



**User's Manual**

# **IP Telephone Gateway**

**Model No.: SP5001/S**

<http://www.micronet.info>

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## About this User's Manual

This user's guide gives hardware specifications and explains web configuration and command line configuration for the FXS Gateway SP5001/S.

## Online Upgrade

Please refer to <http://www.micronet.info/> for additional support documentation.

## 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 to type one or more characters.

Predefined choices are in **Bold Arial** Font.

A single keystroke is in Arial font and enclosed in square brackets. **[Enter]** means the Enter.

For brevity's sake, we will use "e.g.," as shorthand for "for instance", and "i.e.," for "that is" or "in other words."

## Related Documentation

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

Please refer to <http://www.micronet.info/> for additional support documentation.

# 1. VoIP Gateway Overview

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

## 1.1. Overview

SP5001/S FXS Gateway integrated data and voice in one device, which based on IETF RFC 3261 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 into Voice over IP world.

## 1.2. Features

- IETF RFC 3261 bis-09 compliance
- Configuration interface: RS-232 Console  
TELNET  
HTTP web management
- Transmit Voice and T.38 fax simultaneously
- Provides call progress tone
- E.164 Common Dial Plan
- DTMF Dialing
- Inband / Outband DTMF
- TFTP/FTP software upgrade
- Remote configuration/ reset
- LED indication for system status
- Support Static IP, DHCP and PPPoE
- EMS support (Element Management System)
- Dimensions: 165(W) x 29(H) x 139 mm (D)

### 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.
- One 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 default profile

### **IP Parameters**

IP Address = 10.1.1.3

Subnet mask = 255.0.0.0

Default gateway = 10.1.1.254

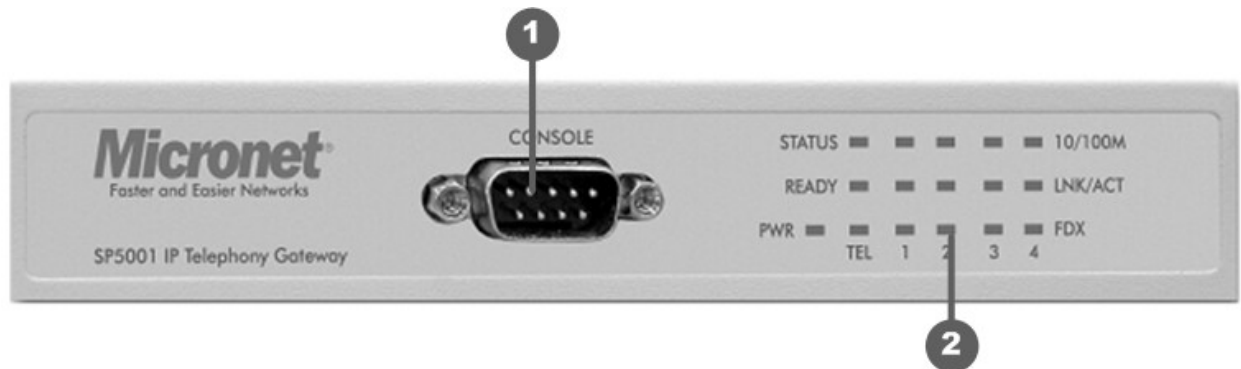
Console, Telnet and Web Login Password

Login = root

Password = Null (default)

## 1.4. Hardware Specifications

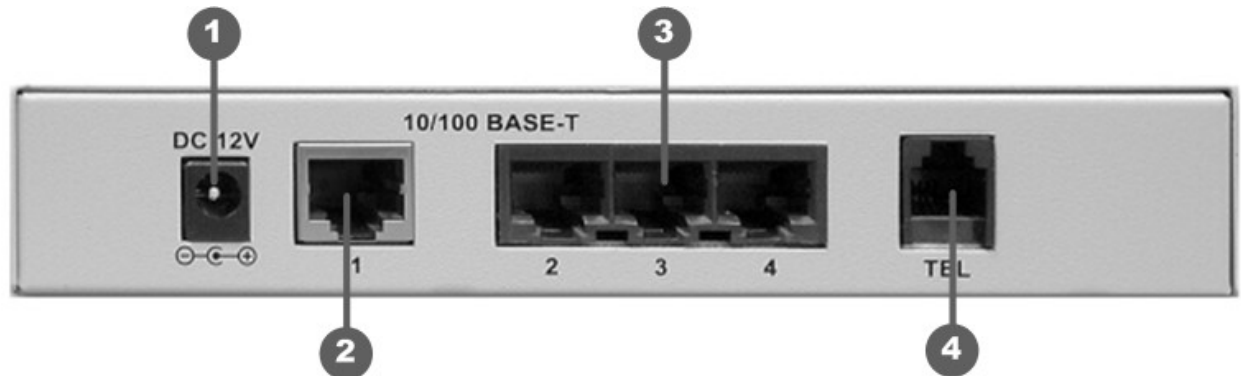
### Front Panels



(1) RS232 COM Port (9600, n, 8, 1)

(2) LED Status Display

### Back Panel



(1) Power Jack

(2) WAN Port

(3) LAN Ports

(4) RJ-11 Port (FXS Port)

## LED Status Functions:

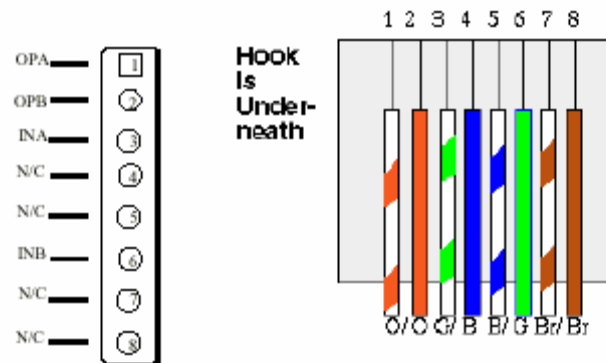
| LEDs    | Functions   | Status | Active        | Description                                                                 |
|---------|-------------|--------|---------------|-----------------------------------------------------------------------------|
| PWR     | Power       | Green  | On            | The Power is on                                                             |
|         |             |        | Off           | The Power is off                                                            |
| TEL     | TEL         | Red    | On            | The Telephone is Off-Hook.                                                  |
|         |             |        | Off           | The Telephone is On-Hook.                                                   |
| READY   | Ready       | Green  | Slow Blinking | Normal mode.                                                                |
|         |             |        | Fast Blinking | Downloading mode.                                                           |
| STATUS  | Status      | Green  | On            | Proxy mode and has registered to Proxy server successfully                  |
|         |             |        | Blinking      | Proxy mode and has not yet registered to Proxy server.<br>Downloading mode. |
|         |             |        | Off           | Peer-to-Peer Mode.                                                          |
| ACT/LNK | LAN         | Green  | On            | Ethernet connection has been established                                    |
|         |             |        | Blinking      | Ethernet data is being transmitted / received.                              |
|         |             |        | Off           | No connection                                                               |
| 100/10  | LAN         | Green  | On            | The 100M LAN is connected.                                                  |
|         |             |        | Off           | The 10M LAN is connected.                                                   |
| FDX     | Full / Half | Green  | On            | Transmitting mode is full duplex.                                           |
|         |             |        | Off           | Transmitting mode is half duplex.                                           |



## Connection Ports

### Ethernet Port:

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

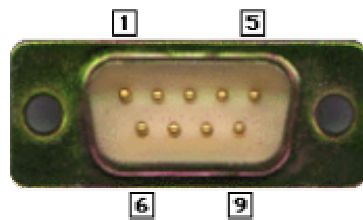


Ethernet connector ( LAN )

### 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:

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

**12V DC Port:** DC Power supply.

## 2. Getting Started

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.

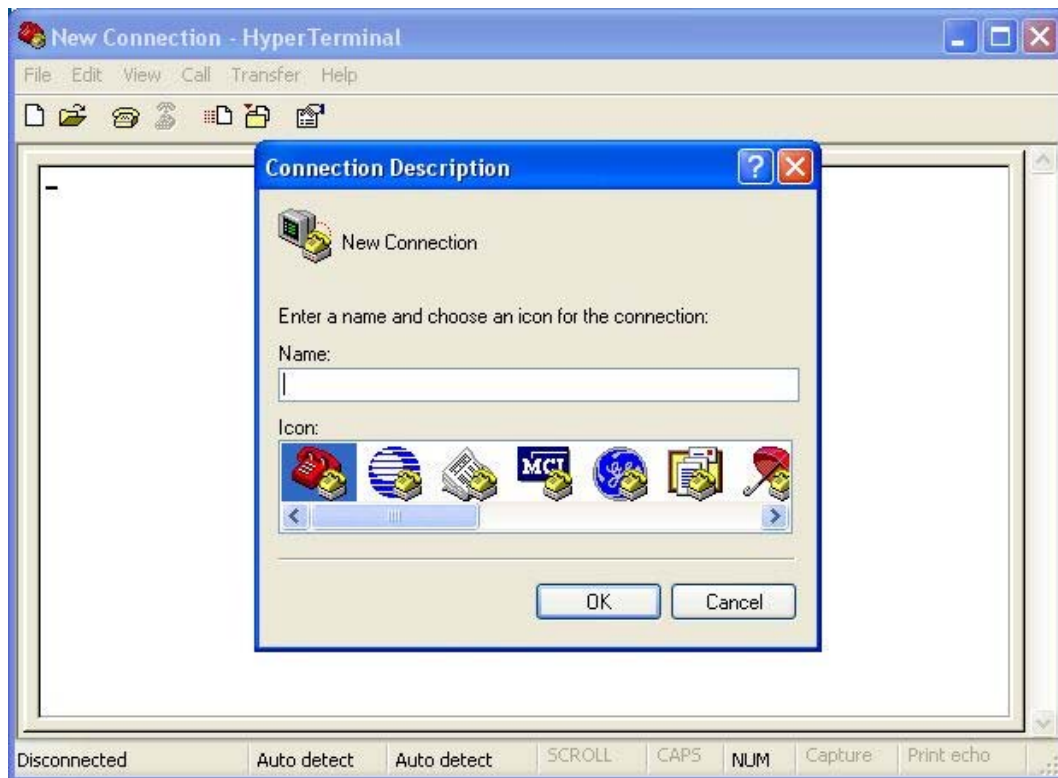
### 2.1. Setting Up the Gateway

For the initial configuration of your VoIP Gateway, you need to use terminal emulator software (Hyper Terminal for example) 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.

1. Connect your computer and VoIP gateway with serial cable



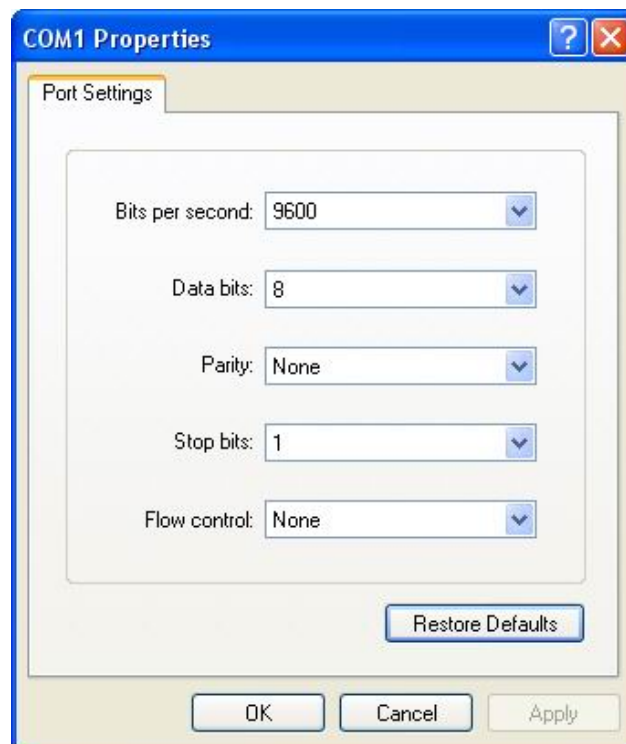
2. From Windows (Windows XP), click  
**Start → Programes → Accessories → Communications → Hyper Terminal**



