

# VoxStack GSM Gateway API

Version: 1.0.0

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# 1. Configuring AMI in VoxStack GSM Gateway.

## 1.1 How to configure AMI interface?

Login your gateway with your user account and password, and please follow this flow to configure: ADVANCED-->Asterisk API. Please change the default to yours.

General		
Enabled:	<input checked="" type="checkbox"/>	Adjust this switch to "ON" to enable AMI protocol
Port:	5038	Specify a port number when you login Gateway over TCP socket

Manager		
Manager Name:	admin	Define a user account to login
Manager secret:	admin	Set up your user account password
Deny:	0.0.0.0/0.0.0.0	Disallow all the IP addresses
Permit:	172.16.99.16/255.255.0.0&172.16.1.207/25	Allowed IP address(es)

Concerning the 'permit' option, if you have one more IP addresses, then you should have junction with them by symbol '&'. In the demo test, allowing both servers 172.16.99.16 and 172.16.1.207 to have access to this GSM gateway.

## 1.2 Defining read/write authorization for various event classes.

Rights		
System:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
Call:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
Log:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
Verbose:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
Command:	read: <input type="checkbox"/>	write: <input checked="" type="checkbox"/>
Agent:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
User:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
Config:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
DTMF:	read: <input checked="" type="checkbox"/>	write: <input type="checkbox"/>
Reporting:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>
CDR:	read: <input checked="" type="checkbox"/>	write: <input type="checkbox"/>
Dialplan:	read: <input checked="" type="checkbox"/>	write: <input type="checkbox"/>
Originate:	read: <input type="checkbox"/>	write: <input checked="" type="checkbox"/>
All:	read: <input checked="" type="checkbox"/>	write: <input checked="" type="checkbox"/>

Save

Read authorization permits you to receive events, and write authorization permits you to send commands.

In this illustration, you will be able to define custom authorization for various event classes. Read authorization permits you to receive asynchronous events, in general. Write authorization permits you to send commands and get back responses.

## 2. Monitoring and managing your Asterisk over Asterisk Manager Interface (AMI).

### 2.1 Using telnet to demonstrate AMI connectivity over TCP socket.

- a. Connect to the AMI over a TCP socket on port 5038.
- b. Log in using the *login* action and your user account.
- c. Execute the *Ping* action .

Here's how to get access to the gateway and some responds for the actions from AMI.

```
[root@mylinux ~]# telnet 172.16.99.102 5038
Trying 172.16.99.102...
Connected to 172.16.99.102.
Escape character is '^]'.
Asterisk Call Manager/1.1
Action: Login
Username: admin
Secret: admin

Response: Success
Message: Authentication accepted

Event: FullyBooted
Privilege: system,all
Status: Fully Booted

Action: Ping

Response: Success
Ping: Pong
Timestamp: 1360139590.096698
```

### 2.2 Introduction of SMS sending command

```
gsm send syncsms <span> <destination> <message> <timeout> [id]
```

Options	
Synopsis	Execute SMS sending over a specific GSM channel
Description	Send short message to outside
Syntax	Action: Command Command: gsm send syncsms <span> <destination> <message> <timeout> [id]
Arguments	
span	Which GSM channel will you select to send SMS
destination	What number will be receiving the short message
timeout	How long it will try to send SMS before time is up
id	Identifier of SMS. id is an optional parameter

2.2 Starting to send SMS over command action by value “gsm send syncsms ...” .With regard to the SMS ID, you will be able to set it by yourself, or take *ActionID* to be your SMS ID.

*Action: Command*

*ActionID: 2013 //I take ActionID to be my sms ID.*

*Command: gsm send syncsms 2 13480798079 "Hello,this is GSM Gateway" 30*

*Response: Follows*

*Privilege: Command*

*ActionID: 2013*

*SPAN:2 SEND SMS TO PHONE:13480798079 SUCCESSFULLY*

*--END COMMAND--*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMSEND/3-1*

*Variable: SMS\_SEND\_TYPE*

*Value: pdu*

*Uniqueid: 1360139896.17*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMSEND/3-1*

*Variable: SMS\_SEND\_SENDER*

*Value: 13480798079*

*Uniqueid: 1360139896.17*

Event: VarSet  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Variable: SMS\_SEND\_TXT  
Value: Hello,this is GSM Gateway  
Uniqueid: 1360139896.17

Event: VarSet  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Variable: SMS\_SEND\_PDU  
Value:  
0031000B813184708970F900000019C8329BFD66D1D1E939283D071DA74DD031  
4C2FDFC379  
Uniqueid: 1360139896.17

Event: VarSet  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Variable: SMS\_SEND\_ID  
Value:  
Uniqueid: 1360139896.17

