



WellGate 2608 ( 8-FXS ) and WellGate 2680 (8-FXO) gateway in Peer to Peer mode with Hotline by port to port application.

**Note :**

**Please use Windows XP IE 6.0 web browser or above version to configure both FXO and FXS gateway webpage setting. Welltech products don't support other Web Browser such as FireFox to configure. Otherwise, you may be not able to save your changes at webpage.**

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**1. Purpose**

This paper is going to describe how to configure 8-port FXO to 8-port FXS gateway in **peer to peer mode with hotline function** to link from one desire port at FXO via SIP IP link to remote FXS desire port. This application is widely used to extend traditional PABX extension (or local PSTN line) from one location to remote office via IP Link which could be VPN, Private network, fiber link or Wireless network. Here is an typical

diagram of this application at **Figure 1 and Figure 2.**

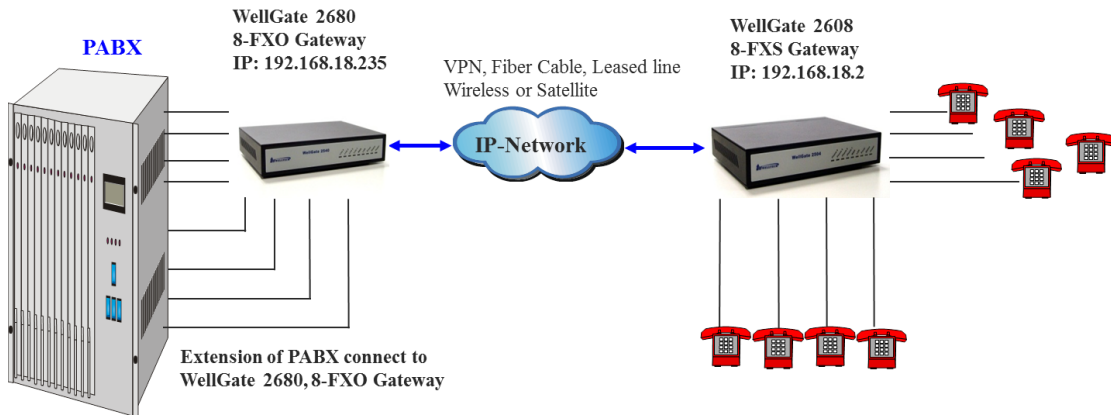


Figure 1. Typical P2P Hotline application

	PABX Extension Number or PSTN number	FXO SIP Trunk Line Number	FXS Line Number	FXS Phone Caller ID number when FXO Enable Caller ID Setting
Line 1	201	26801	260801	201
Line 2	202	26802	260802	202
Line 3	203	26803	260803	203
Line 4	204	26804	260804	204
Line 5	205	26805	260805	205
Line 6	206	26806	260806	206
Line 7	207	26807	260807	207
Line 8	208	26808	260808	208

Figure 2. P2P Hotline number plan

Before starting to configure both FXO and FXS gateway, we have assigned the following parameters to both devices as follows. **Please note that both IP addresses at FXO and FXS gateway's WAN port should be able to see each other. Both FXO and FXS gateway CAN NOT install behind Router or Firewall or IP Sharing.**

### WellGate 2608 (8-FXS Gateway ) information.

IP address : 192.168.18.2

Line number : 260801, 260802, 260803, 260804, 260805, 260806, 260807 and 260808.

This number is used for IP network to connect with remote IP device.

### WellGate 2680 (8-FXO Gateway) information.

IP address : 192.168.18.235

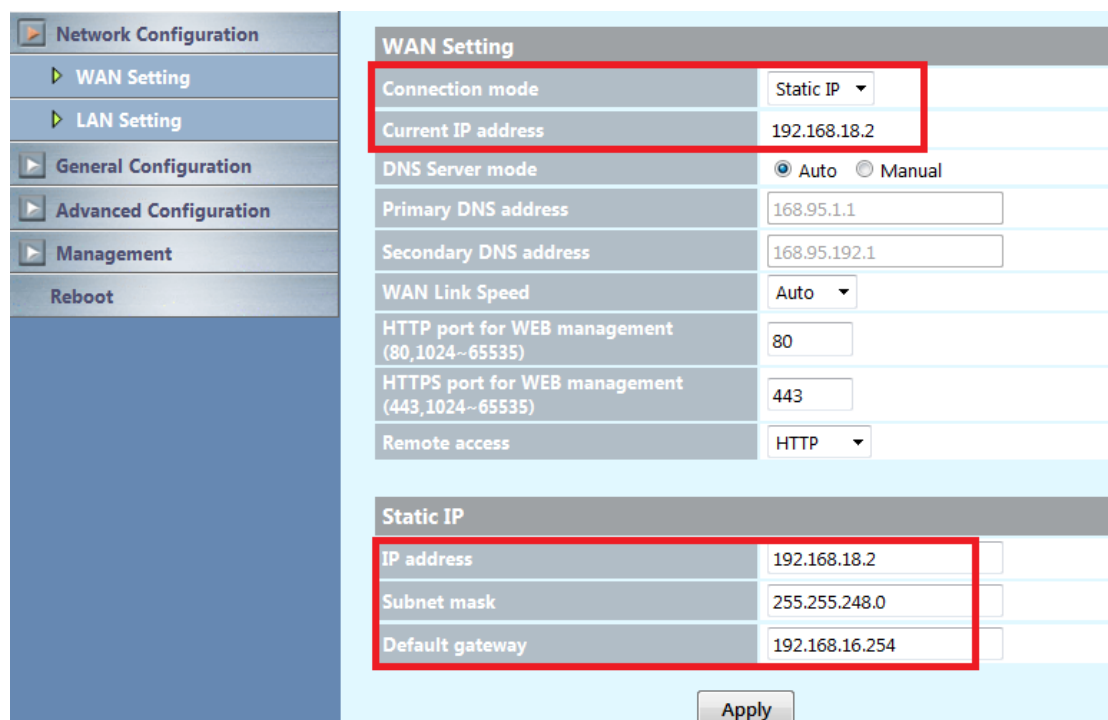
Line number : 26801, 26802, 26803, 26804, 26805, 26806, 26807 and 26808. This number is used for IP network to connect with remote IP device.

PABX Extension number 201, 202, 203, 204, 205, 206, 207 and 208 which were connected to Port #1 to #8 at FXO Gateway. These numbers were sending to FXO interface by Caller ID protocol and detect by FXO gateway correctly to show up them to remote devices.