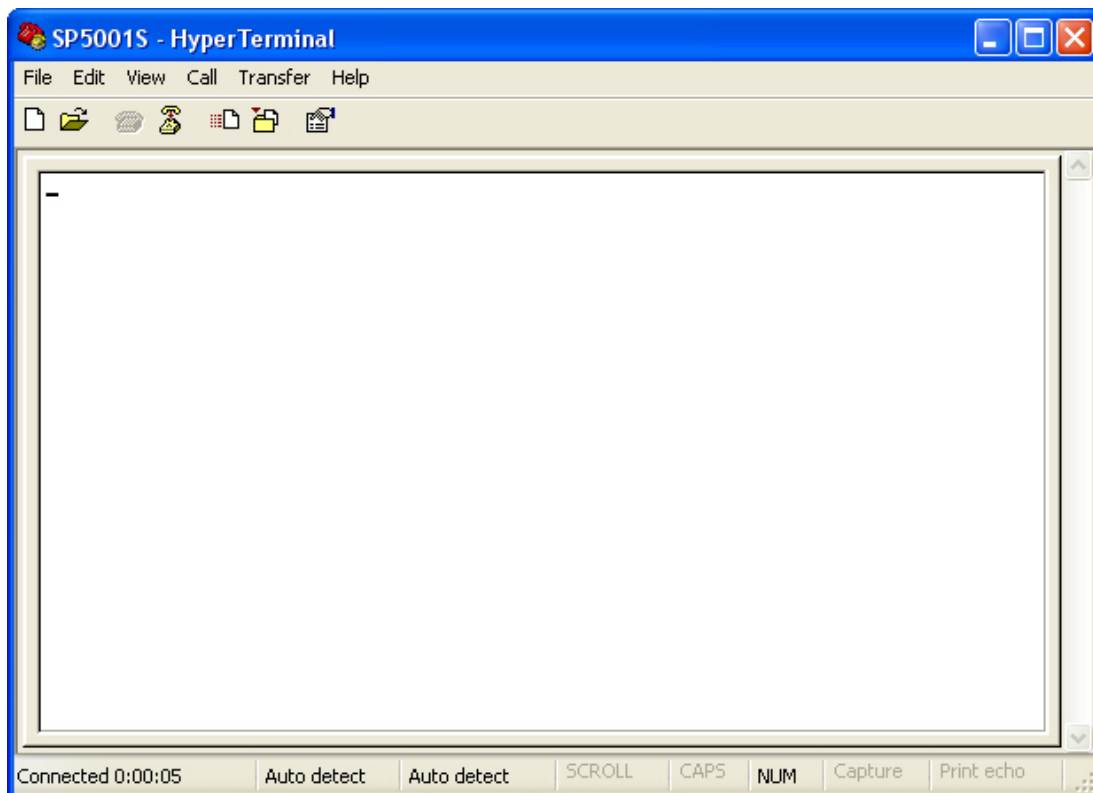
3. Select the COM port



#### 4. Configure the COM port Properties



Terminal Program is ready

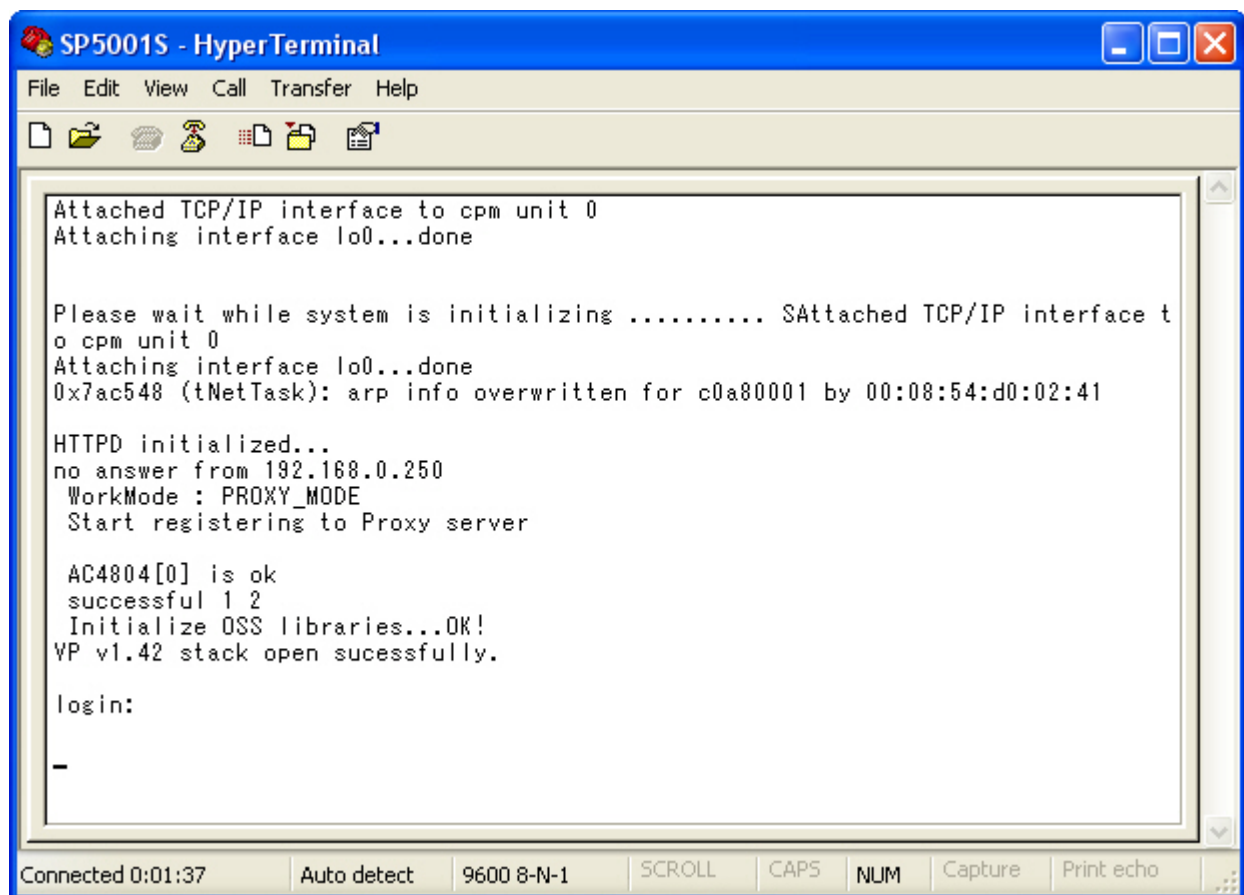


## 5. Power On the Gateway

### Caution:

To prevent damage to the VoIP Gateway, first make sure you have the correct AC power adapter. Please check the power specifications before you connect to the gateway.

It takes about 40 seconds to complete booting, once the **login:** showed, the FXS gateway has booted completely and ready to set the configurations.



```
SP5001S - HyperTerminal
File Edit View Call Transfer Help

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

Please wait while system is initializing ..... SAttached TCP/IP interface t
o cpm unit 0
Attaching interface lo0...done
0x7ac548 (tNetTask): arp info overwritten for c0a80001 by 00:08:54:d0:02:41

HTTPD initialized...
no answer from 192.168.0.250
WorkMode : PROXY_MODE
Start registering to Proxy server

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

login:
-

Connected 0:01:37 Auto detect 9600 8-N-1 SCROLL CAPS NUM Capture Print echo
```

## 2.2. Configure the FXS gateway IP address

```
Subnet mask      : 255.0.0.0
Default gateway  : 10.1.1.254
NAT enabled      : OFF
DHCP startup     : OFF
SNTP             : mode=1
                  server 168.95.195.12
                  time zone : GMT+8
                  cycle=1024 mins

IPSharing        : no IPSharing device.

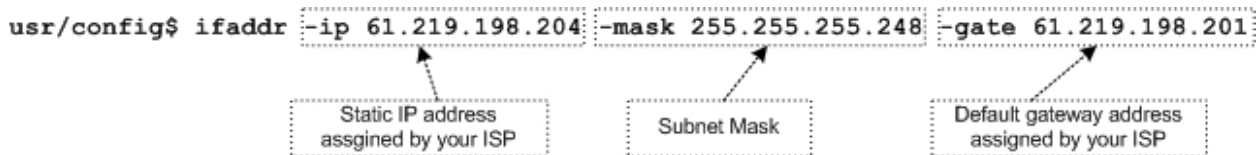
Primary DNS Server : 168.95.1.1
Secondary DNS Server : 168.95.1.1

EMS IP Address    : 192.168.0.250
EMS User ID       : vwusr
EMS Password      : vwusr
EMS cycle time    : 0
usr/config$

usr/config$

usr/config$ ifaddr -ip 61.219.198.204 -mask 255.255.255.248 -gate 61.219.198.201
```

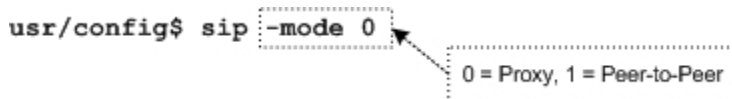
Use **[ifaddr]** command to configure the IP address



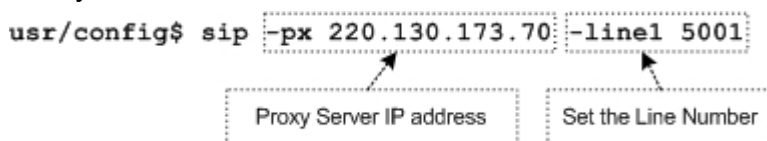
## 2.3. Configure Proxy Mode

1. Use **[sip]** command to configure Application Mode

Proxy Mode



Proxy Server IP address and Line Number



**Note:** The Line Number may be same as your account number, depend on your service provider.

2. Use **[security]** command to configure the account and password

```
usr/config$ security -line 1 -name 5001 -pwd 5001
```



**Note :** For the SP5001/S, the gateway has Line 1 only

## 2.4. Saving your configurations

Use the **[commit]** to save the configurations

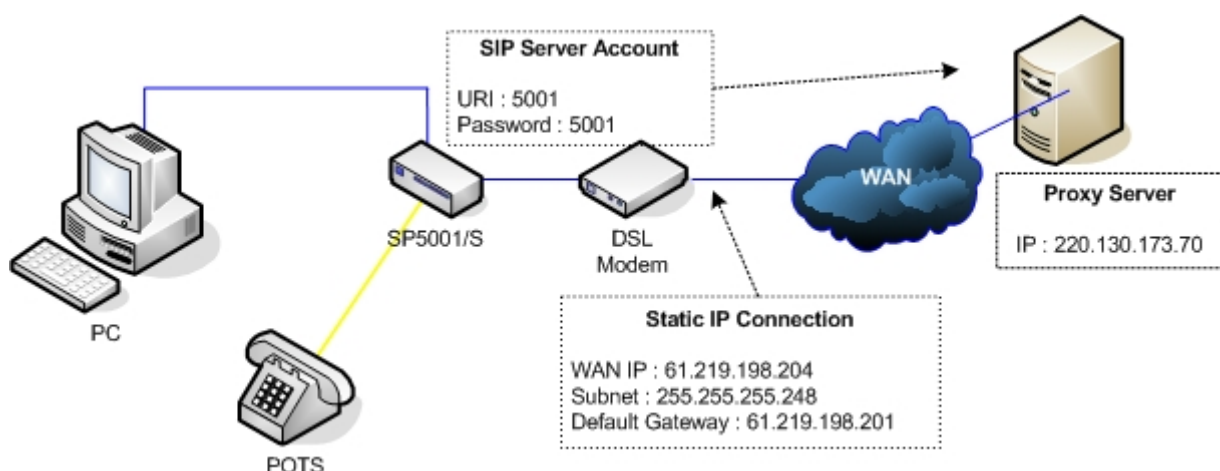
```
usr/config$ commit
```

Use the **[reboot]** to re-start your gateway

```
usr/config$ reboot
```

**Note :** After changed the configurations, you must use **[commit]** and **[reboot]** commands to take new configurations effective.

