

Yealink SIP IP Phones Auto Provision Guide

Version 81.72 Sep.2017

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Summary of Changes

This section describes the changes to this guide for each release and guide version.

Changes for Release 81, Guide Version 81.73

Documentations of the newly released CP920 and W60 IP phones have also been added.

Changes for Release 81, Guide Version 81.72

Documentations of the newly released CP960 IP phones have also been added.

Changes for Release 81, Guide Version 81.71

Documentations of the newly released CP860/SIP-T54S/T52S IP phones have also been added.

Changes for Release 81, Guide Version 81.70

Documentations of the newly released W56P/W52P/SIP-T58V/T58A/T56A/T40G IP phones have also been added.

Introduction

Yealink IP phones are full-featured telephones that can be plugged directly into an IP network and can be used easily without manual configuration.

This guide provides instructions on how to provision Yealink IP phones with the minimum settings required. Yealink IP phones support FTP, TFTP, HTTP, and HTTPS protocols for auto provisioning and are configured by default to use the TFTP protocol.

The purpose of this guide is to serve as a basic guidance for provisioning Yealink IP phones, including:

- Yealink SIP-T58V/A
- Yealink SIP-T56A
- Yealink SIP-T54S
- Yealink SIP-T52S
- Yealink SIP-T48G/S
- Yealink SIP-T46G/S
- Yealink SIP-T42G/S
- Yealink SIP-T41P/S
- Yealink SIP-T40P/G
- Yealink SIP-T29G
- Yealink SIP-T27P/G
- Yealink SIP-T23P/G
- Yealink SIP-T21(P) E2
- Yealink SIP-T19(P) E2
- Yealink CP860
- Yealink CP960
- Yealink CP920
- Yealink W60
- Yealink W52P/W56P

The auto provisioning process outlined in this guide applies to Yealink SIP-T54S/T52S/46G/T46S/T42G/T42S/T41P/T41S/T40P/T40G/T29G/T27P/T27G/T23P/T23G/ T21(P) E2/T19(P) E2, CP860, CP920, W60, W52P and W56P IP phones running firmware version 81 or later and CP960/SIP-T58V/T58A/T56A IP phones running firmware version 80 or later. We recommend that IP phones running the latest firmware CANNOT be downgraded to an earlier firmware version. The new firmware is compatible with old configuration parameters, but not vice versa.

Getting Started

This section provides instructions on how to get ready for auto provisioning. To begin the auto provisioning process, the following steps are required:

- Obtaining the Boot File
- Obtaining Configuration Files
- Obtaining Phone Information

Obtaining the Boot File

You can use a boot file to customize the download sequence of configuration files. The configuration files are flexible: you can rearrange the configuration parameters within the Yealink-supplied template configuration files or create your own configuration files from configuration parameters you want. You can create and name as many configuration files as you want and your own configuration files can contain any combination of configuration parameters. It is efficiently for you to provision your IP phones in different deployment scenarios, especially when you want to apply a set of features or settings to a group of phones.

Before beginning provisioning, you need to obtain the Yealink-supplied template boot file named as "y000000000000.boot". The IP phone tries to download the boot file first, and then download the configuration files referenced in the boot file in sequence during auto provisioning.

Yealink supports the following two types of boot files:

- MAC-Oriented boot file (e.g., 00156574b150.boot)
- Common boot file (y000000000000.boot)

You can ask the distributor or Yealink FAE for the template boot file.

Obtaining Configuration Files

Before beginning provisioning, you also need to obtain template configuration files. There are two configuration files both of which are CFG-formatted. We call these two files Common CFG file and MAC-Oriented CFG file. You can also create and name as many configuration files as you want (e.g., account.cfg, sip.cfg, features.cfg) by using the template configuration files. The custom configuration files can contain the configuration parameters of the same feature modules for all phones.

If boot file is found on the provisioning server, the IP phones download the boot file first, and then download the configuration files referenced in the boot file in sequence during auto provisioning. You can customize the download sequence of configuration files in the boot file as required. If boot file is not found on the provisioning server, IP phones download the common CFG file first, and then the MAC-Oriented CFG file during auto provisioning – i.e., the old mechanism for auto provisioning. You can select whether to use the boot file or not for auto provisioning according to your deployment scenario.

IP phones also support local configuration files named as <MAC>-local.cfg. When a user modifies configurations via web user interface or phone user interface, the non-static settings will be automatically saved to the MAC-local CFG file on the IP phone.

You can ask the distributor or Yealink FAE for template configuration files. You can also obtain the template configuration files online:

http://support.yealink.com/documentFront/forwardToDocumentFrontDisplayPage.

To download template configuration files:

- 1. Go to Yealink Document Download page and select the desired phone model.
- 2. Download and extract the combined configuration files to your local system.

For example, the following illustration shows the template files available for SIP-T23G IP phones running firmware version 80.

		IP Phone SIP-T23G
	1	art roddfed sate: 3011/08/11 views: 1983
Datasteet	Datasheet	Vealok SIP-723G Datasheet.pdf
Firmware & Release Note		Concernent of the Concernent o
Setup & Maintenance	Firmware &	Yeslink_SIP_phones_Release_Notes_of_Version80.pdf
Documents	Release Note	T23-44.80.0,70.zip Now
Other Documents		44.80.0.60.zip New
User Documents		44.80.0.5.20
	User	Yaalink_51P-723P & T23G_User_Guide_V80_60.pdf
	Documents	Vealink_STF-T2_Series_T19(P) E2_T4_Series_JP_Phones_Administrator_Guida_V80_60.pdf
		Vealink_SIP_Phones_Description of Configuration Parameters in CFG Files_VB0_60.zlp
		Vealink_SIP-T2_Series_T19(P) E2_T4_Series_IP_Phones_XML_Browser_Developer's_Guide_V80_E 0.pdf
		Yealink AutoProvisioning Template V80.zp
		Yealink_SIP-T2 Series_T29(P) E2_T4 Series_IP_Phones_Auto_Provisioning_Guide_V80_60.pdf

3. Open the folder you extracted and identify the files you will edit.

Obtaining Phone Information

Before beginning provisioning, you also need the IP phone information. For example, MAC address and the SIP account information of the IP phone.

MAC Address: The unique 12-digit serial number of the IP phone. You can obtain it from the bar code on the back of the IP phone.

SIP Account Information: This may include SIP credentials such as user name, password and IP address of the SIP server. Ask your system administrator for SIP account information.

Provisioning Yealink IP Phones

This section provides instructions on how IP phones interoperate with provisioning server for auto provisioning, and shows you four major tasks to provision the phones. It will help users who are not familiar with auto provisioning to understand this process more easily and quickly.

Auto Provisioning Process

When IP phones are triggered to perform auto provisioning, they will request to download the boot files and configuration files from the provisioning server. During the auto provisioning process, the IP phone will download and update configuration files to the phone flash. The following figure shows how the IP phone interoperates with the provisioning server:

IP Phone

Request to Download Boot Files and Configuration Files



Download Boot Files, Configuration Files and Update Configuration Files

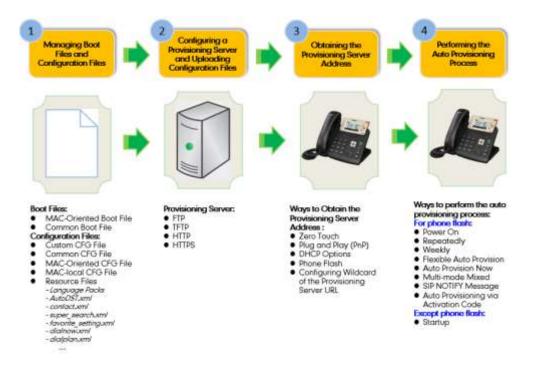


Provisioning Server

Major Tasks for Auto Provisioning

You need to complete four major tasks to provision Yealink IP phones.

The following figure shows an overview of four major provisioning tasks:



For more information on how to manage boot files, refer to Managing Boot Files on page 11. For more information on how to manage configuration files, refer to Managing Configuration Files on page 15.

For more information on how to configure a provisioning server, refer to Configuring a Provisioning Server on page 22.

For more information on how to obtain the provisioning server address, refer to Obtaining the Provisioning Server Address on page 26.

For more information on how to perform the auto provisioning process, refer to Triggering the IP Phone to Perform the Auto Provisioning on page 34.

If you are not familiar with auto provisioning process on Yealink IP phones, you can refer to An Instance of Auto Provision Configuration on page 7.

An Instance of Auto Provision Configuration

This section shows an instance of auto provision configuration.

1. Manage boot files.

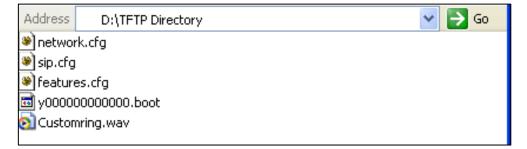
Specify the desired download path (e.g., tftp://10.2.5.193/network.cfg) of the configuration files in the boot file (e.g., y0000000000.boot). For more information, refer to Managing Boot Files on page 11.

```
#!version:1.0.0.1
## The header above must appear as-is in the first line
    include:config <tftp://10.2.5.193/network.cfg>
    include:config <../sip.cfg>
    include:config "features.cfg"
overwrite_mode = 1
```

2. Manage configuration files.

Add/Edit the desired configuration parameters in the CFG file (e.g., features.cfg) you want the IP phone to download. For more information on how to manage configuration files, refer to Managing Configuration Files on page 15.

- 3. Configure the TFTP server.
 - 1) Place boot files and configuration files to TFTP root directory (e.g., D:\TFTP Directory).



2) Start the TFTP sever. The IP address of the TFTP server is shown as below:

TFTF Server	Start Tirre	Peer	Bytes	
atigue IIII Server	Jul 12, 2016 09(3D	Sð local	0	Listening for TFTP requests on IP address 2025 191 Port 69
Server is started is here to ctop at.			dov	server URL where the IP phone mloads boot files and configuration
			files	from is tftp://10.2.5.193/
eging to Trud.Log. Click to stop				
Not debeging				
Click to start.				
Clear list.				
616				
Lig/Tebig files.				

3) Select **Configure TFTP Server**. Click the ... button to locate the TFTP root directory from your local system.