## 2. WellGate 2608 (FXS Gateway) configuration

**Step 1:** Configure static IP address to WellGate 2608, like below [Figure 2](#).

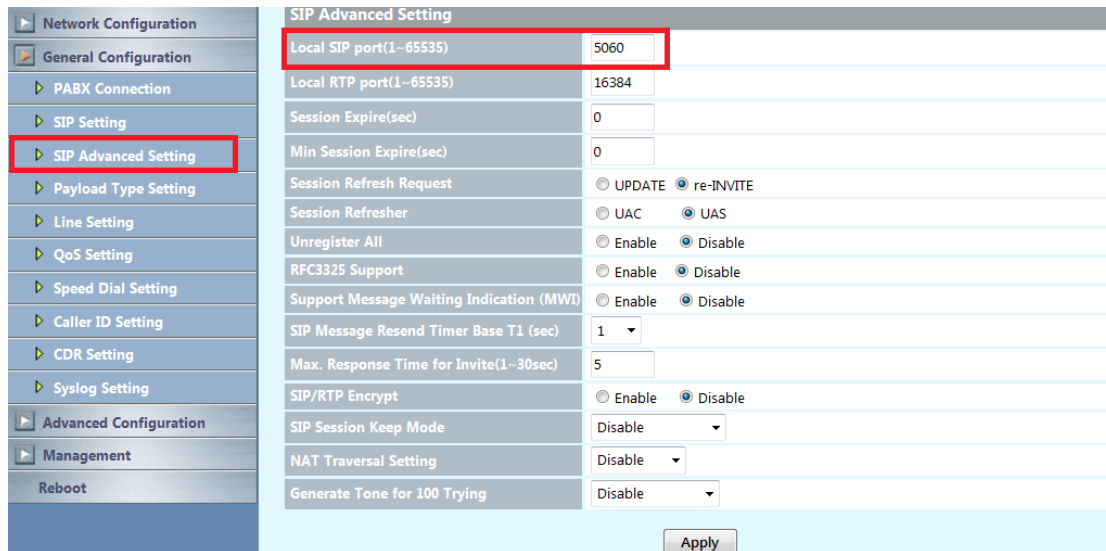
For example: Set static IP address of 192.168.18.2 at **WAN port** on **Network Configuration** → **WAN Setting** of WellGate 2608 WEB page.



WAN Setting	
Connection mode	Static IP
Current IP address	192.168.18.2
DNS Server mode	<input checked="" type="radio"/> Auto <input type="radio"/> Manual
Primary DNS address	168.95.1.1
Secondary DNS address	168.95.192.1
WAN Link Speed	Auto
HTTP port for WEB management (80,1024~65535)	80
HTTPS port for WEB management (443,1024~65535)	443
Remote access	HTTP
Static IP	
IP address	192.168.18.2
Subnet mask	255.255.248.0
Default gateway	192.168.16.254

Figure 2. FXS gateway Network

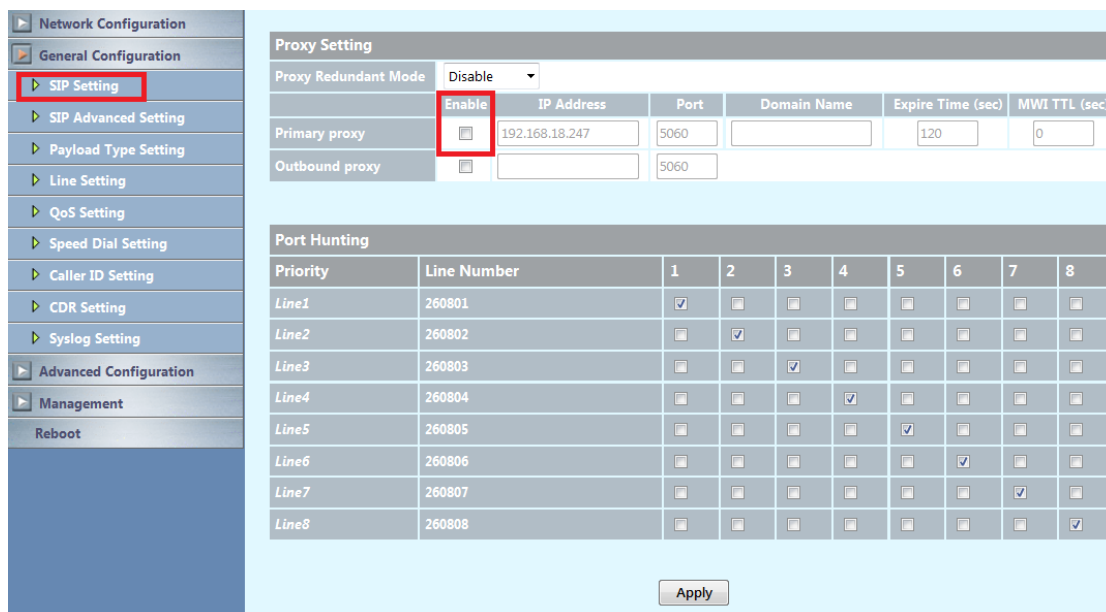
**Step 2:** Go to **General Configuration** → **SIP Advanced setting** → **SIP Local Port** to configure port number. In this example, the SIP local port is 5060. See [Figure 3](#). This port number should be the same as Call Routing configuration SIP port number.



SIP Advanced Setting	
Local SIP port(1~65535)	5060
Local RTP port(1~65535)	16384
Session Expire(sec)	0
Min Session Expire(sec)	0
Session Refresh Request	<input type="radio"/> UPDATE <input checked="" type="radio"/> re-INVITE
Session Refresher	<input type="radio"/> UAC <input checked="" type="radio"/> UAS
Unregister All	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
RFC3325 Support	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Support Message Waiting Indication (MWI)	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SIP Message Resend Timer Base T1 (sec)	1
Max. Response Time for Invite(1~30sec)	5
SIP/RTP Encrypt	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SIP Session Keep Mode	Disable
NAT Traversal Setting	Disable
Generate Tone for 100 Trying	Disable

Figure 3. SIP local port number.

**Step 3:** Disable Primary Proxy on SIP Setting, See [Figure 4](#).



Proxy Setting						
Proxy Redundant Mode	Disable					
	Enable	IP Address	Port	Domain Name	Expire Time (sec)	MWI TTL (sec)
Primary proxy	<input checked="" type="checkbox"/>	192.168.18.247	5060		120	0
Outbound proxy	<input type="checkbox"/>		5060			

Port Hunting									
Priority	Line Number	1	2	3	4	5	6	7	8
Line1	260801	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line2	260802	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line3	260803	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line4	260804	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line5	260805	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line6	260806	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line7	260807	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line8	260808	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 4.



**Step 4:** Go to **Line Setting** webpage (See [Figure 5](#) and [Figure 6](#)) of FXS gateway at **Port #1 (LINE ID 1)** to continue setting of port #1.

Cancel the **Reg option** ( Disable Registration) for each line and Enter FXS port #1 information as follows.

TEL No : 260801

User ID : 260801

User password: 260801

Display Name: 260801

**Enter FXS port #2 information as follows.**

TEL No : 260802

User ID : 260802

User password: 260802

Display Name: 260802

**Enter FXS port #3 information as follows.**

TEL No : 260803

User ID : 260803

User password: 260803

Display Name: 260803

**Enter FXS port #4 information as follows.**

TEL No : 260804

User ID : 260804

User password: 260804

Display Name: 260804

**Enter FXS port #5 information as follows.**

TEL No : 260805

User ID : 260805

User password: 260805

Display Name: 260805

**Enter FXS port #6 information as follows.**

TEL No : 260806

User ID : 260806

User password: 260806

Display Name: 260806



**Enter FXS port #7 information as follows.**

TEL No : 260807

User ID : 260807

User password: 260807

Display Name: 260807

**Enter FXS port #8 information as follows.**

TEL No : 260808

User ID : 260808

User password: 260808

Display Name: 260808

**Step 5:** Set the FXS line's information to each port ( Line ID is the FXS's port number. See [Figure 5](#) and [Figure 6](#)). Enable Hotline feature at FXS gateway to port #1 and enter **HOT LINE TEL** field to **26801** which is WellGate 2680 FXO port 1 number. This command let FXS port #1 point to remote FXO port #1 directly. Continue to configure FXS port number 2 to 8 as following example at **Modify Line Setting** web page. See [Figure 5](#) and [Figure 6](#).

Enter **HOT LINE TEL** field to **26802** which is WellGate 2680 FXO port 2 number.  
(This command let FXS port #2 point to remote FXO port #2 directly.)

Enter **HOT LINE TEL** field to **26803** which is WellGate 2680 FXO port 3 number.  
(This command let FXS port #3 point to remote FXO port #3 directly.)

