

Yealink Auto Provisioning User Guide SIP-T2xP/SIP-T3xG/VP530 IP Phone Family

Version 1.3 Nov 2012

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Changes from Previous Versions

Changes from Version 1.2

The following sections are new for this version:

- Customizing a Wallpaper on page 13
- Customizing a Screensaver on page 14
- Customizing Replace Rule File on page 17
- Customizing Dial-now File on page 19

Major updates have occurred to the following sections:

- Customizing Local Contact File on page 15
- Updating Firmware on page 20

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 shows you how to provision Yealink IP phones with the minimum settings required. Yealink IP phones support the FTP, TFTP, HTTP, and HTTPS protocols for file provisioning and are configured by default to use Trivial File Transfer Protocol (TFTP).

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

- Yealink VP530
- Yealink SIP-T38(G)
- Yealink SIP-T32(G)
- Yealink SIP-T28(P)
- Yealink SIP-T26(P)
- Yealink SIP-T22(P)
- Yealink SIP-T20(P)

The provisioning process outlined in this document applies to the firmware V70 or higher version of Yealink IP phones. If your phones are running a firmware version earlier than 70, please contact your system administrator for help.

Getting Started

This section shows you how to get ready for the provisioning. The provisioning process discussed in this guide uses TFTP and a personal computer (PC) as the provisioning server.

To begin the provisioning process, the following are required:

- Obtaining Configuration Information
- Managing Configuration Files

Obtaining Configuration Information

Obtaining Configuration Files

Before beginning provisioning, you need to obtain the configuration files. There are 2 configuration files both of which are CFG formatted. We call these two files Common CFG file and MAC-Oriented CFG file. The phone will try to download these CFG files from the server during provisioning.

The MAC-Oriented CFG file is only effectual for the specific phone. It uses the 12-digit MAC address of the phone as the file name. For example, if the MAC address of the phone is 0015651130F9, then the MAC-Oriented CFG file name must be 0015651130F9.cfg. However, the Common CFG file is effectual for all the phones with the same model. It uses a fixed name "y000000000XX.cfg" as the file name, where "XX" equals to the hardware version of the phone model, except 0 for T28 which is special.

The names of the Common CFG file for each phone model are:

Phone Model	Common Configuration File
VP530	y00000000023.cfg
SIP-T38G	y00000000038.cfg
SIP-T32G	y00000000032.cfg
SIP-T28(P)	y00000000000.cfg
SIP-T26(P)	y00000000004.cfg
SIP-T22(P)	y00000000005.cfg
SIP-T20(P)	y00000000007.cfg

You can ask the distributor or the Yealink FAE for configuration files.

Obtaining Phone Information

Before beginning the provisioning, you will also need the phone information. Such as, MAC address and the SIP account of the phone.

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

SIP Account: This may include SIP credentials such as user name, password and the address of the phone's registration server. Ask your system administrator for SIP account information you need. Although SIP accounts may not be required to get the phone working, we strongly recommend using them.

Managing Configuration Files

Auto provisioning enables Yealink IP phones to update automatically via downloading the Common CFG file and MAC-Oriented CFG file. Before provisioning you may need to edit and customize your configuration files.

Editing Common CFG File

Common CFG file contains configuration parameters which apply to all phones of the same phone model, such as the language displays on the phone LCD screen.

Common.cfg x
1 #!version:1.0.0.1
##File header "#!version:1.0.0.1" can not be edited or deleted.##
5 ####################################
9 #Configure the WAN port type; 0-DHCP(default), 1-PPPoE, 2-Static IP Address; 10 #Require reboot;
11 network.internet_port.type = 12
13 #Configure the static IP address, submask, gateway and DNS server for the phone; 14 #Require Reboot;
15 network.internet_port.ip =
16 network.internet_port.mask = 17 network.internet_port.gateway =
18 network.primary_dns= 19 network.secondary_dns =
20
21 #Configure the username and password for PPPOE connection; 22 #Require reboot;
23 network. pppoe. user =
24 network.pppoe.password = 25
26 #Configure the PC port type;0-Router,1-Bridge(default);
27 #Require reboot; 28 network.bridge mode =

The line beginning with "#" is considered to be a comment.

The file header "#lversion:1.0.0.1" is not a comment, it must not be edited or be deleted and must be placed in the first line.

