

Brekeke SIP Server Brekeke PBX

Version 3

Provisioning Feature Setup Guide

Brekeke Software, Inc.

Version

Brekeke SIP Server / Brekeke PBX v3 Provisioning Feature Setup Guide

Copyright

This document is copyrighted by Brekeke Software, Inc.

Copyright © 2017 Brekeke Software, Inc.

This document may not be copied, reproduced, reprinted, translated, rewritten, or readdressed in whole or part without expressed, written consent from Brekeke Software, Inc.

Disclaimer

Brekeke Software, Inc., reserves the right to change any information found in this document without any written notice to the user.

Trademark Acknowledgement

- ◆ *Linux is a registered trademark of Linus Torvalds in the United States and other countries.*
- ◆ *Red Hat is a registered trademark of Red Hat Software, Inc.*
- ◆ *Windows is a trademark or registered trademark of Microsoft Corporation in the United States and other countries.*
- ◆ *Yealink is a registered trademark of Yealink Network Technology Co, Ltd.*
- ◆ *Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.*
- ◆ *Other logos and product and service names contained in this document are the properties of their respective owners.*

- 1. INTRODUCTION..... 3**
- 2. PROVISIONING FEATURE 3**
- 3. BASIC STEPS 3**
 - 3.1. **Basic Step #4: Set pattern..... 4**
 - 3.2. **Basic Step #5: Set value of common tags 5**
 - 3.3. **Basic Step #6: Add devices and set local tags 6**
 - 3.4. **Basic Step #7: Start provisioning function 7**
- 4. UPLOAD RESOURCE FILES..... 8**
 - 4.1. **Update Firmware 8**
 - 4.2. **Update Wallpaper 8**
- APPENDIX 1.1. DEFAULT COMMON SETTINGS FOR YEALINK..... 9**
- APPENDIX 1.2. DEFAULT LOCAL SETTINGS FOR YEALINK..... 11**

1. Introduction

This document explains the basic configuration of the provisioning feature. The feature is supported in v3.7 of Brekeke SIP Server and Brekeke PBX or later versions.

2. Provisioning Feature

Basic Steps

No.	Steps	Workplace
1	Add templates for configuration files of devices	[Model]> Template
2	Set tags' attribute (common tags)	[Model]> Common Settings > Tag Settings
3	Set tags' attribute (local tags)	[Model]> Common Settings > Tag Settings
4	Set pattern	[Model] > Template > Pattern
5	Set value of common tags	[Model]> Common Settings
6	Add devices and set local tags	[Devices]>New
7	Start provisioning function	[Start/Stop]

3. Basic Steps

There are sample models for the following phone manufacturers. When setting up phones for general use, these template settings can be applied without any modifications. If this is the case, skip step1 through step3 in the above list.

- Yealink
- Polycom
- Panasonic
- Grandstream
- Cisco (SPA series)

3.1. Basic Step #4: Set pattern

1. Select a sample model for your SIP device from [Provisioning]>[Model].
2. Enter a new model name and create a copy.
3. To edit the settings, click the model name you've created in the above step.
4. To enable this model, uncheck "Disabled" right underneath the "Description" at the top. Edit "Description," if needed.
5. Set patterns at [Template] setting. These patterns have to match the addresses that are used by phonesto connect to the provisioning service to get a configuration file.

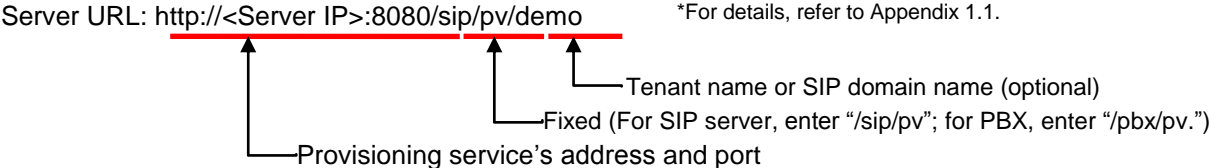
Example: Model settings for Yealink

For example, in the case of Yealink T46G, configuration file of provisioning is as follows:

- Common configuration file name: `y000000000028.cfg`
- MAC-oriented configuration file name: `[MAC address].cfg`

IP address of the provisioning service should be set at the Yealink T46G as:

<Yealink configuration (Settings > Auto Provision)>



<Brekeke provisioning configuration (Model > Template)>

Set "Patterns" under [Template] as "`/<Tenant name>/<filename>`" using a regular expression.

