -sntp       Set SNTP server mode and specify IP address.
    -dns        specify IP address of DNS Server.
    -timezone   Set local timezone.
    -ipsharing Specify usage of an IP sharing device and specify IP
address.
    -upnp       Specify the upnp mode of ipsharing(0:Off/1:On)
Note:
    Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
    DHCP client setting value (On=1, Off=0). If DHCP set to 'On',
    Obtain a set of Internet configuration from DHCP server assgined.
    SNTP mode (0=no update, 1=specify server IP, 2=broadcast
mode).
Example:
    ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate
210.59.163.254
    ifaddr -dhcp 1
```

```
    ifaddr -sntp 1 210.59.163.254
    ifaddr -ipsharing 1 210.59.163.254
    ifaddr -upnp 1
    ifaddr -dns 1 168.95.1.1

usr/config$
```

Figure 19-18 ifaddr commend list

Parameter Usages:

-print: Print current IP setting and status

-ip: Assigned IP address for Gateway

-mask: Assigned internet subnet mask

-gate: Assigned IP default gateway

-dhcp: Dynamic Host Configuration (1 = ON; 0 = OFF)

-dns: Setup DNS Server IP Address.

-sntp: Simple Network Time Protocol (0=No update, 1=Specify server IP, 2=broadcast mode). When SNTP function is activated, users have to specify a SNTP server as network time source. An example is demonstrated below:

```
usr/config$ ifaddr -sntp 1 10.1.1.1
```

Note:

While 10.1.1.1 stands for SNTP server's IP address.

-timezone: set local time zone according to GMT

-ipsharing: To specify a global fixed IP address, user can add this IP address in the command.

```
usr/config$ ifaddr -ipsharing 1 210.11.22.33
```

Note:

If the IP address is not a fixed one, the dedicated IP address is not necessary in the command. However, dynamic IP Address is not working in Peer-to-Peer mode.

-ipchange: If the unit is behind the IP sharing device and the IP address for the WAN port of that IP sharing is using the dynamic IP address. This function has to be enabled.

```
usr/config$ ifaddr -ipchange 1 210.59.163.172
```

-upnp: Enable/ Disable UPnP function. If IP sharing has this function, use can enable upnp function that user doesn't need to configure gateway or IP sharing for NAT function.

For example:

```
usr/config$ ifaddr -print

Internet address information
    WAN IP address        : 192.168.13.75
    Subnet mask           : 255.255.248.0
    Default gateway       : 192.168.8.254
    DHCP startup          : OFF
    SNTP                  : mode=1
                            server 168.95.195.12
                            time zone : GMT+8
                            cycle=1024 mins

    IPSharing             : no IPSharing device.

    Primary DNS Server    : 168.95.1.1
    Secondary DNS Server : 168.95.1.1
usr/config$
```

Figure 19-19 ifaddr –print command

19.7.7 [time]

When SNTP function of Gateway is enabled and SNTP server can be found as well, type [time] command to show current network time.

```
usr/config$ time
Current time is WED SEP 17 12:36:49 2003

usr/config$
```

Figure 19-20 time commend list

19.7.8 [ping]

Use [ping] to test whether a specific IP is reachable or not.

For example: if 192.168.1.2 is not existing while 210.63.15.32 exists. Users will have the following results:

For example:

```
usr/config$ ping 192.168.1.2
no answer from 192.168.1.2
usr/config$ ping192.168.1.254
```

```
PING 192.168.1.254: 56 data bytes
64 bytes from 192.168.1.254: icmp_seq=0. time=5. ms
64 bytes from 192.168.1.254: icmp_seq=1. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=2. time=0. ms
64 bytes from 192.168.1.254: icmp_seq=3. time=0. ms
----192.168.1.254 PING Statistics----
4 packets transmitted, 4 packets received, 0% packet loss
round-trIP (ms)   min/avg/max = 0/1/5
210.63.15.32 is alive
usr/config$
```

Figure 19-21 ping commend list

19.7.9 [pbook]

Phone Book function allows users to define their own numbers, which mapping to real IP address. It is effective only in peer-to-peer mode. When adding a record to Phone Book, users do not have to reboot the machine, and the record will be effective immediately.

