

Using Genband E911 on Yealink IP Phones

Introduction

This guide introduces how to configure the Genband Enhanced 911 (E911) feature on Yealink IP phones.

The features introduced in this guide apply to Yealink SIP-T54S, SIP-T52S, SIP-T48G/S, SIP-T46G/S, SIP-T42G/S, SIP-T41P/S, SIP-T40P/G, SIP-T29G, SIP-T27P/G, SIP-T23P/G, SIP-T21(P) E2 and SIP-T19(P) E2 IP phones running firmware version 83 or later.

Using Genband E911

With the E911 feature, you can set the phone's location for emergency calls on the phone. When you register a Genband account, the phone prompts you to set a location. After that, the location is stored on the phone. When making an emergency call, the caller's location information can be identified by the emergency operator. You can make an emergency call even if your phone keypad is locked.

Obtaining Location List from ProvServer

When the phone's account is configured to retrieve E911 location information, the phone sends a service-package event SUBSCRIBE message to the server. The server then sends back a NOTIFY with the ProvServer URL in the message body. The phone can perform an SOAP request to the ProvServer for obtaining the location list. You can manually configure the period of the service-package event subscription.

Example of a SUBSCRIBE message:

```
Via: SIP/2.0/UDP 10.81.24.115:5060;branch=z9hG4bK2093144611
From: "y5978025" <sip:y5978025@yealink.a2e01.gbiot>;tag=903318596
To: <sip:y5978025@yealink.a2e01.gbiot>;tag=3723864990-1759412320
Call-ID: 4_3836799636@10.81.24.115
CSeq: 2 SUBSCRIBE
Contact: <sip:y5978025@10.81.24.115:5060>
Accept: application/com.nortelnetworks.applications.service-package+xml
Max-Forwards: 70
User-Agent: Yealink SIP-T46S 66.83.0.1
Supported: https
Expires: 0
Event: service-package
Content-Length: 0
```

Example of a NOTIFY message:

```
NOTIFY sip:y5978025@172.16.0.0:15234 SIP/2.0
Max-Forwards: 19
To: "y5978025" <sip:y5978025@yealink.a2e01.gbiot>;tag=2250208005
From: <sip:y5978025@yealink.a2e01.gbiot>;tag=3723865008-1425010731
Call-ID: 4_1111674402@10.81.24.115
CSeq: 1 NOTIFY
Allow: PUBLISH,MESSAGE,UPDATE, SUBSCRIBE,REFER,INFO,NOTIFY,REGISTER,OPTIONS,BYE,INVITE,ACK,CANCEL
Via: SIP/2.0/UDP 206.165.51.38:5060;branch=z9hG4bK3b40983916fc594fca1749c0bb190e53
Contact: <sip:y5978025@206.165.51.38:5060;maddr=206.165.51.38>
Event: service-package
Subscription-State: active;expires=118
Content-Type: application/com.nortelnetworks.applications.service-package+xml
Accept: application/com.nortelnetworks.applications.service-package+xml
User-Agent: Nortel SESM 18.0.30.1
Supported: com.nortelnetworks.firewall,p-3rdpartycontrol,nosec,join,x-nortel-sipvc,gin,com.nortelnetworks.im.encryption
P-Charging-Vector: icid-value=Umnvveo-RB;icid-generated-at=206.165.51.38
Content-Length: 78

https://so-ott-pa8.genband.com:443/prov\_clientopi/services/ClientOPI?scope=all
```

Adding Location ID to INVITE and REGISTER SIP Messages

Once the list of available locations is presented on the phone, and the user chooses an appropriate location based on the current physical location of the phone. This location ID is carried to send to the server in the INVITE and REGISTER SIP messages.

Example of a REGISTER message:

```
REGISTER sip:yealink.a2e01.gbiot:5060 SIP/2.0
Via: SIP/2.0/UDP 10.81.6.14:5060;branch=z9hG4bK1351438644
From: "y5978025" <sip:y5978025@yealink.a2e01.gbiot:5060>;tag=3146142791
To: "y5978025" <sip:y5978025@yealink.a2e01.gbiot:5060>
Call-ID: 0_3319694303@10.81.6.14
CSeq: 15 REGISTER
Contact: <sip:y5978025@10.81.6.14:5060>
Proxy-Authorization: Digest username="y5978025", realm="Realm",
nonce="MTUxNzk2NzY0NTYwNDJmMjNhODc4MjRmNzA5Mzc0NWZhZmI5NGU2ZWl4ZGI0",
uri="sip:yealink.a2e01.gbiot:5060", response="6363afdcb18998d69ade509a0e93320", algorithm=MD5,
cnonce="0a4f113b", qop=auth, nc=00000014
Allow: INVITE, INFO, PRACK, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REGISTER, SUBSCRIBE, REFER, PUBLISH, UPDATE,
MESSAGE
Max-Forwards: 70
User-Agent: Yealink SIP-T46S 66.83.0.10
Expires: 0
Allow-Events: talk,hold,conference,refer,check-sync
```