- Template1: `/demo/y000000000028\.cfg`
- Template2: `/demo/([0-9a-fA-F]{12})\.cfg`

3.2 Basic Step #5: Set value of common tags

Set values of the common tags at [Common Settings]. Tag names correspond with the phone device's provisioning configuration files. The tag values set here will be applied to all provisioned SIP phones of this particular model.

Example: Common settings for Yealink

Common Settings [Tag Settings](#)

Tag Name	Tag Value
AUTO_PROVISION.SERVER.URL	<input type="text" value="https://172.16.201.62:8443/pbx/"/>
AUTO_PROVISION.AES_KEY_16.MAC	<input type="text"/>
AUTO_PROVISION.AES_KEY_IN_FILE	<input type="text" value="0-Disabled"/>
AUTO_PROVISION.SERVER.USERNAME	<input type="text"/>
AUTO_PROVISION.SERVER.PASSWORD	<input type="text"/>
FIRMWARE.URL	<input type="text"/>
SECURITY.TRUST_CERTIFICATES	<input type="text" value="0-Disabled"/>
WALLPAPER_UPLOAD.URL	<input type="text" value="https://172.16.201.62:8443/pbx/"/>
PHONE_SETTING.BACKGROUNDS	<input type="text" value="test_wall2.jpg"/>
SIP_SERVER1	<input type="text" value="172.16.201.62"/>
SIP_SERVER1_PORT	<input type="text" value="5060"/>
SIP_SERVER2	<input type="text" value="172.16.200.82"/>
SIP_SERVER2_PORT	<input type="text" value="5060"/>
LOCAL_TIME.TIME_ZONE	<input type="text" value="-7"/>
LOCAL_TIME.TIME_ZONE_NAME	<input type="text"/>
LOCAL_TIME.NTP_SERVER1	<input type="text"/>
LOCAL_TIME.NTP_SERVER2	<input type="text"/>
LOCAL_TIME.INTERVAL	<input type="text" value="1000"/>
LOCAL_TIME.SUMMER_TIME	<input type="text" value="2-Automatic"/>
LOCAL_TIME.DST_TIME_TYPE	<input type="text" value="0-DST By Date"/>
LOCAL_TIME.START_TIME	<input type="text" value="1/1/0"/>
LOCAL_TIME.END_TIME	<input type="text" value="12/31/23"/>
LOCAL_TIME.TIME_FORMAT	<input type="text" value="1-24 Hour"/>
LOCAL_TIME.DHCP_TIME	<input type="text" value="0-Disabled"/>
LOCAL_TIME.MANUAL_TIME_ENABLE	<input type="text" value="1-NTP"/>
LOCAL_TIME.MANUAL_NTP_SRV_PRIOR	<input type="text" value="0-High"/>
AUTO_DST.URL	<input type="text"/>
YEALINK_PASSPHRASE	<input type="text" value="{AUTO_PROVISION.AES_KEY_"/>

For default tag in demo templates, refer to Appendix 1.1. of this document.

3.3 Basic Step #6: Add devices and set local tags

- 1. Add a new device at [Devices] > “New” button.
- 2. Enter the following fields.

Field Name	Explanation
Tenant	Select tenant name from the select box.
PHONE_ID	Enter a phone ID. When a SIP user associated with the phone ID does not exist, a SIP user will be created.
Model	Select a model. Tags that are needed in the selected model will be displayed in the “Tags” section.
Device ID	Generally, the MAC address of the phone will be used.

- 3. Enter tag values. Refer to Appendix 1.2. for default tag value.

Example: Local tags (for Yealink)

The screenshot shows the 'New Device' configuration page. At the top, there are tabs: Devices, Import/Export, Model, Log, Pending, Start/Stop, and Test. The 'New Device' title is centered. Below the title, there are four input fields: TENANT_ID (dropdown menu with 'demo' selected), PHONE_ID (text input with 'demo_9876'), MODEL_ID (dropdown menu with 'Yealink' selected), and DEVICE_ID (text input with '00:11:33'). Below these fields is a 'Tags' section. A red arrow points to the 'Tags' section. The 'Tags' section contains a table with two columns: 'Tag Name' and 'Tag Value'. The table has 20 rows, each representing a different tag configuration for the device.