Enter **HOT LINE TEL** field to **26804** which is WellGate 2680 FXO port 4 number.  
(This command let FXS port #4 point to remote FXO port #4 directly.)

Enter **HOT LINE TEL** field to **26805** which is WellGate 2680 FXO port 5 number.  
(This command let FXS port #5 point to remote FXO port #5 directly.)

Enter **HOT LINE TEL** field to **26806** which is WellGate 2680 FXO port 6 number.  
(This command let FXS port #6 point to remote FXO port #6 directly.)

Enter **HOT LINE TEL** field to **26807** which is WellGate 2680 FXO port 7 number.  
(This command let FXS port #7 point to remote FXO port #7 directly.)

Enter **HOT LINE TEL** field to **26808** which is WellGate 2680 FXO port 8 number.  
 (This command let FXS port #8 point to remote FXO port #8 directly.)

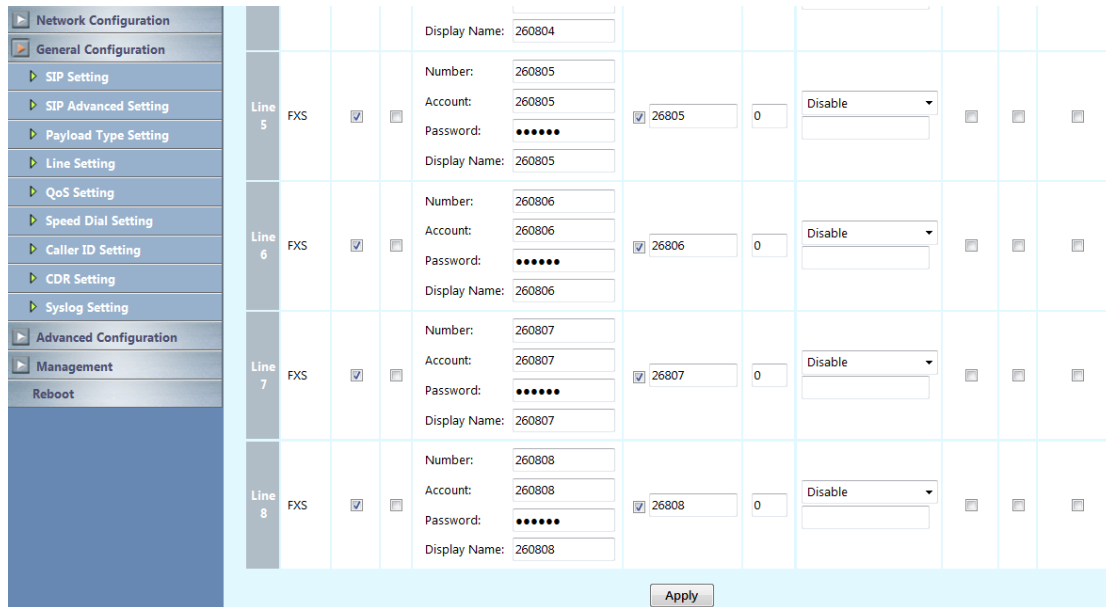
For example:

The FXS port 1 number is 260801, FXS port 2 is 260802, FXS port 3 is 260803, FXS port 4 is 260804, FXS port 5 is 260805, FXS port 6 is 260806, FXS port 7 is 260807, FXS port 8 is 260808.

FXS port 1 number 260801 hotline to **FXO Port 1** which number is **26801**,  
 FXS port 2 number 260802 hotline to **FXO Port 2** which number is **26802**,  
 FXS port 3 number 260803 hotline to **FXO Port 3** which number is **26803**,  
 FXS port 4 number 260804 hotline to **FXO Port 4** which number is **26804**,  
 FXS port 5 number 260805 hotline to **FXO Port 5** which number is **26805**,  
 FXS port 6 number 260806 hotline to **FXO Port 6** which number is **26806**,  
 FXS port 7 number 260807 hotline to **FXO Port 7** which number is **26807**,  
 FXS port 8 number 260808 hotline to **FXO Port 8** which number is **26808**,

Line Setting		TYPE	Enable	Reg	Number	Hotline	Wait to Hotline (sec)	Forward	Call Waiting	DND	Anonymous
Line 1	FXS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: <input type="text" value="260801"/> Account: <input type="text" value="260801"/> Password: <input type="password" value="*****"/> Display Name: <input type="text" value="260801"/>	<input checked="" type="checkbox"/> 26801	<input type="text" value="0"/>	Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line 2	FXS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: <input type="text" value="260802"/> Account: <input type="text" value="260802"/> Password: <input type="password" value="*****"/> Display Name: <input type="text" value="260802"/>	<input checked="" type="checkbox"/> 26802	<input type="text" value="0"/>	Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line 3	FXS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: <input type="text" value="260803"/> Account: <input type="text" value="260803"/> Password: <input type="password" value="*****"/> Display Name: <input type="text" value="260803"/>	<input checked="" type="checkbox"/> 26803	<input type="text" value="0"/>	Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Line 4	FXS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: <input type="text" value="260804"/> Account: <input type="text" value="260804"/> Password: <input type="password" value="*****"/> Display Name: <input type="text" value="260804"/>	<input checked="" type="checkbox"/> 26804	<input type="text" value="0"/>	Disable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Figure 5. Line Setting.



Line	Type	Number	Account	Password	Display Name	Disable	Other Settings
Line 5	FXS	26805	26805	••••••	26805	Disable	26805, 0
Line 6	FXS	26806	26806	••••••	26806	Disable	26806, 0
Line 7	FXS	26807	26807	••••••	26807	Disable	26807, 0
Line 8	FXS	26808	26808	••••••	26808	Disable	26808, 0

Figure 6. Line setting.

**Step 6:** Create a prefix at Wellgate 2680 FXS Gateway to route calls to Wellgate 2680 FXO. For this example, see [Figure 7](#).

- Set prefix: 26801, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5060**
- Set prefix: 26802, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5062**
- Set prefix: 26803, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5064**
- Set prefix: 26804, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5066**
- Set prefix: 26805, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5068**
- Set prefix: 26806, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5070**
- Set prefix: 26807, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5072**
- Set prefix: 26808, min length :0 , route to :P2P , P2P Address :192.168.18.235:**5074**

We are routing number 26801 to WellGate 2680 port 1, the SIP Local port is **5060**.

- Number 26802 to WellGate 2680 port 2, the SIP Local port is **5062**.
- Number 26803 to WellGate 2680 port 3, the SIP Local port is **5064**.
- Number 26804 to WellGate 2680 port 4, the SIP Local port is **5066**.
- Number 26805 to WellGate 2680 port 5, the SIP Local port is **5068**.
- Number 26806 to WellGate 2680 port 6, the SIP Local port is **5070**.
- Number 26807 to WellGate 2680 port 7, the SIP Local port is **5072**.
- Number 26808 to WellGate 2680 port 8, the SIP Local port is **5074**.