## 2.5. Example Diagram

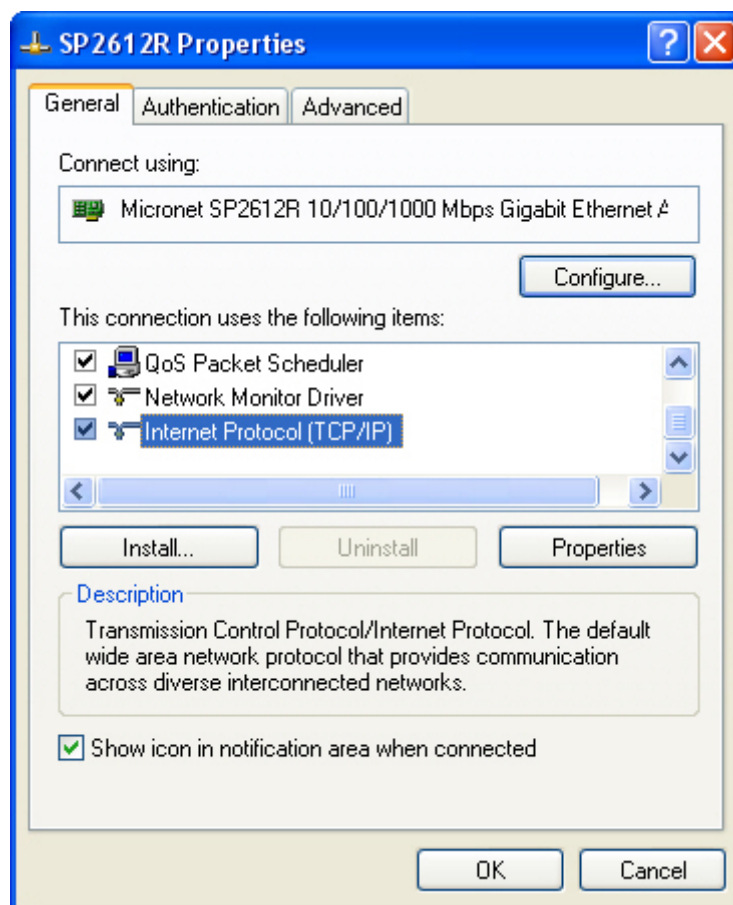


## 3. Web Configuration

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

### 3.1. Setting Up the TCP/IP Protocol

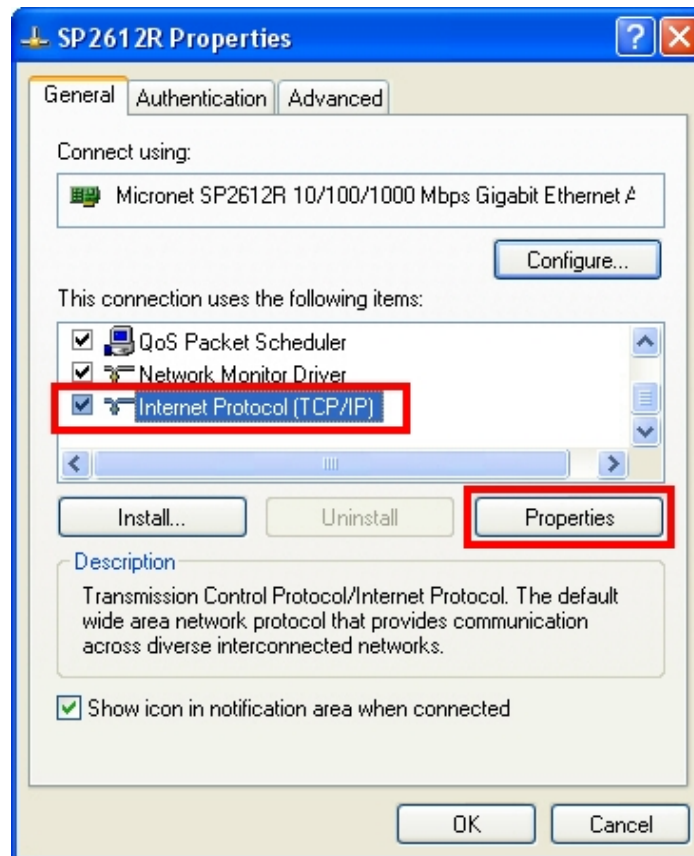
1. Open your PC network adapter **Properties**



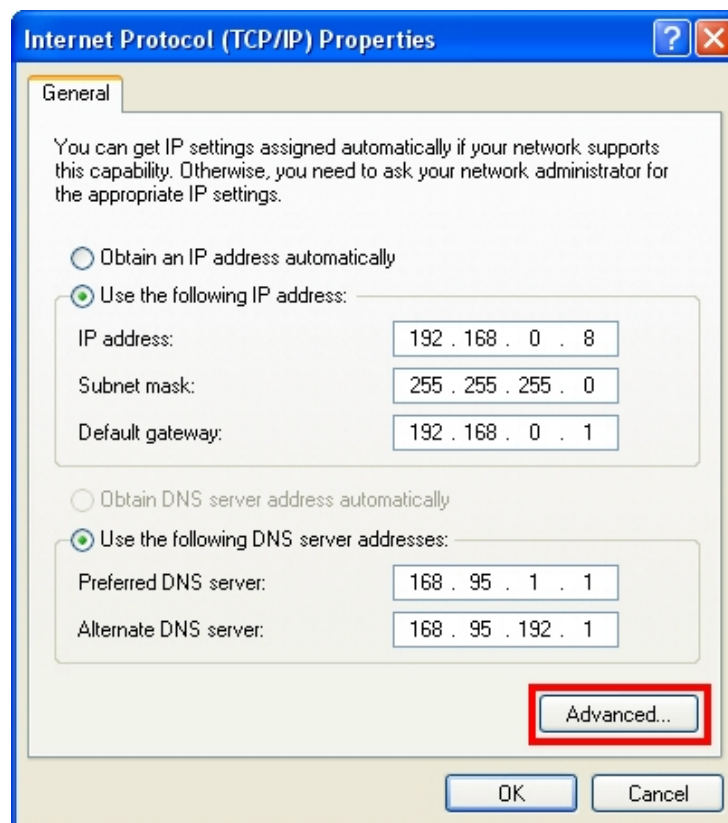
Note :If you are not sure about the TCP/IP Protocol, check with your network administrator.

2. Select the **Internet Protocol (TCP/IP)** and click [**Properties**]

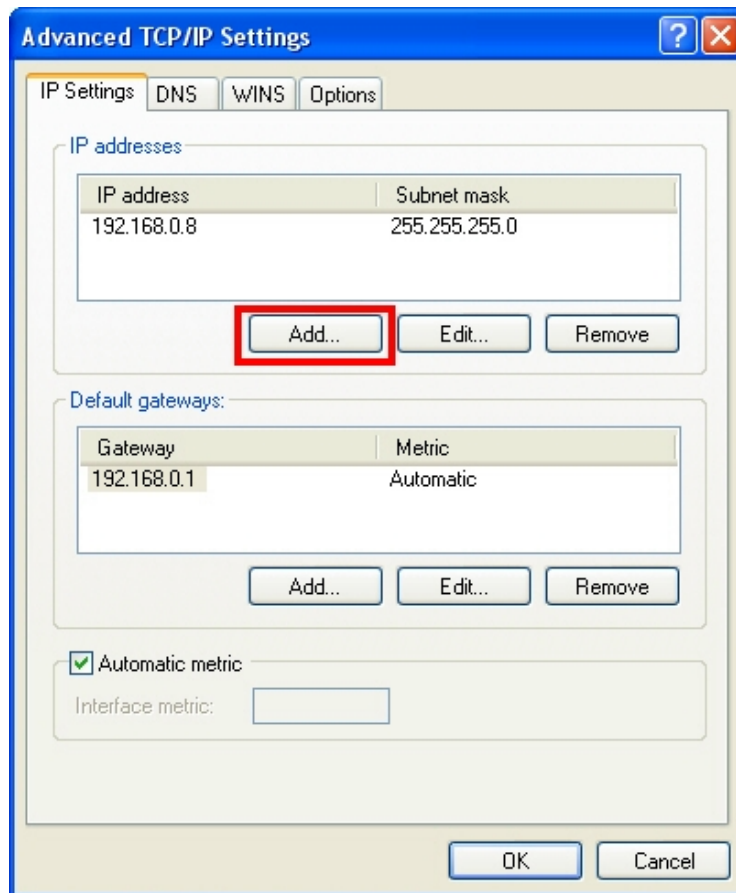




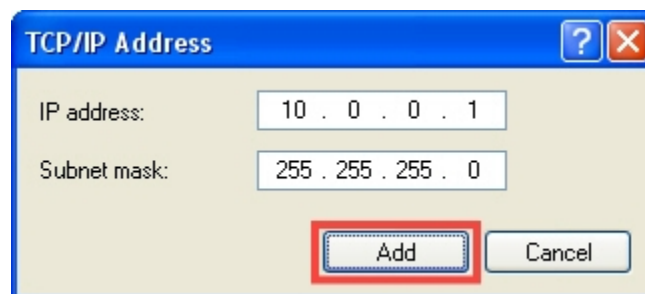
3. Click the [Advanced...]



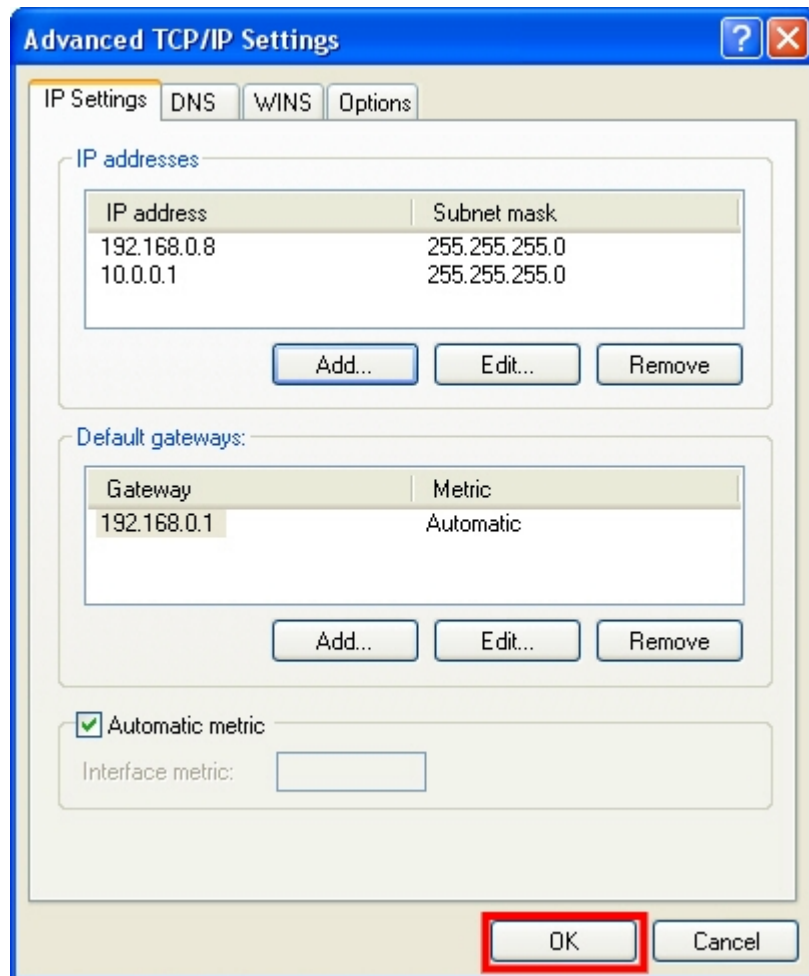
4. On the **Advanced TCP/IP Settings** window, click **[Add...]**



5. Enter the IP address and Subnet mask address and click **[Add]**



6. You have now two sets of IP address, and click **[OK]** to close the Advanced TCP/IP Settings window



7. Click **[OK]** button, to complete the TCP/IP installation.

#### 8. Power Up Your VoIP Gateway

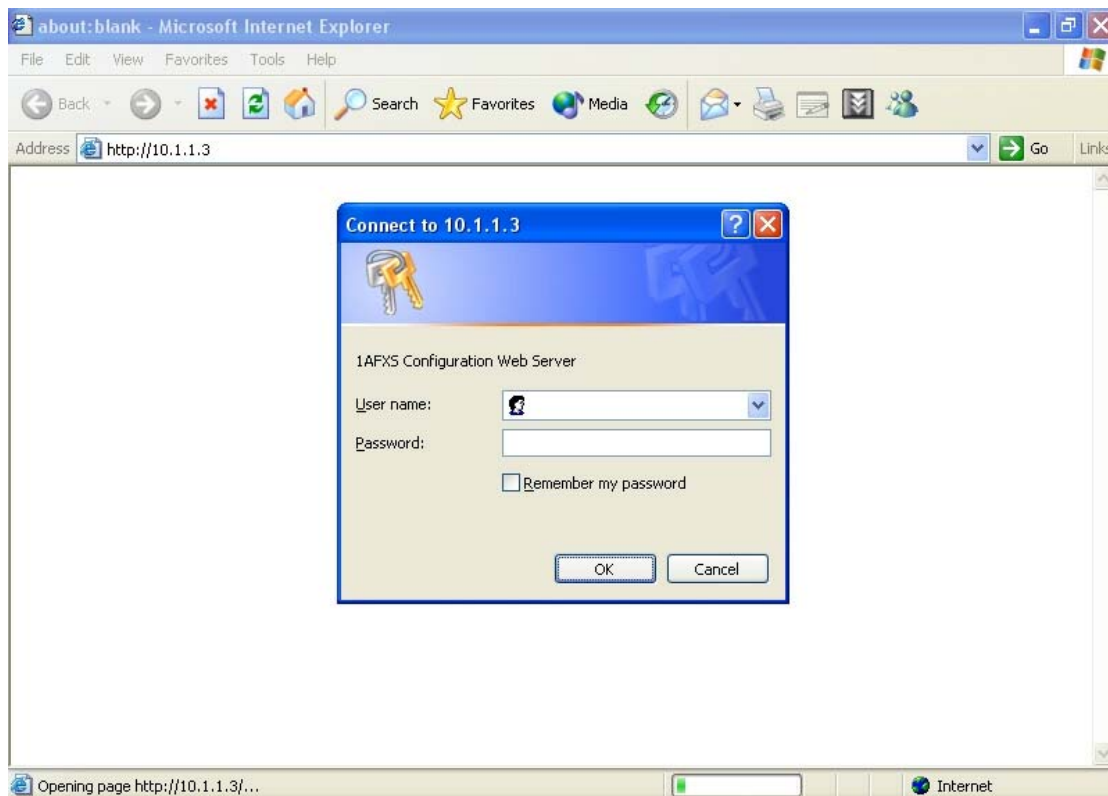
It takes about 40 seconds to boot up the gateway completely.