```
usr/config$ pbook

Phonebook information and configuration
Usage:
pbook [-print [start_record] [end_record]]
pbook [-add [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-search [ip ipaddress] [name Alias] [e164 phonenumber]]
pbook [-insert [index] [ip ipaddress] [name Alias] [e164
phonenumber] [port numb
er]]
pbook [-delete index]
pbook [-modify [index] [ip ipaddress] [name Alias] [e164
phonenumber] [port numb
er]]

    -print      Display phonebook data.
    -add        Add an record to phonebook.
    -search     Search an record in phonebook.
    -delete     Delete an record from phonebook.
    -insert     Insert an record to phonebook in specified position.
    -modify     Modify an exist record.
```

```
Note:
    If parameter 'end_record' is omited, only record 'start_record' will
be disp
lay.
    If  both parameters 'end_record' and 'start_record' are omited, all
records
will be display.
    Range of ip address setting (0.0.0.0 ~ 255.255.255.255).
    Range of index setting value (1~100),
Example:
    pbook -print 1 10
    pbook -print 1
    pbook -print
    pbook -add name Test ip 210.59.163.202 e164 1001
    pbook -insert 3 name Test ip 210.59.163.202 e164 1001
    pbook -delete 3
    pbook -search ip 192.168.4.99
    pbook -modify 3 name Test ip 210.59.163.202 e164 1001

usr/config$
```

Figure 19-22 pbook commend list

Parameter Usages:

-print: Print out current contents of Phone Book. Users can also add index number, from 1 to 100, to the parameter to show specific phone number.

Note:

Index number: means the sequence number in phone book. If users do request a specific index number in phone book, Gateway will give each record a automatic sequence number as index.

-add: add a new record to phone book. When adding a record, users have to specify name, IP, and e164 number to complete the command.

--name: Name to represent caller.

--e164: e.164 number for mapping with IP address of caller

--ip: IP address of caller

--port: Call signal port number of caller

--drop : Drop e.164 number when dial out. 0 means to keep e.164 number, 1 means to drop e.164 number when dialing out.

--inert: Insert digits.(1~10 digits)

```
usr/config$ pbook –add name test e164 100 ip 192.168.13.78
```

-modify: modify an existing record. When using this command, users have to specify the record's index number, and then make the change.

```
usr/config$ pbook –modify 1 name test e164 5678 ip 192.168.1.10
port 1730 drop 0
```

-delete: delete a specific record. [pbook –delete 3] means delete index 3 record.

```
usr/config$ pbook –delete 3
```

PhoneBook Rules:

The e164 number defined in phone book will fully carry to destination. It is not just a representative number for destination's IP Address. In other words, user dial this e164 number to reach destination, destination will receive the number and find out if it is matched to its e164, including Line number in some particular device.

For example:

```
usr/config$ pbook -print

index    Name           IP                  E164           Port
==========================================
==============
1        74             192.168.13.74        74
------------------------------------------------------------
usr/config$
```

Figure 19-23 pbook -print commend

19.7.10 [pppoe]

Display PPPoE related information.

```
usr/config$ pppoe

PPPoE device information and configuration
Usage:
pppoe [-print]|[-open]|[-close]
pppoe [-dev on/off][-id username][-pwd password]

    -print      Display PPPoE device information.
```

```
    -dev        Enable(=1) or Disable(=0) device.
    -open       Open PPPoE connection.
    -close      Disconnect PPPoE connection.
    -id         Connection user name.
    -pwd        Connection password.
    -reboot     Reboot after remote host disconnection.

usr/config$
```

Figure 19-24 pppoe commend list

Parameter Usages:

-print: print PPPoE status.
-dev: Enable PPPoE Dial-up function
-open: Open the connection
-close: Close the connection
-id: Input the User name ID provided by ISP
-pwd: Input the User name password provided by ISP
-reboot: Reboot the PPPoE connection.

For example:

```
usr/config$ pppoe -print

PPPoE adapter information
    Device          : Enabled
    Status          : Not initialized
    User name       : pppoe
    Password        : *****
    Reboot          : No

usr/config$
```

Figure 19-25 pppoe –print commend list

19.7.11 [sysconf]

This command displays system information and configurations.