Tag Name	Tag Value
ACCOUNT.1.ENABLE	1-Enabled
ACCOUNT.1.LABEL	9876
ACCOUNT.1.DISPLAY_NAME	9876
ACCOUNT.1.AUTH_NAME	{ACCOUNT.1.USER_NAME}
ACCOUNT.1.USER_NAME	{PHONE_ID}
ACCOUNT.1.PASSWORD	*****
ACCOUNT.1.OUTBOUND_PROXY_ENABLE	0-Disabled
ACCOUNT.1.OUTBOUND_HOST	
ACCOUNT.1.OUTBOUND_PORT	
ACCOUNT.1.SIP_SERVER.1.TRANSPORT_TYPE	0-UDP
ACCOUNT.1.SIP_SERVER.1.ADDRESS	{SIP_SERVER1}
ACCOUNT.1.SIP_SERVER.1.PORT	{SIP_SERVER1_PORT}
ACCOUNT.1.SIP_SERVER.2.TRANSPORT_TYPE	0-UDP
ACCOUNT.1.SIP_SERVER.2.ADDRESS	{SIP_SERVER2}
ACCOUNT.1.SIP_SERVER.2.PORT	{SIP_SERVER2_PORT}
ACCOUNT.1.CODEC.1.ENABLE	1-Enabled
ACCOUNT.1.CODEC.1.PAYLOAD_TYPE	PCMU
ACCOUNT.1.CODEC.1.PRIORITY	2
ACCOUNT.1.CODEC.2.ENABLE	1-Enabled
ACCOUNT.1.CODEC.2.PAYLOAD_TYPE	PCMA
ACCOUNT.1.CODEC.2.PRIORITY	3

- 4. Save settings.

3.4 Basic Step #7: Start provisioning function

1. Open [Provisioning] >[Start/Stop].
2. Set “Valid Remote IP address Pattern.”

Example:

- Allowing connections to the provisioning service from all IP addresses: ^.+ $\$$
 - Allowing connections to the provisioning service from the devices in “172.16.200.0” network: 172\.16\.200\..+ $\$$
3. Click “Start.”

4. Upload Resource Files

The provisioning function can be used to distribute other resource files. The following shows some examples.

4.1. Update firmware

Step 1. Upload firmware from [Provisioning] >[Model] >[Resource File].

Step 2. Enter a pattern used to download firmware.

Step 3. If needed, set a tag value to download firmware. For example, in many Yealink models, the tag value should be set as “FIRMWARE.URL.”

Step 4. Save and start provisioning.

4.2. Update wallpaper

Step 1. Upload an image file from [Provisioning] >[Model] > [Resource files].

Step 2. Enter a pattern used to download an image file.

Step 3. If needed, set a tag value to download the image file. For example, in many Yealink models, the tag value should be set as following:

Example: Common tags for changing a wallpaper (Yealink T46G)

- WALLPAPER_UPLOAD.URL:http://172.16.201.62:8080/sip/pv/demo/test_wall2.jpg
- PHONE_SETTING.BACKGROUNDS:test_wall2.jpg

Step 4. Save and start provisioning.