The parameters commonly edited in the Common CFG file (T2xP as an example) are detailed as following:

#!version:1.0.0.1

##File header "#!version:1.0.0.1" cannot be edited or deleted and must be placed in the first line.##

#Configure the WAN port type; 0-DHCP(default), 1-PPPoE, 2-Static IP Address #Require reboot

network.internet_port.type = 0

#Configure the static IP address, submask, gateway and DNS server for the phone #Require reboot

network.internet_port.ip = 192.168.1.10

network.internet_port.mask = 255.255.255.0

network.internet_port.gateway = 192.168.1.1

network.primary_dns= 202.101.103.55

network.secondary_dns = 202.101.103.54

#Configure the duplex mode and the speed of the WAN port.

#0-Auto negotiate (default), 1-Full duplex 10Mbps, 2-Full duplex 100Mbps, 3-Half duplex 10Mbps, 4-Half duplex 100Mbps;

network.internet_port.speed_duplex =

#Configure the username and password for PPPOE connection. #Require reboot

network.pppoe.user =

network.pppoe.password =

#Configure the PC port type; 0-Router, 1-Bridge (default) #Require reboot

network.bridge_mode = 1

#LAN port as Router settings #Require reboot

network.pc_port.ip = 10.0.0.1

network.pc_port.mask = 255.255.255.0

 $network.pc_port.speed_duplex = 0$

network.pc_port.dhcp_server = 1

network.dchp.start_ip = 10.0.0.10

network.dchp.end_ip = 10.0.0.100

#Enable or disable the Plug and Play feature; 0-Disabled, 1-Enabled (default)

auto_provision.pnp_enable = 1

#Configure the domain name of the PNP server.

auto_provision.pnp_domain_name =

#Configure the value (manufacturer of the device) of the PNP subscribe message.

auto_provision.pnp_event_vendor =

#Configure the auto provision mode;

#0-Disabled (default), 1-Power on, 4-Repeatedly, 5-Weekly, 6-Power on + Repeatedly, 7-Power on + Weekly;

 $auto_provision.mode = 1$

#Configure the interval (in minutes) for the phone to check new configuration files. It ranges from 1 to 43200, the default value is 1440.

#It is only applicable to "Repeatedly" and "Power on + Repeatedly" modes.

auto_provision.schedule.periodic_minute = 1440

#Configure the start time of the day for the phone to check new configuration files. The default value is 00:00.

#It is only applicable to "Weekly" and "Power on + Weekly" modes.

#If the desired start time of the day is seven forty-five a.m., the value format is 07:45.

auto_provision.schedule.time_from = 00:00

#Configure the end time of the day for the phone to check new configuration files. The default time is 00:00.

#It is only applicable to "Weekly" and "Power on + Weekly" modes.

#If the desired end time of the day is seven forty-five p.m., the value format is 19:45.

auto_provision.schedule.time_to = 00:00

#Configure the day of week for the phone to check new configuration files. The default vaule is 0123456.

#0-Sunday,1-Monday,2-Tuesday,3-Wednesday,4-Thursday,5-Friday,6-Saturday; #It is only applicable to "Weekly" and "Power on + Weekly" modes.

#If the desired week is Monday, Tuesday and Wednesday, the value format is 012.

auto_provision.schedule.dayofweek = 0123456

#Configure the URL of the auto provisioning server.

auto_provision.server.url =

#Configure the username and password for downloading.

auto_provision.server.username =

auto_provision.server.password =

#Configure the name of the common file.

#T28P: y00000000000.cfg, T26P: y0000000004.cfg, T22P: y00000000005.cfg, #T20P: y00000000007.cfg-T20P;

auto_provision.common_file_name =

#Enable or disable DHCP option mode; 0-Disabled, 1-Enabled (default);

auto_provision.dhcp_option.enable =

#Configure the value (manufacturer of the device) of DHCP option 60.

auto_provision.dhcp_option.option60_value =

#Configure the custom DHCP option number. It ranges from 128 to 254.

auto_provision.dhcp_option.list_user_options =

#Set the AES key used for decrypting the Common CFG file

auto_provision.aes_key_16.com =

#Set the AES key used for decrypting MAC-Oriented CFG file

auto_provision.aes_key_16.mac =

#Set the language used on the Web page

#The available values are: English, Chinese_S, Turkish, Portuguese, Spanish, Italian, #French, Russian, Deutsch and Czech

lang.wui =

#Set the language used on the phone LCD screen

#The available values are: English (default), Chinese_S, Chinese_T, German, French, #Turkish, Italiano, Polish, Spanish and Portuguese

lang.gui = English

#Set the web server access type (0-Disabled, 1-HTTP&HTTPS (default), 2-HTTP only, #3-HTTPS only) #Require reboot

