

OpenVox GSM Gateway Clustering

QUICKSTART GUIDE

This document applies to OpenVox GSM Gateway VS-GW1600 (including 8G/12G/16G/20G). This is an example with 20G. 8G/12G/16G/20G GSM Gateway will be auto-matically assigned to 2/3/4/5 different IPs in each 4 GSM channels. You can access each GW in cor-responding IP from 172.16.99.1 to 172.16.99.5. Each 4 channels are separated, which is able to avoid crashing during the production. It is also available to configure a cluster to use one Master module to control all other Slave modules. Then you can control all 20 gsm ports with a single IP address. Here is a demo to show you how to configure the cluster.

Default IP: 172.16.99.1

Username: admin

Password : admin

Versions	Modules	IP Address
VS-GW1200-4G	1 * 4G	172.16.99.1
VS-GW1600-8G	2 * 4G	172.16.99.1-2
VS-GW1600-12G	3 * 4G	172.16.99.1-3
VS-GW1600-16G	4 * 4G	172.16.99.1-4
VS-GW1600-20G	5 * 4G	172.16.99.1-5

There are two LAN ports, please connect the gateway to Internet through one of LAN port and make sure connectivity by LED status.

Configuration

⇒ Configure options in GUI:

1. Factory Reset All Modules;
2. Cluster Settings;
3. Network Parameters;
4. SIP Settings;
5. Routings;
6. Call Test

⇒ Create a SIP trunk, and configure VoIP gateway in SIP server

⇒ Register SIP extensions

⇒ Call Test



Step 1. Factory Reset All Modules

Before setup cluster, you need to upgrade the latest firmware and factory reset all modules. This can be done via web GUI or hardware RST button.

Reset the device via WEB GUI:

Click “SYSTEM—>Tools—>Factory Reset

The screenshot shows the OpenVox web GUI interface. At the top, there is a navigation bar with 'SYSTEM' highlighted. Below it, a secondary menu has 'Tools' circled in red. The main content area is titled 'Free Communication' and contains several sections: 'Reboot Tools' with 'System Reboot' and 'Asterisk Reboot' buttons; 'Update Firmware' with a 'System Update' button; 'Upload Configuration' with a 'File Upload' button; 'Backup Configuration' with a 'Download Backup' button; and 'Restore Configuration' with a 'Factory Reset' button circled in red. The footer contains the OpenVox logo and copyright information.

Reset the device via Hardware RST button:



Notice:



Press the RST button for 8 seconds, then the system will restart and factory reset the device. About 90 seconds later, you can login the device with default IP address list above, then we can start to do cluster for managing the device through a single IP address.



Step 2. Cluster settings

Click “SYSTEM—> Cluster—> Set Default” to setup cluster for all VS-GWM400G modules:

The screenshot shows the OpenVox web interface for configuring cluster settings. The 'Cluster' tab is active. The 'Managed Mode' section includes a 'Mode' dropdown set to 'Master' and a 'Set Default' button. The 'Password' field is set to '9999'. The 'Master IP(Local IP):' field is set to '192.168.9.1'. The 'Slaves IP List' table contains the following data:

Board	Original IP	Target IP
Board-2	172.16.99.2	192.168.9.2
Board-3	172.16.99.3	192.168.9.3
Board-4	172.16.99.4	192.168.9.4
Board-5	172.16.99.5	192.168.9.5

At the bottom, the 'Remain Original IP address.' checkbox is checked (ON). An 'Apply' button is located below the form.

Mode:

- Stand-alone ----- Work individually as a 4 ports GSM gateway;
- Master ----- Act as a Master of all VS-GWM400G modules, it will control all slave modules. one master, others are slave;
- Slave ----- Act as a Slave, it is under Master's control.

Password:

It is for communication between Master and Slaves.

Master IP (Local IP):

This IP is for internal communication between Master and Slaves. It is different from external IP for access to Administrator console via WEB GUI. You can setup it whatever you want, just make sure it will not conflict in LAN.

Slave IP List:

There are 2 kinds of IP here, Original IP is for external access to each module, default IP is 172.16.99.1-5, Target IP is for internal communication in clustering. If Master IP settled, Target IP will be settled automatically. When clicked "Apply", Target IP will be put into effect for each module based on Original IP. Here cluster done!

Remain Original IP Address:

If 'ON', remain external IP for each module; If 'OFF', only remain external IP for Master, Slave not.