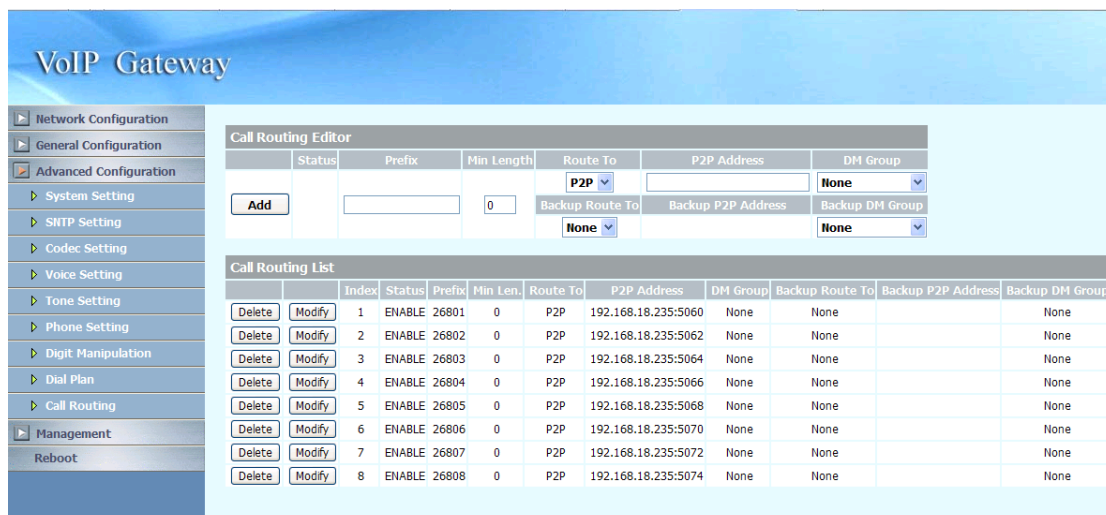


Figure 7. Configure FXS Routing table.

### 3. WellGate 2680 (FXO Gateway) configuration

**Step 1:** Set static IP address to WellGate 2680 FXO gateway’s WAN port as following picture. See Figure 8. For example, Set static IP address 192.168.18.235 on **Network Configuration** → **WAN Setting** of WellGate 2680 WEB page.

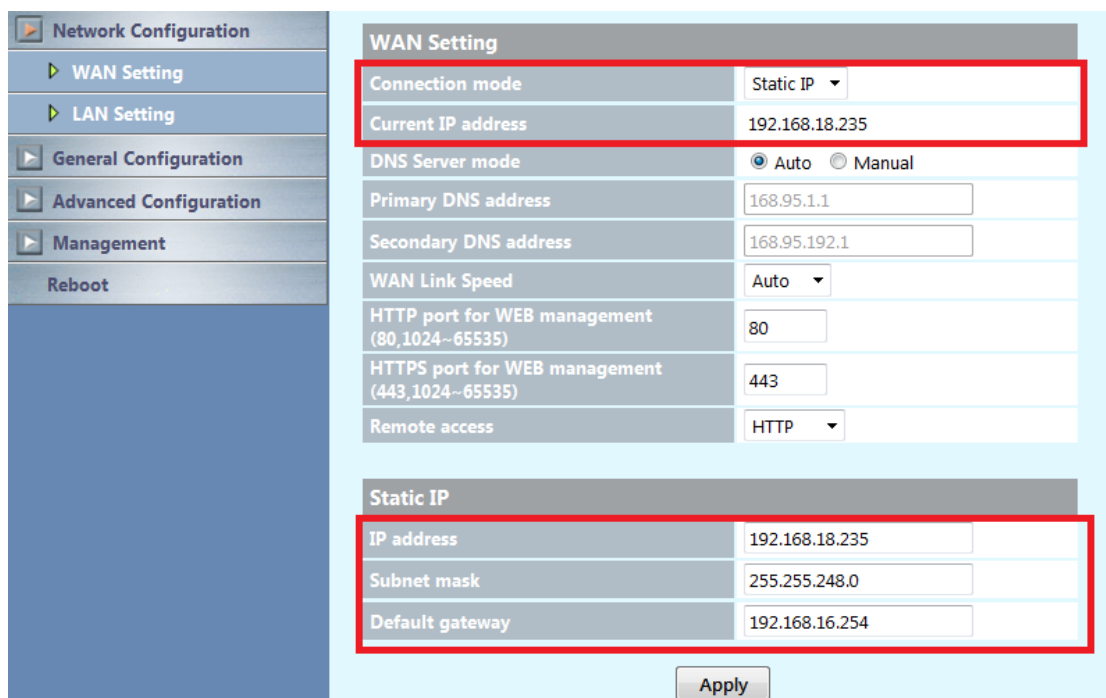
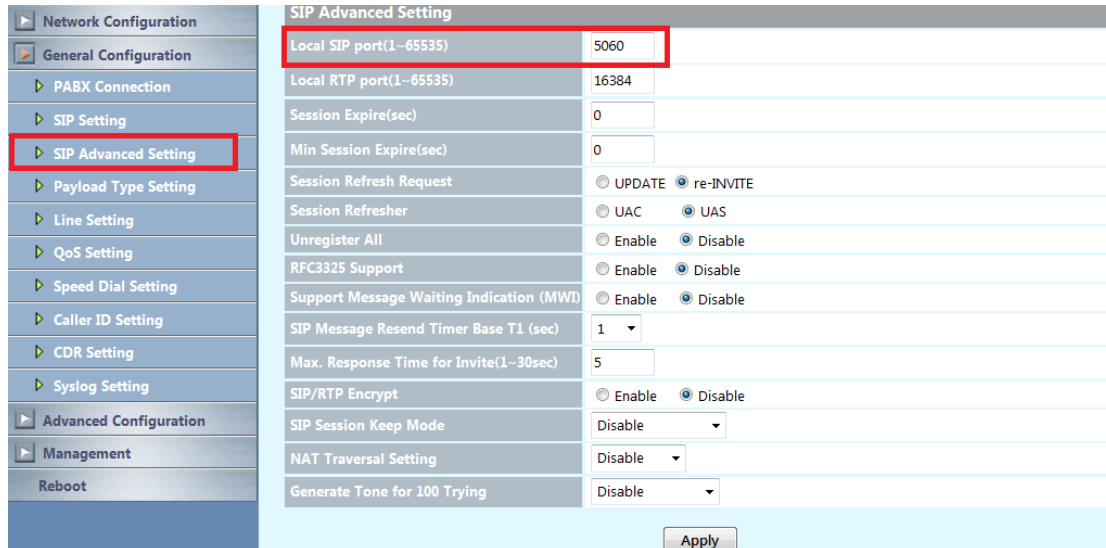


Figure 8. Set WellGate 2680 FXO IP Address.

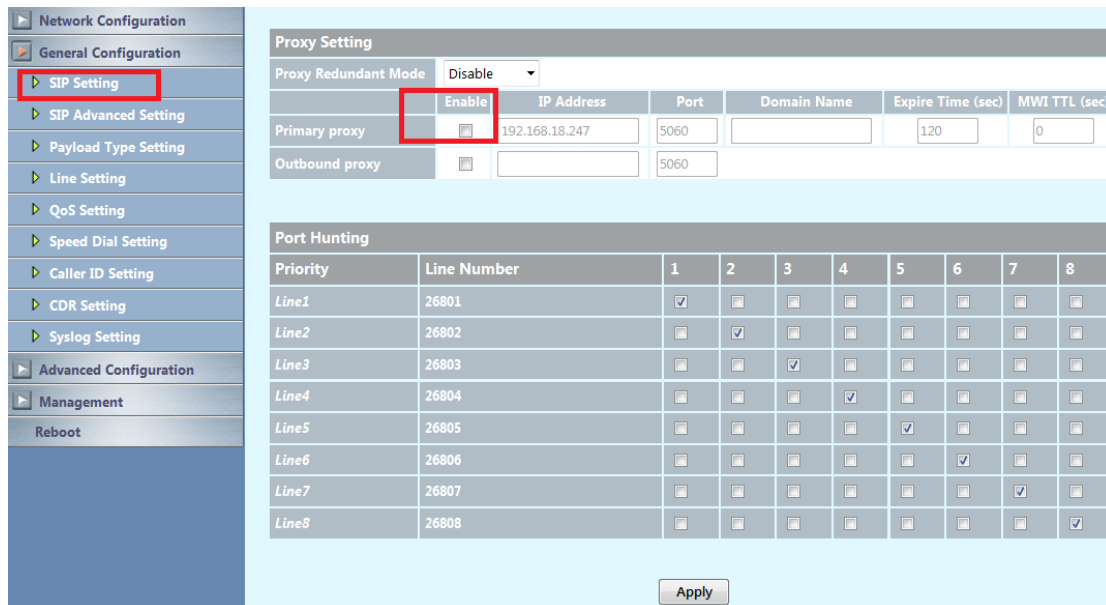
**Step 2:** Go to **General Configuration** → **SIP Advanced setting** → **Local SIP Port** to setup the **SIP Local Port** number. In this example, the SIP local port is 5060. See [Figure 9](#). This port number should be the same as [Call Routing configuration SIP port number](#).