```
usr/config$ sysconf

System information and configuration
Usage:
```

```
sysconf [-print] [-idtime digit] [-bf digit] [-keypad dtmf]
        [-faxtype type][-2833type type][-lcdrop ON/OFF]
        [-droptime digit][-eod digit] [-callerid type]
        [-service used][-dtmfstart digits] [-dtmfend digits]
sysconf -print

-print          Display system overall information and configuration.
-idtime         Inter-Digits time.(1~10 sec)
-service        Specify gateway service type. (0: Dial in service,
                 1: HotLine service.)
-bf             BusyForward.(ON:1 / OFF:0)
-keypad          Select DTMF type: 0=In-band,
                                   1=RFC2833.
-faxtype        FAX Payload Type      (range:96~128
inter-used:100,102~105)
-2833type       RFC2833 Payload Type (range:96~128
inter-used:100,102~105)
-lcdrop         Disconnect Supervision(Loop Current Drop) (ON:1 /
OFF:0)
-droptime       Period of Loop Current Drop (ms)
-eod            End of Dial Digit setting(0: none, 1: *, 2: #)
-callerid       Caller ID Type setting, 0: Disable,
                                         1: FSK(BELLCORE),
                                         2: DTMF.
-dtmfstart      DTMF CallerID Start Symbol.
-dtmfstart      DTMF CallerID End Symbol.
Example:
  sysconf -keypad 0 -eod 2 -callerid 1

usr/config$
```

Figure 19-26 sysconf commend list

Parameter Usages:

-print: Print current sysconf settings.

-idtime: Set the duration (in second) of two pressed digits in dial mode as timed out. If after the duration user hasn't pressed next number, it will dial out all number pressed (1-10 seconds).

-service: set SIP Phone to be normal mode or under hotline mode.

(sysconf –service 0/1, 0 for normal service, 1 for hotline service.)

-bf Only working in Proxy mode and Peer-to-Peer mode (some previous version does not support in Peer-to-Peer mode). If the line1 is engaged as well as this function is enabled, the line2 will be ringing.

-keypad: DTMF replay type. When value is “1”, FXS Gateway will transfer DTMF signal via RTP payload as defined in RFC2833. When the value is set to “0”, the DTMF type is set as In-band.

-faxtype: FAX Payload Type. Rrange:96~128 inter-used:100,102~105.

-2833type: RFC2833 Payload Type. Range: 96~128 inter-used: 100, 102~105.

-lcdrop: Disconnect Supervision (Loop Current Drop) (ON:1 / OFF:0).

-droptime: Period of Loop Current Drop (ms).

-eod: It will transfer the DTMF in [#] if users disable the end of dial function. Users have to press the keypad in [#] if the end of dial function is enable.

Note:

User can also define IP address here in P2P mode, once user press “#”, Gateway will call out this IP address.

-callerid: Support Bell Core and DTMF callerID function. After the first ring at destination site, device will send line number as callerID to called site.

-dtmfstart: DTMF CallerID Start Symbol.

-dtmfstart: DTMF CallerID End Symbol.

For example:

```
usr/config$ sysconf -print

System information
        Gateway Service              : 0
        Inter-Digits time           : 3
        BusyForward                  : OFF
        Keypad DTMF type             : In-band
        End of Dial Digit           : #
        Caller ID Type               : x
        DTMF Caller ID Start Symbol : D
        DTMF Caller ID End Symbol    : C
        RFC2833 Payload Type         : 96
        FAX Payload Type            : 101
```

```
        Disconnect Supervision        : OFF
        Loop Current Drop Time(ms)    : 500
usr/config$
```

Figure 19-27 sysconf -print commend

19.7.12 [sip]

This command is to configure SIP related parameters.

```
usr/config$ sip

SIP stack information and configuration
Usage:
sip [-print] [-mode   pxmode] [-outpx IPaddmress]
sip [-px address] [-px2 address] [-domain domain] [-prefix
prefixstring]
    [-line1 number] [-line2 number] [-line3 number] [-line4 number]
    [-expire t1] [-port udpPort] [-rtp rtpPort]
sip -print

    -print      Display SIP stack information and configuration.
    -mode       Configure as Proxy mode:0/Peer-to-Peer
mode:1/Gateway mode:2.
    -px         Primary Proxy server address. (IPv4 address or dns
name)
    -px2        Secondary Proxy server address. (IPv4 address or dns
name)
    -pxport     Proxy server port.     (the port of proxy)
    -outpx      OutBound Proxy server address. (IPv4 address or dns
name)
    -transport SIP message transport type(TCP:0/UDP:1)
    -prefix     Specify prefix string, use it when UserID contains
alphabets
                (if UserID uses numerals, specify as null)
    -line1      TEL1 Phone number.
    -line2      TEL2 Phone number.
    -line3      TEL3 Phone number.
    -line4      TEL4 Phone number.
    -pbsearch   Search phone book     0:off/1:on.
    -expire     The relative time after which the message expires(0 ~
```