BCDaemon File View Help				
TPTP Server	Start Time	Pwer	Bytes	Status
	Jul 12, 2016 09:30:13	local	0	Listening for TFTP requests on IP address: 10.2.5.193, Port 69
Candigure TFT? Server	3EDaamon Configuratio	211		
æ	FTP Profile General Confi			Sysleg Configuration TPTP Configuration
TFTF Server is started. Click here to stop it.	Greate directory sam	HE IS.	inconi:	
	Allow overwrite of a	azi ati a	g file	s?
Logging to Tftpd log. Click to stop	Upload/Bownload	D	\TFTP	Directory).
X	Per-packet timeont i	n sece	nda	<u> </u>
Sot debugging Click to start.	Naziona retriez			10
Clear list.	Taterframe transmiss			P
Vier Los/Debus files				

For more information on how to configure a provisioning server, refer to Configuring a Provisioning Server on page 22.

4. Configure the provisioning server address on the IP phone.

nietski (dolenik) me	Status	Account	Network	DSSKey	Features,	Settings	Directory	Security
Preference		Auto Provision					NOTE	
Time & Date Call Itisplay Rograde		PNP Active DHCP Active Custom Option(128- DHCP Option Value	-254)	* on © off • on © off			with prove	one can interoperate koning server using sering for deploying
Auto Provision		Sever URL		thp://18.2.5.193/			perform as	P phone triggers to sto provisioning, it will
Configuration Dial Pion Voice		User Name Password Attempt Expired Tin Common AES Key	ne(x)	3	the p	r the access rovisioning s	URL of server in	a download the on files from the o sarver. During the oning process, the 8 download and figuration files to th
mag		MAC-Oriented AES 8 Zero Active	ley.	••••••		Jerver Uni		en click here to get Nesi
Tones		Wat Time[1-100s]		3				
Bolthey Layout		Power Do		# .on © .off				

For more information on how to obtain the provisioning server address, refer to Obtaining the Provisioning Server Address on page 26.

							Tr.	Log Out	
ealink 1236	Status	Account	Network	DSSKey	Features	Settings	Directory	Security	
Configuration Dial Plan Voice Ring Tones Softkey Layout TR069 Voice Monitoring SIP		Account Auto Provision PHP Active DHOP Active Custom Option (128- DHOP Option Value Server URL User Name Password Attempt Expired Tim Common AES Key MAC-Oriented AES k Zero Active Wak Time(1~100s) Power On Repeatedly Interva(Minutes) Weekly Weekly Upgrade Inti Inactivity Time Expire Time Day of Week	-254) ne(s) ley erva(012week)	On Off On Off On Off thp://10.2.5.193/ thp://10.2.5.193/ Deabled S On Off On Off On Off 2440 On Off	z 00 Click th	e Autopr	Directory NOTE Auto Provision The #P phone with provision the #P phones Upperformance request to do provision provision #P phone with phone wit	on can hteroperate ng for deoloying phone triggers to provisioning, it will writed the files from the more, During the forminad and uration files to the lick here to get	
		Flexible Auto Provec Flexible Interval Days Flexible Time	[Saturday On On Off 30 02 : 00 - Autoprovision	p		to provisio mediately.		

5. Trigger the IP phone to perform the auto provisioning.

For more information on how to trigger the phone to perform the auto provisioning, refer to Triggering the IP Phone to Perform the Auto Provisioning on page 34.

Managing Boot Files

Yealink IP phones support downloading CFG files referenced in the boot files in sequence. Before beginning provisioning, you may need to edit and customize your boot files.

You can edit the template boot file directly or create a new boot file as required. Open each boot file with a text editor such as UltraEdit.

Editing Common Boot File

The common boot file is effectual for all phones. It uses a fixed name "y000000000000.boot" as the file name.

The following figure shows the contents of the common boot file:

```
#!version:1.0.0.1
## The header above must appear as-is in the first line
include:config <xxx.cfg>
include:config "xxx.cfg"
overwrite_mode = 1
```

When editing the boot file, learn the following:

- The line beginning with "#" is considered to be a comment.
- The file header "#!version:1.0.0.1" is not a comment and must be placed in the first line. It cannot be edited or deleted.
- The file format must be *.boot.
- Each "include" statement can reference a configuration file. The referenced configuration file format must be *.cfg. The "include" statement can be repeated as many times as needed. It means one or more CFG files can be referenced in the boot file.
- Each "include" statement must use the following format:

include:config < *download path of the CFG file*> or include:config "*download path of the CFG file*"

The download path of the CFG file must point to a specific CFG file. It supports the following path forms:

- Relative path (relative to the boot file):

For example, sip.cfg, HTTP Directory/sip.cfg, ../sip.cfg, etc.

- Absolute path (or URL):

For example, http://10.2.5.258/HTTP Directory/sip.cfg.

• The CFG files are downloaded in the order listed (top to bottom). The parameters in the

new downloaded configuration files will override the duplicate parameters in files downloaded earlier.

- "overwrite_mode = 1" means overwrite mode is enabled. The overwrite mode will be applied to the configuration files specified to download. This parameter can only be used in boot files. Overwrite mode includes the following features:
 - The NULL values take effect (if the value of a parameter in configuration files is left blank, the factory default value can take effect.)

For example, the label for account 1 is "abc", and the value of the parameter "account.1.label" is left blank in the configuration files (e.g., account.1.label = or account.1.label = ""). The factory default value Blank takes effect after auto provisioning. So the label for account 1 will be deleted.

- The deletions of the configuration parameters take effect (if a parameter in configuration files is deleted, the factory default value can take effect immediately.)

For example, account.1.enable = 1 is deleted or commented out in the configuration files. The factory default value 0 takes effect after auto provisioning. So account 1 is disabled.

- Note that if a boot file is used but the value of the parameter "overwrite_mode" is not configured, the default value 1 will take effect. If you want to disable the overwrite mode, configure "overwrite_mode = 0" in the boot file.
- Note

Overwrite mode only affects the non-static settings configured using configuration files. If you do not use the boot file for auto provisioning, overwrite mode is disabled by default and you are not allowed to enable it.

Creating MAC-Oriented Boot File

The MAC-Oriented boot file is only effectual for the specific phone. It use the 12-digit MAC address of the IP phone as the file name. For example, if the MAC address of the IP phone is 00156574B150, the MAC-Oriented boot file has to be named as 00156574b150.boot (case-sensitive) respectively.

The IP phones try to download the MAC-Oriented boot file first from the server during auto provisioning first. If no matched MAC-Oriented boot file is found on the server, the IP phones try to download the common boot file.

If you want to create a MAC-Oriented boot file for your phone, follow these steps:

To create a MAC-Oriented boot file:

- **1.** Create a boot file for your phone. Ensure the file complies with the guidelines that are listed in Editing Common Boot File on page 11.
- **2.** Copy the contents from the common boot file and specify the configuration files to be downloaded.

One or more configuration files can be referenced in the boot file. The following takes two configuration files for example:

00156574b150.boot ×

```
#!version:1.0.0.1
#! The header above must appear as-is in the first line
include:config <account.cfg>
include:config "network.cfg"
overwrite_mode = 1
```

3. Save the changes and close the MAC-Oriented boot file.

You can also make a copy of the common boot file, rename it and then edit it.

Managing Configuration Files

Auto provisioning enables Yealink IP phones to update themselves automatically via downloading Common CFG, MAC-Oriented CFG, custom CFG and MAC-local CFG files. Before beginning provisioning, you may need to edit and customize your configuration files. You can edit the template configuration files directly or create a new CFG file as required. Open each configuration file with a text editor such as UltraEdit.

For more information on description of all configuration parameters in configuration files, refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Description of Configuration Parameters in CFG Files_V81.xlsx, Yealink DECT IP Phones Description of Configuration Parameters in CFG Files.xlsx* or *Yealink_SIP-T5_Series_CP960_IP_Phones_Description of Configuration Parameters in CFG*

Files.xlsx.

Editing Common CFG File

The Common CFG file is effectual for all phones of the same model. It uses a fixed name "y000000000XX.cfg" as the file name, where "XX" equals to the first two digits of the hardware version of the IP phone model.

Phone Model	Common CFG File
CP960	y0000000073.cfg
SIP-T58V/A	y0000000058.cfg
SIP-T56A	y0000000056.cfg
SIP-T54S	y0000000070.cfg
SIP-T52S	y0000000074.cfg
SIP-T48S	y0000000065.cfg
SIP-T46S	y0000000066.cfg
SIP-T42S	y0000000067.cfg
SIP-T41S	y0000000068.cfg
SIP-T48G	y0000000035.cfg
SIP-T46G	y0000000028.cfg
SIP-T42G	y00000000029.cfg
SIP-T41P	y0000000036.cfg

The names of the common CFG file requirements for the phone model are:

Phone Model	Common CFG File
SIP-T40P	y0000000054.cfg
SIP-T40G	y0000000076.cfg
SIP-T29G	y0000000046.cfg
SIP-T27P	y0000000045.cfg
SIP-T27G	y0000000069.cfg
SIP-T23P/G	y00000000044.cfg
SIP-T21(P) E2	y00000000052.cfg
SIP-T19(P) E2	y0000000053.cfg
CP860	y0000000037.cfg
CP920	y0000000078.cfg
W60	Y0000000077.cfg
W52P/W56P	y00000000025.cfg

Common CFG file contains configuration parameters which apply to phones with the same model, such as language and volume.

The following figure shows a portion of the common CFG file:

When editing the common CFG file, learn the following:

- The line beginning with "#" is considered to be a comment.
- The file header "#!version:1.0.0.1" is not a comment and must be placed in the first line. It cannot be edited or deleted.
- The file format must be *.cfg.
- The filename complies with the requirements that are listed in the above table.
- Each line must use the following format and adhere to the following rules:

Configuration Parameter= Valid Value

- Separate each configuration parameter and value with an equal sign.
- Set only one configuration parameter per line.
- Put the configuration parameter and value on the same line, and do not break the line.

Editing MAC-Oriented CFG File

The MAC-Oriented CFG file is only effectual for the specific phone. It use the 12-digit MAC address of the IP phone as the file name. For example, if the MAC address of the IP phone is 00156574B150, the MAC-Oriented CFG file has to be named as 00156574b150.cfg (case-sensitive) respectively.

MAC-Oriented CFG file contains configuration parameters which are expected to be updated per phone, such as the registration information.