X-Nt-Location: 284909

Content-Length: 0

Configuring E911 Feature

Procedure

1. Add/Edit E911 parameters in the configuration template files:

Parameters	Permitted Values	Default
dialplan.emergency.asserted_id_source	ELIN, CUSTOM or GENBAND	ELIN
<p>Description:</p> <p>Configures the precedence of the source of emergency outbound identities when placing an emergency call.</p> <p>ELIN-The outbound identity used in the P-Asserted-Identity (PAI) header of the SIP INVITE request is taken from the network using an LLDP-MED Emergency Location Identifier Number (ELIN). The custom outbound identity configured by "dialplan.emergency.custom_asserted_id" will be used if the phone fails to get the LLDP-MED ELIN value.</p> <p>CUSTOM-The custom outbound identity configured by "dialplan.emergency.custom_asserted_id" will be used; if the value of the parameter "dialplan.emergency.custom_asserted_id" is left blank, the LLDP-MED ELIN value will be used.</p> <p>GENBAND-GENBAND E911 feature is enabled, the X-Nt-Location header with a location ID (e.g., X-Nt-Location: 284909) will be added to the INVITE and REGISTER SIP messages.</p> <p>Note: If the obtained LLDP-MED ELIN value is blank and no custom outbound identity, the PAI header will not be included in the SIP INVITE request.</p>		
dialplan.emergency.asserted_id.sip_account	Refer to the following content	1
<p>Description:</p> <p>Configures the GENBAND account to be used to retrieve E911 location information.</p> <p>Permitted Values:</p> <p>SIP-T54S/T48G/T48S/T46G/T46S/T29G: Integer from 1 to 16.</p> <p>SIP-T52S/T42G/T42S: Integer from 1 to 12.</p> <p>SIP-T41P/T41S/T27P/T27G: Integer from 1 to 6.</p> <p>SIP-T40P/T40G/T23P/T23G: Integer from 1 to 3.</p> <p>SIP-T21(P) E2: Integer from 1 to 2.</p> <p>SIP-T19(P) E2: 1.</p>		

Parameters	Permitted Values	Default
Note: It works only if "dialplan.emergency.asserted_id_source" is set to GENBAND.		
dialplan.emergency.custom_asserted_id	10-25 digits, SIP URI, or TEL URI	Blank
<p>Description:</p> <p>Configures the custom outbound identity when placing an emergency call.</p> <p>If using a TEL URI (for example, tel:+16045558000), the full URI is included in the P-Asserted-Identity (PAI) header (for example, <tel:+16045558000>).</p> <p>If using a SIP URI (for example, sip:1234567890123@abc.com), the full URI is included in the P-Asserted-Identity (PAI) header and the address will be replaced by the emergency server (for example, <sip:1234567890123@emergency.com>).</p> <p>If using a 10-25 digit number (for example, 1234567890), the SIP URI constructed from the number and SIP server (e.g., abc.com) is included in the P-Asserted-Identity (PAI) header (for example, <sip:1234567890@abc.com>).</p>		
dialplan.emergency.server.X.address (X ranges from 1 to 3)	IP address or domain name	Blank
<p>Description:</p> <p>Configures the IP address or domain name of the emergency server X to be used for routing calls.</p> <p>Note: If the account information has been configured (no matter whether the account registration succeeds or fails), the emergency calls will be dialed using the following priority: SIP server>emergency server; if not, the emergency server will be used.</p>		
dialplan.emergency.server.X.port (X ranges from 1 to 3)	Integer from 1 to 65535	5060
<p>Description:</p> <p>Configures the port of emergency server X to be used for routing calls.</p>		
dialplan.emergency.server.X.transport_type (X ranges from 1 to 3)	0, 1, 2 or 3	0
<p>Description:</p> <p>Configures the transport protocol the IP phone uses to communicate with the emergency server X.</p> <p>0-UDP 1-TCP 2-TLS 3-DNS-NAPTR</p>		
dialplan.emergency.X.value	number or SIP	Refer to the following