Step 3. Setup Network Parameters

After cluster settings finished, you can change the IP address for Master module, both internal IP and public IP are OK. Please enter the default IP of gateway address in your browser to login Administrator Console, and click “NETWORK—>LAN Settings” to set network parameters such as IP Address. Choose "Static" Type for eth0 Interface, fill in your IP address, then "Save" your changes.

Reserved Access IP:



This option is reserved to access to gateway if all passwords missed just in case. It is not changeable. You can choose to Enable it or not, if "OFF" selected, the IP will disappear.

you also need to setup DNS server in DNS settings for time synchronization.



Step 4. SIP Settings

Create a SIP Endpoint for connecting VoxStack and SIP server

Please enter the IP of gateway in your browser to login Administrator Console, and click “SIP—>SIP Endpoints—>Add New SIP Endpoint” to build a sip trunk.

Endpoint Name	Registration	Credentials	Actions
1025	client	1025@172.16.65.65	
DISA	client	400800@172.16.66.66	

[Add New SIP Endpoint](#)

Here is a sample to show you how to create SIP trunks for connecting VoxStack to a VOS3000 VoIP Operation Platform with Register Mode and UnRegister Mode.

- Register Mode: Register VoxStack to SIP server with username and password

Add a New SIP Endpoint

▼ Main Endpoint Settings

Name:	VOS3000
Username:	2002 <input type="checkbox"/> Anonymous
Password:	2002
Registration:	This gateway registers with the endpoint
Hostname or IP Address:	172.16.110.110
Transport:	UDP
NAT Traversal:	Yes

▶ Advanced:Registration Options

▶ Call Settings

[Save](#) [Cancel](#)

- UnRegister Mode: Connect VoxStack to SIP server without authentication, just IP to IP.

Add a New SIP Endpoint

▼ Main Endpoint Settings

Name:	VOS3000
Username:	<input type="checkbox"/> Anonymous
Password:	
Registration:	None
Hostname or IP Address:	172.16.110.110
Transport:	UDP
NAT Traversal:	Yes

▶ Advanced:Registration Options

▶ Call Settings

[Save](#) [Cancel](#)



Notice:

If you need to build multiple sip trunks for connecting VoxStack to a same SIP server, **fromuser** options must be enabled in the SIP peer setting when you create SIP trunk on your SIP server.

Set codec priority for all SIP endpoints

Click “SIP—>Advanced SIP Settings—>Codec Settings” to set codec priority, it is a general setting, will be applied to all SIP endpoints.

VoxStack WIRELESS GATEWAY

SYSTEM | GSM | SIP | ROUTING | NETWORK | ADVANCED | LOGS

SIP Endpoints | **Advanced SIP Settings**

SIP DETAILS

Free Communication OpenVox Solution

Networking

Parsing and Compatibility

Security

Media

Codec Settings

Codec Priority 1:	G.729
Codec Priority 2:	G.711 u-law
Codec Priority 3:	G.711 a-law
Codec Priority 4:	GSM
Codec Priority 5:	G.722
Codec Priority 6:	G.726

Save



If you want to use a specific codec, such as G729, then you have to put G.729 in top priority. Otherwise VoxStack will not transfer calls with the codec you expect.