SIP Advanced Setting	
Local SIP port(1-65535)	5060
Local RTP port(1-65535)	16384
Session Expire(sec)	0
Min Session Expire(sec)	0
Session Refresh Request	<input type="radio"/> UPDATE <input checked="" type="radio"/> re-INVITE
Session Refresher	<input type="radio"/> UAC <input checked="" type="radio"/> UAS
Unregister All	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
RFC3325 Support	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Support Message Waiting Indication (MWI)	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SIP Message Resend Timer Base T1 (sec)	1
Max. Response Time for Invite(1-30sec)	5
SIP/RTP Encrypt	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
SIP Session Keep Mode	Disable
NAT Traversal Setting	Disable
Generate Tone for 100 Trying	Disable

Figure 9. FXO Gateway SIP port number.

**Step 3:** Cancel the Enable option of Primary Proxy on SIP Setting, See [Figure 10](#).



Proxy Setting						
Proxy Redundant Mode	Disable					
	<input checked="" type="checkbox"/> Enable	IP Address	Port	Domain Name	Expire Time (sec)	MWI TTL (sec)
Primary proxy	<input type="checkbox"/>	192.168.18.247	5060		120	0
Outbound proxy	<input type="checkbox"/>		5060			

Port Hunting									
Priority	Line Number	1	2	3	4	5	6	7	8
Line1	26801	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line2	26802	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line3	26803	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line4	26804	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line5	26805	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line6	26806	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line7	26807	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line8	26808	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 10. Disable Primary SIP Proxy.

**Step 4:** Go to **Line Setting** webpage (See [Figure 11](#) and [Figure 12](#)) of FXO gateway at **Port #1 (LINE ID 1)** to continue setting of port #1.

Cancel the Reg option ( Registration) for each line and Enter FXO port #1 information



as follows.

TEL No : 26801

User ID : 26801

User password: 26801

Display Name: 26801

**Enter FXO port #2 information as follows.**

TEL No : 26802

User ID : 26802

User password: 26802

Display Name: 26802

**Enter FXO port #3 information as follows.**

TEL No : 26803

User ID : 26803

User password: 26803

Display Name: 26803

**Enter FXO port #4 information as follows.**

TEL No : 26804

User ID : 26804

User password: 26804

Display Name: 26804

**Enter FXO port #5 information as follows.**

TEL No : 26805

User ID : 26805

User password: 26805

Display Name: 26805

**Enter FXOport #6 information as follows.**

TEL No : 26806

User ID : 26806

User password: 26806

Display Name: 26806

**Enter FXO port #7 information as follows.**



TEL No : 26807

User ID : 26807

User password: 26807

Display Name: 26807

**Enter FXO port #8 information as follows.**

TEL No : 26808

User ID : 26808

User password: 26808

Display Name: 26808

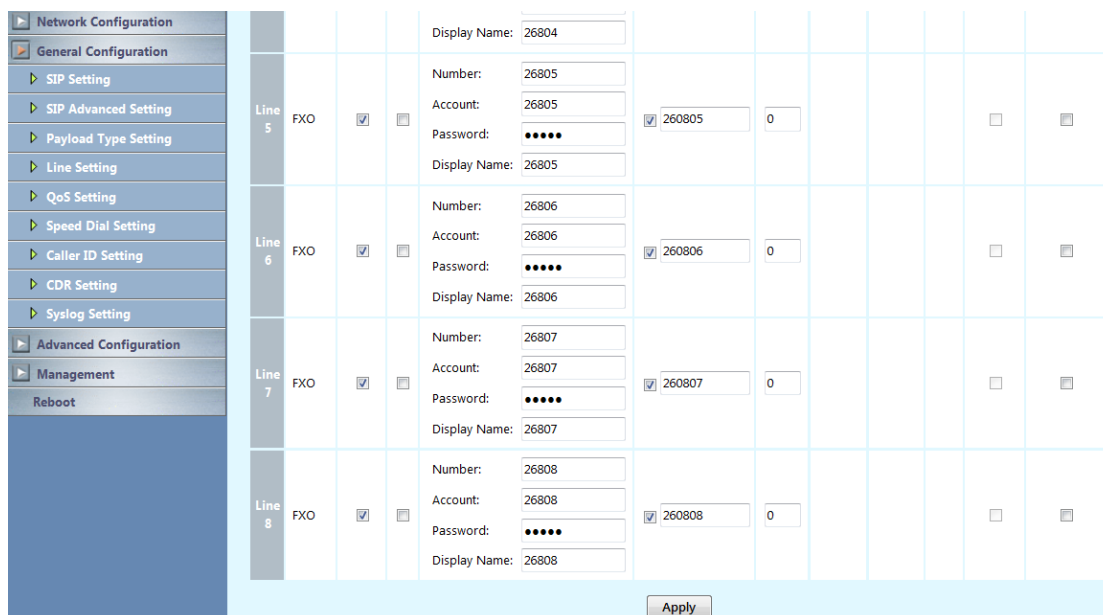
**Step 5:** Set the FXO SIP line's information to each line. Go to **Ling Setting** webpage of WellGate 2680 FXO Gateway and configure each line. See [Figure 11](#) and [Figure 12](#).

Enable **Hotline feature** by selecting **Incoming Call Handling** to **Hot Line** and give remote WellGate 2608 FXS gateway port 1 number to 260801. For example:

- FXO SIP port 1 number 26801 hotline to remote **FXS port 1** number **260801** directly.
- FXO SIP port 2 number 26802 hotline to remote **FXS port 2** number **260802** directly.
- FXO SIP port 3 number 26803 hotline to remote **FXS port 3** number **260803** directly.
- FXO SIP port 4 number 26804 hotline to remote **FXS port 4** number **260804** directly.
- FXO SIP port 5 number 26805 hotline to remote **FXS port 5** number **260805** directly.
- FXO SIP port 6 number 26806 hotline to remote **FXS port 6** number **260806** directly.
- FXO SIP port 7 number 26807 hotline to remote **FXS port 7** number **260807** directly.
- FXO SIP port 8 number 26808 hotline to remote **FXS port 8** number **260808** directly.