```
(2^31-1))
    -port       SIP local UDP port number (5060~5070), Default: 5060
    -rtp        RTP port number (2326~65534), Default: 16384
Example:
     sip -mode 1
     sip -px 210.59.163.171 -line1 70 -line2 71 -line3 72 -line4 73

usr/config$
```

Figure 19-28 sip commend list

Parameter Usages:

-mode: Configure as Proxy mode or Peer-to-Peer mode (0: Peer-to-Peer mode, 1: Proxy mode, Gateway Mode).

-px: to specify Proxy address when FXS Gateway is in proxy mode. Proxy address can be IPv4 address or DNS name.

-px2: to setting Secondary Proxy server address. Proxy address can be IPv4 address or DNS name.

-Proxy port: Set Proxy port for SIP-Phone to send message, default value is 5060, if there is no special request of Proxy server, please don't change this value.

-Outbound Proxy: Set IP Address or URL address (Domain Name Server must be configured. Please refer to Network Configure) of outbound Proxy server.

-transport: Provide setting SIP message transport type for TCP or UDP prot.

-prefix: when your username contains alphabets, for example sip1123, then specify the prefix string as "sip".

-Provide setting SIP message transport type for TCP or UDP prot.

-line1: assign line 1 number.

-line2: assign line 2 number.

–pbsearch: enable/disable phone book search function under Proxy Mode. If user enabled this function, SIP-Phone will search dialed number in phone book to see if there is any matched table before send to Proxy server, and if there is a matched data in phone book, SIP-Phone will make call to related IP address.

-expire: this parameter is used to inform proxy server the valid duration of the registration information.

-port: SIP local UDP port which uses to listen incoming SIP Messages.

-rtp: Specify the RTP received port number.

Note: *One will need to configure port and rtp parameters only when you deploy two or more sets behind the IP sharing device (Router).*

For example:

```
usr/config$ sip –print

    Run Mode                  : PEER-2-PEER MODE
    Prefix string             : null
    Line1                     : 1001
    Line2                     : 1002
    Line3                     : 1003
    Line4                     : 1004
    pbook search              : OFF
    SIP listen port           : 5060
    RTP receive port          : 16384
usr/config$
```

Figure 19-29 sip –print commend list

```
usr/config$ sip –print

    Run Mode                  : PROXY MODE
    Primary Proxy address     : 10.1.1.2
    Secondary Proxy address   : null
    Proxy port                : 5060
    OutBound Proxy address    : null
    Transport Type (TCP/UDP) : UDP
    Prefix string             : null
    Line1                     : 1001
    Line2                     : 1002
    Line3                     : 1003
    Line4                     : 1004
    pbook search              : OFF
    SIP listen port           : 5060
    RTP receive port          : 16384
    Expire                    : 3600
usr/config$
```

Figure 19-30 sip –print commend list

```
usr/config$ sip -print

    Run Mode                    : Gateway MODE
    Primary Proxy address       : 10.1.1.2
    Secondary Proxy address     : null
    Proxy port                  : 5060
    OutBound Proxy address      : null
    Transport Type(TCP/UDP)     : UDP
    Prefix string               : null
    Line1                       : 1001
    pbook search                : OFF
    SIP listen port             : 5060
    RTP receive port            : 16384
    Expire                      : 60
usr/config$
```

Figure 19-31 sip –print commend list

19.7.13 [security]

This command is used to configure the account information included username and password obtained from the service provider

```
usr/config$ security

Secuirty information and configuration
Usage:
 security [-line number][-name username] [-pwd password]
 security [-print]

 -print          Display system account information and configuration.
 -line           Specify which line number you want to set the account.
 -name             Specify user name.
 -pwd            Specify password.
Example:
  security -line 1 -name 1001 -pwd 1001
  security -line 2 -name 1002 -pwd 1002
  security -line 3 -name 1003 -pwd 1003
  security -line 4 -name 1004 -pwd 1004

usr/config$
```

Figure 19-32 security Commend List

Parameter Usages:

-print: print current setting in security command.

-line: Specify which line number you want to set into the account

Note: *If you have only one account, you can set into line1 or line2 using this parameter. For example, if you set the account into line1, line1 can accept incoming calls.*

-name: Specify the username of your account information.

-pwd: Specify the password of your account information.

For example:

```
usr/config$ security -print

 Line1 account information
    Username     : 1001
    Password     : ***
 Line2 account information
    Username     : 1002
    Password     : ***
 Line3 account information
    Username     : 1003
    Password     : ***
 Line4 account information
    Username     : 1004
    Password     : ***
usr/config$
```

Figure 19-33 security –print commend list

19.7.14 [voice]

The voice command is associated with the audio setting information. There are four voice codecs supported by Gateway.