The following figure shows a portion of the MAC-Oriented CFG file:

1#!version:1.0.0.1
##File header "#!version 1,0,0,1" can not be edited or deleted, and must be placed in the first line.## ##This template file is applicable to IP phones running firmware version 81 or later.## ##For more information on configuration parameters, refer to Description of Configuration Parameters in CFG Files.ws1w##
Account. Basic Settings
account.1.label = account.1.display_name = account.1.auth_name = account.1.user_name = account.1.pesswicz =
account.1.outbound_proxy_enable = account.1.outbound_host = account.1.outbound_port = account.1.dial_tone =
<pre>##It configures the transport type for account 1. 0-UDP,1-TCP,2-TLS,3-DNS-NAPTR ##The default value is 0. account.1.sip_server.1.transport_type = account.1.sip_server.2.transport_type =</pre>
######################################
<pre>socount.1.nsptr_build = socount.1.fallback.xedundancy_type = socount.1.fallback.timeout = socount.1.sip_server.1.sddress =</pre>

When editing the MAC-Oriented CFG file, learn the following:

- The line beginning with "#" is considered to be a comment.
- The file header "#!version:1.0.0.1" is not a comment and must be placed in the first line. It cannot be edited or deleted.
- The file format must be *.cfg.
- The filename matches the MAC address of your phone.
- Each line must use the following format and adhere to the following rules:

Configuration Parameter= Valid Value

- Separate each configuration parameter and value with an equal sign.
- Set only one configuration parameter per line.

- Put the configuration parameter and value on the same line, and do not break the line.

SIP-T58V/T58A/T56A/T54S/T48G/T48S/T46G/T46S/T29G IP phones support 16 accounts, SIP-T52S/T42G/T42S IP phones support 12 accounts, W60 DECT IP phones support 8 accounts. SIP-T41P/T41S/T27P/T27G IP phones support 6 accounts, W52P/W56P IP DECT phones support 5 accounts; SIP-T40P/T40G/T23P/T23G IP phones support 3 accounts, SIP-T21(P) E2 IP phones support 2 accounts, CP960/CP920/CP860/SIP-T19 (P) E2 IP phones support only one account.

Creating a New CFG File

If you want to create a new CFG file for your phone, follow these steps:

To create a new CFG file:

- **1.** Create a CFG file for your phone. Ensure the file complies with the guidelines that are listed in Editing Common CFG File on page 15 or Editing MAC-Oriented CFG File on page 17.
- **2.** Copy configuration parameters from the template configuration files and set the valid values for them.

settings.cfg ×

```
10 20 30 40 50
#!version:1.0.0.1
phone_setting.phone_lock_enable = 1
phone_setting.phone_locak_lock_key_type = 0
features.dnd_mode = 1
static.lang.wui = English
static.lang.gui = English
```

3. Save the changes and close the CFG file.

You can also make a copy of the template configuration file, rename it and then edit it.

Managing MAC-local CFG File

By default, MAC-local CFG file automatically stores non-static settings modified via web user interface or phone user interface. This file is stored locally on the IP phone, but a copy can also be uploaded to the provisioning server (or a specified URL configured by "static.auto_provision.custom.sync.path"). This file enables the phone to keep user personalization settings, even after auto provision. As with the MAC-Oriented CFG files, MAC-local CFG files are only effectual for the specific phone too. They use the 12-digit MAC address of the IP phone as the file name. For example, if the MAC address of the IP phone is 00156574B150, MAC-local CFG file has to be named as 00156574b150-local.cfg (case-sensitive).

If your IP phone's current firmware version doesn't support generating a <MAC>-local.cfg file, the IP phone will automatically generate a MAC-local CFG file after it is upgraded to the latest firmware.

For more information on how to keep user personalization settings, refer to

Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone Administrator Guide_V81 **or** *Yealink_SIP-T5_Series_CP960_IP_Phones_Administrator_Guide.*

We recommend you do not edit the MAC-local CFG file. If you really want to edit MAC-local CFG file, you can export and then edit it.

For more information on how to export CFG files, refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone Administrator Guide_V81* or *Yealink SIP-T5 Series CP960 IP Phones Administrator Guide.*

Encrypting Configuration Files

To protect against unauthorized access and tampering of sensitive information (e.g., login password, registration information), you can encrypt configuration files using Yealink Configuration Encryption Tool. AES keys must be 16 characters and the supported characters contain: $0 \sim 9$, $A \sim Z$, $a \sim z$ and the following special characters are also supported: # \$ % * + , - .: = ? @ [] ^ {} . For more information on how to encrypt configuration files, refer to *Yealink Configuration Encryption Tool User Guide*.

Customizing Resource Files

When configuring some particular features, you may need to upload resource files to IP phones, such as personalized ring tone file, language package file and logo file. Yealink supplies the following resource file templates:

Feature	Template File Name
DST	AutoDST.xml
Language Packs	For example, 000.GUI.English.lang 1.English_note.xml 1.English.js
Replace Rule	dialplan.xml
Dial-now	dialnow.xml
Softkey Layout (not applicable to CP960/W52P/W56P/ W60 DECT IP phones)	CallFailed.xml CallIn.xml Connecting.xml Dialing.xml (not applicable to SIP-T58V/T58A/T56A/T48G/T48S IP phones) RingBack.xml Talking.xml

Feature	Template File Name				
Directory (not applicable to SIP-T58V/T58A/T56A/ CP960 IP phones)	favorite_setting.xml				
Super Search in dialing	super_search.xml				
Local Contact File	contact.xml				
Remote XML Phone	Department.xml				
Book	Menu.xml				
Ring Tone					
(not applicable to W52P/W56P/W60 DECT IP phones)	None				
Logo customization					
(not applicable to W52P/W56PW60 DECT IP phones)	None				
Wallpaper (not applicable to W52P/W56P/W60 DECT IP phones)	None				
	For				
	SIP-T54S/T52S/T48G/T48S/T46G/T46S/T42/T42S/T41P/T41S/T40P				
	/T29G/T27P/T27G/T23P/T23G/T21(P) E2/T19(P) E2:				
	X.81.0.XX.rom				
Firmware	For example, 44.81.0.15.rom				
	For SIP-T58V/T58A/T56A/CP960: X.80.0.XX.rom				
	For example,				
	58.80.0.10.rom				

Ask the distributor or Yealink FAE for resource file templates. For more information on an explanation of the configuration parameters that relate to these features, refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone*

Administrator Guide_V81 or Yealink_SIP-T5_Series_CP960_IP_Phones_Administrator_Guide.

Configuring a Provisioning Server

Yealink IP phones support using FTP, TFTP, HTTP and HTTPS protocols to download boot files and configuration files. You can use one of these protocols for provisioning. The TFTP protocol is used by default. The following section provides instructions on how to configure a TFTP server.

We recommend that you use 3CDaemon or TFTPD32 as a TFTP server. 3CDaemo and TFTPD32 are free applications for Windows. You can download 3CDaemon online:

http://www.oldversion.com/3Com-Daemon.html and TFTPD32 online: http://tftpd32.jounin.net/.

For more information on how to configure FTP and HTTP servers, refer to Configuring an FTP Server on page 52 and Configuring an HTTP Server on page 55.

Preparing a Root Directory

To prepare a root directory:

- **1.** Create a TFTP root directory on the local system (e.g., D:\TFTP Directory).
- 2. Place the boot files and configuration files to this root directory.



3. (Optional.) Set security permissions for the TFTP directory folder.

You need to define a user or a group name, and set the permissions: read, write or modify. Security permissions vary by organizations.

Group or user nar	nes:			
Administrato		D80\Adminis	trators)	2
Everyone				
🖸 Hill, James (jahil@mys	ervername.	(mos	
SYSTEM				~
K				2
		A	dd	Bemove
Permissions for E	reryone	71	Allow	Deny
Full Control		1		
Modily			1	
Read & Execut	ie		4	
List Folder Con	tents		1	
Read				
Write			1	
Canada Damin	alana	1		
For special permit click Advanced	sions or for	r advanced s	ettings,	Adyanced

An example of configuration on the Windows platform is shown as below:

Configuring a TFTP Server

If you have a 3CDaemon application installed on your local system, use it directly. Otherwise, download and install it.

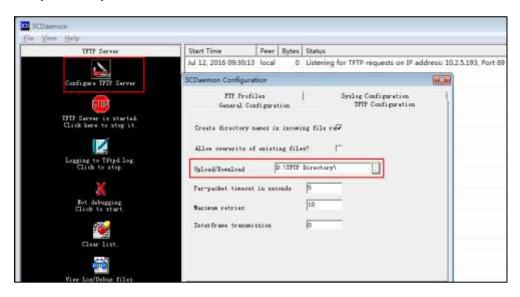
To configure a TFTP server:

1. Double click **3CDaemon.exe** to start the application.

A configuration page is shown as below:

3CDaemon file View Help					
TPTT Serves	Start Time	Peer	Bynes	Statue	
Lustigers THT Lerver	Jul 12, 2016 14:11:08	local	0	Listening for TFTP requests on IP address: 10.2.5.193, Port 69	
TFIT Server is started Click bars to step it.					
Loging to Tripiling Click to step					
Not Advagging Click to start.					
Cier lit.					
Vies Log/Tebug files.					

2. Select **Configure TFTP Server**. Click the ... button to locate the TFTP root directory from your local system:



3. Click the **Confirm** button to finish configuring the TFTP server.

The server URL "tftp://IP/" (Here "IP" means the IP address of the provisioning server, for example, "tftp://10.2.5.193/") is where the IP phone downloads configuration files from.

Obtaining the Provisioning Server Address

Yealink IP phones support obtaining the provisioning server address in the following ways:

- Zero Touch
- Plug and Play (PnP) Server
- DHCP Options
- Phone Flash
- Configuring Wildcard of the Provisioning Server URL

The priority of obtaining the provisioning server address is as follows: Zero Touch-->PnP Server-->DHCP Options (Custom option-->option 66-->option 43) -->Phone Flash. The following sections detail the process of each way (take the SIP-T23G IP phone as an example).

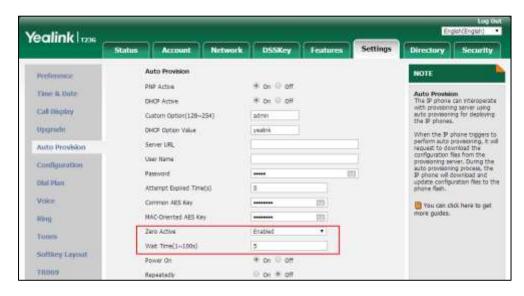
Zero Touch

Zero Touch allows you to configure the network parameters and provisioning server address via phone user interface during startup. This feature is helpful when there is a system failure on the IP phone. To use Zero Touch, make sure this feature is enabled. This feature is not applicable to W52P/W56P/W60 IP phones.