#### Note:

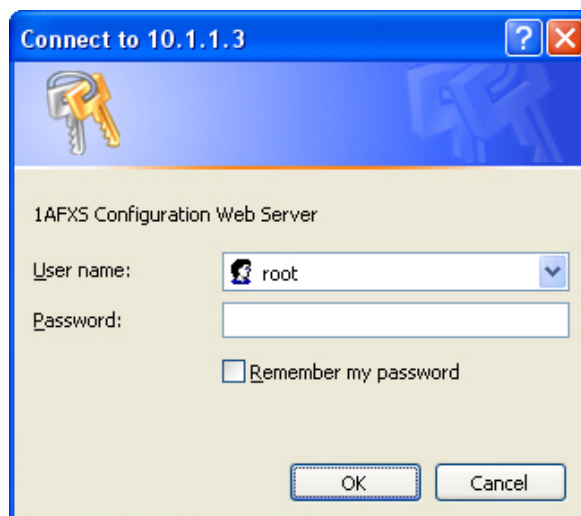
Here is the example under Windows XP Operating System, you may find that it differs with Windows 98/ME/NT/2000 slightly. For more informations, please refer to your PC OS manual or ask network administrator.

## 3.2. Accessing the Web Configuration

1. Start your web browser. (e.g. Microsoft Internet Explorer)
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.

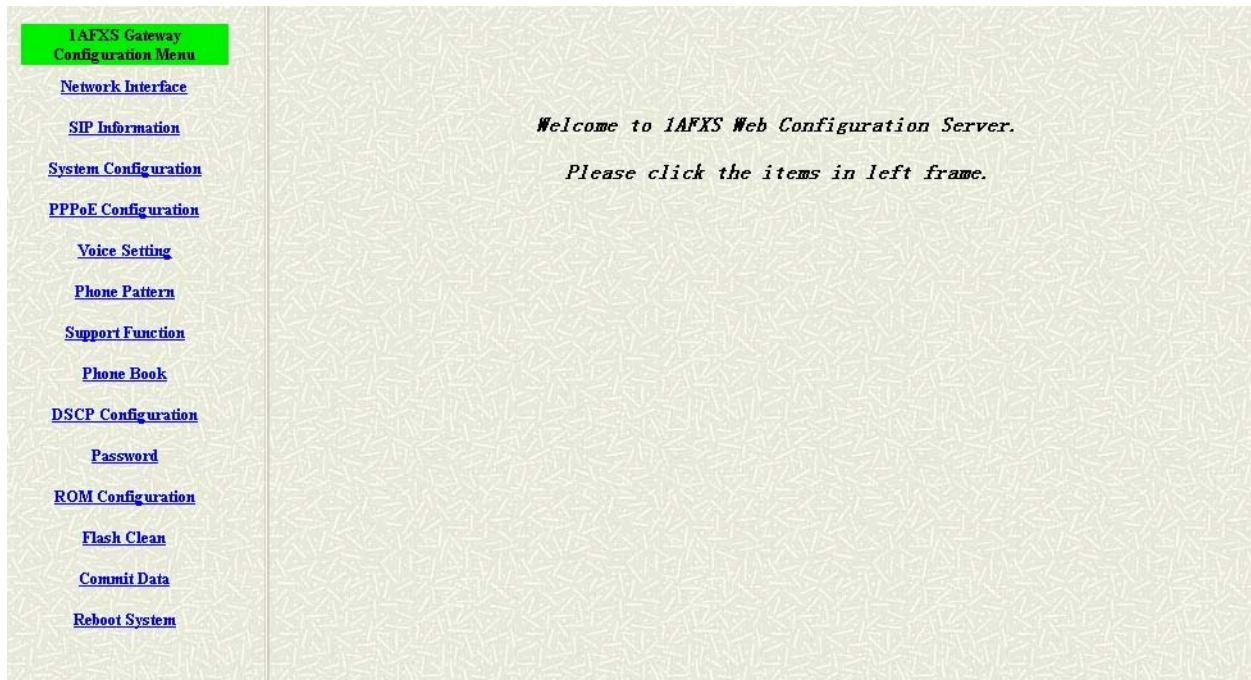


3. The Password screen now appears. Type **root** in the user name field, leave the password blank(default [Null]) and click [OK]



4. After a successful login, you will see the welcome screen

5. Welcome Screen





### 3.3. Configure IP Address

1. Select the **Network Interface** at the Configuration Menu section

1AFXS Gateway Configuration Web Server - Microsoft Internet Explorer

Address: http://10.1.1.3

**1AFXS Gateway Configuration Menu**

- Network Interface**
- SIP Information
- System Configuration
- PPPoE Configuration
- Voice Setting
- Phone Pattern
- Support Function
- Phone Book
- DSCP Configuration
- Password
- ROM Configuration
- Flash Clean
- Commit Data
- Reboot System

**Network Interface**

IP Address: 10 . 1 . 1 . 3

Subnet Mask: 255 . 0 . 0 . 0

Default routing gateway: 10 . 1 . 1 . 254

DHCP: ☐ enable ☒ disable

SNTP: ☒ enable ☐ disable

SNTP Server Address: 168 . 95 . 195 . 12

GMT: 8

IP Sharing: ☐ enable ☒ disable

UPnP: ☐ enable ☒ disable

IP Sharing Server Address: 210 . 59 . 163 . 198

Primary DNS Server: 168 . 95 . 1 . 1

Secondary DNS Server: 168 . 95 . 1 . 1

OK

2. The FXS Gateway the factory with a default IP address of 10.1.1.3 and a subnet mask of 255.0.0.0 showed on Network Interface section.

| Network Interface          |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| IP Address:                | 10 . 1 . 1 . 3                                                        |
| Subnet Mask:               | 255 . 0 . 0 . 0                                                       |
| Default routing gateway:   | 10 . 1 . 1 . 254                                                      |
| DHCP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| SNTP:                      | <input checked="" type="radio"/> enable <input type="radio"/> disable |
| SNTP Server Address:       | 168 . 95 . 195 . 12                                                   |
| GMT:                       | 8                                                                     |
| IP Sharing:                | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| UPnP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| IP Sharing Server Address: | 210 . 59 . 163 . 198                                                  |
| Primary DNS Server:        | 168 . 95 . 1 . 1                                                      |
| Secondary DNS Server:      | 168 . 95 . 1 . 1                                                      |
| OK                         |                                                                       |

3. Enter the IP address : 61.219.198.204 Subnet Mask : 255.255.255.248  
Default routing gateway : 61.219.198.201

| Network Interface                 |                                                                       |
|-----------------------------------|-----------------------------------------------------------------------|
| IP Address:                       | 61 . 219 . 198 . 204                                                  |
| Subnet Mask:                      | 255 . 255 . 255 . 248                                                 |
| Default routing gateway:          | 61 . 219 . 198 . 201                                                  |
| DHCP:                             | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| SNTP:                             | <input checked="" type="radio"/> enable <input type="radio"/> disable |
| SNTP Server Address:              | 168 . 95 . 195 . 12                                                   |
| GMT:                              | 8                                                                     |
| IP Sharing:                       | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| UPnP:                             | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| IP Sharing Server Address:        | 210 . 59 . 163 . 198                                                  |
| Primary DNS Server:               | 168 . 95 . 1 . 1                                                      |
| Secondary DNS Server:             | 168 . 95 . 1 . 1                                                      |
| <input type="button" value="OK"/> |                                                                       |

4. Click [OK]



## 3.4. Configure Proxy Mode

1. Select the **SIP Information** at the Configuration Menu section

The screenshot shows the 'IAFXS Gateway Configuration Menu' on the left with a list of options: Network Interface, SIP Information (highlighted), System Configuration, PPPoE Configuration, Voice Setting, Phone Pattern, Support Function, Phone Book, DSCP Configuration, Password, ROM Configuration, Flash Clean, Commit Data, and Reboot System. The main area displays the 'SIP Configuration' form with the following fields:

| SIP Configuration                 |                                                                          |
|-----------------------------------|--------------------------------------------------------------------------|
| Run Mode:                         | <input type="radio"/> Peer-2-Peer <input checked="" type="radio"/> Proxy |
| Primary Proxy IP Address:         | <input type="text"/>                                                     |
| Secondary Proxy IP Address:       | <input type="text" value="null"/>                                        |
| Outbound Proxy:                   | <input type="text" value="null"/>                                        |
| Proxy port:                       | <input type="text" value="5060"/>                                        |
| Prefix String:                    | <input type="text" value="null"/>                                        |
| Line1 Number:                     | <input type="text"/>                                                     |
| Line1 Account:                    | <input type="text"/>                                                     |
| Line1 Password:                   | <input type="text"/>                                                     |
| SIP port:                         | <input type="text" value="5060"/>                                        |
| RTP Port:                         | <input type="text" value="16384"/>                                       |
| Expire:                           | <input type="text" value="60"/>                                          |
| <input type="button" value="OK"/> |                                                                          |

2. Enter the Proxy Server's IP address, Line1 Number, Line1 Account and Password, and click [OK]

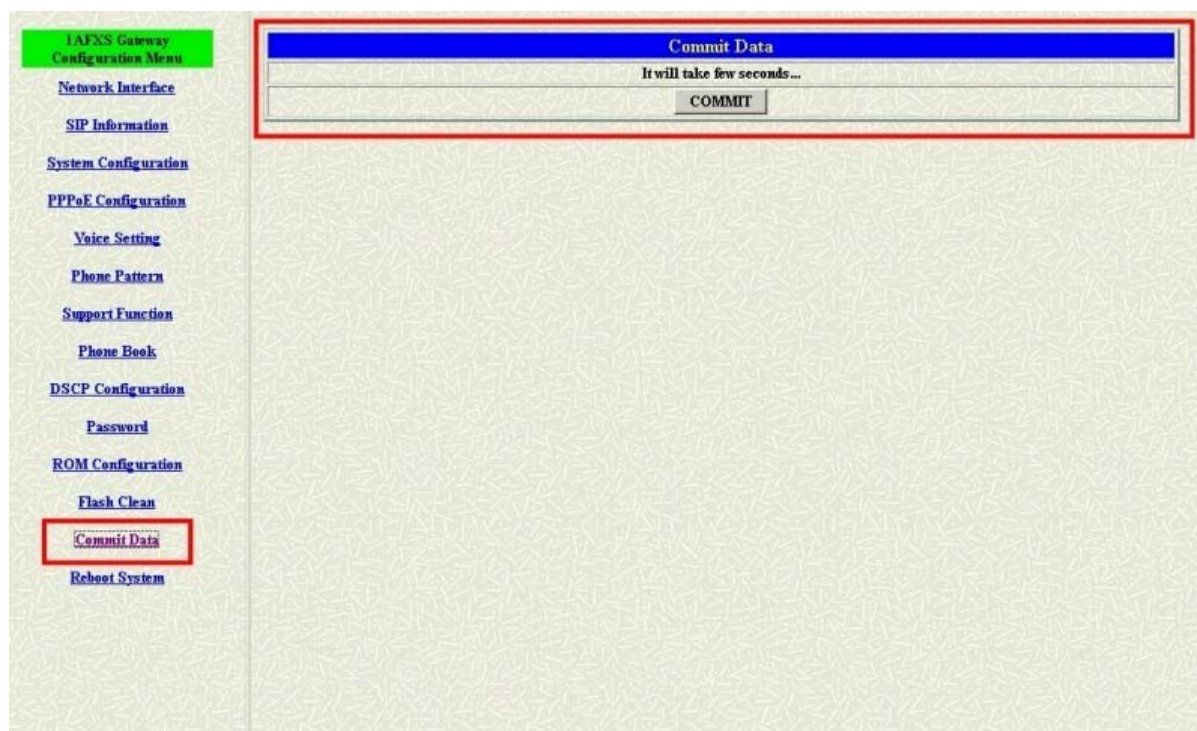
This screenshot shows the 'SIP Configuration' form with the following fields filled in. Red boxes highlight the 'Primary Proxy IP Address' field and the 'Line1 Number', 'Line1 Account', and 'Line1 Password' fields.