```
usr/config$ voice

Voice codec setting information and configuration
Usage:
voice [-send [G723 ms] [G711U ms] [G711A ms] [G729 ms] ]
      [-volume [voice level] [input level] [dtmf  level]]
```

```
      [-nscng [G711U used1] [G711A used2] [G723 used3]]
      [-echo used] [-mindelay t1] [-maxdelay t2]
voice -print
voice -priority [G723] [G711U] [G711A] [G729]

    -print      Display voice codec information and configuration.
    -send       Specify sending packet size.
                G.723   (30/60 ms)
                G.711U (20/40/60 ms)
                G.711A (20/40/60 ms)
                G.729   (20/40/60/80 ms)
    -priority   Priority preference of installed codecs.
                G.723
                G.711U
                G.711A
                G.729
    -volume     Specify the following levels:
                voice volume (0~63, default: 25),
                input gain (0~38, default: 25),
                dtmf   volume (0~31, default: 23),
    -nscng      No sound compression and CNG. (G.723.1 only, On=1,
Off=0).
    -echo       Setting of echo canceller. (On=1, Off=0, per port
basis).
    -mindelay   Setting of jitter buffer min delay. (0~150, default: 90).
    -maxdelay   Setting of jitter buffer max delay. (0~150, default:
150).
Example:
    voice -send g723 60 g711u 60 g711a 60 g729 60
    voice -volume voice 20 input 32 dtmf 27
    voice -echo 1 1 1 1
usr/config$
```

Figure 19-34 voice commend list

Parameter Usages:

-print: Print current voice information and configurations.

-send: To define packet size for each codec. 20/40/60/80 ms means to send a voice packet per 20/40/60/80 milliseconds. The smaller the packet

size, the shorter the delay time. If network is in good condition, smaller sending packet size is recommended. In this parameter, 20/40/60ms is applicable to G.711u/a law, 20/40/60ms is applicable to G.729 codec, while 30/60ms is applicable to G.723.1 codec.

-priority: Codec priority while negotiating with other h323 device. This parameter determines the listed sequence in h.245 TCS message. The codec listed in left side has the highest priority when both parties determining final codec. User can also select the particular codec without others.

```
usr/config$ voice –priority g723   (only select this codec)
usr/config$ voice –priority g723 g729 g711u g711a (select four
codecs, and g723 is the first choice)
```

-volume: There are three adjustable value.

--voice volume stands for volume, which can be heard from Gateway side(range 0~63, default: 28).

--input gain stands for volume, which the opposite party hears (range 0~38, default: 28).

--dtmf volume stands for DTMF volume/level, which sends to its own Line (range 0~31, default: 23).

-nscng: Silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only.

```
usr/config$ voice -nscng g723 1
```

-echo: On or Off the activate each canceler.

-mindelay: The minimum jitter buffer size (Default value= 90 ms).

-maxdelay: The minimum jitter buffer size (Default value= 150 ms).

```
usr/config$ voice –mindelay 90 –maxdelay 150
```

Note:

Be sure to know well the application before you change voice parameters because this might cause incompatibility.

For example:

```
usr/config$ voice -print

Voice codec setting relate information
    Sending packet size   :
            G.729A        : 40 ms
            G.723.1       : 60 ms
```

```
            G.711U          : 40 ms
            G.711A          : 40 ms
    Priority order codec :
            g729a g7231 g711u g711a
    Volume levels           :
            voice volume : 25
            input gain    : 25
            dtmf volume   : 23
 No sound compress & CNG :
            G.729A          : There is no setting
            G.723.1         : Off
            G.711(U-Law) : Off
            G.711(A-Law) : Off
    Echo canceller          : On On On On
    Jitter buffer           :
            Min Delay     : 90
            Max Delay     : 150
usr/config$
```

Figure 19-35 voice –print commend

19.7.15 [support]

This command provides some extra functions that might be needed by users.

