

## SIP Server Usage Instructions

This minimal SIP server can establish calls successfully. To ensure proper operation, make sure to modify the following settings in sip\_server.c **before compiling**:

- 1. Set the SIP Server's IP Address:** The SIP server uses SIP\_SERVER\_IP\_ADDRESS to generate its Via and Contact headers. It **must** be set to the SIP server's interface address.  
`#define SIP_SERVER_IP_ADDRESS "192.168.1.128" // Change this to your server's IP address`
- 2. Configure Location Entries for Softphones/UEs:** Each entry in location\_entries represents a softphone/UE with its corresponding phone number, IP address, and SIP port, so that they can be correctly reached by the server.

```
location_entry_t location_entries[] = {
    {"1001", "192.168.1.101", 5060},
    {"1002", "192.168.1.101", 5070},
    {"1003", "192.168.0.1", 5060},
    {"1004", "192.168.0.1", 5070},
    {"1005", "192.168.184.1", 5060},
    {"1006", "192.168.184.1", 5070},
    {"1007", "192.168.192.1", 5060},
    {"1008", "192.168.192.1", 5070},
}; // Update with the actual IP addresses and ports of your softphones/UEs
```

### 3. Testing with MicroSIP:

It is recommended to use **MicroSIP version 3.21.5** for interoperability testing between softphones.

Enter the Settings menu and configure the SIP port as shown in the screenshot, making sure it matches the port specified in the location\_entries configuration.

**Note:** During testing, I found that binding a fixed SIP port on some computers may not work as expected. The softphone may detect a conflict and automatically choose a random port to bind and listen on. Therefore, using a self-developed testing program that allows binding to a fixed SIP port for the callee is a more feasible approach for testing.

Settings

2

Single Call Mode

2

Ringtone

...

X

2

Ring Device

Default

▼

Speaker

Default

▼

Microphone

Default

▼

☐ Microphone Amplification

2

☐ Software Level Adjustment

2

Available Codescs

Enabled Codescs

Opus 24 kHz

G.722 16 kHz

GSM 8 kHz

ILBC 8 kHz

Speex 32 kHz

Speex 16 kHz

Speex 8 kHz

2

G.711 A-law

G.711 u-law

2

2

☐ VAD

2

☒ EC

2

☐ Force Codec for Incoming

2

Camera

Default

▼

P

Video Codec

Default

▼

2

☒ H.264

☒ H.263

☒ VP8

Video Bitrate

256

2

Source Port

5060

☐ rport

RTP Ports

0

-

0

2

Nameserver

☐ DNS SRV

2

STUN Server

☐

2

Call Recording

☐

Recordings

...

X

2

☒ MP3

☐ WAV

☒ REC

2

DTMF Method

Auto

▼

2

Auto Answer

Control Button

▼

0

sec

2

Deny Incoming

Control Button

▼

2

Directory of Users

2

Default List Action

Default

▼

2

☐ Handle Media Buttons

2

☒ Sound Events

2

☒ Bring to Front on Incoming Call

2

☐ Random Popup Position

2

☒ Call Waiting

2

☐ Enable Log File

2

☐ Enable Local Account

2

Check for Updates

Weekly

▼

Save

Cancel