Event: VarSet  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Variable: DIALSTATUS  
Value: SMS\_SEND\_END  
Uniqueid: 1360139896.17

Event: Newexten  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Context: gsm-2  
Extension: sms\_send\_ok  
Priority: 1  
Application: System  
AppData: touch /tmp/sms/S  
Uniqueid: 1360139896.17

Event: VarSet  
Privilege: dialplan,all  
Channel: EXTRA-SMSEND/3-1  
Variable: SYSTEMSTATUS

*Value: SUCCESS*  
*Uniqueid: 1360139896.17*  
  
*Event: Hangup*  
*Privilege: call,all*  
*Channel: EXTRA-SMSEND/3-1*  
*Uniqueid: 1360139896.17*  
*CallerIDNum: <unknown>*  
*CallerIDName: <unknown>*  
*ConnectedLineNum: <unknown>*  
*ConnectedLineName: <unknown>*  
*Cause: 0*  
*Cause-txt: Unknown*

### 2.3 Introduction of Manager Action *Ping*.

Options	
Synopsis	Keepalive command.
Description	A 'Ping' action will elicit a 'Pong' response. Used to keep the manager connection open.
Syntax	Action: Ping [ActionID:] <value>
Arguments	
ActionID	ActionID for this transaction. Will be returned.

### 2.4 Completed transaction of AMI when a short message comes in.

*Action: Ping*  
  
*Response: Success*  
*Ping: Pong*  
*Timestamp: 1360140299.655150*

*Action: WaitEvent*

*Response: Success*  
*Message: Waiting for Event completed.*

*Event: WaitEventComplete*

*Response: Error*

*Message: Missing action in request*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: SMSSRC*

*Value: +8613480798079*

*Uniqueid: 1360140505.18*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: SMSTXT*

*Value: Hello, this is a short message from my mobile phone!*

*Uniqueid: 1360140505.18*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: SMSPDU*

*Value:*

*0891683108705505F0040D91683184708970F900003120606174922334C8329BFD6  
681E8E8F41C949E83C2A039FA2DA783DAE5F93C7C2E83CCF2771BD4CE83DA  
6F719A5D06C1D16F773904*

*Uniqueid: 1360140505.18*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: SMSTIME*

*Value: 2013/02/06 16:47:29*

*Uniqueid: 1360140505.18*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: SMSTZ*

*Value: GMT+8*

*Uniqueid: 1360140505.18*

*Event: VarSet*

*Privilege: dialplan,all*

*Channel: EXTRA-SMS/3-1*

*Variable: DIALSTATUS*



*Value: SMS\_END*  
*Uniqueid: 1360140505.18*

*Event: Newexten*  
*Privilege: dialplan,all*  
*Channel: EXTRA-SMS/3-1*  
*Context: gsm-2*  
*Extension: sms*  
*Priority: 1*  
*Application: System*  
*AppData: /my\_tools/process\_sms "2" "+8613480798079" "2013/02/06 16:47:29"*  
*"Hello, this is a short message from my mobile phone!"*  
*Uniqueid: 1360140505.18*

*Event: VarSet*  
*Privilege: dialplan,all*  
*Channel: EXTRA-SMS/3-1*  
*Variable: SYSTEMSTATUS*  
*Value: SUCCESS*  
*Uniqueid: 1360140505.18*

*Event: Hangup*  
*Privilege: call,all*  
*Channel: EXTRA-SMS/3-1*  
*Uniqueid: 1360140505.18*  
*CallerIDNum: +8613480798079*  
*CallerIDName: +8613480798079*  
*ConnectedLineNum: <unknown>*  
*ConnectedLineName: <unknown>*  
*Cause: 0*  
*Cause-txt: Unknown*

In the whole transaction, you can find a code segment as the following. This section is the most important when you would like to monitor the incoming short message. Asterisk (Gateway core) will report a new event to the client.

*Event: Newexten*  
*Privilege: dialplan,all*  
*Channel: EXTRA-SMS/3-1*  
*Context: gsm-2*  
*Extension: sms*  
*Priority: 1*  
*Application: System*  
*AppData: /my\_tools/process\_sms "2" "+8613480798079" "2013/02/06 16:47:29"*

"Hello, this is a short message from my mobile phone!"