```
usr/config$ support

Special Voice function support manipulation
Usage:
support [-t38 enable]
        [-busy number] [-noanswer number] [-uncon number]
support -print
    -t38        T.38(FAX) enabled/disabled.
    -busy       Busy Forward number.(if empty, please fill "null")
    -noanswer No Anser Forward number.(if empty, please fill "null")
    -uncon      Unconditional Forward number.(if empty, please fill
"null")
Example:
    support   -t38 1
    support   -busy 1001
```

```
    support   -uncon null

usr/config$
```

Figure 19-36 support commend list

Parameter Usages:

-print: print current settings in support command.

-t38: Enable or disable T.38 fax ability. The function is will automatically defer codec (G.723 or G.729a) to T.38 when FAX signal is detected.

-busy: Provide setting busy forwrd to other number, when you setting this function. Then this channel busy, auto forward to setting phone number.

-noanswer: Provide setting noanser forwrd to other number, when you setting this function. Then this channel not answer, auto forward to setting phone number.

-uncon: Provide setting noanser forwrd to other number, when you setting this function. Then all call this channel number, will all auto forward to setting phone number.

Note:

It is not recommended to change the value in this command, only if users do know well the application. This might cause incompatibility with other devices.

For example:

```
usr/config$ support -print

Special Voice function support manipulation
    T.38(FAX) support : Disabled
Forward Numbers
    Busy Forward number: 0123456789
    NoAnswer Forward number: 0212345678
    Uncondition Forward number:
usr/config$
```

Figure 19-37 support –print commend list

19.7.16 [tos]

IP Packet ToS (Type of Service)/ Differentiated Service configuration.

```
usr/config$ tos

IP Packet ToS(type of Service)/Differentiated Service configuration
Usage:
tos [-rtptype dscp]
tos [-sigtype dscp]
tos -print
      [-rtpreliab mode]
tos -print

Example:
    tos -rtptype 7 -sigtype 0
usr/config$
```

Figure 19-38 tos commend list

Parameter Usages:

-rtptype: the packages of voice (0~63).

-sigtype: the package of call signal (0~63).

Note:

The value of rtptype and sigtype is from 0 to 63. It's working if it supported by your network.

For example:

```
usr/config$ tos –print

IP Packet ToS information:
    Signalling Packet:
            DSCP Code : 0
    Media Packet      :
            DSCP Code : 0

usr/config$
```

Figure 19-39 tos -print commend

19.7.17 [phone]

Gateway progress tone is configurable. Default tone value is set according to U.S. tone specification. Users may adjust the values according

to their own country's tone specification or users-defined tone specification.

```
usr/config$ phone

Phone ringing , ringback tone , busy tone , dial tone setting and notes
Usage:

phone [-ring [freq    ] [ringON   ] [ringOFF ] [ringLevel]]
      [-rbt   [freqHi ] [freqLo   ] [freqHiLev] [freqLoLev]
              [Tone1ON] [Tone1OFF] [Tone2ON   ] [Tone2OFF ]]
      [-bt    [freqHi ] [freqLo   ] [freqHiLev] [freqLoLev]
              [Tone1ON] [Tone1OFF] [Tone2ON   ] [Tone2OFF ]]
      [-dt    [freqHi ] [freqLo   ] [freqHiLev] [freqLoLev]
              [Tone1ON] [Tone1OFF] [Tone2ON   ] [Tone2OFF ]]
      [-flash [freqLo ] [freqHi ]]
      [-level [loopCurrentLevel] [onhookLineVoltageLevel ]]
phone [-print [ring]|[rbt]|[bt]|[dt]|[flash]]

      -print   Display phone ringing/tone configuration.
               ring :    ringing
               rbt  :    ringback tone
               bt   :    busy tone
               dt   :    dial tone
               flash:    flash tone
      -ring    ringing configuration set .
      -rbt     ringback tone configuration set .
      -bt      busy tone configuration set .
      -dt      dial tone configuration set .
      -flash   flash configuration set .
      -level   Loop Current and On-Hook Line Voltage level set .
Note:
      ringing frequency    : 15 ~ 100    (Unit : Hz)
      ringing ring ON/OFF : 0   ~ 8000   (Unit : ms)
      ringing level        : 0   ~ 94     (Unit : V)
      tone     frequency    : 0   ~ 65535 (Unit : Hz)
      tone     freqLevel    : 0   ~ 65535 (Unit : mVrms)
      tone     Tone ON/OFF : 0   ~ 8000   (Unit : ms)
      level    loopCurrent : 0   ~ 7      (20mA ~   41mA, Step :
3mA)
```