To configure zero touch via web user interface:

- 1. Click on Settings->Auto Provision.
- 2. Select Enabled from the pull-down list of Zero Active.
- 3. Enter the desired wait time in the Wait Time(1~100s) field.

The default value is 5.



4. Click **Confirm** to accept the change.

When Zero Touch is enabled, there will be a configuration wizard during startup:



Press the **OK** soft key.

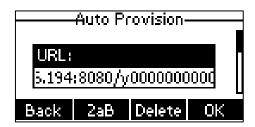
The network parameters are configurable via phone user interface:

	Net	work——	
		97 W I I 9	
IP M	ode:		
IP۷۹	1		44
	_		
Back		Switch	Next

Press the Next soft key after finishing network settings.

Configure the provisioning server address, authentication user name (optional) and password (optional) in the **Auto Provision** screen.

An example of screenshot is shown as below:



Press the **OK** soft key.

After the above configuration is completed, the IP phone will connect to the configured provisioning server and perform the auto provisioning process during startup.

Plug and Play (PnP) Server

Yealink IP phones support obtaining the provisioning server address from the PnP server. The IP phone broadcasts the PnP SUBSCRIBE message to obtain the provisioning server address during startup. To use Plug and Play, make sure this feature is enabled.

To configure PnP via web user interface:

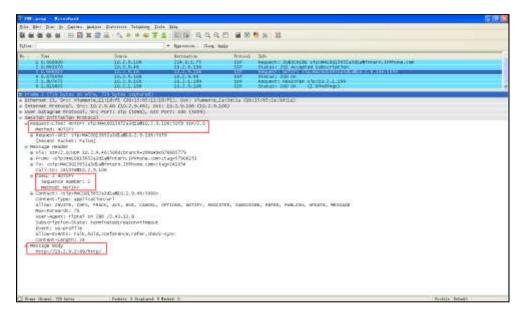
1. Click on **Settings->Auto Provision**.

2.	Mark the On	radio I	box in the	PNP	Active field.
----	--------------------	---------	------------	------------	---------------

ealink 1724	Status	Account	Network	DSSKey	Features	Settings	Directory	ish(English)		
	Status	Account	Network	DSSRey	Features	secongs	Directory	Security		
Priference	1.	Auto Provision					NOTE			
Time & Date		PHP Active		★ on ○ off			Auto Provision			
Call Display		DHCP Active		* on @ off			The IP phone o with provelening	g server using		
The second s		Custom Option(128		admin			auto provisioning for deploying the P phones.			
Mpgrade:		DHCP Option Value		yeaini.			When the IP phone triggers to perform auto provisioning, it w			
Auto Provision		Server URL					request to dow configuration fil	micad the		
Configuration		User Name					provisioning sen auto provisionin	ver. During the		
Old Plan		Password				-	usdate configur	P phone will download and update configuration files to the		
Voice		Attempt Expred Tr	YWER)	3			pitone fesh.			
	Common AES Ker					You can click here to get more guides.				
Ring		MAC-Orientad AES 8	Ney	Ecabled						
Tones	Zero Actue			S						
Softkey Layout		Wait Time(1~1065) Forwer On Repeatedly Interna(Wenutes)		IF ON COT						
18000				O on # Off						
Voice Monitoring				1440						
SIP		Weekb		© on ≉ off						
3449		Weekly Upgrade Int	tenal(0~12week)							
		Inactivity Time Expe	w(0~120mm)	0						

3. Click **Confirm** to accept the change.

Any PnP server activated in the network responses with a **SIP NOTIFY** message, and an address of the provisioning server is contained in the message body.



After the IP phone obtains the provisioning server address from the PNP server, it will connect to the provisioning server and perform the auto provisioning process during startup.

DHCP Options

Yealink IP phones support obtaining the provisioning server address by detecting DHCP options during startup.

The phone will automatically detect the option 66 and option 43 for obtaining the provisioning server address. DHCP option 66 is used to identify the TFTP server. DHCP option 43 is a vendor-specific option, which is used to transfer the vendor-specific information.

You can configure the phone to obtain the provisioning server address via a custom DHCP option. To obtain the provisioning server address via a custom DHCP option, make sure the DHCP option is properly configured on the phone. The custom DHCP option must be in accordance with the one defined in the DHCP server.

For more information on how to configure a DHCP server, refer to Configuring a DHCP Server on page 59.

To configure the DHCP option via web user interface:

- 1. Click on Settings->Auto Provision.
- 2. Mark the **On** radio box in the **DHCP Active** field.
- 3. Enter the desired value in the Custom Option(128~254) field.

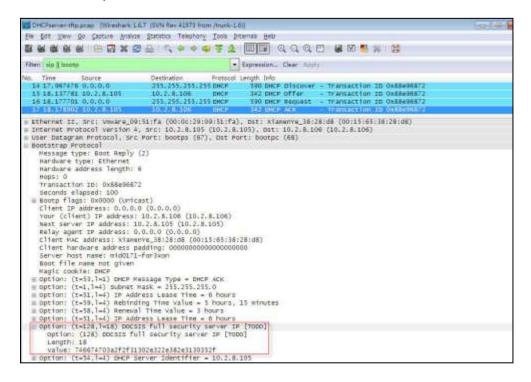
Yealink	_					6	B	Log Out pish(English) •
To call it is that	Status	Account	Network	DSSKey	Features	Settings	Directory	Security
Profescen		Auto Provision					NOTE	
Time & Dobe		PHP Active		* or © off	-		Auto Provisi	an i
and the second	ſ	DHCP Active		* Or © DF			with provolena	can interoperate
Cull Usplay		Custom Option(128+	-254)	128			in/to provelor. the 3P phones	ng far deploying
Upgrade		DHCP Option Value	· · · · ·	Vealue	- A -			phone triggers to
Auto Provision		Server URL					request to do configuration (provisioning, it will writigid the
Coofiguration		User Hame					provisioning se	rver. During the ing process, the
Chal Plan		Pasaword		*****			3P phone will p	download and unition files to the
Charles Charles		Attempt Expired Ten	(x)	5			phone flash.	analogie inca co cre
Writere		Cummon AES Key			89			lick here to get
Ring		HAC-Orienter AES K	ey		1993 (1994 (19)))))))))))))))))))))))))))))		more guides.	
Tones.		Zere Active		Enabled				
		Wet Time(1-10th)		5				
Softley Layout		Power On		1. or 0 or				
10065		Repeatedy		0 or # off				
Voloe Monitoring		Interva(Hmutes)		1440				
STP		Weekloy		0 or # or				
		Weekly Upgrade Inte	rva(0-12vrek)	4				
	3	Inactivity Time Explo	(8~120mm)	0				

4. Click **Confirm** to accept the change.

During startup, the phone will broadcast DHCP request with DHCP options for obtaining the provisioning server address. The provisioning server address will be found in the received DHCP response message.

After the IP phone obtains the provisioning server address from the DHCP server, it will connect to the provisioning server and perform the auto provisioning process during startup.

For more information on the DHCP options, refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone Administrator Guide_V81* or *Yealink_SIP-T5_Series_CP960_IP_Phones_Administrator_Guide.* The following figure shows the example messages of obtaining the TFTP server address from a custom DHCP option:



Right click the root node of the custom option (e.g., option 128) shown on the above figure, and select **Copy**->**Bytes**->**Printable Text Only**. Paste the copied text in your favorite text editor to check the address, for example, tftp://192.168.1.100/.

Phone Flash

Yealink IP phones support obtaining the provisioning server address from the IP phone flash. To obtain the provisioning server address by reading the IP phone flash, make sure the configuration is set properly.

To configure the IP phone flash via web user interface:

1. Click on Settings->Auto Provision.

 Enter the URL, user name and password of the provisioning server in the Server URL, User Name and Password field respectively (the user name and password are optional).

ealink 1200							De	turg Dr (dah/brglah)
C Califrit (1725)	Status	Account	Network	DSSKey	Features	Settings	Directory	Security
Preference.	56	Auto Provision					NOTE	1
Time & Date		PNP Active DHCP Active		on O off on O off			Auto Provisi The P phone	on san interoperate
Call Display	10	Custom Option(128-	-254)				auto provincere	ng server using ing for deploying:
Wpgrade	- 4	DHCP Option Value					the IP phones	
Autu Provision		Saiver URL		thp://10.2.5.193/			parform auto	phone triggers to provisioning, it wi
Configuration		User Name					request to do configuration (files from the
COMPANY.		Paseword					auto provisioni	inver. During the ing process, the
Dial Plan	3	Attempt Expend Ter	ne(s)	5			IP phone sell o update canfig	fownload and uration files to the
Voka	3	Common AES Key					phone fash.	11112 - 11120 1
Ning	20	MAC-Driented AES #	Gey					tck here to get
		Zero Active		Deabled			more guides.	
Tools	11	Wat Tree(1+100s)		5				

3. Click **Confirm** to accept the change.

After the above configuration is completed, the IP phone will connect to the configured provisioning server and perform the auto provisioning process by one of the following methods: Power On, Repeatedly, Weekly, Flexible Auto Provision, Auto Provision Now, SIP NOTIFY Message and Multi-mode Mixed. For more information on these methods, refer to Triggering the IP Phone to Perform the Auto Provisioning on Page 34.

Configuring Wildcard of the Provisioning Server URL

Normally, many phone models may be deployed in your environment. To deploy many phone models using a unified provisioning server, it is convenient for the administrator to configure a unified provisioning server URL for different phone models. On the provisioning server, many directories need to be configured for different phone models, each with a unique directory name. Yealink IP phones support the following wildcards in the provisioning server URL:

- \$PN: it is used to identify the directory name of the provisioning server directory where the corresponding boot files and configuration files are located.
- **\$MAC**: it is used to identify the MAC address of the IP phone.

The parameter "static.auto_provision.url_wildcard.pn" is used to configure the directory name the boot files and configuration files located. For more information on the parameter, refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series_CP_Series IP Phones_Description of Configuration Parameters in CFG Files_V81.xlsx, Yealink DECT IP Phones Description of Configuration Parameters in CFG Files.xlsx* or *Yealink_SIP-T5_Series_CP960_IP_Phones_Description of Configuration Parameters in CFG Files.xlsx.*

When the IP phone obtains a provisioning server URL containing the wildcard \$PN, it automatically replaces the character \$PN with the value of the parameter "static.auto_provision.url_wildcard.pn" configured on the IP phone. When the IP phone is triggered to perform auto provisioning, it will request to download the boot files and configuration files from the identified directory on the provisioning server.