	TYPE	Enable	Reg	Number	Hotline	Wait to Hotline (sec)	Forward	Call Waiting	DND	Greeting	Anonymous
Line 1	FXO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: 26801 Account: 26801 Password: ●●●● Display Name: 26801	<input checked="" type="checkbox"/> 260801	0				<input type="checkbox"/>	<input type="checkbox"/>
Line 2	FXO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: 26802 Account: 26802 Password: ●●●● Display Name: 26802	<input checked="" type="checkbox"/> 206802	0				<input type="checkbox"/>	<input type="checkbox"/>
Line 3	FXO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: 26803 Account: 26803 Password: ●●●● Display Name: 26803	<input checked="" type="checkbox"/> 206803	0				<input type="checkbox"/>	<input type="checkbox"/>
Line 4	FXO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Number: 26804 Account: 26804 Password: ●●●● Display Name: 26804	<input checked="" type="checkbox"/> 260804	0				<input type="checkbox"/>	<input type="checkbox"/>

Figure 11. FXO Line Configuration.



Line	Type	Display Name	Number	Account	Password	268005	0		
Line 5	FXO	26804	26805	26805	•••••	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line 6	FXO	26806	26806	26806	•••••	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line 7	FXO	26807	26807	26807	•••••	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line 8	FXO	26808	26808	26808	•••••	<input checked="" type="checkbox"/>	<input type="text" value="0"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 12. FXO Line configuration.

**Step 6:** Create a prefix of WellGate 2680 FXO to route calls to WellGate 2608.

For this example, [See the Figure 13](#).

Set prefix: 260801, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5060**

Set prefix: 260802, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5062**

Set prefix: 260803, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5064**

Set prefix: 260804, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5066**

Set prefix: 260805, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5068**

Set prefix: 260806, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5070**

Set prefix: 260807, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5072**

Set prefix: 260808, min length :0 , route to :P2P , P2P Address :192.168.18.2:**5074**

We are routing number 206801 to WellGate 2608 port 1, the SIP Local port is **5060**.

Number 26802 to WellGate 2680 port 2, the SIP Local port is **5062**.

Number 26803 to WellGate 2680 port 3, the SIP Local port is **5064**.

Number 26804 to WellGate 2680 port 4, the SIP Local port is **5066**.

Number 26805 to WellGate 2680 port 5, the SIP Local port is **5068**.

Number 26806 to WellGate 2680 port 6, the SIP Local port is **5070**.

Number 26807 to WellGate 2680 port 7, the SIP Local port is **5072**.

Number 26808 to WellGate 2680 port 8, the SIP Local port is **5074**.

Call Routing Editor											
Status	Prefix	Min Length	Route To	P2P Address	DM Group						
<input type="button" value="Add"/>	<input type="text"/>	<input type="text" value="0"/>	P2P	<input type="text"/>	None						
			Backup Route To	Backup P2P Address	Backup DM Group						
			None		None						

Call Routing List											
		Index	Status	Prefix	Min Len	Route To	P2P Address	DM Group	Backup Route To	Backup P2P Address	Backup DM Group
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	1	ENABLE	260801	0	P2P	192.168.18.2:5060	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	2	ENABLE	260802	0	P2P	192.168.18.2:5062	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	3	ENABLE	260803	0	P2P	192.168.18.2:5064	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	4	ENABLE	260804	0	P2P	192.168.18.2:5066	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	5	ENABLE	260805	0	P2P	192.168.18.2:5068	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	6	ENABLE	260806	0	P2P	192.168.18.2:5070	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	7	ENABLE	260807	0	P2P	192.168.18.2:5072	None	None		None
<input type="button" value="Delete"/>	<input type="button" value="Modify"/>	8	ENABLE	260808	0	P2P	192.168.18.2:5074	None	None		None

Figure 13. WellGate 2680 FXO Routing table.

## 4. Configure incoming Ring Cadence to FXO Gateway

When you connect WellGate 2680 FXO gateway Lines to local PABX's extension or PSTN switch, please go to WellGate 2680 webpage setting at **Phone Setting** to configure proper **Ring Cadence ( Ring ON time and Ring OFF time )** according to the **PABX or PSTN ring Cadence specification**.

Without configuring Ring Cadence to FXO gateway properly according to PABX or PSTN Ring Cadence, FXO may detect Ring signal in a strange behavior and cause abnormal operation.

WellGate 2680 factory default Ring Cadence setting is 1 seconds ON, 2 seconds OFF. Some PABX or PSTN provides 1 second ON and 3 seconds OFF Ring Cadence. In this case, please configure WellGate 2680 Ring Cadence to 1 second ON and 3 seconds OFF to match incoming Ring signal. [See Figure 14](#).

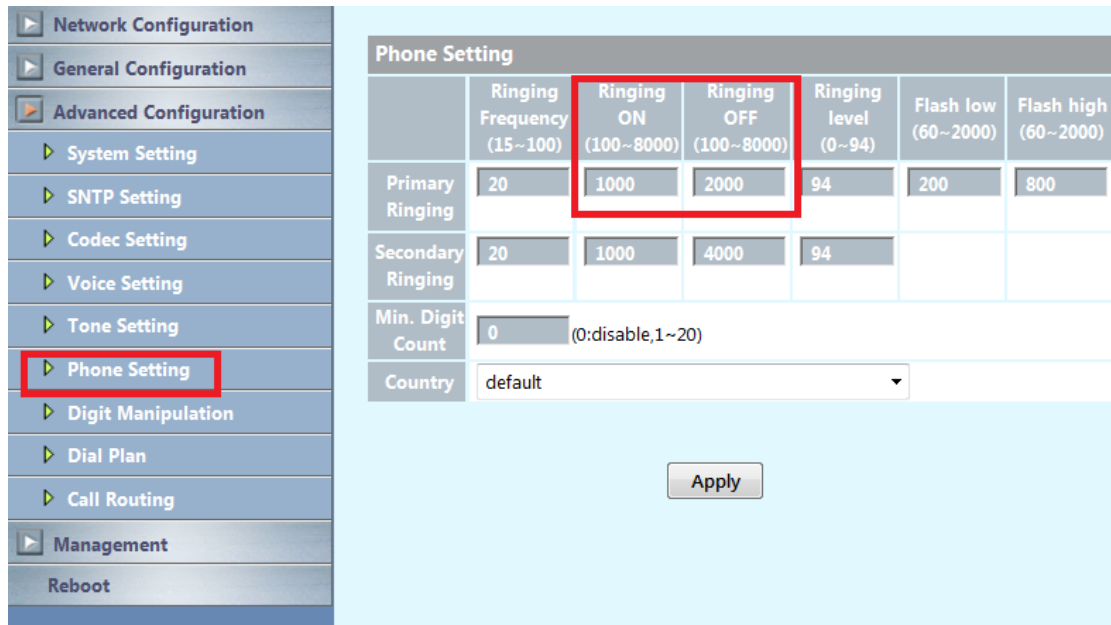


Figure 14. Ring Cadence of FXO Gateway.

Finally, if you have no idea what is [Ring Cadence](#) of PABX or PSTN, you can try setting the ON time and OFF time to 1000 (1 second) and 8000(8 seconds), see [Figure 15](#).