| SIP Configuration                 |                                                                          |
|-----------------------------------|--------------------------------------------------------------------------|
| Run Mode:                         | <input type="radio"/> Peer-2-Peer <input checked="" type="radio"/> Proxy |
| Primary Proxy IP Address:         | <input type="text" value="220.130.173.70"/>                              |
| Secondary Proxy IP Address:       | <input type="text" value="null"/>                                        |
| Outbound Proxy:                   | <input type="text" value="null"/>                                        |
| Proxy port:                       | <input type="text" value="5060"/>                                        |
| Prefix String:                    | <input type="text" value="null"/>                                        |
| Line1 Number:                     | <input type="text" value="5001"/>                                        |
| Line1 Account:                    | <input type="text" value="5001"/>                                        |
| Line1 Password:                   | <input type="text" value="****"/>                                        |
| SIP port:                         | <input type="text" value="5060"/>                                        |
| RTP Port:                         | <input type="text" value="16384"/>                                       |
| Expire:                           | <input type="text" value="60"/>                                          |
| <input type="button" value="OK"/> |                                                                          |

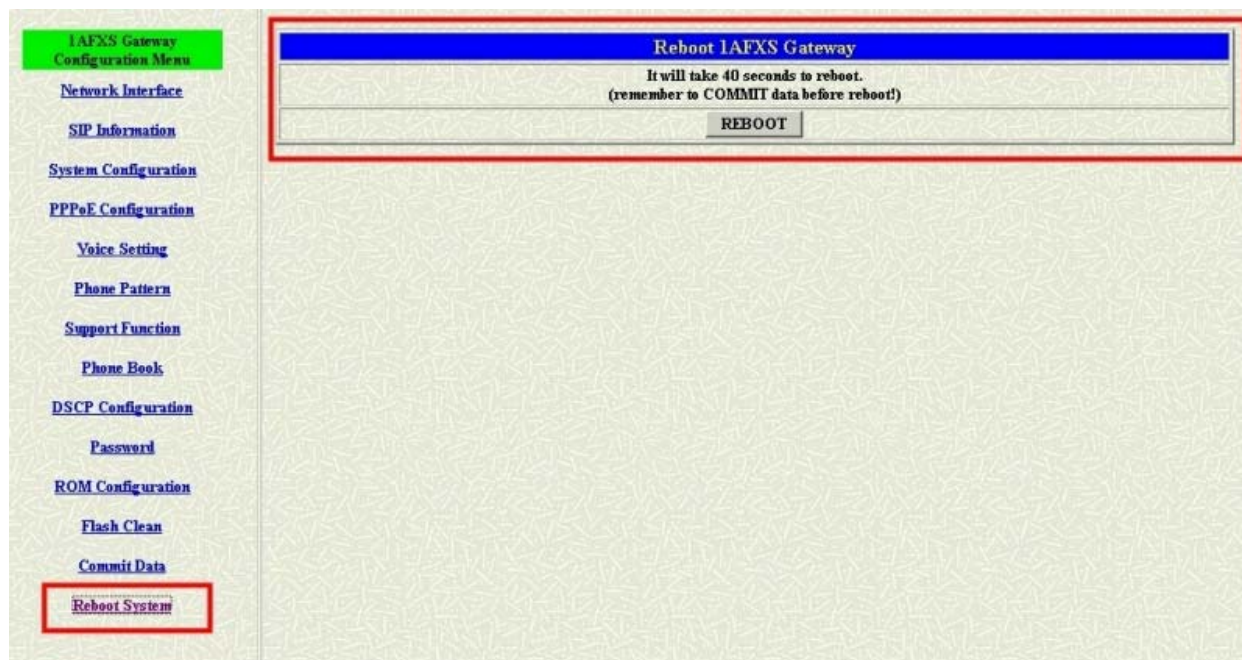


### 3.5. Saving your configurations

1. Select Commit Data and click **[commit]** to save your configurations



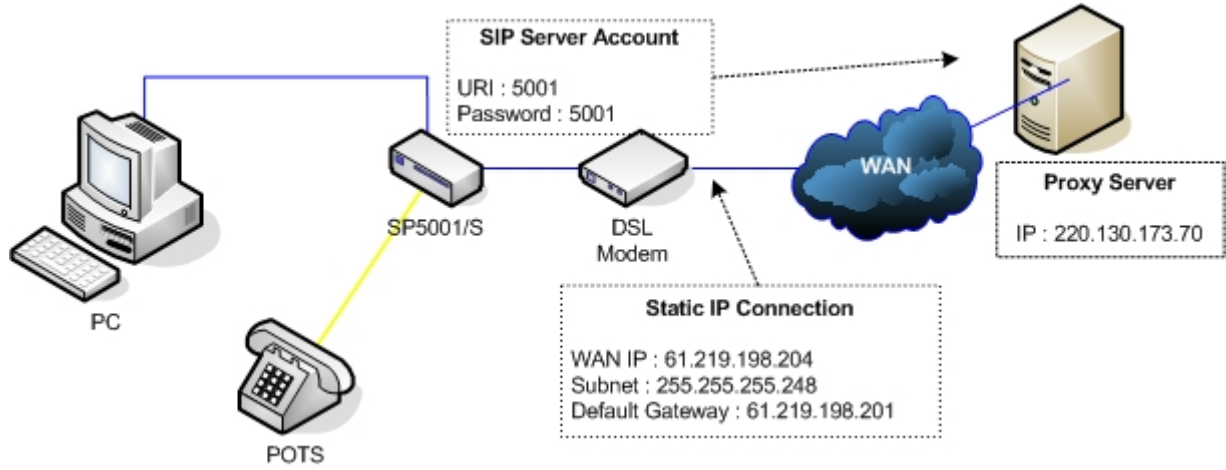
2. Select Reboot System and click **[REBOOT]** to restart the gateway



3. Close the current browser windows and launch your web browser again after 40 seconds. Enter the new IP address in the Location or Address field to login back

on the gateway.

### Example Diagram

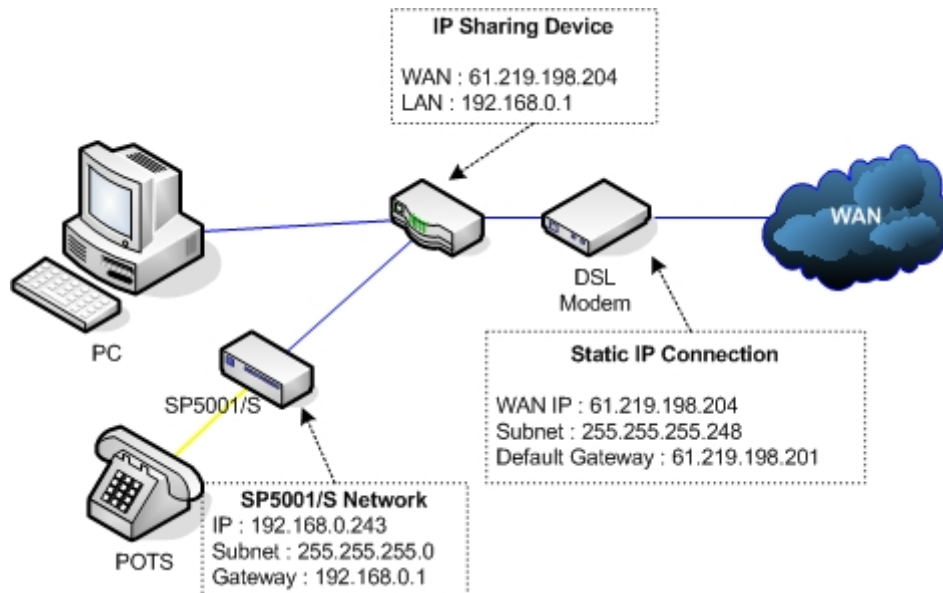


### 3.6. IP Sharing Configuration

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 SIP server 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 192.168.0.243, IP Sharing device must forward the VoIP message to 192.168.0.243

Please see following for example:

>Advanced setting > NAT setting > DMZ Host setting

DMZ Host setting

- Activate DMZ

DMZ Host IP: 192.168.0.243

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. 61.219.198.204) and click the OK button.

| Network Interface          |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| IP Address:                | 192 . 168 . 0 . 243                                                   |
| Subnet Mask:               | 255 . 255 . 255 . 0                                                   |
| Default routing gateway:   | 192 . 168 . 0 . 1                                                     |
| DHCP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| SNTP:                      | <input checked="" type="radio"/> enable <input type="radio"/> disable |
| SNTP Server Address:       | 168 . 95 . 195 . 12                                                   |
| GMT:                       | 8                                                                     |
| IP Sharing:                | <input checked="" type="radio"/> enable <input type="radio"/> disable |
| UPnP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| IP Sharing Server Address: | 61 . 219 . 198 . 204                                                  |
| Primary DNS Server:        | 168 . 95 . 1 . 1                                                      |
| Secondary DNS Server:      | 168 . 95 . 1 . 1                                                      |
| OK                         |                                                                       |

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

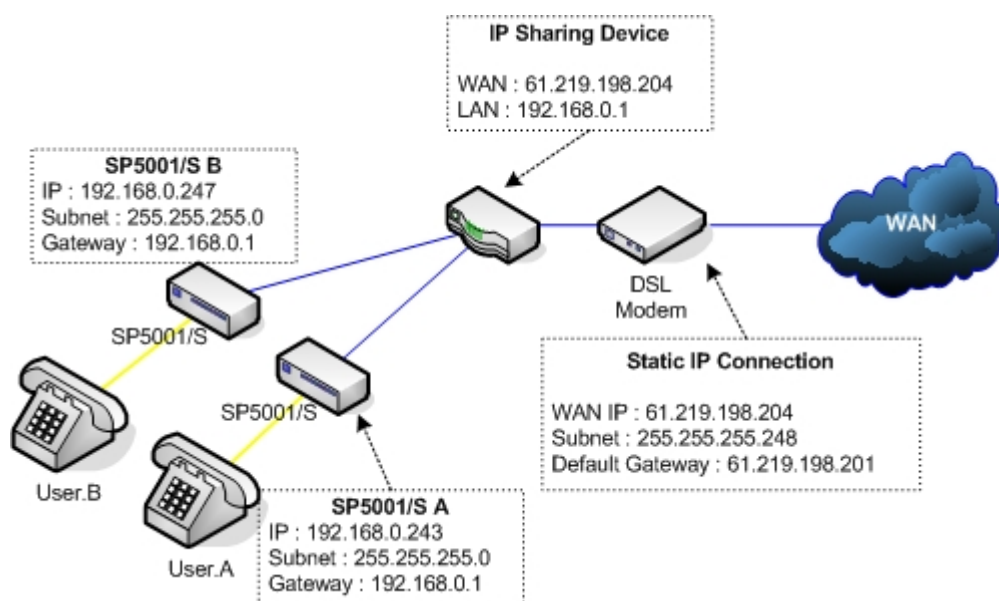


Display [Commit to Flash OK!], When the Commit Data Ok.

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.

### 3.7. Two gateways attached to IP Sharing Device(Router)



Assign a IP address to each set using DHCP or fixed address.

Enable the IP Sharing function for each set using following command.

Fixed IP Address : **usr/config\$ ifaddr -ipsharing 1 61.219.198.204**

Configure separate SIP port and RTP port for each set to prevent from port conflict.

For example, if User.A uses the default settings (SIP port: 5060, RTP port: 16384), you must change User.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**

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        | 192.168.0.243 | 5060         | V      |
| 2     | 2            | UDP      | 16384       | 192.168.0.243 | 16384        | V      |
| 3     | 3            | UDP      | 16394       | 192.168.0.243 | 16394        | V      |
| 4     | 4            | UDP      | 5061        | 192.168.0.247 | 5061         | V      |
| 5     | 5            | UDP      | 26384       | 192.168.0.247 | 26384        | V      |
| 6     | 6            | UDP      | 26394       | 192.168.0.247 | 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.

## 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. Peer-to-Peer mode Configuration

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 5001) and click the [OK] button.

The screenshot shows the 'SIP Configuration' window with a blue header. The 'Run Mode' is set to 'Peer-2-Peer' (selected with a radio button) and 'Proxy' (unselected). The 'Line1 Number' is set to '5001'. Other fields include 'Primary Proxy IP Address', 'Secondary Proxy IP Address', 'Outbound Proxy', 'Proxy port' (5060), 'Prefix String', 'Line1 Account', 'Line1 Password', 'SIP port' (5060), 'RTP Port' (16384), and 'Expire' (60). An 'OK' button is at the bottom right.

| SIP Configuration           |                                                                          |
|-----------------------------|--------------------------------------------------------------------------|
| Run Mode:                   | <input checked="" type="radio"/> Peer-2-Peer <input type="radio"/> Proxy |
| Primary Proxy IP Address:   |                                                                          |
| Secondary Proxy IP Address: | null                                                                     |
| Outbound Proxy:             | null                                                                     |
| Proxy port:                 | 5060                                                                     |
| Prefix String:              | null                                                                     |
| Line1 Number:               | 5001                                                                     |
| Line1 Account:              |                                                                          |
| Line1 Password:             |                                                                          |
| SIP port:                   | 5060                                                                     |
| RTP Port:                   | 16384                                                                    |
| Expire:                     | 60                                                                       |
| OK                          |                                                                          |

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.