The value of the parameter "static.auto_provision.url_wildcard.pn" must be configured in accordance with the directory name of the provisioning server directory where the boot files and configuration files of the IP phones are located.

The following example assists in explaining the wildcard feature:

You want to deploy SIP-T42G and SIP-T46G IP phones simultaneously in your environment. IP phones are configured to obtain the provisioning server URL via DHCP option 66. The following details how to deploy the SIP-T42G and SIP-T46G IP phones using wildcard feature.

- 1. Create two directories on the root directory of provisioning server.
- 2. Configure the directory names of these two directories to be "T42G" and "T46G".
- 3. Place the associated boot files and configuration files to the directory created above.
- 4. Configure the value of DHCP option 66 on the DHCP server as: tftp://192.168.1.100/\$PN.
- 5. Configure the value of the parameter "static.auto_provision.url_wildcard.pn".

The default value of the parameter "static.auto_provision.url_wildcard.pn" is "T42G" for the SIP-T42G IP phones and "T46G" for the SIP-T46G IP phones. If the default value is different from the directory name, you need to configure the value of this parameter to be the directory name on the IP phones in advance.

During startup, IP phones obtain the provisioning server URL "tftp://192.168.1.100/\$PN" via DHCP option 66, and then replace the character "\$PN" in the URL with "T42G" for the SIP-T42G IP phones and "T46G" for the SIP-T46G IP phones. When performing auto provisioning, the SIP-T42G IP phones and the SIP-T46G IP phones first request to download the MAC-Oriented boot files and configuration files referenced in MAC-Oriented boot files from the provisioning server address "tftp://192.168.1.100/T42G" and "tftp://192.168.1.100/T46G" respectively. If no matched MAC-Oriented boot files are found on the server, the SIP-T42G IP phones and the SIP-T46G IP phones request to download the common boot files and configuration files referenced in the server, the SIP-T42G IP phones and the SIP-T46G IP phones request to download the common boot files and configuration files referenced in common boot files from the provisioning server address "tftp://192.168.1.100/T42G" and "tftp://192.168.1.100/T46G" respectively.

If the URL is configured as "tftp://192.168.1.100/\$PN/\$MAC.boot" on the DHCP server, the SIP-T42G IP phones and the SIP-T46G IP phones will replace the characters "\$PN" with "T42G" and "T46G" respectively, and replace the characters "\$MAC" with their MAC addresses. For example, the MAC address of one SIP-T42G IP phone is 00156543EC97. When performing auto provisioning, the IP phone will only request to download the 00156543ec97.boot file and configuration files referenced in the 00156543ec97.boot file from the provisioning server address "tftp://192.168.1.100/T42G".

For more information on boot files, refer to Managing Boot Files on page 11.

Triggering the IP Phone to Perform the Auto Provisioning

This chapter introduces the following methods to trigger the IP phone to perform the auto provisioning process:

- Power On
- Repeatedly
- Weekly
- Flexible Auto Provision
- Auto Provision Now
- Multi-mode Mixed
- SIP NOTIFY Message
- Auto Provisioning via Activation Code

When there is an active call on the IP phone during auto provisioning, the auto provisioning process will detect the call status every 30 seconds. If the call is released within 2 hours, the auto provisioning process will be performed normally. Otherwise, the process will end, due to timeout.

Power On

The IP phone performs the auto provisioning process when the IP phone is powered on.

To activate the power on mode via a web user interface:

1. Click on Settings->Auto Provision.

ealink 1236	Status	Account	Network	DSSKey	Features	Settings	Directory	Security
Preference	6	Auto Provision					NOTE	
Time & Date		PNP Active		# on ○ off			Auto Provisio	
		DHCP Active		8 0s 0 0€				Can interoperate
Call Display		Custom Option(128~	256)	128				to for deploying
Alpgröde		OHOP Option Value		yeairk.			1.1.2.11.1.1.1.1	hone trippers to
Auto Provision		Server URL		tftp://10.2.5.109	8		perform auto p request to dov	ravaioning, it w
Configuration		User Harne					configuration fi provisioning ser	iver. During the
		Password			1.0	m) (auto provisione IP phone will d	bris beolewia
Dial Plan		Attempt Expired Tim	#(1)	5			phone flam.	ration files to th
Voice		Common AES Key			-		B You can ch	ck here to get
Minut		MAC-Driented AES Ki	11		100		more guides.	
Tours		Zero Active		Enabled				
		Wet Time(1~100s)		5.				
Softlary Layout		Poiner On		* 01 07				
11000		Repeatedly		O on # off				
Voice Monitoring		Interva(Hinutes)		2440				
SIP		Weekly		0 os # off				
10000		Weekly Upgrade Inte	rvel(0~12meek)	4				
		Inactivity: Time Expire		0				

2. Mark the **On** radio box in the **Power On** field.

3. Click **Confirm** to accept the change.

Repeatedly

The IP phone performs the auto provisioning process at regular intervals. You can configure the interval for the repeatedly mode. The default interval is 1440 minutes.

To activate the repeatedly mode via web user interface:

- 1. Click on Settings->Auto Provision.
- 2. Mark the **On** radio box in the **Repeatedly** field.

ealink	Status	Account	Network	DSSKey	Features	Settings	Directory	Security
Prifurence	14	Auto Provision	-				NOTE	
	3	PhP Active		# or 0 of			And a second second second	
Time & Date	3	DHCP Active		# or = or-			Auto Provisio The IP phone	can interaperal
Call Display		Custors Option(128~2	(10	128			with provisione auto provisione	ig for deployin
Mpgrade		DHCP Option Value		yealex.			the IP phones. When the IP p	
Auto Provision	14	Server URL		tftp://10.2.5.169			perform auto p	Discounts
	- 34	User Name					configuration fi provisioning as	les from the
Configuration		Password				-	auto provisione IF phone wit d	ig process, the anyrioad and
third Plan		Attempt Expired Time	(8)	5			spore fails.	ration files to 1
Volor	10	Common AES Key			199		The can ch	ck here to pet
Ring .		NAC-Onented AES Ke			172		more guides.	
Tones		Zero Active		Enabled				
		Wat Tma[1~100s]						
Soltkey Luyout		Power On		If or 0 or				
110009	1	Repeatedly		# 01 © 07				
Voice Monitoring	3	Interval(Hinutes)		1448				
SIP		dreekly		0 or # of				
		Weekly Upgrade Inter	va(0~12week)	4				
	13	Inactivity Time Expire	0~120mm)	0				

3. Enter the desired interval time (in minutes) in the Interval(Minutes) field.

4. Click Confirm to accept the change.

Weekly

The IP phone performs the auto provisioning process at a random time every week/month/quarter. You can configure what time of the day and which day of the week to trigger the IP phone to perform the auto provisioning process. You can also configure a regular week interval to trigger the IP phone to perform the auto provisioning process. You can specify the delay time to perform an auto provisioning process when the IP phone is inactive at regular week. For example, you can configure the IP phone to check and update new configuration only when the IP phone has been inactivated for 10 minutes between 2 to 3 o'clock in the morning every Monday for a 4-week interval.

If you configure two or more days in a week, the auto provisioning only occurs at a random day.

To activate the weekly mode via web user interface:

- 1. Click on Settings->Auto Provision.
- 2. Mark the **On** radio box in the **Weekly** field.
- 3. Enter the desired upgrade interval in the Weekly Upgrade Interval(0~12week) field.
- 4. Enter the desired value in the Inactivity Time Expire(0~120min) field.
- 5. Enter the desired time in the Time field.

- Yealink 17236 Account DSSKey Settings Status Network Features Directory Security Auto Provision NOTE Preference PHP Active ■ On ○ Off Time & Date Auto Provision The IP phone can interoperate with provisioning server using auto provisioning for deploying the IP phones. e on O off DHCP Active Call Display Custom Option(128~254) yeaks DHCP Option Value Upgrade When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning process, the auto provisioning process, the phone will download and update configuration files to the phone flash. Server URL tftp://192.168.1.100/ Auto Provision User Name Configuration Password Dial Plan Attempt Expired Time(s) 5 Common AES Key Voice phone flash MAC-Oriented AES Key You can click here to get Ring Zero Active Enabled Tones Watt Time(1~100s) 5 Softkey Layout Power On · on O off Repeatedly O on 🖲 off TH069 Interval(Minutes) 1440 Voice Monitoring Week On © 08 SIP Weekly Upgrade Interval(0~12week) Inactivity Time Expire(0~120min) 10 Tm 02 : 00 - 03 : 00 11 Sunday Monday Tuesday Day of Week Wednesday Thursday Friday Saturd
- 6. Check one or more checkboxes in the Day of Week field.

7. Click **Confirm** to accept the change.

Flexible Auto Provision

The IP phone performs the auto provisioning process at a random time on a random day within a specific period of time. The random day is calculated on the basis of the phone's MAC address. You can specify an interval and configure what time of the day to trigger the IP phone to perform the auto provisioning process.

For example, you can configure the IP phone to check and update new configuration between 1 and 6 o'clock in the morning for a 30-day interval. The IP phone will perform an auto provisioning process at a random time (e.g., 03:47) on a random day (e.g., 18) based on the phone's MAC address.

Note that the update time will be recalculated if auto provisioning occurs (e.g., Auto Provision Now) during this specific period of time.

