



# Getting Started with Algo IP Endpoints: SIP Registration Guide

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## Introduction

Algo IP products register with most hosted/cloud or premise-based telephone systems supporting 3<sup>rd</sup> party SIP endpoints. This guide provides instructions to get an Algo SIP endpoint registered as well as to troubleshoot a failed registration.

For a list of known phone systems which support Algo SIP devices and specific instructions, please visit the URL below:

<http://www.algosolutions.com/voip>

## General Instructions (For All Extension Types)

1. Log into the web interface by typing the device's IP address in the web browser. For device-specific instructions to discover the IP address, check its [User Guide](#), or use the [Algo Network Device Locator](#).
2. Get in touch with your service provider or network administrator to request the following:
  - a. SIP Server Address / Domain Name
  - b. SIP Extension, Authentication ID and Password, outbound proxy (if applicable).

Note: The Authentication ID may also be called Username for some SIP servers, and in some cases may be the same as the SIP extension.
3. Enter the SIP server's IP address / Domain Name into the **SIP Domain (Proxy Server)** field under the **Basic Settings** -> **SIP** tab.

The screenshot shows the 'SIP Settings' configuration page. At the top, there are navigation tabs: Status, Basic Settings (selected), Additional Features, Advanced Settings, System, and Logout. Below the tabs, there are sub-tabs: SIP (selected), Features, and Multicast. The main content area is titled 'SIP Settings' and contains the following fields and options:

- SIP Domain (Proxy Server)**: A text input field with a red border. A tooltip below it states: "Default port is 5060. To specify a different port, enter PROXY:PORT, e.g. my\_proxy.com:5070, or 192.168.1.10:5080."
- Ring/Alert Mode**: Radio buttons for "Monitor 'Ring' event on registered SIP extension" and "None" (selected).
- Page Extension**: A text input field.
- Authentication ID**: A text input field.
- Authentication Password**: A text input field with a password icon.
- Display Name (Optional)**: A text input field.

A tooltip at the bottom of the form states: "The device will auto-answer any inbound call received on this extension and provide a voice paging path (and multicast if configured)." A "Save" button with a green checkmark is located at the bottom right of the form.

4. Not mandatory (dependent upon service provider settings). If the service provider uses an **Outbound Proxy**, enter its address under **Advanced Settings** -> **Advanced SIP**.

Status Basic Settings Additional Features **Advanced Settings** System Logout

Network Admin Time Provisioning Advanced Audio **Advanced SIP** Advanced Multicast

## Advanced SIP Settings

**General**

SIP Transportation	Auto <small>Select Auto to check DNS NAPTR record, then try UDP/TCP. In TLS mode, if the SIP Server requires endpoints to be authenticated, a PEM file containing both a device certificate and a private key needs to be installed on the Algo device. Use the "System &gt; <a href="#">File Manager</a>" tab to upload a certificate file renamed to 'sipclient.pem' in the 'certs' folder.</small>
SIPS Scheme	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Validate Server Certificate	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <small>Validate the SIP server against common certificate authorities. To validate against additional certificates, use the "System &gt; <a href="#">File Manager</a>" tab to upload a Base64 encoded X.509 certificate file in .pem, .cer, or .crt format to the 'certs/trusted' folder.</small>
Force Secure TLS Version	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <small>Enable this option to require TLS connections to use TLSv1.2.</small>
SIP Outbound Support (RFC 5626)	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <small>Enable this option to support best networking practices according to RFC 5626. This option should generally be enabled if the Algo device is being registered with a hosted server or if TLS is being used for SIP Transportation.</small>
Outbound Proxy	<input type="text"/>
Register Period (seconds)	3600

5. Follow the next sections for specific instructions on how to register a page, ring and/or emergency alert extension.

## Extension Specific Instructions

### Registering a Page Extension

A Page Extension will auto answer and open a voice path. Often used for public announcement, and can be configured for two-way communication.

1. In Basic Settings -> SIP tab, enter the **Page Extension, Authentication ID, and Password.**
2. Check the SIP Registration state under the Status tab. If the status is not “Successful”, read the [Troubleshooting](#) section below.

The screenshot shows the 'SIP Settings' configuration page. The 'SIP Settings' section is highlighted with a red box. It contains the following fields and options:

- SIP Domain (Proxy Server)**: A text input field with a help icon. Below it, a note states: "Default port is 5060. To specify a different port, enter PROXY:PORT, e.g. my\_proxy.com:5070, or 192.168.1.10:5080."
- Ring/Alert Mode**: Two radio button options: "Monitor 'Ring' event on registered SIP extension" (unselected) and "None" (selected).
- Page Extension**: A text input field.
- Authentication ID**: A text input field.
- Authentication Password**: A text input field with a password strength indicator icon.
- Display Name (Optional)**: A text input field.

Below the highlighted section, there is a note: "The device will auto-answer any inbound call received on this extension and provide a voice paging path (and multicast if configured)." and a "Save" button with a green checkmark icon.

### Registering Additional Page Extensions

Most Algo SIP Endpoints support up to 50 page extensions. These are typically used with multicasting to give each zone a specific SIP extension.

1. Select **Additional Features** -> **More Page Extensions** tab.
2. Enable the desired zones and fill in the **Extension, Authentication ID, and Authentication Password.**

## Registering a Ring Extension

A Ring Extension plays an audio file (e.g. ringtone, alert announcement, etc.), and is commonly used for loud ringing. The Algo SIP Endpoint can be added as part of a hunt group or ring group to ring in conjunction with a telephone.

1. In **Basic Settings** -> **SIP** tab, change the **Ring/Alert Mode** to **Monitor "Ring" event on registered SIP extension**.
2. Enter the **Ring Extension**, **Authentication ID**, and **Password**.