Step 3. Enter the Index **1**, Name **User.B**, e164 No **352**, IP address **192.168.0.247** and of the destination and click the [Add Data] button.



| Phone Book |      |            |      |      |
|------------|------|------------|------|------|
| Index      | Name | IP_Address | e164 | Port |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |

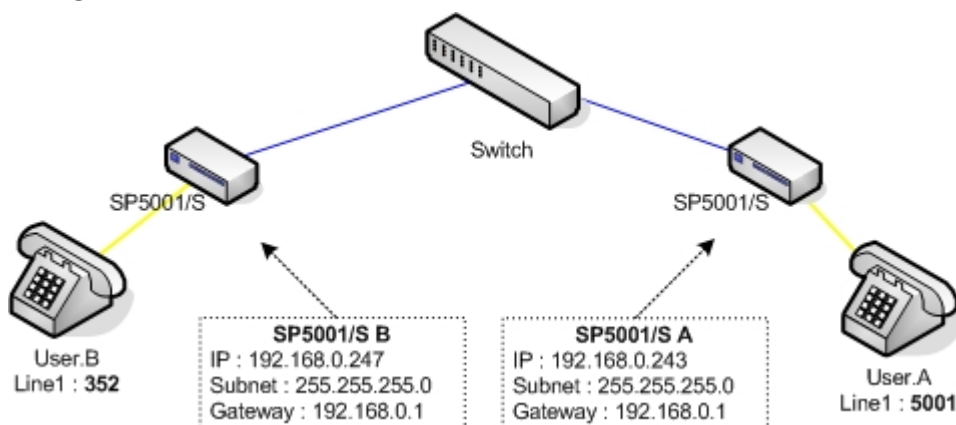
  

| New Record                        |         |               |          |          |
|-----------------------------------|---------|---------------|----------|----------|
| Index                             | Name    | IP Address    | E164 No. | Port No. |
| 1                                 | User. B | 192.168.0.247 | 352      |          |
| <div> Add Data Delete Data </div> |         |               |          |          |

Step 4. 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 5. Click [Reboot System] on the navigation panel. In the FXS Gateway screen, click the [Reboot] button. It will take 40 seconds to reboot.

### Example Diagram

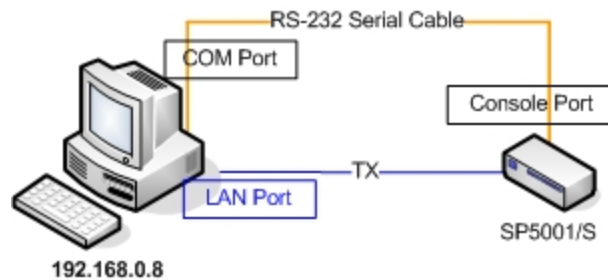


User.A dials **352#** to call User.B

## 5. Upgrade ROM Version

This Chapter covers the basic how to upgrade FXS Gateway ROM Version. You can upgrade through console, telnet commands or by web interface.

Prepare the TFTP / FTP server on your PC.



### 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: 192.168.0.8, Target File Name: 1asipfxs.107, Method: TFTP, Target File Type: Application image) and click the [OK] button.

| ROM Configuration                 |                                                       |
|-----------------------------------|-------------------------------------------------------|
| FTP/TFTP server IP Address:       | 192 . 168 . 0 . 8                                     |
| Target File name:                 | 1asipfxs.107                                          |
| Method:                           | TFTP ▼                                                |
| FTP Login:                        | name <input type="text"/> passwd <input type="text"/> |
| Target File Type:                 | Application Image ▼                                   |
| <input type="button" value="OK"/> |                                                       |

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

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

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.

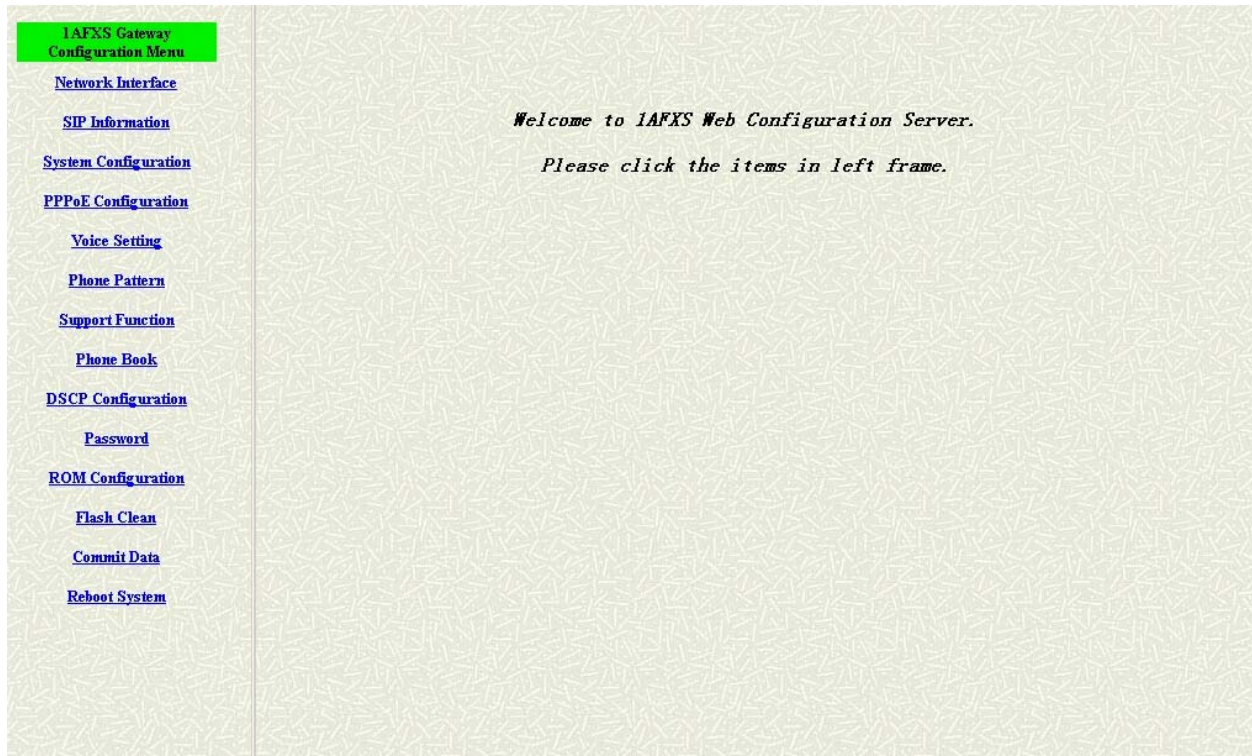
Step 6. Close the current browser windows and launch your web browser again.  
Enter the IP address in the Location or Address field.

**Note : Please check our web site for more informations**

<http://www.micronet.info>

## 6. Web Interface Command List

### The main page





## 6.1. Network Interface

Use this screen to setup Network Interface identification information

| Network Interface          |                                                                       |
|----------------------------|-----------------------------------------------------------------------|
| IP Address:                | 192 . 168 . 0 . 243                                                   |
| Subnet Mask:               | 255 . 255 . 255 . 0                                                   |
| Default routing gateway:   | 192 . 168 . 0 . 1                                                     |
| DHCP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| SNTP:                      | <input checked="" type="radio"/> enable <input type="radio"/> disable |
| SNTP Server Address:       | 168 . 95 . 195 . 12                                                   |
| GMT:                       | 8                                                                     |
| IP Sharing:                | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| UPnP:                      | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| IP Sharing Server Address: | 210 . 59 . 163 . 198                                                  |
| Primary DNS Server:        | 168 . 95 . 1 . 1                                                      |
| Secondary DNS Server:      | 168 . 95 . 1 . 1                                                      |
| OK                         |                                                                       |

**IP Address** Enter the IP Address of the FXS Gateway in dotted decimal notation for e.g. 192.168.0.243 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. 255.255.255.0

**Default Routing Gateway** Enter the IP Address of the default-outgoing gateway (your NAT router's LAN IP address for example) in dotted decimal notation for e.g. 192.168.0.1

**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**

Universal Plug & Play supported

**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 Server**

Enter the DNS IP Address in dotted decimal notation for e.g. 168.95.1.1

**Secondary DNS Server**

Enter the DNS secondary IP Address

## 6.2. SIP Information

| SIP Configuration           |                                                                          |
|-----------------------------|--------------------------------------------------------------------------|
| Run Mode:                   | <input type="radio"/> Peer-2-Peer <input checked="" type="radio"/> Proxy |
| Primary Proxy IP Address:   | 220.130.173.70                                                           |
| Secondary Proxy IP Address: | null                                                                     |
| Outbound Proxy:             | null                                                                     |
| Proxy port:                 | 5060                                                                     |
| Prefix String:              | null                                                                     |
| Line1 Number:               | 5001                                                                     |
| Line1 Account:              | 5001                                                                     |
| Line1 Password:             | ****                                                                     |
| SIP port:                   | 5060                                                                     |
| RTP Port:                   | 16384                                                                    |
| Expire:                     | 60                                                                       |
| OK                          |                                                                          |

**RUN Mode** Select Proxy mode or Peer-to-Peer mode.

**Primary Proxy IP Address** Set Proxy IP Address in dotted decimal notation e.g. 220.130.173.70

**Secondary Proxy IP Address** Set redundancy second 2 Gatekeeper IP Address

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

**Proxy Port** SIP local UDP port number (5060~5070), default: 5060.

**Prefix String** Set specify prefix string, use it when UserID contains alphabets.

**Line1 Number** Set Line Number.

**Line1 Account** Set Line Account Name.

**Line1 Password** Set Line 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.



## 6.3. System Configuration

| System Configuration              |                                                                                                          |
|-----------------------------------|----------------------------------------------------------------------------------------------------------|
| Keypad DTMF Type:                 | <input checked="" type="radio"/> In-Band <input type="radio"/> RFC2833                                   |
| RFC2833 Payload Type:             | <input type="text" value="96"/>                                                                          |
| FAX Payload Type:                 | <input type="text" value="101"/>                                                                         |
| Inter Digit Time:                 | <input type="text" value="3"/>                                                                           |
| CallerID Type:                    | <input checked="" type="radio"/> disable <input type="radio"/> FSK(BELL CORE) <input type="radio"/> DTMF |
| Busy Forward:                     | <input type="radio"/> ON <input checked="" type="radio"/> OFF                                            |
| End of Dial Digit:                | <input type="radio"/> NONE <input type="radio"/> * <input checked="" type="radio"/> #                    |
| <input type="button" value="OK"/> |                                                                                                          |

|                             |                                                                                                                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Keypad Type</b>          | Select In-Band, RFC2833 on DTMF replay type                                                                                                                                                       |
| <b>RFC2833 Payload Type</b> | RFC2833 Payload Type (range:96~128<br>inter-used:100,102~105)                                                                                                                                     |
| <b>FAX Payload Type</b>     | Set Fax Payload Type (range: 96 or 101, default: 101)                                                                                                                                             |
| <b>Inter Digit Time</b>     | Set the DTMF inter digit time (second)                                                                                                                                                            |
| <b>CallerID Type</b>        | Set CallerID Type (Disable, FSK, DTMF).<br>Support Bell Core and DTMF callerID function. After the<br>first ring at destination site, device will send line number as<br>callerID to called site. |
| <b>Busy Forward</b>         | Set enable or disable to route the call to the next line<br>(While the line number is not matched or engaged).                                                                                    |
| <b>End of Dial Digit</b>    | Set end of dial key as NONE, *, or #.                                                                                                                                                             |

## 6.4. PPPoE Configuration

| PPPoE Device Configuration              |                                                               |
|-----------------------------------------|---------------------------------------------------------------|
| Device:                                 | <input type="radio"/> On <input checked="" type="radio"/> Off |
| User Name:                              | <input type="text" value="pppoe"/>                            |
| Password:                               | <input type="text" value="*****"/>                            |
| IP Address:                             | <input type="text"/>                                          |
| Destination:                            | <input type="text"/>                                          |
| DNS primary:                            | <input type="text"/>                                          |
| Reboot After Remote Host Disconnection: | <input checked="" type="radio"/> On <input type="radio"/> Off |
| <input type="button" value="OK"/>       |                                                               |

|                                               |                                            |
|-----------------------------------------------|--------------------------------------------|
| <b>Device</b>                                 | Enable or Disable the PPPoE connection     |
| <b>User Name</b>                              | Enter your PPPoE account                   |
| <b>Password</b>                               | Enter your PPPoE password                  |
| <b>IP Address</b>                             | Display the IP information                 |
| <b>Destination</b>                            | Display the default gateway information    |
| <b>DNS primary</b>                            | Display the Domain Name Server information |
| <b>Reboot After Remote Host Disconnection</b> | Enable or Disable                          |

## 6.5. Voice Configuration

To configure the Codec priority and audio settings associated with the audio information.

| Voice Setting              |                                                                       |                |                    |                   |                |
|----------------------------|-----------------------------------------------------------------------|----------------|--------------------|-------------------|----------------|
| Codec Priority             | 1st<br>G.723.1                                                        | 2nd<br>G.729a  | 3rd<br>G.711mu-Law | 4th<br>G.711A-Law | 5th<br>G.729   |
| Frame Size                 | G.723.1<br>60ms                                                       | G.729a<br>40ms | G.729<br>40ms      | G.711mu<br>40ms   | G.711A<br>40ms |
| G.723 Silence Suppression: | <input type="radio"/> enable <input checked="" type="radio"/> disable |                |                    |                   |                |
| Volume:                    | voice 25                                                              | input 25       | DTMF 23            |                   |                |
| Echo Cancelor:             | <input checked="" type="radio"/> enable <input type="radio"/> disable |                |                    |                   |                |
| Jitter Buffer:             | Min. Delay 90                                                         |                | Max. Delay 150     |                   |                |
| OK                         |                                                                       |                |                    |                   |                |

- 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 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.