To activate the flexible auto provision mode via web user interface:

- 1. Click on Settings->Auto Provision.
- 2. Mark the On radio box in the Flexible Auto Provision field.
- 3. Enter the desired value in the Flexible Interval Days field.

ealink	Status	Account	Network	DSSKey	Features	Settings	Directory	security
	citatus	MECONINC	HELHOIK	USSINGY	reatines	(occurring)	Unicetony	security
Preference		Auto Provision					NOTE	
Time & Date		PNP Active		🔍 On 🔿 Off			Auto Provisi	ion
and all the second		DHCP Active		● On © Off				can interoperate ing server using
Call Display		Custom Option(128-	~254)	admin				ing for deploying
Upgrade		DHOP Option Value						phone triggers to
Auto Provision		Server URL		tftp://192.168.1.:	100/			provisioning, it w
Configuration		User Name					configuration	files from the
		Password					auto provision	erver. During the ing process, the
Dial Plan		Attempt Expired Tin	ne(s)	5			update config	download and suration files to th
Voice		Common AES Key					phone flash.	
Ring		MAC-Oriented AES #	Key					lick here to get
Tones		Zero Active		Disabled			more guides.	
Tones		Wait Time(1~100s)		5				
Softkey Layout		Power On		🖲 On 🗇 Off				
TR069		Repeatedly		O on R off				
Voice Monitoring		Interval(Minutes)		1440				
		Weekly		O on 🖲 off				
SIP		Weekly Upgrade Int	erval(0~12week)	4				
		Inactivity Time Expir	ve(0~120min)	0				
		Time		00 : 00 - 00	= 00			
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				Tuesday				
		Day of Week		Wednestay				
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		Flexible Time	51 	01 : 00 - 06	* 00			
	L	Contraction of the local distance of the loc		Autoprovision				
				- Autoprovision	iter i			

4. Enter the desired start time and end time in the **Flexible Time** field.

5. Click **Confirm** to accept the change.

Auto Provision Now

You can use auto provision now mode to manually trigger the IP phone to perform the auto provisioning process immediately.

To use the auto provision now mode via web user interface:

1. Click on Settings->Auto Provision.

Upgrade Auto Provision Configuration Dial Plan Voice	US Account Network Auto Provision PHP Active DHCP Active Custom Option(128~254) DHCP Option Value Server URL User Name Password Attempt Expired Time(s) Common AES Key MAC-Onented AES Key	OSSKey Feature © On © Off On © Off adman Interview tftp://192.168.1.100/ Interview	s Settings	Directory Security NOTE Auto Provision The P phone can interoperate with provisioning server using auto provisioning for deploying the P phones. When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and update configuration files to the P phone will download and P phone will download
Time & Date Call Display Upgrade Auto Provision Configuration Dial Plan	PHP Active DHCP Active Custom Option(128~254) DHCP Option Value Server URL User Name Password Attempt Expired Time(s) Common AES Key	On Off admin thtp://192.168.1.100/		Auto Provision The B phone can interoperate with provisioning server using auto provisioning for deploying the B phones. When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning server. During the auto provisioning server.
Call Display Upgrade Auto Provision Configuration Dial Plan Voice	DHCP Active Custom Option(128~254) DHCP Option Value Server URL User Name Password Atterrot Expired Time(s) Common AES Key	On Off admin thtp://192.168.1.100/		The IP phone can interoperate with provisioning server using auto provisioning for deploying the IP phones. When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the IP phone will download and update configuration files to the
Call Display Upgrade Auto Provision Configuration Dial Plan Voice	Custom Option(128~254) DHCP Option Value Server URL User Name Password Atterrot Expired Time(s) Common AES Key	admin tftp://192.168.1.100/ 		The IP phone can interoperate with provisioning server using auto provisioning for deploying the IP phones. When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the IP phone will download and update configuration files to the
Upgrade Auto Provision Configuration Dial Plan Voice	DHCP Option Value Server URL User Name Password Atterrot Expired Time(s) Common AES Key	tftp://192.168.1.100/		auto provisioning for deploying the IP phones. When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the IP phone well download and update configuration files to the
Auto Provision Configuration Dial Plan Voice	Server URL User Name Password Atterrot Expired Time(s) Common AES Key	5		When the IP phone triggers to perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the IP phone will download and update configuration files to the
Configuration Dial Plan Voke	User Name Password Atterrot Expired Time(s) Common AES Key	5		perform auto provisioning, it will request to download the configuration files from the provisioning server. During the auto provisioning process, the 3P phone will download and update configuration files to the
Dial Plan Voice	Password Attempt Expired Time(s) Common AES Key	5		configuration files from the provisioning server. During the auto provisioning process, the IP phone will download and update configuration files to the
Dial Plan Voice	Attempt Expred Time(s) Common AES Key	5		auto provisioning process, the P phone will download and update configuration files to the
Voice	Common AES Key			IP phone will download and update configuration files to the
Ring	MAC-Oriented AES Key			phone flash,
County .				You can click here to get
	Zero Active	Dsabled -		more guides.
Tones	Wait Time(1~100s)	5		
Softkey Layout	Power On	🖷 On 🗇 Off		
TROOP	Repeatedly	O on 🖲 off		
	Interval(Minutes)	1440		
Voice Monitoring	Weekly	0 on # off		
SIP	Weekly Upgrade Interval(0~12week)	4		
	Inactivity Time Expire(0~120min)	0		
	Tme	00 : 00 - 00 : 00		
	Day of Week	Image: Sunday Image: Sunday Image: Sunday Image: Sunday Image: Sunday Image: Sunday		
	Flexible Auto Provision	🖷 On 🔿 Off		
	Flexible Interval Days	30		
	Flexible Time	01 : 00 - 06 : 00		
		Autoprovision New		

2. Click Autoprovision Now.

The IP phone will perform the auto provisioning process immediately.

Multi-mode Mixed

You can activate more than one method for auto provisioning. For example, you can activate the "Power On" and "Repeatedly" modes simultaneously. The IP phone will perform the auto provisioning process when it is powered on and at a specified interval.

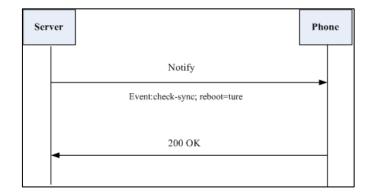
SIP NOTIFY Message

The IP phone will perform the auto provisioning process when receiving a SIP NOTIFY message which contains the header "Event: check-sync". Whether the IP phone reboots or not depends on the value of the parameter "sip.notify_reboot_enable". If the value is set to 1, or the value is set to 0 and the header of the SIP NOTIFY message contains an additional string "reboot=true", the IP phone will reboot immediately. For more information on the parameter "sip.notify_reboot_enable", refer to Yealink_SIP-T2_Series_T19(P) E2_T4_Series_CP_Series IP Phones_Description of Configuration Parameters in CFG Files_V81.xlsx, Yealink DECT IP Phones

Description of Configuration Parameters in CFG Files.xlsx or Yealink_SIP-T5_Series_CP960_IP_Phones_Description of Configuration Parameters in CFG Files.xlsx.

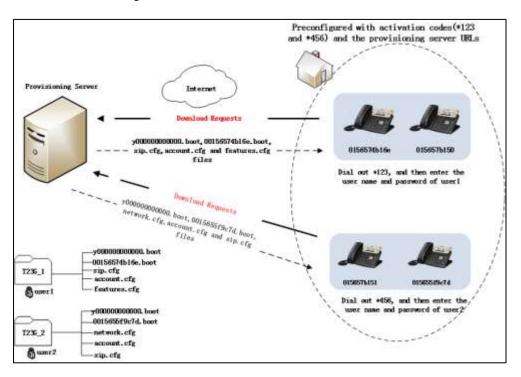
This method requires server support.

The following figure shows the message flow:



Auto Provisioning via Activation Code

In addition to the updating modes introduced above, users can trigger IP phones to perform auto provisioning by dialing an activation code. To use this method, the activation code and the provisioning server URL need to be pre-configured on the IP phones. This method works only if there is no registered account on the IP phone. It is normally used for IP phones distributed by retail sales. It has the advantage that the IP phones do not need to be handled (e.g., registering account) before sending them to end-users.



The following lists the processes for triggering auto provisioning via activation code:

- 1. Create multiple directories (e.g., T23G_1 and T23G_2) on the provisioning server.
- 2. Store boot files and configuration files to each directory on the provisioning server.
- 3. Configure a user name and password for each directory on the provisioning server.

The user name and password provides a means of conveniently partitioning the boot files and configuration files for different IP phones. To access the specified directory, you need to provide the correct user name and password configured for the directory.

4. Configure unique activation codes and the provisioning server URLs on IP phones.

The activation code can be numeric characters, special characters "#", "*" or a combination of them within 32 characters.

The following are example configurations in the configuration file for IP phones:

static.autoprovision.1.code = *123

static.autoprovision.1.url = http://192.168.1.30/T23G_1/

static.autoprovision.2.code = *456

static.autoprovision.2.url = http://192.168.1.30/T23G_2/

- 5. Send the specified activation code, associated user name and password to each end-user.
- **6.** The user can set up the IP phone, and then input the activation code (e.g., *123) after the phone startup.

The LCD screen will prompt the following dialog box:



7. Press the **OK** soft key to trigger the IP phone to perform auto provisioning.

The LCD screen will prompt the following input box:

	AutoP A	authority	
User	Name:		
Cancel	2aB	Delete	OK

8. Enter the user name and password in the User Name and Password field respectively.

The entered user name and password must correspond to the directory where the boot files and configuration files of the IP phone are located. If you enter invalid user name or password, the LCD screen will prompt the message "Wrong user name or password!". The prompt message will disappear in two seconds, and the LCD screen will return to the idle screen. You need to input the activation code again to trigger the auto provisioning

process.

The IP phone downloads the specified configuration files in sequence in boot files from the provisioning server to complete phone configurations. For more information on boot files and configuration files, refer to Managing Boot Files on page 11 and Managing Configuration Files on page 15.

The entered user name and password will be saved to the IP phone for next auto provisioning.

The LCD screen will not prompt for user name and password if the provisioning server does not require authentication, or the user name and password are already saved on the IP phone.

The following parameters are used to configure the auto provisioning via activation code method (X ranges from 1 to 50):

#(Optional.) Configure the code name for triggering auto provisioning.

static.autoprovision.X.name

#Configure the activation code.

static.autoprovision.X.code

#Configure the URL of the provisioning server.

static.autoprovision.X.url

#Configure the username and password for downloading boot files and configuration files. If configured, the LCD screen will not prompt for user name and password.

static.autoprovision.X.user

static.autoprovision.X.password

Downloading and Verifying Configurations

Downloading Boot Files and Configuration Files

After obtaining the provisioning server address in one of the ways introduced above, the phone will request to download the boot files and configuration files from the provisioning server when it is triggered to perform auto provisioning.

The IP phone will try to download the MAC-Oriented boot file firstly and then download the configuration files referenced in the MAC-Oriented boot file in sequence from the provisioning server during the auto provisioning process. If no MAC-Oriented boot file is found, the IP phone will try to download the common boot file and then download the configuration files referenced in the common boot file in sequence. If no common boot file is found, the IP phone will try to download the Common CFG file firstly, and then try to download the MAC-Oriented CFG file from the provisioning server.