The screenshot shows the 'SIP Settings' configuration page. At the top, there are tabs for 'Status', 'Basic Settings', 'Additional Features', 'Advanced Settings', 'System', and 'Logout'. Below these, there are sub-tabs for 'SIP', 'Features', and 'Multicast'. The main content area is titled 'SIP Settings' and contains a description: 'This section allows the SIP server information & account credentials to be entered. This information should be obtained from your telephone system administrator or hosted account provider. After saving these settings, see the [Status](#) tab to confirm successful registration.' Below the description are several input fields: 'SIP Domain (Proxy Server)', 'Ring/Alert Mode' (with radio buttons for 'Monitor "Ring" event on registered SIP extension' and 'None'), 'Ring Extension', 'Authentication ID', 'Authentication Password', and 'Display Name (Optional)'. A red box highlights the 'Ring/Alert Mode', 'Ring Extension', 'Authentication ID', and 'Authentication Password' fields. At the bottom, there is a note: 'The device will detect inbound ring events on this extension and play the alerting tone (and multicast if configured) until the inbound call stops ringing. It will not answer the call on this extension.'

3. Check the SIP Registration state under the Status tab. If the status is not "Successful", read the [Troubleshooting](#) section below.

## Registering Additional Ring Extensions

Most Algo SIP Endpoints support up to 10 ring extensions. These can be used to monitor multiple extensions, or with multicast to alert specific zones.

1. Select **Additional Features** -> **More Ring Extensions** tab.
2. Enable the additional ring extensions and fill in the **Extension**, **Authentication ID**, and **Authentication Password**.

## Registering Emergency Alert Extensions

An Emergency Alert Extension can be dialed and will begin to play an audio file (e.g. ringtone, alert announcement, etc.). These can be configured to play for a pre-set duration, or until the Call-to-Cancel extension is dialed.

For additional Emergency Alert configuration, please see [device user guide](#).

1. Select **Additional Features** -> **Emergency Alerts** tab.
2. Enable the announcements that are to be configured.
3. Enter the **Extension, Authentication ID, and Password**.
4. (Optional) If Announcement Duration is set to Play Until Cancelled then enter an **Extension, Authentication ID, and Password** under Call-to-Cancel.

**Emergency Alerts**

This section allows pre-recorded announcements to be triggered & latched by calling an extension and hanging up. The announcement will continue to play until a different "Cancel" extension is called to clear the announcement (or a pre-defined timeout is reached). This can be useful for emergency notifications (e.g. "Evacuation Alert"), allowing staff to quickly dial a pre-configured number and then exit the building. Audio files can be easily uploaded to create custom announcements.

Up to 10 extensions can be registered allowing up to 10 different announcements. A single "Cancel" extension also needs to be registered; calling this number will cancel the currently active announcement.

Note: Some SIP phone systems may not support this feature if they limit the number of extensions that can be registered on a single device.

**Settings**

Announcement Duration:  Play Once  Play Until Cancelled

Maximum Announcement Time: 10 minutes

Answer Inbound Call:  Enabled  Disabled

This option selects how the Announcement calls are handled. In both cases, the Emergency Announcement is started when the appropriate extension is called and continues until the Cancel Extension is called.

Select "Enabled" to answer the inbound call and provide the option to play a confirmation tone before starting the alert, then automatically release the call.

Select "Disabled" to detect just the inbound Ring signal, but not actually answer the call.

**Call-to-Cancel**

Extension:

Authentication ID:

Authentication Password:

Display Name (Optional):

**Announcements**

Announcement 1:  Enabled  Disabled

Announcement 2:  Enabled  Disabled

Announcement 3:  Enabled  Disabled

5. Check the SIP Registration state under the Status tab. If the status is not "Successful", read the [Troubleshooting](#) section below.

The Answer Inbound Call feature can be enabled to play a confirmation tone on the dialing phone and/or configure a pin code to initiate the announcement. Leave this feature disabled if there are other devices registered to the emergency alert extension.

## Troubleshooting

### SIP Registration Status = "Rejected by Server" (in the Status tab)

Meaning: The server receives SIP Register packets from the endpoint and responds with an unauthorized message.

- Ensure the credentials (extension, authentication ID, password) on the device match on the Server.
- Under Basic Settings -> SIP, click on the blue circular arrows to the right of the Password field. If the Password is not what it should be, the web browser is probably auto filling the password field. If so, any change on a page containing a password could be filled in with an undesired string.
- Many VoIP Phone Systems don't accept more than 1 device registered to an extension. Make sure that the endpoint is registering with an extension that is not being used by any other device.
- Check the System Log (System -> System Log tab). If you see "500 Server Internal Error", it often means that this is not actually the correct address/port for the SIP server (although the server does know enough to reject the request).
- Lastly, if the Extension and Authentication ID are not the same, try copying & pasting the Extension to Authentication ID.

### SIP Registration Status = "No reply from server" (in the Status tab)

Meaning: the device is not able to communicate across the network to the phone server.

- Double check the "SIP Domain (Proxy Server)", under Basic Settings -> SIP tab field is filled out correctly with the address of your server and port number.
- Check if the service provider uses an Outbound Proxy. If so, enter it under Advanced Settings -> Advanced SIP.
- Try changing the SIP Transportation Method (Advanced Settings -> Advanced SIP) from "Auto" to the required one according to the PBX.
- Ensure the firewall (if present) is not blocking the incoming packets from the server.

### Registration Drops Constantly

Enable the Keep-alive method. Navigate to Advanced Settings -> Advanced SIP, set Keep-alive to "Double CRLF" and set the period to 30 seconds.