Note:

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

## 6.6. Phone Pattern Configuration

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.

| Phone Pattern   |            |           |           |          |      |      |
|-----------------|------------|-----------|-----------|----------|------|------|
| Ring Tone:      | Frequency  | 20        | On        | 2000     | Off  | 4000 |
| Ring Back Tone: | High(freq) | Low(freq) | High(lev) | Low(lev) | On   | Off  |
|                 | 480        | 440       | 155       | 155      | 2000 | 4000 |
| Busy Tone:      | High(freq) | Low(freq) | High(lev) | Low(lev) | On   | Off  |
|                 | 620        | 480       | 155       | 155      | 500  | 500  |
| Dial Tone:      | High(freq) | Low(freq) | High(lev) | Low(lev) | On   | Off  |
|                 | 440        | 350       | 155       | 155      | 8000 | 0    |
| 2nd Dial Tone:  | High(freq) | Low(freq) | High(lev) | Low(lev) | On   | Off  |
|                 | 440        | 350       | 19        | 19       | 25   | 25   |
| OK              |            |           |           |          |      |      |

- 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 workable FXS Gateway.
- 2nd Dial Tone** To configure the value of the local 2nd dial tone.

### 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)

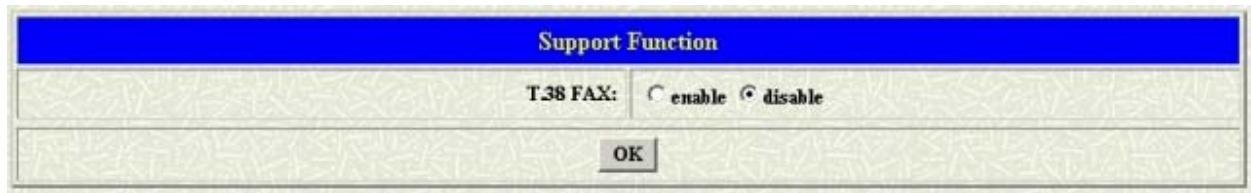
tone frequency: 0 ~ 65535 (Unit: Hz)

tone freqLevel: 0 ~ 65535 (Unit: mVrms)

tone Tone ON/OFF: 0 ~ 8000 (Unit: ms)

## 6.7. Support Configuration

Some extra functions that might be needed by users.

A screenshot of a 'Support Function' dialog box. The title bar is blue with the text 'Support Function' in white. The main area has a light green background with a subtle pattern. It contains a label 'T.38 FAX:' followed by two radio buttons: 'enable' and 'disable'. The 'disable' radio button is selected. At the bottom center is an 'OK' button.

| Support Function                  |                                                                       |
|-----------------------------------|-----------------------------------------------------------------------|
| T.38 FAX:                         | <input type="radio"/> enable <input checked="" type="radio"/> disable |
| <input type="button" value="OK"/> |                                                                       |

**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.



## 6.8. Phone Book Configuration

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.

| Phone Book |      |            |      |      |
|------------|------|------------|------|------|
| Index      | Name | IP_Address | e164 | Port |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |
|            |      |            |      |      |

| New Record                                                                         |                           |                                 |                               |                               |
|------------------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------|-------------------------------|
| Index <input type="text"/>                                                         | Name <input type="text"/> | IP Address <input type="text"/> | E164 No. <input type="text"/> | Port No. <input type="text"/> |
| <input type="button" value="Add Data"/> <input type="button" value="Delete Data"/> |                           |                                 |                               |                               |

- 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

### 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.



## 6.9. DSCP Configuration

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

| DiffServ Code Point(DSCP) Configuration              |                                                                                                          |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| === Signal Packet ===                                |                                                                                                          |
| <input type="radio"/> Assured Forwarding(AF) PHB     | Delay Priority : <input type="text" value="Class 1"/> Drop Precedence : <input type="text" value="Low"/> |
| <input type="radio"/> Expedited Forwarding(EF) PHB   |                                                                                                          |
| <input checked="" type="radio"/> Default             |                                                                                                          |
| <input type="radio"/> User Assign Special DSCP Code: | <input type="text"/>                                                                                     |
| === RTP Packet ===                                   |                                                                                                          |
| <input type="radio"/> Assured Forwarding(AF) PHB     | Delay Priority : <input type="text" value="Class 1"/> Drop Precedence : <input type="text" value="Low"/> |
| <input type="radio"/> Expedited Forwarding(EF) PHB   |                                                                                                          |
| <input checked="" type="radio"/> Default             |                                                                                                          |
| <input type="radio"/> User Assign Special DSCP Code: | <input type="text"/>                                                                                     |
| <input type="button" value="OK"/>                    |                                                                                                          |

**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.

## 6.10. Password Configuration

Here allows you to configure the root and administrator password.



The image shows a 'Password' configuration window. It has a blue title bar with the word 'Password' in white. The main area is divided into three rows for password input. The first row is labeled 'Current Password:' and has a text box. The second row is labeled 'New Password:' and has a text box. The third row is labeled 'Confirm New Password:' and has a text box. To the left of these rows is a drop-down menu currently showing 'root'. At the bottom of the window are two buttons: 'CHANGE' and 'ABORT'.

| Password                |                                            |
|-------------------------|--------------------------------------------|
| <div>root ▼</div>       | Current Password: <input type="text"/>     |
|                         | New Password: <input type="text"/>         |
|                         | Confirm New Password: <input type="text"/> |
| <div>CHANGE ABORT</div> |                                            |

- 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.
- Confirm New Password** Confirm your new system password for confirmation.

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

## 6.11. ROM Upgrade

The web configuration provides Update FXS Gateway ROM Version.

| ROM Configuration                 |                                                                                           |
|-----------------------------------|-------------------------------------------------------------------------------------------|
| FTP/TFTP server IP Address:       | <input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/> |
| Target File name:                 | <input type="text"/>                                                                      |
| Method:                           | <input type="text" value="TFTP"/>                                                         |
| FTP Login:                        | name <input type="text"/> passwd <input type="text"/>                                     |
| Target File Type:                 | <input type="text" value="Application Image"/>                                            |
| <input type="button" value="OK"/> |                                                                                           |

|                           |                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Server IP Address</b>  | Enter the FTP or TFTP Server IP Address.                                                                                                                |
| <b>Target File Name</b>   | Enter the file name prepared to upgrade.                                                                                                                |
| <b>Method</b>             | Select download method as FTP or TFTP.                                                                                                                  |
| <b>FTP Login Name</b>     | Enter the FTP Login name (max 14 byte)                                                                                                                  |
| <b>FTP Login Password</b> | Enter the FTP Login password (max 14 byte)                                                                                                              |
| <b>Target File Type</b>   | 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. |

### Note:

To upgrade the firmware version, use the Application ROM only in most cases. 2M ROM includes BOOT and APP images.

## 6.12. Flash Clean

To reset the gateway settings back to factory default



### Note:

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

## 6.13. Commit Data

To save change after configuring FXS Gateway.



## 6.14. Reboot System

Reboot the FXS Gateway



## 7. Command List

This section introduces the command line interface and lists all of the commands. You can use Hyper Terminal or Telnet to configure the gateway by commands

| Command  | Description                                             |
|----------|---------------------------------------------------------|
| help     | help/man/? [command]                                    |
| quit     | quit/exit/close                                         |
| debug    | show debug message                                      |
| reboot   | reboot local machine                                    |
| 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                                |
| flash    | clean configuration from flash rom                      |
| sysconf  | System information manipulation                         |
| sip      | SIP information manipulation                            |
| security | Security information manipulation                       |
| voice    | Voice information manipulation                          |
| support  | Special Voice function support manipulation             |
| tos      | IP Packet ToS/DSCP values                               |
| phone    | Setup of call progress tones and ringing (SLIC control) |
| bureau   | Bureau line information manipulation                    |
| rom      | ROM file update                                         |
| passwd   | Password setting information and configuration          |

## 7.1. [help]

Type [help] or [?] will show the command list as the table above.

## 7.2. [quit]

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

### **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. If you are using the telnet and type [quite], the connection will be lost, you'll need to run the telnet again.



### 7.3. [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
```

#### Parameter Usages:

|                |                                  |
|----------------|----------------------------------|
| <b>-status</b> | Display the enabled debug flags. |
| <b>-add</b>    | Add debug flag                   |
| <b>-sip</b>    | SIP related information          |
| <b>-msg</b>    | voice related information        |
| <b>-delete</b> | Remove specified debug flag      |
| <b>-open</b>   | Start to show debug messages     |
| <b>-close</b>  | Stop showing debug messages      |

For example, user open debug flags including sip, vp, msg.

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

```
usr/config$ debug -status

Current debug type enabled :
Debug Mode is open
DEBUG-> SIP      MSG
```

## 7.4. [reboot]

```
usr/config$ reboot
```

◆ Rebooting...It will take 40 seconds....

After [commit] command, type [reboot] to re-start the gateway to take new configurations effective

## 7.5. [commit]

```
usr/config$ commit
```

This may take a few seconds, please wait....

Commit to flash memory ok!

Save changes after configuring Gateway.

## 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]] [-ipsharing used[ip address]]
ifaddr [-upnp used]
```

|            |                                                               |
|------------|---------------------------------------------------------------|
| -print     | Display LAN information and configuration.                    |
| -ip        | Specify WAN ip address.                                       |
| -lanip     | Specify LAN ip address.                                       |
| -mask      | Set Internet subnet mask.                                     |
| -gate      | Specify default gateway ip address                            |
| -nat       | Set NAT service flag (On/Off).                                |
| -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)                |
| -server    | specify EMS Server IP address                                 |
| -id        | specify EMS Server ID                                         |
| -pwd       | specify EMS Server password                                   |
| -emstime   | specify EMS cycle time                                        |

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 assigned.  
SNTP mode (0=no update, 1=specify server IP, 2=broadcast mode).

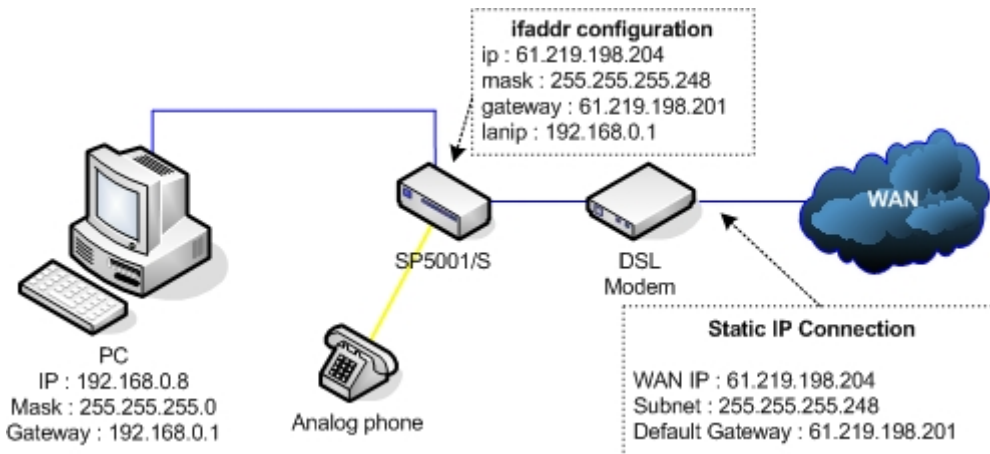
Example:

```
ifaddr -ip 210.59.163.202 -mask 255.255.255.0 -gate 210.59.163.254
ifaddr -nat 1
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
```

### Parameter Usages:

|               |                                      |
|---------------|--------------------------------------|
| <b>-print</b> | Print current IP setting and status  |
| <b>-ip</b>    | Assign the VoIP gateway's IP address |

- lanip** Specify LAN port IP address (For NAT function), use this command setup lanip address assigned to PC or other machine. Setting IP address provide PC setup Default Gateway Address
- mask** Assign the VoIP gateway's Subnet Mask
- gate** Assign the VoIP gateway's default gateway
- nat** Provides Network Address Translation function



Enable the NAT function when share the connection with computer

- dhcp** Dynamic host configuration (0=Off, 1=On)
- dns** Specify the DNS server's IP address
- sntp** Simple Network Time Protocol (0=No update, 1=Specify server IP). When SNTP function is activated, users have to specify a SNTP server as network time source  
Example : **ifaddr -sntp 1 168.95.192.12**
- timezone** Set local time zone according to GMT
- ipsharing** Enable this function when the VoIP gateway behind the NAT router or IP Sharing devices.  
Example : **ifaddr -ipsharing 1 61.219.198.204**

**Note :** If you don't have static public IP address, then the dedicated IP address is not necessary in the command, for example : **ifaddr-ipsharing 1** However, dynamic IP Address is not working in Peer-to-Peer mode.