If the access URLs of the resource files have been specified in the configuration files, the phone will try to download the resource files.

Resolving and Updating Configurations

After downloading, the phone resolves the configuration files and resource files (if specified in the configuration files), and then updates the configurations and resource files to the phone flash. Generally, updated configurations will automatically take effect after the auto provisioning process is completed. For update of some specific configurations which require a reboot before taking effect, for example, network configurations, the IP phone will reboot to make the configurations effective after the auto provisioning process is completed.

The IP phone calculates the MD5 values of the downloaded files before updating them. If the MD5 values of the Common and MAC-Oriented configuration files are the same as those of the last downloaded configuration files, this means these two configuration files on the provisioning server are not changed. The IP phone will complete the auto provisioning without repeated update. This is used to avoid unnecessary restart and impact of phone use. On the contrary, the IP phone will update configurations.

The latest values to be applied to the IP phone are the values that take effect.

The phone only reboots when there is at least a specific configuration requiring a reboot after auto provisioning. If you want to force the IP phone to perform a reboot after auto provisioning, you can configure "static.auto_provision.reboot_force.enable = 1" in the configuration file. For more information on the specific configurations which require a reboot during auto provisioning and the parameter "static.auto_provision.reboot_force.enable", refer to *Yealink_SIP-T2_Series_T19(P) E2_T4_Series IP Phones_Description of Configuration Parameters in CFG Files_V81.xlsx, Yealink IP DECT Phones Description of Configuration Parameters in CFG Files.xlsx* or *Yealink_SIP-T5_Series_CP960_IP_Phones_Description of Configuration Parameters in CFG Files.xlsx.*

If configuration files have been AES encrypted, the IP phone will uses the Common AES key to decrypt the Common CFG file and the MAC-Oriented AES key to decrypt the <MAC>.cfg file after downloading the configuration files. For more information on how the IP phone decrypts configuration files, refer to *Yealink Configuration Encryption Tool User Guide*.

Using MAC-local CFG File

Uploading and downloading the <MAC>-local.cfg file

You can configure whether the IP phone uploads the <MAC>-local.cfg file to the provisioning server (or a specified URL configured by "static.auto_provision.custom.sync.path") once the file changes for backing up this file, and downloads the <MAC>-local.cfg file from the provisioning server (or a specified URL configured by "static.auto_provision.custom.sync.path") during auto provisioning to override the one stored on the phone. This process is controlled by the value of the parameter "static.auto_provision.custom.sync".

Updating configurations in the <MAC>-local.cfg file

You can configure whether the IP phone updates configurations in the <MAC>-local.cfg file during auto provisioning. This process is controlled by the value of the parameter "static.auto_provision.custom.protect". If the IP phone is configured to keep user personalized settings (by setting the value of the parameter "static.auto_provision.custom.protect" to 1), it will update configurations in the <MAC>-local.cfg file. If the value of the parameter "overwrite_mode" is set to 1 in the boot file, the value of the parameter "static.auto_provision.custom.protect" will be forced to set to 1.

The IP phone updates configuration files during auto provisioning in sequence: CFG files referenced in the boot file>MAC-local CFG file (if no boot file is found, Common CFG file>MAC-Oriented CFG file>MAC-local CFG file). The configurations in the <MAC>-local.cfg file take precedence over the ones in other downloaded configuration files. As a result, the personalized settings of the phone configured via the phone or web user interface can be kept after auto provisioning.

Note that if the personalized settings are static settings, they cannot be kept after auto provisioning because the static settings will never be saved in the <MAC>-local.cfg file.

For more information, refer to Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone Administrator Guide_V81 or Yealink_SIP-T5_Series_CP960_IP_Phones_Administrator_Guide.

Verifying Configurations

After auto provisioning, you can then verify the update via phone user interface or web user interface of the phone. For more information, refer to *Yealink phone-specific user guide*. During the auto provisioning process, you can monitor the downloading requests and response

messages by a WinPcap tool. The following shows some examples.

Example1: Yealink SIP-T23G IP phone downloads the boot file and configuration files from the TFTP server.

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ine line	States	Designation	Political	length bits
2777 12 343499000	10.2.38.75	10.7.5.100	1710	EL Read Request, + The OESSS74556 boot, Transfer type: octet, STatize 000-2432.000
7778 1.1. 188591020	10.2.26.71	13, 7, 3, 285	1110	AT Anal Respect, File: 20196136186, host, transfer type: octet, biksige/2006-1322-200
2746 12 716997000	20.3.3.20	20.2.26.73	1010	as proof take, topy, occess violation, wastage, could not open requested file for realing
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1731 17-460889000	10.2.3.185	10.3.20.72	1210	60 Upting Advantationert, STartys (000-0412-000
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1783 17.488514000	10.7.3.101	10.2.20.73	1210	478 Data Packet, Clark: 1 Clart)
1750 17-868270000	10.7.20.78	10.0.1.1.100	1919	ed achtual edgesert . allock: 1
2747 17,468239006	10.1.20.72	10.7.1.199	1110	ff schrupfadgement, flock) 1
1775 17-483335000	10.7.28.72	18.2.3.195	ULTIV	7% Read Respect, File: stp-cfg, Transfer type: sctet, Elizion/300-0432-000
1776 17.28100000	10.7.78.71	10.7.3.185	1210	25 Bead Request, File, sip. Cro., Stabler, Cost, artet, English, Status, 200-1412-0201
2779 17.556728000	10.1.1.1.101	20.2.20.72	1010	57 startiest acknowledgement, blastaw.000-64422.000
1781 17.1008880000	10.2.8.181	14.0.10.25	11110	60 hptfor AdomsTukpment, 37bs1ps(000-041).000
1788 17.311014000	10.2.28.78	10.2.2.1.1.0.0		BE acknowledgement, Block: II
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1810 17, 548170000	10.2.5.191	10.2.30.73	TETP	88 strong code, code, access violation, message, cauld not open requested file for reading
1811 17.900472000	00.0.1.100	20.2.20.79	1676	EE Group Code, Code: Access violation, Mechanic Could not open requested fills for reading

Example 2: Yealink SIP-T23G IP phone downloads the boot file and configuration files from the FTP server.

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3227 36.891035300	315.275.191	10.2.20.73	1.10	388 September 201 Man Milleren Fill Server version 2.0
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Example 3: Yealink SIP-T23G IP phone downloads boot file and configuration files from the HTTP server.

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316.2.380621000	10.2.5.104	10.3.30.73	METER-	181 mr. /Ss/perspadding-win. SsTee. 81, 25	
317 2, 580873000	10.2.5.199	10.7.00.75	HTTP	571 GET / 50/1990. (5744, 61, 234, 71 HTTE/1	
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Troubleshooting

This chapter provides general troubleshooting information to help you solve problems you might encounter when deploying phones.

If you require additional information or assistance with the deployment, contact your system administrator.

Why does the IP phone fail to download configuration files?

- Ensure that auto provisioning feature is configured properly.
- Ensure that the provisioning server and network are reachable.
- Ensure that authentication credentials configured on the IP phone are correct.
- Ensure that configuration files exist on the provisioning server.
- Ensure that MAC-Oriented boot file and common boot file don't exist simultaneously on the provisioning server. If both exist, the IP phone only downloads MAC-Oriented boot file and the configuration files referenced in the MAC-Oriented boot file.

Why does the IP phone fail to authenticate the provisioning server during auto provisioning?

- Ensure that the certificate for the provisioning server has been uploaded to the phone's trusted certificates list. If not, do one of the following:
 - Import the certificate for the provisioning server to the phone's trusted certificates list (at phone's web path Security->Trusted Certificates->Import Trusted Certificates).
 - Disable the IP phone to only trust the server certificates in the trusted certificates list (at phone's web path Security->Trusted Certificates->Only Accept Trusted Certificates).

Why does the provisioning server return HTTP 404?

- Ensure that the provisioning server is properly set up.
- Ensure that the access URL is correct.
- Ensure that the requested files exist on the provisioning server.

Why does the IP phone display "Network unavailable"?

- Ensure that the Ethernet cable is plugged into the Internet port on the IP phone and the Ethernet cable is not loose.
- Ensure that the switch or hub in your network is operational.
- Ensure that the configurations of network are properly set in the configuration files.

Why is the permission denied when uploading files to the root directory of the FTP server?

- Ensure that the complete path to the root directory of the FTP server is authorized.
- Check security permissions on the root directory of the FTP server, if necessary, change the permissions.

Why doesn't the IP phone obtain the IP address from the DHCP server?

- Ensure that settings are correct on the DHCP server.
- Ensure that the IP phone is configured to obtain the IP address from the DHCP server.

Why doesn't the IP phone download the ring tone?

- Ensure that the file format of the ring tone is *.wav.
- Ensure that the size of the ring tone file is no larger than that the IP phone supports.
- Ensure that the properties of the ring tone for the IP phone are correct.
- Ensure that the network is available and the root directory is right for downloading.
- Ensure that the ring tone file exists on the provisioning server.

Why doesn't the IP phone update configurations?

- Ensure that the configuration files are different from the last ones.
- Ensure that the IP phone has downloaded the configuration files.
- Ensure that the parameters are correctly set in the configuration files.
- Ensure that the value of the parameter "static.auto_provision.custom.protect" is set to 0. If it
 is set to 1, the provisioning priority is as follows: phone/web user interface >central
 provisioning >factory defaults. A setting you make using a lower-priority method does not
 apply to or override a duplicate setting made using a higher-priority method.

For more information, refer to Yealink_SIP-T2_Series_T19(P) E2_T4_Series_T5_Series_CP_Series_IP_Phones_Administrator_Guide_V81, Yealink DECT IP Phone Administrator Guide_V81 or Yealink_SIP-T5_Series_CP960_IP_Phones_Administrator_Guide.

Glossary

MAC Address: A Media Access Control address (MAC address) is a unique identifier assigned to network interfaces for communications on the physical network segment.

MD5: The MD5 Message-Digest Algorithm is a widely used cryptographic hash function that produces a 128-bit (16-byte) hash value.

DHCP: Dynamic Host Configuration Protocol (DHCP) is a network configuration protocol for hosts on Internet Protocol (IP) networks. Computers that are connected to IP networks must be configured before they can communicate with other hosts.