Appendix 1.1. Default Common Settings for Yealink

Tag Name	Default Value	Memo
AUTO_PROVISION.SERVER.URL		<p>Example1:Using https protocol and Multi-tenant PBX https://172.16.201.62:8443/pbx/pv/tenant/</p> <p>Example2:Using SIP server on Windows OS http://172.16.201.62:18080/sip/pv/</p> <p>Example3:Using SIP server on Linux OS http://172.16.201.62:8080/sip/pv/</p>
AUTO_PROVISION.AES_KEY_16.MAC		If you do not use encryption, keep this fieldblank.
AUTO_PROVISION.AES_KEY_IN_FILE	0	<p>0-Disabled, 1-Enabled</p> <p>If you do not use encryption, keep "0"for the value.</p>
AUTO_PROVISION.SERVER.USERNAME		<p>User name for the basic authentication between a provisioning service and devices.</p> <p>If you do not use basicauthentication, keep this field blank.</p>
AUTO_PROVISION.SERVER.PASSWORD		<p>Password used for the basic authentication between a provisioning service and devices.</p> <p>If you do not basic authentication, keep this field blank.</p>
FIRMWARE.URL		
SECURITY.TRUST_CERTIFICATES	0	0-Disabled, 1-Enabled
WALLPAPER_UPLOAD.URL		
PHONE_SETTING.BACKGROUNDS		
SIP_SERVER1		Primary SIP server's address. This value is referred by local tag settings in each device.
SIP_SERVER1_PORT		Primary SIP server's port. This value is referred by local tag settings in each device.
SIP_SERVER2		Secondary SIP server's address. This value is referred by local tag settings in each device.
SIP_SERVER2_PORT		Secondary SIP server's port. This value is referred by local tag settings in each device.
LOCAL_TIME.TIME_ZONE	+8	
LOCAL_TIME.TIME_ZONE_NAME	China	
LOCAL_TIME.NTP_SERVER1		

Tag Name	Default Value	Memo
LOCAL_TIME.NTP_SERVER2		
LOCAL_TIME.INTERVAL	1000	
LOCAL_TIME.SUMMER_TIME	2	2-Automatic,0-Disabled,1-Enabled:
LOCAL_TIME.DST_TIME_TYPE	0	
LOCAL_TIME.START_TIME	1/1/0	
LOCAL_TIME.END_TIME	12/31/23	
LOCAL_TIME.TIME_FORMAT	1	1-24 Hour, 0-12 Hour
LOCAL_TIME.DHCP_TIME	0	0-Disabled, 1-Enabled
LOCAL_TIME.MANUAL_TIME_ENABLE	0	0-Disabled, 1-Enabled
LOCAL_TIME.MANUAL_NTP_SRV_PRIOR	0	0-High:0;1-Low:1
AUTO_DST.URL		
YEALINK_PASSPHRASE	{AUTO_PROVISION. AES_KEY_16.MAC}	The value is fixed. It refers to the value of the "AUTO_PROVISION.AES_KEY_16.MAC" tag.

Appendix 1.2. Default Local Settings for Yealink

Tag Name	Default Value	Memo
Account.1 Section		
ACCOUNT.1.ENABLE	1	0-Disabled, 1-Enabled
ACCOUNT.1.LABEL		
ACCOUNT.1.DISPLAY_NAME		
ACCOUNT.1.AUTH_NAME	{ACCOUNT.1.USER_NAME}	It refers to the tag value of the "ACCOUNT.1.USER_NAME."
ACCOUNT.1.USER_NAME	{PHONE_ID}	It refers to the PHONE_ID of a device.
ACCOUNT.1.PASSWORD		
ACCOUNT.1.OUTBOUND_PROXY_ENABLED	0	0-Disabled, 1-Enabled
ACCOUNT.1.OUTBOUND_HOST		
ACCOUNT.1.OUTBOUND_PORT		
ACCOUNT.1.SIP_SERVER.1.TRANSPORT_TYPE	0	0-UDP,1-TCP, 2-TLS, 3-DNS-NAPTR
ACCOUNT.1.SIP_SERVER.1.ADDRESS	{SIP_SERVER1}	It refers to the tag value of the "SIP_SERVER1" at common settings.
ACCOUNT.1.SIP_SERVER.1.PORT	{SIP_SERVER1_PORT}	It refers to the tag value of the "SIP_SERVER1_PORT" at common settings.
ACCOUNT.1.SIP_SERVER.2.TRANSPORT_TYPE	0	0-UDP,1-TCP, 2-TLS, 3-DNS-NAPTR
ACCOUNT.1.SIP_SERVER.2.ADDRESS	{SIP_SERVER2}	It refers to the tag value of the "SIP_SERVER2" at common settings.
ACCOUNT.1.SIP_SERVER.2.PORT	{SIP_SERVER2_PORT}	It refers to the tag value of the "SIP_SERVER2_PORT" at common settings.
ACCOUNT.1.CODEC.1.ENABLE	1	0-Disabled, 1-Enabled
ACCOUNT.1.CODEC.1.PAYLOAD_TYPE	PCMU	PCMU,PCMA,G729,G722,G726-16,G726-24,G726-32,G726-40,iLBC,G723_53, G723_63
ACCOUNT.1.CODEC.1.PRIORITY	2	1-11
ACCOUNT.1.CODEC.2.ENABLE	1	0-Disabled, 1-Enabled
ACCOUNT.1.CODEC.2.PAYLOAD_TYPE	PCMA	PCMU,PCMA,G729,G722,G726-16,G726-24,G726-32,G726-40,iLBC,G723_53, G723_63
ACCOUNT.1.CODEC.2.PRIORITY	3	1-11