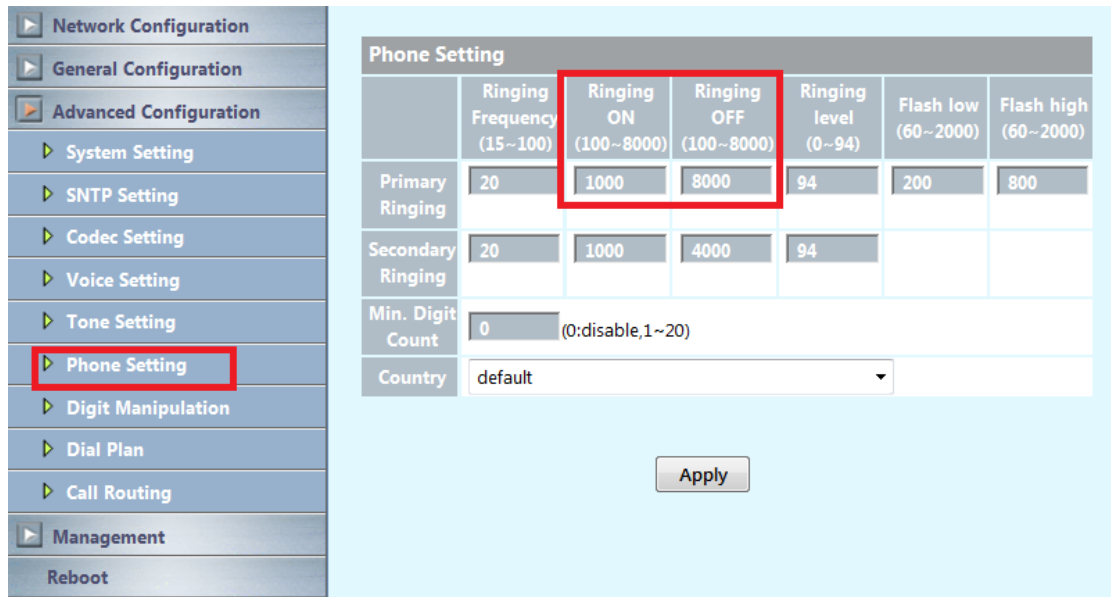


Figure 15. Ring Cadence of FXO Gateway.

## 5. Enable Caller ID function at FXO and FXS gateway.

The Caller ID configuration at FXO gateway should be configured to match PABX extension or local PSTN Caller ID incoming signal in order to carry this signal to remote FXS gateway to display at FXS analog phone set. Of course, the remote FXS Gateway also has to enable Caller ID generation function ( see Figure 16. ) Here are steps to enable FXO Caller ID detection specification and enable FXS gateway Caller ID generation steps.

**Step 1:** Enable each line's Caller ID setting. WellGate 2680 will auto detect incoming call's caller id type of PABX or PSTN line number and send to remote WellGate 2608. If you disable Caller ID detection all lines, WellGate 2680 will send each line number to WellGate 2608 instead. See Figure 16.

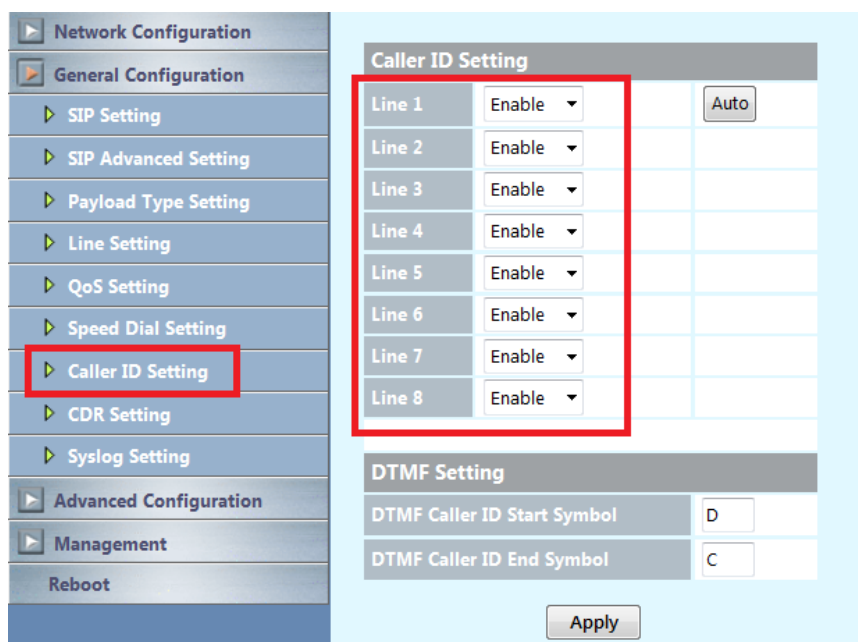


Figure 16. Caller ID Setting.

**Step 2:** Enable Caller ID generation at WellGate 2608 FXS gateway. See Figure 17. Go to **Caller ID Setting** to select Caller ID generation type. This type has to match your analog Phone's caller ID type in order to display CID number correctly. The Caller ID has either **FSK** or **DTMF** mode. The **CID** from Caller ID indicates telephone number. The **NAME** from Caller ID represents Caller **NAME** instead.



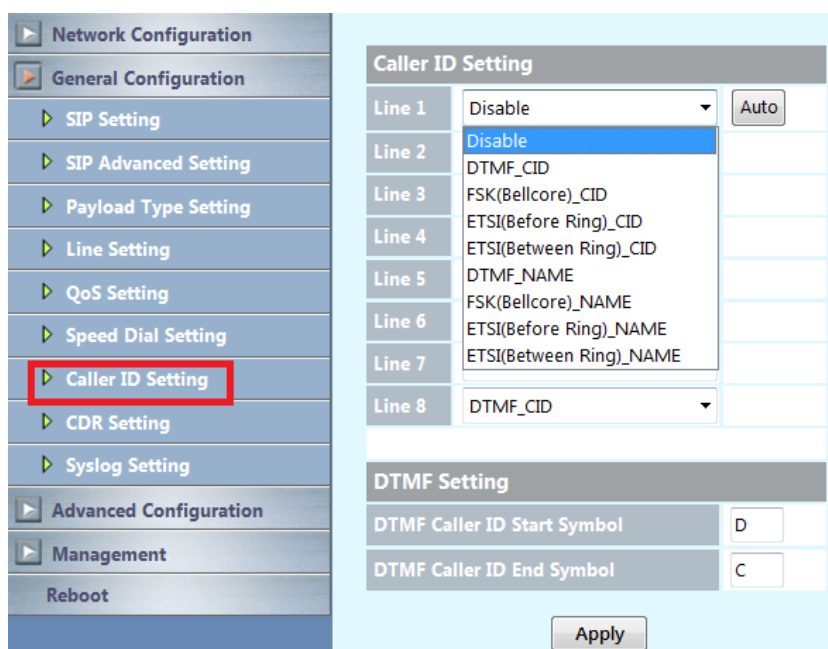


Figure 17. Select Caller ID number or name at FXS Gateway.

## 6. Release FXO Line from PSTN or PABX extension after call was dropped.

FXO analog interface detect disconnect tone which was sent from PABX extension or PSTN line to release tip/ring phone wire. In other word, the FXO line can only drop call after detecting an effective disconnect tone. In FXO gateway webpage configuration, Go to **Advanced Configuration** → **Tone Setting** to configure **Disconnect Tone 1** and **Disconnect Tone 2** in which disconnect tone are needed to match with PABX or PSTN disconnect tone. See figure 18. For details description, please refer to [User manual for 26xx User Manual V108a.pdf](#) at page 53 in details. You can also go to **Welltech company WEB page** → **SUPPORT** and **DOWNLOAD** → **WellGate 26XX(2608;2680;2644)(SIP)** to download tool to detect disconnect tone by WellGate 2680. You also can link to below address to download it.

[http://www.welltech.com/support/voip2/SIP%20series/FXSO%20series/26xx/tool/FXO%20Tone%20Analyzer\\_EN.zip](http://www.welltech.com/support/voip2/SIP%20series/FXSO%20series/26xx/tool/FXO%20Tone%20Analyzer_EN.zip)

Tone Setting						
	Dial tone	Ring back tone	Busy tone	Call-waiting	Disconnect tone1	Disconnect tone2
Frequency high (0,300-1980)	440	480	620	440	620	620
Frequency low (0,300-1980)	350	440	480	350	480	480
Frequency high level (0-63)(-db)	13	19	24	24	8	13
Frequency low level (0-63)(-db)	13	19	24	24	8	13
Tone1 On(0-8000) (Unit:10ms)	300	100	50	25	50	25
Tone1 Off(0-8000) (Unit:10ms)	0	200	50	25	50	25
Tone2 On(0-8000) (Unit:10ms)	0	0	0	25	0	0
Tone2 Off(0-8000) (Unit:10ms)	0	0	0	25	0	0

Apply

Figure 18. Disconnect tone table.