```
      level    OnHookVol    : 0   ~ 63     (   0V ~ 94.5V, Step : 1.5V)
Example:
      phone -print rbt
      phone -ring 20 2000 4000 94
      phone -rbt 480 440 125 105 2000 4000 2000 4000
      phone -bt 620 480 125 105 500 500 500 500
      phone -dt 440 350 96 96 8000 0 8000 0
      phone -flash 400 800
      phone -level 1 32

usr/config$
```

Figure 19-40 phone commend list

Parameter Usages:

-print: Print current call progress tone configurations (ring: ring tone, rbt: ring back tone, bt: busy tone, dt: dial tone). This parameter should be accompanied with tone type.

-ring: To set RING tone value. The played tone type, when Gateway is receiving a call.

-rbt: To set RingBackTone value. The played tone type, when Gateway receives a Q.931 Alerting message. In condition that Gateway is the originate side.

-bt: To set BusyTone value. The played tone type, when destination is busy.

-dt: To set DialTone value. The played tone type, when hook off a phone set of workable Gateway.

-flash: Set the detective flash range in ms, for example, 300-500 ms.

Note:

For tone simulation, Gateway adopts dual frequencies as traditional telephone does. If users want to have their own call progress tone, they can change the value of tones. High and Low frequency/level/cadence can be configured respectively.

For example:

```
usr/config$ phone -print rbt
Phone ringback tone paramter
    Ringback Tone frequency high        : 480
    Ringback Tone frequency low         : 440
```

```
    Ringback Tone frequency high level   : 155
    Ringback Tone frequency low level    : 155
    Ringback Tone tone1 on               : 2000
    Ringback Tone tone1 off              : 4000
    Ringback Tone tone2 on               : 2000
    Ringback Tone tone2 off              : 4000

usr/config$
```

Figure 19-41 phone –print rbt commend

```
usr/config$ phone -print rbt

Phone ring back tone paramter
    Ringback Tone frequency high         : 440
    Ringback Tone frequency low          : 480
    Ringback Tone frequency high level   : 13
    Ringback Tone frequency low level    : 13
    Ringback Tone tone1 on               : 100
    Ringback Tone tone1 off              : 200
    Ringback Tone tone2 on               : 100
    Ringback Tone tone2 off              : 200

usr/config$
```

Figure 19-42 phone –print rbt commend

```
usr/config$ phone -print bt

Phone busy tone paramter
    Busy Tone frequency high         : 620
    Busy Tone frequency low          : 480
    Busy Tone frequency high level   : 155
    Busy Tone frequency low level    : 155
    Busy Tone tone1 on               : 500
    Busy Tone tone1 off              : 500
    Busy Tone tone2 on               : 500
    Busy Tone tone2 off              : 500

usr/config$
```

Figure 19-43 phone –print bt commend

```
usr/config$ phone -print dt

Phone dial tone paramter
    Dial Tone frequency high         : 440
    Dial Tone frequency low          : 350
    Dial Tone frequency high level   : 155
    Dial Tone frequency low level    : 155
    Dial Tone tone1 on               : 8000
    Dial Tone tone1 off              : 0
    Dial Tone tone2 on               : 8000
    Dial Tone tone2 off              : 0
usr/config$
usr/config$
```

Figure 19-44 phone –print dt commend

```
usr/config$ phone -print flash

Phone flash paramter
    Flash frequency high : 800
    Flash frequency low  : 400

usr/config$
```

Figure 19-45 phone –print flash commend

19.7.18 [bureau]

To set Hotline function must be under Peer-to-Peer mode and switch to hotline mode.

```
usr/config$ bureau

Bureau line setting information and configuration
Usage:
bureau   [-hotline [Port DestIP TELnum]]
bureau -print

    -print      Display Bureau line information and configuration.
    -hotline    Set Hot line information. (Port range: 1~6)
```