Step5. Setup Routings to handle call traffic

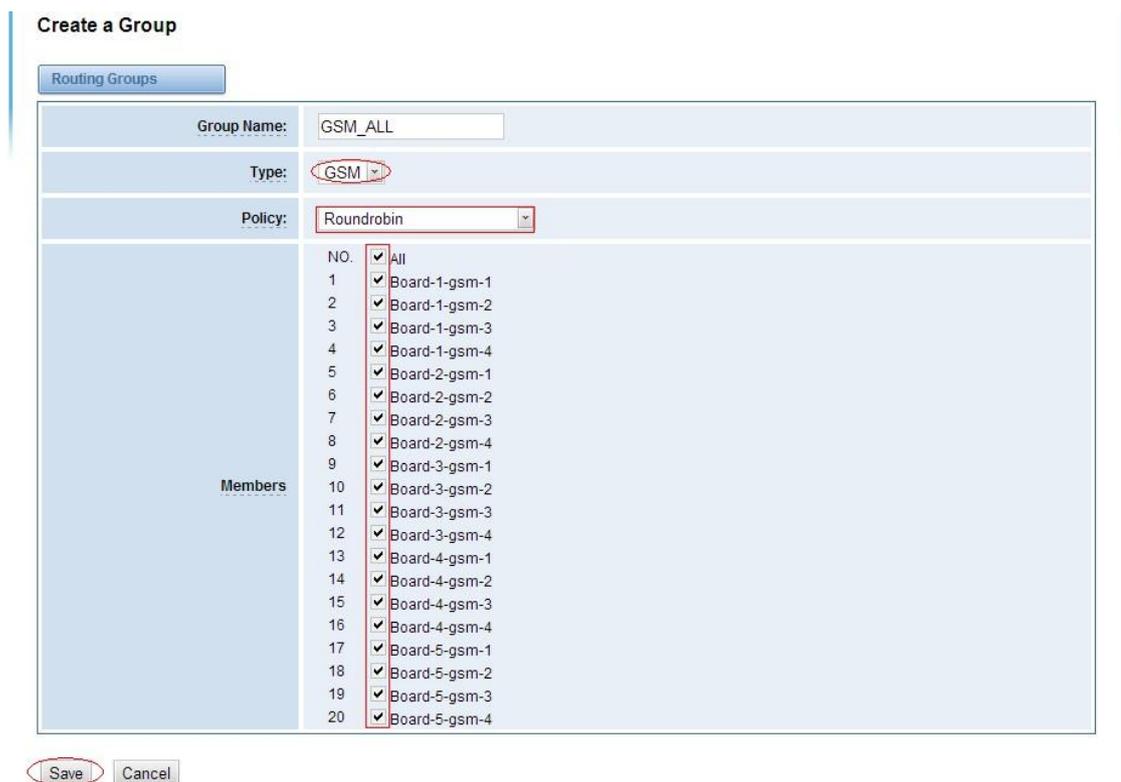
Create a GSM group

VoxStack provides 4/8/12/16/20 gsm ports for GSM network access, with Cluster mode, it is easy to separate all those ports to different GSM groups with different policy to route calls. You can also add sip endpoints to a SIP group. Thus make routings truly flexible and simple.

Click “ROUTING—>Groups—>New Group” to create GSM group or SIP group.



Here is a sample show you how to create a GSM group to contain all 20 ports.



Group Name:

It is for identifying different group in case multiple groups exists.

Type:

There are 2 types of group, GSM and SIP.

Policy:

7 kinds of policies are available for choosing GSM or SIP channel, Ascending, Descending, Roundrobin, Revers Roundrobin, Least Recent, Fewest Calls and Ramdon. You can choose the policy based on your needs, normally, Roundrobin and Reverse Roundrobin recommended.

Members:

You can choose any number of gsm ports to the group you want to create.

Click "Save" to apply the changes. You can follow the same step to create SIP groups if needed.

Create Call Routing Rules

VoxStack provides Flexible Routing rules to handle calls, from SIP to GSM, GSM to SIP, SIP to SIP and GSM to GSM, you can achieve whatever you want.

Click “ROUTING—>Call Routing Rules—>New Call Routing Rule” to create Routing rules.

Move	Order	Rule Name	From	To	Actions
	1	GSM_OUT	1025	GSM_ALL	
	2	GSM_IN	GSM_ALL	DISA	

- Create a routing rule from VOS3000 to GSM group, calls from VOS3000 will be sent to all gsm ports with Round robin policy.

Now focus on the dial Patterns:

Prepend ----- 0086
 Prefix ----- 88
 Match Pattern ----- 01.
 CallerId ----- 123456789

Notice:



A dot (.) matches one or more dialed digits.

It means only calls with CallerID '123456789' and CalleeID '8801.' from VOS3000 can be sent to GSM group, after modified by the dial pattern, CalledID will be changed to '008601.', if leave the blank empty, then corresponding parameter will be unlimited.

- Create another routing rule from GSM group to VOS3000, then calls from all gsm ports will be sent to VOS3000 through sip trunk 2002.

Create a Call Routing Rule

▼ Call Routing Rule

Routing Name:	GSM2VOS
Call Comes in From:	GSM_ALL
Send Call Through:	VOS3000

▶ Advance Routing Rule

Save Cancel



Step6. Call Test

Apply all changes on VOS3000 and GSM gateway, then you can try to make calls. Taking advantage of SIP software such as Xlite/Eyebeam to register a SIP extension 123456789 on VOS3000 server.

- Test call from VOS3000 to GSM gateway

Use Extension 123456789 to call '8801+digits', then you will reach '008601+digits', you can check it on the asterisk log of VoxStack.

- Test call from GSM gateway to VOS3000

Use your mobile to call numbers of SIM cards on GSM gateway, then calls will be routed to VOS3000, you need to setup a Mapping Gateway for VoxStack to handle the calls.