Uniqueid: 1360140505.18

Arguments	Value & Description
Event	Newexten. When a new short message comes in, Asterisk (Gateway core) will report a new event to you (client).
Priviledge	Dialplan. Allowed event
Channel:	EXTRA-SMS/3-1. Which channel to be used?
Context:	gsm-2. Conext name.
Extension:	sms. Transaction type. When the short message comes in, the gateway will invoke sms extension.
Priority	1. Executed priority while short message coming in.
AppData	/my_tools/process_sms "2" "+8613480798079" "2013/02/06 16:47:29" "Hello, this is a short message from my mobile phone!" Data which will be saved in CDR.
Uniqueid	1360140505.18. Event Identifier

If TCP socket connection is still alive. And you receive both parameters *Newexten* and *sms*, which indicate that there is a new short message comes in. You will be able to use *Ping* action to check if your connection is alive or not, and monitor the incoming short message by these two events.

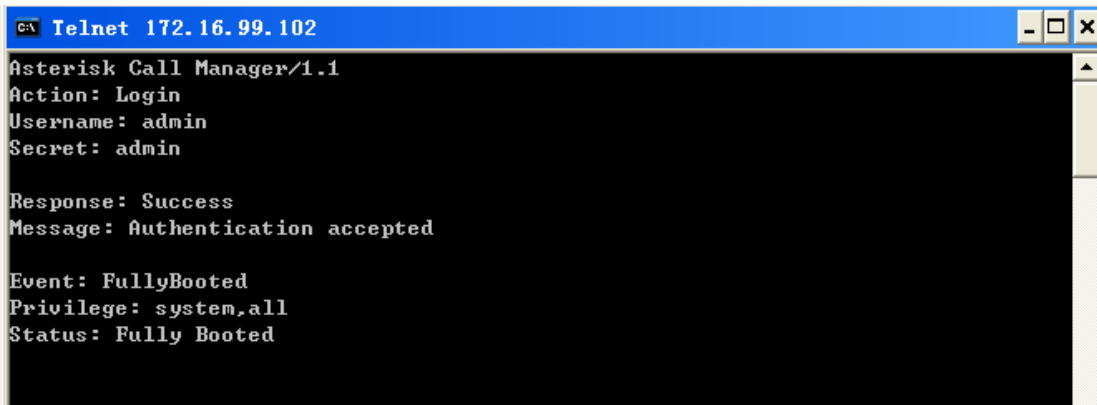
## 2.5 AMI over TCP for Windows.

Yes, you can get access to your GSM Gateway over AMI protocol in Windows system. Please follow thisflow:

Click Start-->Run-->Open, at the input text box, type 'cmd' to enter a Windows console.

```
C:\Documents and Settings\Administrator>telnet 172.16.99.102 5038
```

Hit the [Enter], and it will automatically skip to the next illustration.



```
CA Telnet 172.16.99.102
Asterisk Call Manager/1.1
Action: Login
Username: admin
Secret: admin

Response: Success
Message: Authentication accepted

Event: FullyBooted
Privilege: system,all
Status: Fully Booted
```

```
Action: Command
Command: gsm send syncsms 2 13480798079 "hello" 30 11

Response: Follows
Privilege: Command
ID:11 SPAN:2 SEND SMS TO PHONE:13480798079 SUCCESSFULLY
--END COMMAND--
```

In this demo, I sent a short message to be outside by action *command*.

## 2.6. Using PHP script to send short message over AMI protocol.

Before doing this, please download `phpagi` target from website: <http://sourceforge.net/projects/phpagi/>, and place it to `/var/lib/asterisk/agi-bin`. Give execute permission to the file. Based on my experience, if your PHP version is higher than 5.3, you MUST rename the function `goto` in `phpagi.php`.

Here's demo script `voxstack_sms.php`:

```
#!/usr/bin/php -q
<?php

include("phpagi-asmanager.php");

$agi=new AGI_AsteriskManager;

$vst_host='YOUR VOXSTACK GSM GATEWAY IP ADDRESS';
$vst_user='admin'; #Corresponding to your GSM gateway API settings
$vst_pwd='admin'; #Corresponding to your GSM gateway API settings
$vst_port=5038; #Corresponding to your GSM gateway API settings

$agi_status=$agi->connect($vst_host.".".$vst_port,$vst_user,$vst_pwd);
if(!$agi_status)
{

    $msg="Failed to connected Asterisk,exit..";
    exit(0);
}

$type='gsm';

$method='send';
```

```

$sync='syncsms';

$span='2';

$destination='YOUR DESTINATION NUMBER';

$message='HelloWorld';

$timeout='30';

$cid='1234';

$agi->Command("$type $method $sync $span $destination $message $timeout
$cid");

exit(0);

?>

```

### 3. Introduction of USSD sending command.

*gsm send ussd <span> <message> [timeout]*

Options	
Synopsis	Execute USSD sending over a specific GSM channel
Description	Send USSD on a given GSM channel
Arguments	
span	Which GSM channel will you select to send USSD
message	What USSD code will you send
timeout	How long it will try to send USSD code before time is up