FTP: File Transfer Protocol (FTP) is a standard network protocol used to transfer files from one host to another host over a TCP-based network, such as the Internet. It is often used to upload web pages and other documents from a private development machine to a public web-hosting server.

HTTP: The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.

HTTPS: Hypertext Transfer Protocol Secure (HTTPS) is a combination of Hypertext Transfer Protocol (HTTP) with SSL/TLS protocol. It provides encrypted communication and secure identification of a network web server.

TFTP: Trivial File Transfer Protocol (TFTP) is a simple protocol to transfer files. It has been implemented on top of the User Datagram Protocol (UDP) using port number 69.

AES: Advanced Encryption Standard (AES) is a specification for the encryption of electronic data.

URL: A uniform resource locator or universal resource locator (URL) is a specific character string that constitutes a reference to an Internet resource.

XML: Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

Appendix

Configuring an FTP Server

Wftpd and FileZilla are free FTP application software for Windows. This section mainly provides instructions on how to configure an FTP server using wftpd for Windows. You can download wftpd online: http://www.wftpd.com/products/products.html or FileZilla online: https://filezilla-project.org.

We recommend that you use vsftpd as an FTP server for Linux platform if required.

Preparing a Root Directory

To prepare a root directory:

- 1. Create an FTP root directory on the local system (e.g., D:\FTP Directory).
- 2. Place the boot files and configuration files to this root directory.
- **3.** Set the security permissions for the FTP directory folder.

You need to define a user or group name, and set the permissions: read, write, and modify. Security permissions vary by organizations.

An example of configuration on the Windows platform is shown as below:

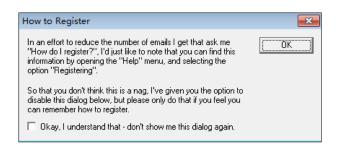
Administrators (VANSTD80	(Administrators)	0
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12 Hill, James (jahilt@myserve	irname.com]	
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List Folder Contents	2	
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For special permissions or for adv click Advanced	anced settings,	Adyanced
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Configuring an FTP Server

To configure a wftpd server:

- **1.** Download the compressed file of the wftpd application to your local directory and extract it.
- 2. Double click the Wftpd.exe.

The dialogue box of how to register is shown as below:



3. Check the check box and click **OK** in the pop-up dialogue box.

The log file of the wftpd application is shown as below:

File 6dt View Logging Messages Security Help [#-001] 2015/3/20 17:39:16 Welcome to WFTPD - we [#-001] 2015/3/20 17:39:16 The first address assign [#-001] 2015/3/20 17:39:16 But your might be reache [#-001] 2015/3/20 17:39:16 Check with your network [#-001] 2015/3/20 17:39:16 WFTPO is listening on p [#-001] 2015/3/20 17:39:16 WFTPO is listening on p [#-001] 2015/3/20 17:39:16 Unregistered version - fe [#-001] 2015/3/20 17:39:16 Unregistered version - fe [#-001] 2015/3/20 17:39:16 select the "Registering"	red to your system is 127.0.0.1 of at a number of other addresses, administrators for the address that is reachable from the inter out 21, standard Rp y WM_ENDSESSION message or instructions on registering,
o vo zasled 00 joc	

4. Click Security->Users/rights.

File Edit View Logging Messages S	ecurity Help					
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#-001] 2015/3/20 17:39:16 Unregistere	dumming - for inches	intions on moletad				
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5. Click New User.

User / Rights Se	curity Dialog	×
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Help	Rig	hts >>

6. Enter a user name (e.g., test1) in the User Name field and then click OK.

User / Rigł	nts Security	Dialog			23
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New Us	User Name	: test1		OK Cancel Help	
Home	ip				Rights >>

 Enter the password of the user (e.g., test1) created above in the New Password and Verify Password field respectively, and then click OK.

User / Rigi	ts Security Dialo	g		23
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New Us	New Password:	****	OK Cancel	
Home	Verify Password:	****	Help	
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8. Click **Browse** to locate the FTP root directory from your local system.

User / Rights	Security Dialog			×
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New User		Change Pass directory and below		
Home	E:\DESKTOP\CONF	IGURATION FILE	Browse	
Help			Rights>	>

9. Click **Rights**>> and assign the desired permission for the user (e.g., test1) created above.

10. Check the check boxes of **Read**, **Create Files/Dirs**, **List Directories** and **Overwrite/Delete** to make sure the FTP user has the read and write permission.

User / Rights Security Dialog	×
User Name: test1	▼ Done
	ge Pass and below
Home E:\DESKTOP\CONFIGURAT	ION FILE Browse
Rights for user test1	Rights<<
Directory: ×	Browse Remove
	e Files/Dirs write/Delete

11. Click Done to save the settings and finish the configurations.

The server URL "ftp://username:password@IP/" (Here "IP" means the IP address of the provisioning server, "username" and "password" are the authentication for FTP download. For example, "ftp://test1:123456@10.3.6.234/") is where the IP phone downloads boot files and configuration files from.

Before configuring a wftpd server, ensure that no other FTP servers exist in your local system.

Configuring an HTTP Server

This section provides instructions on how to configure an HTTP server using HFS tool. You can download the HFS software online: http://www.snapfiles.com/get/hfs.html.

Preparing a Root Directory

To prepare a root directory:

- 1. Create an HTTP root directory on the local system (e.g., D:\HTTP Directory).
- 2. Place the boot files and configuration files to this root directory.
- 3. Set the security permissions for the HTTP directory folder.

You need to define a user or group name and set the permissions: read, write, and modify. Security permissions vary by organizations.

An example of configuration on the Windows platform is shown as below:

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Read & Execute	(V)	
List Folder Contents	1	
Read		
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Canal Deminina		
For special permissions or for	advanced settings,	Advanced
click Advanced.		Los Taracto

Configuring an HTTP Server

HFS tool is an executable application, so you don't need to install it.

To configure an HTTP server:

1. Download the application file to your local directory, double click the hfs.exe.

The main configuration page is shown as below:

HFS - HTTP File Server 2.21	Build 155	
🛿 Menu 🛛 🖗 Port 8080 🛛 🕵 You are in Expert mode		
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onnections: 0 Out: 0.0 KB/s In: 0.0 KB/s Total Out: 0	8 Total Im 0.8 VFS: 0 items	

2. Click **Menu** in the main page and select the IP address of the PC from **IP address**.

HFS ~ HTTP File Server 2.21	A REAL PROPERTY.	-	Build 155	
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Switch OFF F4	[

The default HTTP port is 8080. You can also reset the HTTP port (make sure there is no port conflict).

HFS ~ HTTP File	Server 2.2f	Build 155	- II - XI
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3. Right click the \oint_{1}^{1} icon on the left of the main page, select **Add folder from disk** to add the HTTP Server root directory.

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4. Locate the root directory from your local system.

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Virtual File System	n .	Log			
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- Check the server URL (e.g., http://10.2.11.101:8088/ProvisioningDir) by clicking "Open in browser".
- (Optional.) Right click the root directory name (e.g., ProvisioningDir), and then select Set user/pass....
- **7.** (Optional.) Enter the desired user name and password for the root directory in the corresponding fields and then click **OK**.

Insert the request	ted user/pass	-X -
Username	123	
Password	*****	
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Yealink IP phones also support the Hypertext Transfer Protocol with SSL/TLS (HTTPS) protocol for auto provisioning. HTTPS protocol provides the encrypted communication and secure identification. For more information on installing and configuring an Apache HTTPS Server, refer to the network resource.

Configuring a DHCP Server

This section provides instructions on how to configure a DHCP server for Windows using DHCP Turbo. You can download this software online: http://www.tucows.com/preview/265297 and install it following the setup wizard.

Configuring the DHCP Turbo

Before configuring the DHCP Turbo, make sure:

- The firewall on the PC is disabled.
- There is no DHCP server in your local system.

To configure the DHCP Turbo:

- 1. To start the DHCP Turbo application, double click localhost.
- 2. Click the Login button (the login password is blank) to log in.

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- 3. Right click Scopes and select New Scope.
- 4. Configure the DHCP server name, the DHCP IP range and the subnet mask.

5. Click **OK** to accept the change.

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6. You can add a custom option via DHCP Turbo. Select **Option Types**, right click one of the options on the right of the main page, and then select **New Option Type**.

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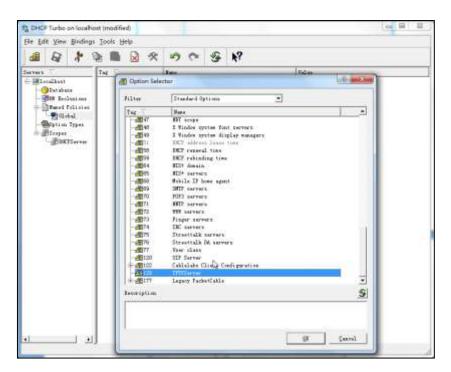
7. Set the custom DHCP option (custom DHCP option tag number ranges from 128 to 254) and select the option type (Yealink supports string and ipaddress option types only). Click the OK button to finish setting the option properties. Click to save the change.

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8. Click Named Policies-->Global, right click the blank area on the right of the main page and then select New Option.

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• Add a m			ŧ.									

9. Scroll down and double click the custom option 128.



- 10. Fill the provisioning server address in the input field.
- 11. Click the **OK** button to finish setting a custom option.

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12. Click 🔄 to save the change.

Add the Option 66 via DHCP Turbo

You can add the option 66 via DHCP Turbo. The following shows the detailed processes.

1. Click Named Policies-->Global, right click the blank area on the right of the main page and then select New Option.

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- 2. Select TFTP Options from the pull-down list of Filter.
- 3. Scroll down and double click MS option 66.

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4. Fill the provisioning server IP address in the input field.

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- 5. Click the **OK** button to finish setting a custom option.
- **6.** Click 🔄 to save the change.

Add the Option 43 via DHCP Turbo

You can also add the option 43. The following shows the detailed processes.

- 1. Click **Named Policies**-->**Global**, right click the blank area on the right of the main page and then select **New Option**.
- 2. Select the Standard Options from the pull-down list of Filter.

3. Scroll down and double click 43.

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4. Fill the provisioning server address in the input field.

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- 5. Click the **OK** button to finish setting a custom option.
- 6. Click 🔄 to save the change.

Customer Feedback

We are striving to improve our documentation quality and we appreciate your feedback. Email your opinions and comments to DocsFeedback@yealink.com.