```
Note:
    Hotline feature should be used together with:
        $sysconf -service 1 (HotLine service)
        $sip     -mode     0 (peer-to-peer mode)
Example:
    bureau -hotline 1 192.168.4.69 628 2 192.168.4.200 999

usr/config$
```

Figure 19-46 bureau commend list

Parameter Usages:

-print: Display current Hotline table.

-hotline: Define Line1 and Line2's Hotline table respectively. The table is included [Line number], [destination IP Address] and [destination Port or Number].

For example

1. Destination is a FXS device, 628 is its Line1 number

usr/config$ bureau -hotline 1 200.168.4.69 628

User picks up the Line1, and then hears the ringback tone generated from destination. Of course, 628 are ringing simultaneously.

2. Destination is a FXO device, Port 3 is the one connected to PSTN Line.

usr/config$ bureau -hotline 1 200.168.4.69 82265699

User picks up the Line1, and then hears the ringback tone generated from destination. Simultaneously, 82265699 numbers is the destination, which is dialed from Port 3.

(Above FXO example is subject to the FXO configurations, such as 2nd dial ON or OFF.)

For example:

```
usr/config$ bureau -print

Bureau line setting relate information
    Hot line table

==========================================
==
```

```
    Port      Destination Address       Remote TEL
    ------------------------------------------
     1          192.168.13.78           629

==========================================================
==

usr/config$
```

Figure 19-47 bureau –print commend list

19.7.19 [rom]

ROM file information and firmware upgrade function.

```
usr/config$ rom

ROM files updating commands
Usage:
rom [-print] [-app] [-boot] [-dsptest] [-dspcore] [-dspapp]
    [-ht] [-method used] [-boot2m]
    -s TFTP/FTP server ip -f filename
rom -print
    -print      show versions of rom files. (optional)
    -app         update main application code(optional)
    -boot       update main boot code(optional)
    -boot2m      update 2M code(optional)
    -ht         updata Hold Tone PCM file(optional)
    -dsptest    update DSP testing code(optional)
    -dspcore     update DSP kernel code(optional)
    -dspapp      update DSP application code(optional)
    -s          IP address of TFTP/FTP server (mandatory)
    -f          file name(mandatory)
    -method      download via TFTP/FTP (TFTP: mode=0, FTP:
mode=1)
    -ftp        specify username and password for FTP
Note:
    This command can run select one option in 'app', 'boot',
    , 'dsptest', 'dspcore', and 'dspapp'.
Example:
    rom -method 1
```

```
    rom -ftp vwusr vwusr
    rom -app -s 192.168.4.101 -f app.bin

usr/config$
```

Figure 19-48 rom commend list

Parameter Usages:

-print: show versions of all rom files.

-app, boot, boot2m, dsptest, dspcore, dspapp, ht: To update main Application program code, Boot code, DSP testing code, DSP kernel code, or DSP application code, and Hold Tone file.

Note:

Most of all, the Rom file needed to get upgrade is App or Boot2m. Please check the exactly Rom file before doing download procedure.

-s: To specify TFTP server's IP address when upgrading ROM files.

-f: To specify the target file name, which will replace the old one.

-method: To decide using TFTP or FTP as file transfer server. [0] stands for TFTP, while [1] stands for FTP.

-ftp: If users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files.

For example:

```
usr/config$ rom –print

Download Method   :   TFTP
       Boot Rom   :   sdboot.200
Application Rom   :   4asip0519.BIN
        DSP App   :   48302ce3.140
     DSP Kernel   :   48302ck.140
  DSP Test Code   :   483cbit.bin
      Hold Tone   :   holdtone.101

usr/config$
```

Figure 19-49 rom –print commend list

19.7.20 [passwd]

For security concern, users have to input the password before entering configuration mode. [passwd] command is for password setting purpose.

```
usr/config$ passwd

Password setting information and configuration
Usage:
passwd [-set [Login name] [Password]][-clean]

passwd -set      Loginname Password.
       -clean   Clear all password stored in flash.
Note:
   1. Loginname can be only 'root' or 'administrator'
   2. passwd -clean will clear all passwd stored in flash,
      please use it with care.
Example:
   passwd -set root Your_Passwd_Setting
   passwd -clean

usr/config$
```

Figure 19-50 passwd commend List

Parameter Usages:

–set: Set login name and password, input login name then input new password.

-clean: Will clear all password setup, and change null.

Note:

Gateway Login name only use [root] or [administrator]. [root] and [administrator] have the same authorization, except commands that can be excuted by [Login name: root] only [passwd –set root], [rom –boot], [room-boot2m] and [flash –clean].

For example:

```
usr/config$ passwd -set root root1234

Setting
login: root
Password: root1234
OK
usr/config$
```

Figure 19-51 passwd –set commend

```
sr/config$ passwd -clean

Please wait a moment!!

Clean password OK.
usr/config$
```

Figure 19-52 passwd –clean commend