ADVANCED NETWORK DEVICES

Configure an AnetD IP Device as a SIP Device

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OVERVIEW

Most AnetD IP devices support phone functionality, allowing users to make and receive two-way, full-duplex intercom calls using the device's built-in microphone and speaker. These devices can be configured as SIP endpoints and are compatible with VoIP and SIP-based phone systems. Additionally, these devices can rebroadcast a SIP call to any number of ANetD devices for paging.

This document outlines how to configure an AnetD device as a SIP device using either the device configuration file (recommended for regular to large installations) or the device's web interface (suitable for smaller deployments). It also covers setup for rebroadcasting SIP calls to other devices.

OPTION 1: ANETD DEVICE SETUP VIA GLOBAL CONFIGURATION FILE

We recommend this method to maintain all the per-device SIP information in a single file.

1. Edit the global configuration file (e.g., *IPSpeaker.cfg* or *InformaCastSpeaker.cfg*) to set the IP address of the SIP server and point to the aggregate speaker configuration file that will contain the specific SIP information for each AnetD device on the network:

SIP_server_addr	SIP server IP address
AggregateSpeakerConfigFile	File containing device-specific information

Example excerpt from IPSpeaker.cfg:

```
<SIPConfig
  SIP_server_addr="10.10.7.168"
/>
<AggregateSpeakerConfigFile file="AllSpeakers.cfg" />
```

2. Edit the aggregate speaker configuration file (e.g., *AllSpeakers.cfg)* to set the specific SIP information for each AnetD device on the network:

id	Match an available *extension number* on the SIP server (e.g., `7003`)
password	Match the *password* configured for this extension on the SIP server
digest_username	Match the *digest user* configured for this extension on the SIP server
push_to_talk_ip1	(optional) If using the push-button to generate a callback to another SIP device, set this parameter to the extension of the line to ring when the button is pressed. Alternately, you can specify the MAC address or IP address of another AnetD device instead of an extension.

Example excerpt from AllSpeakers.cfg:

```
<AllSpeakers>
  <Speaker mac="2046f9010203">
    <SIPConfig
      id="7003"
      password="password123"
      digest_username="Dan"
      push_to_talk_ip1="7000"
    />
  </Speaker>
</AllSpeakers>
```

3. Reboot the AnetD device to begin using the new settings.

OPTION 2: ANETD DEVICE SETUP VIA MAC-SPECIFIC CONFIGURATION FILE

If an administrator prefers to keep individual configuration files for each device, use this method, which can help when generating configuration files programmatically per device.

1. Edit the AnetD device's specific configuration file, *IPSpeaker2046f9010203.cfg*, where 2046f9010203 is the MAC address of the device to configure.

2. In the *SIPConfig* tag, set the following parameters:

id	Match an available *extension number* on the SIP server (e.g., `7003`)
SIP_server_addr	SIP server IP address
password	Match the *password* configured for this extension on the SIP server
digest_username	Match the *digest user* configured for this extension on the SIP server
push_to_talk_ip1	(optional) If using the push-button to generate a callback to another SIP device, set this parameter to the extension of the line to ring when the button is pressed. Alternately, you can specify the MAC address or IP address of another AnetD device instead of an extension.

3. Reboot the AnetD device to begin using the new settings. See next page for example excerpt from IPSpeaker2046f9010203.cfg.