- upnp** Specify the upnp mode of ipsharing(0:Off, 1:On)  
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.
- server** specify EMS Server IP address

|                 |                             |
|-----------------|-----------------------------|
| <b>-id</b>      | specify EMS Server ID       |
| <b>-pwd</b>     | specify EMS Server password |
| <b>-emstime</b> | specify EMS cycle time      |

The EMS (Element Management System) is expressly built to simplify deployment, configuration and management of network equipment and to help you streamline delivery of the high-demand services and capabilities enabled.

**Note:**

One Group only use only LAN IP address, if have two gateway on this group, you must change second gateway LAN IP Address different first gateway.

```
Gateway First:
usr/config$ ifaddr -lanip 192.168.124.124
Gateway Second:
usr/config$ ifaddr -lanip 192.168.124.125
```

**Information Example:**

```
usr/config$ ifaddr -print

Internet address information
  WAN IP address      : 192.168.0.243
  Subnet mask         : 255.255.255.0
  Default gateway     : 192.168.0.1
  NAT enabled         : OFF
  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

  EMS IP Address       : 192.168.1.1
  EMS User ID          : vwusr
  EMS Password         : vwusr
  EMS cycle time       : 0
```

## 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 2004
```

## 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:

## 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 number]]
pbook [-delete index]
pbook [-modify [index] [ip ipaddress] [name Alias] [e164 phonenumber] [port number]]

    -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 omitted, only record 'start_record' will be display.
```



If both parameters 'end\_record' and 'start\_record' are omitted, 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
```

### Parameter Usages:

- |                |                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-print</b>  | Print out current contents of Phone Book. Users can also add index number, from 1 to 50, to the parameter to show specific phone number. |
| <b>-add</b>    | add a new record to phone book. When adding a record, users have to specify name, IP, and e164 number to complete the command.           |
| <b>name</b>    | Name to represent caller.                                                                                                                |
| <b>e164</b>    | E.164 number for mapping with IP address of caller                                                                                       |
| <b>ip</b>      | IP address of caller                                                                                                                     |
| <b>port</b>    | Call signal port number of caller                                                                                                        |
| <b>drop</b>    | Drop e.164 number when dial out. 0 means to keep e.164 number, 1 means to drop e.164 number when dialing out.                            |
| <b>insert</b>  | Insert digits.(1~10 digits)                                                                                                              |
| <b>-modify</b> | modify an existing record. When using this command, users have to specify the record's index number, and then make the change.           |
| <b>-delete</b> | delete a specific record. For example :   pbook -delete 3                                                                                |

### 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.

### 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     | SP5100 | 192.168.0.242 | 5100 |      |

## 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][[-reboot on/off]]
```

|         |                                         |
|---------|-----------------------------------------|
| -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. |

### Parameter Usages:

|                |                                                            |
|----------------|------------------------------------------------------------|
| <b>-print</b>  | print PPPoE status.                                        |
| <b>-dev</b>    | Enable or Disable PPPoE Dial-up function                   |
| <b>-open</b>   | Open the connection                                        |
| <b>-close</b>  | Disconnect the connection                                  |
| <b>-id</b>     | The User name ID provided by ISP                           |
| <b>-pwd</b>    | The Login password provided by ISP                         |
| <b>-reboot</b> | Reboot the gateway after the PPPoE connection disconnected |

## 7.11. [flash]

Restore the gateway's configurations back to default.

```
usr/config$ flash
```

Flash memory information and configuration

Usage:

```
flash -clean
```

Note:

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

### 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.

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

## 7.12. [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.
-dtmfend        DTMF CallerID End Symbol.
Example:
  sysconf -keypad 0 -eod 2 -callerid 1
```

### Parameter Usages:

- print** Show the sysconf current status.
- 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** BusyForward.(ON:1 / OFF:0)
- 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. Range:96~128 inter-used:100,102~105.
- 2833type** RFC2833 Payload Type. Range: 96~128 inter-used: 100, 102~105.

|                   |                                                                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-lcdrop</b>    | Disconnect Supervision (Loop Current Drop) (ON:1 / OFF:0).                                                                                                                    |
| <b>-droptime</b>  | Period of Loop Current Drop (ms).                                                                                                                                             |
| <b>-eod</b>       | Select the End of Dial key, “#”, “*” or none                                                                                                                                  |
| <b>-callerid</b>  | Select the Caller ID type, 0 = disable, 1 = FSK(Bellcore),<br>2 = DTMF. After the first ring at destination site, device will send<br>line number as callerID to called site. |
| <b>-dtmfstart</b> | DTMF Caller ID Start Symbol                                                                                                                                                   |
| <b>-dtmfend</b>   | DTMF Caller ID End Symbol                                                                                                                                                     |

**Note:**

If you enable the Busy Forward function, you need to set the destination number to forwarding. For example, `usr/config$ support -busy 5100`, this command line set the gateway will forwarding the call to 5100 while it's busy. Refer to the **[support]** section for more information.

## 7.13. [sip]

This command is to configure SIP related parameters.

```
usr/config$ sip

SIP stack information and configuration
Usage:
sip [-print] [-mode pxmode] [-outpx IPaddress][-transport type]
sip [-px address] [-px2 address] [-pxport number] [-prefix prefixstring]
    [-line1 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.
    -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.
    -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
    sip -transport 1
```

### Parameter Usages:

- print** Show the SIP current settings
- mode** Select the P2P mode or Proxy mode, 0 = P2P, 1 = Proxy
- px** To specify Proxy address when FXS Gateway is in proxy mode.  
Proxy address can be IPv4 address or DNS name.
- px2** To specify Secondary Proxy server address.
- pxport** To configure proxy server signaling port, default value is 5060, if there is no special request of Proxy server, please don't change this value.
- outpx** Set IP Address or URL address (Domain Name Server must be configured. Please refer to Network Configure) of outbound Proxy server.
- transport** Select TCP or UDP to transport the signaling
- prefix** when your username contains alphabets, for example sip1123, then specify the prefix string as "sip".

|                  |                                                                                                                                                                                                                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-line1</b>    | Assign gateway's line number                                                                                                                                                                                                                                                                                     |
| <b>-pbsearch</b> | enable/disable phone book search function under Proxy Mode. If user enabled this function, the gateway 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, the gateway will make call to related IP address. |
| <b>-expire</b>   | This parameter set duration time for sending registration information.                                                                                                                                                                                                                                           |
| <b>-port</b>     | SIP port which used to listen incoming SIP messages                                                                                                                                                                                                                                                              |
| <b>-rtp</b>      | Specify the RTP received port number                                                                                                                                                                                                                                                                             |

## 7.14. [security]

This command is used to configure the account information included username and password obtained from the proxy 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
```

### Parameter Usages:

|               |                                                                                                |
|---------------|------------------------------------------------------------------------------------------------|
| <b>-print</b> | Shows the current settings                                                                     |
| <b>-line</b>  | Specify the line for the account configuration, here has only one line for this gateway model. |
| <b>-name</b>  | Specify the username of your account information.                                              |
| <b>-pwd</b>   | Specify the password of your account information.                                              |



## 7.15. [voice]

The voice command is associated with the audio setting information.

```
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
```

### Parameter Usages:

- print** Shows the current settings
- 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. For example :

```
usr/config$ voice -priority g729 g723 g711u g711a
```

|                  |                                                                                                                   |
|------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>-volume</b>   | To adjust the voice, input and dtmf levels                                                                        |
| <b>voice</b>     | which can be heard from Gateway side(range 0~63, default: 28).                                                    |
| <b>input</b>     | which the opposite party hears (range 0~38, default: 28).                                                         |
| <b>dtmf</b>      | which sends to its own Line (range 0~31, default: 23).                                                            |
| <b>-nscng</b>    | Silence suppression and comfort noise generation setting (1 = ON; 0 = OFF). It is applicable to G.723 codec only. |
| <b>-echo</b>     | Enable or Disable the echo cancellation                                                                           |
| <b>-mindelay</b> | The minimum jitter buffer size (Default value= 90 ms).                                                            |
| <b>-maxdelay</b> | The minimum jitter buffer size (Default value= 150 ms).                                                           |

**Note:**

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

## 7.16. [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
```

### Parameter Usages:

- |                  |                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-print</b>    | Shows the current settings                                                                                                                               |
| <b>-t38</b>      | Enable or disable FAX ability.                                                                                                                           |
| <b>-busy</b>     | Provide setting busy forwrd to other number, when your gateway is setting this function, it will forward to setting phone number if the channel is busy, |
| <b>-noanswer</b> | Provide setting noanswer forwrd to other number, when you set this function, it will forward to setting phone number if no one answer the call.          |
| <b>-uncon</b>    | Provide setting Unconditional forwrd to other number, when you set this function, all the calls to your number will forward to setting phone number.     |

### Note:

For the call forwarding, you need to enable the Busy Forward on the **[sysconf]**

## 7.17. [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
```

### 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. ToS only works if it has related network devices supported.

## 7.18. [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
```

### Parameter Usages:

|               |                                                                                                                                                   |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-print</b> | Shows the current settings                                                                                                                        |
| <b>-ring</b>  | To set RING tone value. The played tone type, when Gateway is receiving a call.                                                                   |
| <b>-rbt</b>   | To set RingBackTone value. The played tone type, when Gateway receives a Q.931 Alerting message. In condition that Gateway is the originate side. |
| <b>-bt</b>    | To set BusyTone value. The played tone type, when destination is busy.                                                                            |
| <b>-dt</b>    | To set DialTone value. The played tone type, when hook off a phone set of workable Gateway.                                                       |
| <b>-flash</b> | Set the detective flash range in ms, for example, 400-800 ms.                                                                                     |
| <b>-level</b> | Loop Current and On-Hook Line Voltage level set.                                                                                                  |

**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.

## 7.19. [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
```

### Parameter Usages:

|                 |                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <b>-print</b>   | Shows the current settings                                                                                                              |
| <b>-hotline</b> | Define Line 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 telephone handset connects to gateway, and then hears the ringback tone generated from destination. Of course, the destination line 628 is ringing simultaneously.

2. Destination is a FXO device, Port\_1 has 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\_1 (Above FXO example is subject to the FXO configurations, such as 2nd dial ON or OFF.)



## 7.20. [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
```

### Parameter Usages:

|                 |                                                                                                                       |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>-print</b>   | Shows the current settings                                                                                            |
| <b>-app</b>     | update application program code                                                                                       |
| <b>-boot</b>    | update boot code                                                                                                      |
| <b>-boot2m</b>  | Includes APP and Boot code                                                                                            |
| <b>-ht</b>      | updata Hold Tone PCM file(optional)                                                                                   |
| <b>-dsptest</b> | update DSP testing code(optional)                                                                                     |
| <b>-dspcore</b> | update DSP kernel code(optional)                                                                                      |
| <b>-dspapp</b>  | update DSP application code(optional)                                                                                 |
| <b>-s</b>       | To specify TFTP / FTP server IP address for upgrading                                                                 |
| <b>-f</b>       | To specify the target file name, which will replace the old one.                                                      |
| <b>-method</b>  | To decide using TFTP or FTP as file transfer server.<br>TFTP = 0 , FTP = 1                                            |
| <b>-ftp</b>     | If users choose FTP in above item, it is necessary to specify pre-defined username and password when upgrading files. |

## 7.21. [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 Loginname Password
```

```
passwd -clean
```

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
```

### Parameter Usages:

|               |                                                                        |
|---------------|------------------------------------------------------------------------|
| <b>-set</b>   | Set login name and password, input login name then input new password. |
| <b>-clean</b> | 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].