Parameters	Permitted Values	Default
(X ranges from 1 to 255)	URI	content
<p>Description:</p> <p>Configures the emergency number to use on your IP phone so a caller can contact emergency services in the local area when required.</p> <p>Default:</p> <p>When X = 1, the default value is 911; When X = 2-255, the default value is Blank.</p>		
dialplan.emergency.X.server_priority (X ranges from 1 to 255)	a combination of digits 1, 2 and 3	1, 2, 3
<p>Description:</p> <p>Configures the priority of which the emergency servers to be used first.</p> <p>Multiple values are separated by commas. The servers to be used in the order listed (left to right).</p> <p>The IP phone tries to make emergency calls using the emergency server with higher priority, and then with lower priority. The IP phone tries to send the INVITE request to each emergency server three times.</p> <p>Example:</p> <p>dialplan.emergency.1.server_priority = 2, 1, 3</p> <p>It means the emergency calls will be dialed using the following priority: emergency server 2>emergency server 1>emergency server 3. The IP phone tries to send the INVITE request to each emergency server three times.</p> <p>Note: If the account information has been configured (no matter whether the account registration succeeds or fails), the emergency calls will be dialed using the following priority: SIP server>emergency server; if not, the emergency server will be used.</p>		
account.X.blf.subscribe_period^[1]	Integer from 30 to 2147483647	1800
<p>Description:</p> <p>Configures the period (in seconds) of the service-package event subscription for obtaining location list from ProvServer.</p> <p>The IP phone is able to successfully refresh the SUBSCRIBE before expiration of the SUBSCRIBE dialog.</p>		

^[1]X is the account ID. For SIP-T54S/T48G/T48S/T46G/T46S/T29G, X=1-16; for SIP-T52S/T42G/T42S, X=1-12; for SIP-T41P/T41S/T27P/T27G, X=1-6; for SIP-T40P/T40G/T23P/T23G, X=1-3; for SIP-T21(P) E2, X=1-2; for SIP-T19(P) E2, X=1.

The following shows an example of emergency call parameters in the configuration file (e.g., y000000000028.cfg):

```
dialplan.emergency.asserted_id_source = GENBAND
```

```
dialplan.emergency.asserted_id.sip_account = 1
dialplan.emergency.1.value= 911
dialplan.emergency.server.1.address = 10.200.108.48
```

2. Upload the configuration file to the root directory of the provisioning server and perform auto provisioning to configure the Yealink IP phones.

For more information on auto provisioning, refer to the latest Auto Provisioning Guide for your phone on [Yealink Technical Support](#).

Configuring Phone's Location

Manually Setting the Phone's Location

You can manually set your location for emergency calls on the phone.

Procedure

1. Register your GENBAND account.
The phone displays a warning message "Set you location?" for 10 seconds.



2. Press **OK** to view the list of available locations got from server.



If you press **Cancel** or the warning message disappears, proceed to [Resetting the Phone's Location](#).

3. Select an appropriate location and then press **Next** to enter the tree navigation menu of the location.



4. Press **Save**.

Your location information is saved and displayed on the phone at the path **Menu->Basic->E911 Location**.



Note

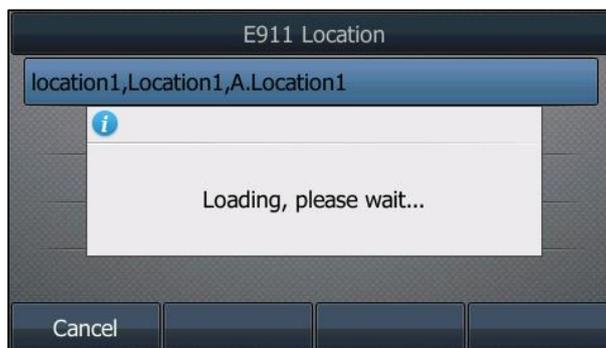
If your location has not been set, re-registering, rebooting, upgrading or subscription expiration will also lead to warning message "Set you location?".

Resetting the Phone's Location

If you want to reselect an address for the phone, for example, when the phone's location is changed, you can reset the phone's location.

Procedure

1. Press **Menu->Basic->E911 Location**.
2. Press **Reset**.



3. Select a location to the location tree navigation menu.
4. Press **Save**.