WellGate 2680 supports an alternative feature to release FXO port by detection Loop Current Drop signal. Go to **Advanced Configuration → System Setting → Disconnect Signal Detection** to select **Loop Current Drop** feature. Once calling user drop this call, PSTN or PABX may **drop Loop Current signal** for about 300 msec (default setting) to inform FXO interface. To detect Loop current drop duration can be changed. See Figure 19. Go to **Advanced Configuration → System Setting → Disconnect Signal Detection** to select **Loop Current Drop** feature and **Current Drop Time**. This feature depends on the PSTN switch or PABX you are using.

System Setting	
prack	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Send billing signal	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP Address announcement	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Dial Wait Timeout (1-60sec)	15
T.38 NoAttribute	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
T.38 FAX Type	T.38
T.30 FAXByPass Codec	G.711 a-law
DTMF Detection Sensitivity	1
<b>System Setting</b>	
Built-in Call Hold Music	<input checked="" type="radio"/> Voice <input type="radio"/> Tone
DTMF Duration	65 ms
DTMF Interdigit Time	55 ms
Ring Time Limit ( 10-600sec )	210
Disconnect Signal Detection	Loop Current Drop
- Loop Current Drop Time ( 100-1000ms )	300
Network Connection Detection	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
FXO Answer after Ring Count	2
Network Unavailable Tone	Disable
ROH Tone	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Apply

Figure 19. Loop Current Drop detection at FXO

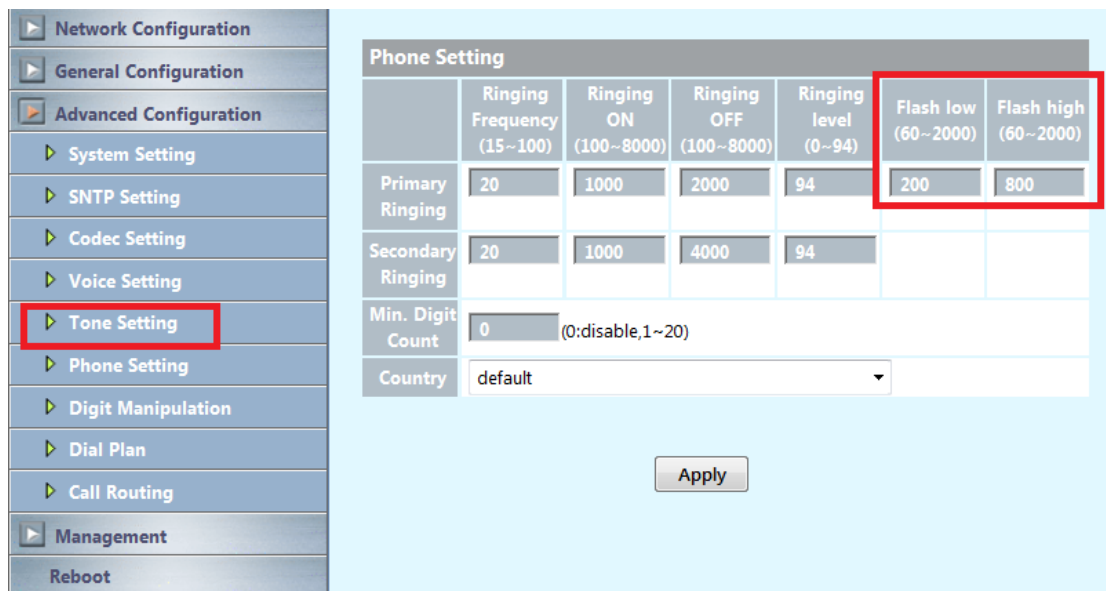
## 7. FLASH command generation and detection on FXO and FXS gateway.

**FLASH feature** is widely used for PABX extension to implement PABX's advanced features such as **Call Transfer, Call Hold, Conference, Forwarding or Call Park and others**. PABX relies on extension's analog phone set to **generate Flash time** to inform PABX this is an **FLASH command**.

In this FXO+FXS P2P Hotline application, FXS needs to detect a FLASH command from analog phone set and transmit to FXO gateway via VoIP network. Then, FXO generates an equivalent Flash time to PABX. Here are step to step guidance to configure this function at both FXO and FXS gateway.

### Step 1 : Setup FXS Flash detection time range.

Since FLASH command was initialized from analog phone set, check what flash time this phone set can generate. Then, configure FXS gateway flash time detection range. See [Figure 20](#) as follows. Go to **Advanced Configuration → Tone Setting → setup Minimum and Maximum Flash Time range**. Note : the analog phone flash time should be located inside FXS gateway setting range to detect an Flash command correctly. Once FXS detect this command, it sends this signal to FXO gateway via SIP IP protocol automatically.



	Ringing Frequency (15~100)	Ringing ON (100~8000)	Ringing OFF (100~8000)	Ringing level (0~94)	Flash low (60~2000)	Flash high (60~2000)
Primary Ringing	20	1000	2000	94	200	800
Secondary Ringing	20	1000	4000	94		
Min. Digit Count	0 (0:disable,1~20)					
Country	default					

Figure 20. Setup FXS Flash detection time range.

### Step 2 : Setup FXO Flash time generation.

Go to **Advanced Configuration → System Setting → Disconnect Signal Detection →**



Loop Current Drop Time (msec). See Figure 21. Flash time has to match PSTN or PABX Flash command specification. Consult PSTN or PABX technician to fill in proper time.

System Setting	
prack	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Flash key function	Transfer
Send billing signal	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Keypad DTMF type	RFC2833
IP Address announcement	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
End of dial key	#
Dial Wait Timeout (1-60sec)	15
Inter Digits Timeout (1-5sec)	5
T.38 NoAttribute	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
FAX redundancy depth	2
T.38 FAX Type	T.38
FAXByPass Keyword	X-fax
T.30 FAXByPass Codec	G.711 a-law
FAXByPass Keyword	
DTMF Detection Sensitivity	1
System Setting	
Built-in Call Hold Music	<input checked="" type="radio"/> Voice <input type="radio"/> Tone
DTMF Duration	65 ms
DTMF Interdigit Time	55 ms
Ring Time Limit (10-600sec)	210
Disconnect Signal Detection	Loop Current Drop
Loop Current Drop Time (100-1000ms)	300
Network Connection Detection	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
FXO Answer after Ring Count	2
Network Unavailable Tone	Disable
ROH Tone	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Figure 21. Setup FXO Flash time generation.

## 8. WellGate 2680 FXO gateway P2P Hotline to WellGate 2504 FXS gateway.

WellGate 2680 8-port FXO gateway can also connect to remote WellGate 2504 4-port FXS gateway with P2P Hotline mode. For instance, FXO port #1 to #4 connects to the first WellGate 2504 at remote location A. However, port #5 to #8 of FXO gateway connects to the second unit WellGate 2504 at location B. Figure 22 shows this application's block diagram.

Follow section 3 of this application to configure WellGate 2680 FXO gateway, and follow section 2 of "WellGate 2504 and WellGate 2540 P2P Hotline application" to configure WellGate 2504 FXS gateway.