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```
<IPSpeakerConfiguration>
…
<SIPConfig
   id="7003"
   SIP_server_addr="10.10.7.168"
   password="password123"
   digest_username="Dan"
   push_to_talk_ip1="7000"
/>
…
</IPSpeakerConfiguration>
```
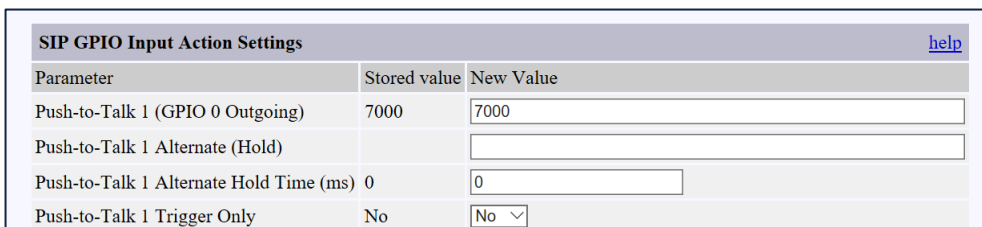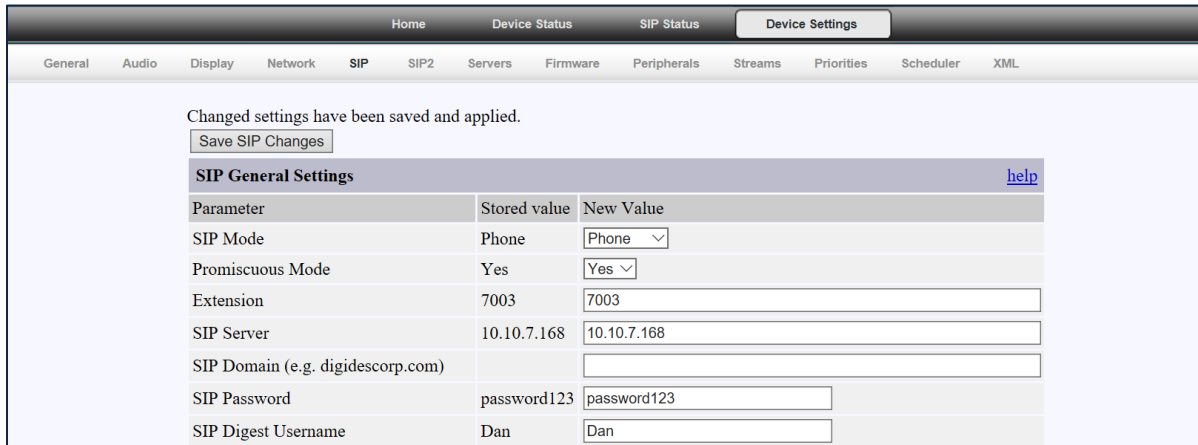
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OPTION 3: ANETD DEVICE SETUP VIA WEB PAGE

1. On the AnetD device's web page, select **Device Settings → SIP**.

2. Enter the following information:

Extension	Match an available *extension number* on the SIP server (e.g., `7003`)
SIP Server	Match the IP address of the SIP server
SIP Password	Match the *password* configured for this extension on the SIP server
SIP Digest Username	Match the *digest user* configured for this extension on the SIP server

3. If using the optional push-button to generate a callback to another SIP device, set the *Push-To-Talk 1* to the extension of the line to ring when the button is pressed. Alternately, you can specify the MAC address or IP address of another AnetD device instead of an extension.

4. Click the *Save SIP Changes* button.

5. Reboot the device to begin using the new settings.

OPERATION

You can confirm operation and identify any issues via the device web server **SIP Status** page.

SIP REBROADCAST

SIP rebroadcast can be used to page to any number of ANetD devices using a single device registered to a SIP server. The rebroadcasting device can be called from a SIP phone and the call audio will be sent to all listening devices. The devices receiving the audio must be configured to listen on a permanent multicast stream.

<u>Rebroadcast Device</u>

1. On the AnetD device you are calling via SIP, navigate to **Device Settings → SIP → Rebroadcast Destination**.

2. Specify a multicast address within the available range (224.0.0.0 to 239.255.255.255) and use an even port number. For example, 239.9.10.11:23456—this is our factory default Permanent Stream that AnetD devices listen to by default.

See the next page for a reference image of these settings.

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Configure an AnetD Device as a SIP Device

	Home	Device Status	SIP Status	Config File Status	Device Settings	
General	Audio	Display	Network	SIP	Servers	Firmware	Peripherals	Streams	Priorities	Onboard	XML

Save and Apply

General SIP Settings   help

Parameter	Stored Value	New Value
SIP Mode	paging	Phone
Extension		7003
SIP Server		10.10.7.168
SIP Domain (e.g. digidescorp.com)		
SIP Digest Username		Dan
SIP Password		password123
SIP Port	5060	5060
Server Connection Type	udp	UDP
Registration Interval, seconds	300	300
Registration Failures Send SNMP Trap	0	0
Mic Replacement Filename Note: Ensure the audio file sample rate matches the capabilities of the receiving device. See help link.		
Mic Replacement File Loops	0	0
Rebroadcast Destination		232.9.10.11:23456
Ring Volume	0.0	0 (disabled)
Ring Tone	Default	Default
Ring Filename		
SIP Stream Priority	50	50
SIP Maximum Call Duration, seconds	0	0
SIP Ring Tone Priority	51	51

IPclockwise

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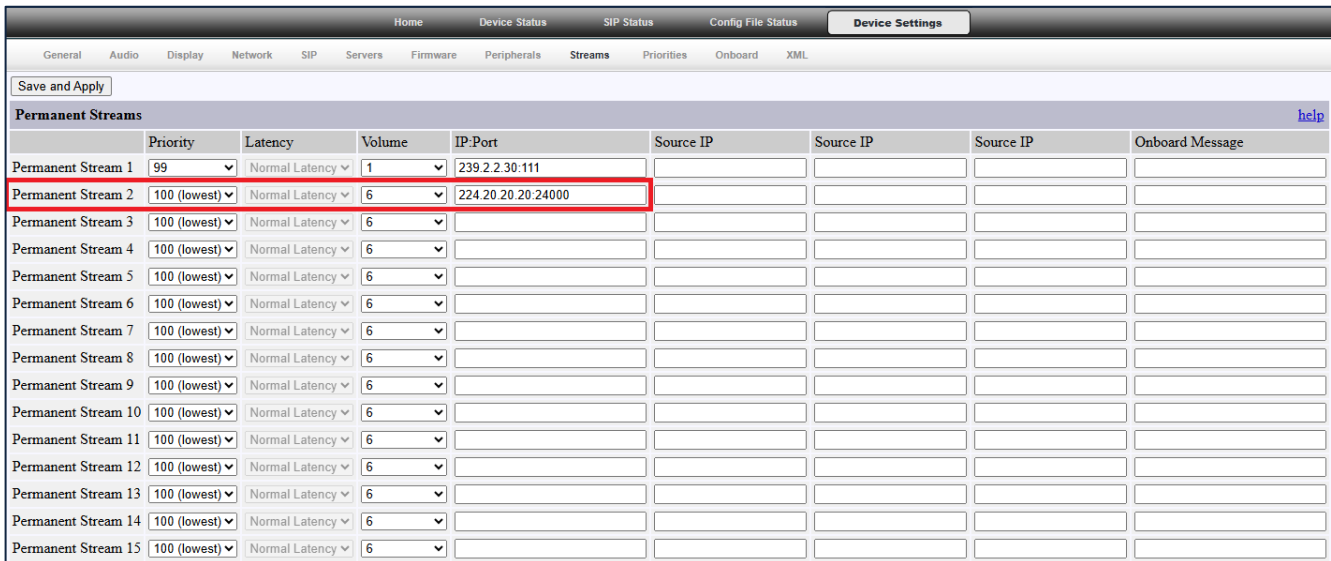Support: tech@anetd.com • 847-463-2237 • www.anetd.com
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For configuration files, include the rebroadcast SIP parameter along with the corresponding SIP extension and related settings to the configuration file being used:

```
<SIPConfig
  id="7003"
  SIP_server_addr="10.10.7.168"
  password="password123"
  digest_username="Dan"
  push_to_talk_ip1="7000"
  rebroadcast="232.9.10.11:23456"
/>
```

Listening Devices

If a custom stream address and port number are used for the SIP *Rebroadcast Destination*, be sure to specify them in the listening device's Permanent Streams configuration.

1. Navigate to **Device Settings → Streams**.

2. Enter the IP address and port number of the custom stream in one of the Permanent Stream rows.

	Priority	Latency	Volume	IP:Port	Source IP	Source IP	Source IP	Onboard Message
Permanent Stream 1	99	Normal Latency	1	239.2.2.30:111				
Permanent Stream 2	100 (lowest)	Normal Latency	6	224.20.20.20:24000				
Permanent Stream 3	100 (lowest)	Normal Latency	6					
Permanent Stream 4	100 (lowest)	Normal Latency	6					
Permanent Stream 5	100 (lowest)	Normal Latency	6					
Permanent Stream 6	100 (lowest)	Normal Latency	6					
Permanent Stream 7	100 (lowest)	Normal Latency	6					
Permanent Stream 8	100 (lowest)	Normal Latency	6					
Permanent Stream 9	100 (lowest)	Normal Latency	6					
Permanent Stream 10	100 (lowest)	Normal Latency	6					
Permanent Stream 11	100 (lowest)	Normal Latency	6					
Permanent Stream 12	100 (lowest)	Normal Latency	6					
Permanent Stream 13	100 (lowest)	Normal Latency	6					
Permanent Stream 14	100 (lowest)	Normal Latency	6					
Permanent Stream 15	100 (lowest)	Normal Latency	6					

Note: Up to fifteen Permanent Streams can be configured at once on AnetD devices.

For configuration files, add the following Permanent Stream parameter to the configuration file being used:

```
<PermanentStreams>
 <Channel
    stream="224.20.20.20"
    port="24000"
    volume="4.0"
    >
 </Channel>
</PermanentStreams>
```

Here is an example of how the Permanent Stream parameters would appear with both the factory default stream and a custom stream defined.

```
<PermanentStreams>
    <Channel
        stream="232.9.10.11"
        port="23456"
        priority="99"
        volume="4.0"
        >
    </Channel>
    <Channel
        stream="224.20.20.20"
        port="24000"
        volume="4.0"
        >
    </Channel>
  </PermanentStreams>
```

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