Tag Name	Default Value	Memo
Account.2 Section - By default Account.2 is disabled.		
ACCOUNT.2.ENABLE	0	0-Disabled, 1-Enabled
ACCOUNT.2.LABEL		
ACCOUNT.2.DISPLAY_NAME		
ACCOUNT.2.AUTH_NAME	{ACCOUNT.2.USER_NAME}	It refers to the tag value of the "ACCOUNT.2.USER_NAME".
ACCOUNT.2.USER_NAME		
ACCOUNT.2.PASSWORD		
ACCOUNT.2.OUTBOUND_PROXY_ENABLED	0	0-Disabled, 1-Enabled
ACCOUNT.2.OUTBOUND_HOST		
ACCOUNT.2.OUTBOUND_PORT		
ACCOUNT.2.SIP_SERVER.1.TRANSPORT_TYPE	0	0-UDP,1-TCP, 2-TLS, 3-DNS-NAPTR
ACCOUNT.2.SIP_SERVER.1.ADDRESS	{SIP_SERVER1}	It refers to the tag value of the "SIP_SERVER1" at common settings.
ACCOUNT.2.SIP_SERVER.1.PORT	{SIP_SERVER1_PORT}	It refers to the tag value of the "SIP_SERVER1_PORT" at common settings
ACCOUNT.2.SIP_SERVER.2.TRANSPORT_TYPE	0	0-UDP,1-TCP, 2-TLS, 3-DNS-NAPTR
ACCOUNT.2.SIP_SERVER.2.ADDRESS	{SIP_SERVER2}	It refers to the tag value of the "SIP_SERVER2" at common settings.
ACCOUNT.2.SIP_SERVER.2.PORT	{SIP_SERVER2_PORT}	It refers to the tag value of the "SIP_SERVER2_PORT" at common settings.
ACCOUNT.2.CODEC.1.ENABLE	1	0-Disabled, 1-Enabled
ACCOUNT.2.CODEC.1.PAYLOAD_TYPE	PCMU	PCMU,PCMA,G729,G722,G726-16,G726-24,G726-32,G726-40,iLBC,G723_53, G723_63
ACCOUNT.2.CODEC.1.PRIORITY	2	1-11
ACCOUNT.2.CODEC.2.ENABLE	1	0-Disabled, 1-Enabled
ACCOUNT.2.CODEC.2.PAYLOAD_TYPE	PCMA	PCMU,PCMA,G729,G722,G726-16,G726-24,G726-32,G726-40,iLBC,G723_53, G723_63
ACCOUNT.2.CODEC.2.PRIORITY	3	1-11

Tag Name	Default Value	Memo
Network Section -IPv6 is disabled as default.		
NETWORK.IP_ADDRESS_MODE	0	0-IPv4,1-IPv6, 2-IPv4 & IPv6
NETWORK.INTERNET_PORT.TYPE	0	0-DHCP, 1-PPPoE, 2-Static IP Address
NETWORK.INTERNET_PORT.IP		
NETWORK.INTERNET_PORT.MASK		
NETWORK.INTERNET_PORT.GATEWAY		
NETWORK.PRIMARY_DNS		
NETWORK.SECONDARY_DNS		
NETWORK.IPV6_PREFIX	64	
NETWORK.IPV6_INTERNET_PORT.TYPE	0	0-DHCP, 1-Static IP Address
NETWORK.IPV6_INTERNET_PORT.IP		
NETWORK.IPV6_INTERNET_PORT.GATEWAY		
NETWORK.IPV6_PRIMARY_DNS		
NETWORK.IPV6_SECONDARY_DNS		