network.web_server_type = 1

#Set the HTTP port (80 by default) #Require reboot

network.port.http = 80

#Set the HTTPS port (443 by default) #Require reboot network.port.https = 443

#Set the new password (admin123) for the administrator

security.user_password = admin:admin123

#Set the new password (user123) for the user

security.user_password = user:user123

Editing MAC-Oriented CFG File

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

/	Common.cfg MAC-Oriented.cfg X
	#!version:1.0.0.1
2 3 4	##File header "#!version:1.0.0.1" can not be edited or deleted.##
-	######################################
9	#Enable or disable the account1, 0-Disabled(default), 1-Enabled; account.1.enable =
11	
	#Configure the label for account1, which will display on the LCD screen; account.1.label =
14	
	#Configure the display name of account1; account.1.display name =
17	
	#Configure the username and password for register authentication;
	account.1.auth_name =
20 21	account.1.password =
	#Configure the register user name;
	account.1.user_name =
24	
	#Configure the SIP server address and port(5060 by default);
	account.1.sip_server_host =
27	account.1.sip_server_port =
	#Enable or disable to use the outbound proxy server, 0-Disabled(default), 1-Enabled;
	account. 1. outbound_proxy_enable =
~1	

The parameters commonly edited in the MAC-Oriented CFG file (Take T2xP IP phone as an example) are detailed as following:

#!version:1.0.0.1

#File header "#!version:1.0.0.1" cannot be edited or deleted and must be placed in the first line.##

#Line1 settings

#Enable or disable the account1, 0-Disabled (Default), 1-Enabled

account.1.enable =

#Configure the label displayed on the LCD screen for account1

account.1.label =

#Configure the display name of account1

account.1.display_name =

#Configure the user name and password for register authentication

account.1.auth_name =

account.1.password =

#Configure the register user name

account.1.user_name =

#Configure the SIP server address and port (5060 by default)

account.1.sip_server_host =

account.1.sip_server_port = 5060

#Line2 settings

#Enable or disable the account2, 0-Disabled (Default), 1-Enabled

account.2.enable =

#Configure the label displayed on the LCD screen for account2

account.2.label =

#Configure the display name of account2

account.2.display_name =

#Configure the user name and password for register authentication

account.2.auth_name =

account.2.password =

#Configure the register user name

account.2.user_name =

#Configure the SIP server address and port (5060 by default)

account.2.sip_server_host =

account.2.sip_server_port = 5060

#Line3 settings (Except SIP-T20P IP phones)

#Enable or disable the account3, 0-Disabled (Default), 1-Enabled

account.3.enable =

#Configure the label displayed on the LCD screen for account3

account.3.label =

#Configure the display name of account3

account.3.display_name =

#Configure the user name and password for register authentication

account.3.auth_name =

account.3.password =

#Configure the register user name

account.3.user_name = #Configure the SIP server address and port (5060 by default) account.3.sip_server_host = account.3.sip_server_port = 5060 #Line4 settings (For SIP-T28P, SIP-T38G and VP530 IP phones only) #Enable or disable the account4, 0-Disabled (Default), 1-Enabled account.4.enable = #Configure the label displayed on the LCD screen for account4 account.4.label = #Configure the display name of account4 account.4.display_name = #Configure the user name and password for register authentication account.4.auth name = account.4.password = #Configure the register user name account.4.user name = #Configure the SIP server address and port (5060 by default) account.4.sip_server_host = account.4.sip_server_port = 5060 #Line5 settings (For SIP-T28P and SIP-T38G IP phones only) #Enable or disable the account5, 0-Disabled (Default) 1-Enabled account.5.enable = # Configure the label displayed on the LCD screen for account5 account.5.label = #Configure the display name of account5 account.5.display name = #Configure the user name and password for register authentication account.5.auth_name = account.5.password = #Configure the register user name account.5.user_name = #Configure the SIP server address and port (5060 by default) account.5.sip server host = account.5.sip_server_port = 5060 #Line6 settings (For SIP- T28P and SIP-T38G IP phones only)

#Enable or disable the account6, 0-Disabled (Default), 1-Enabled

account.6.enable =
#Configure the label displayed on the LCD screen for account6
account.6.label =
#Configure the display name of account6
account.6.display_name =
#Configure the user name and password for register authentication
account.6.auth_name =
account.6.password =
#Configure the register user name
account.6.user_name =
#Configure the SIP server address and port (5060 by default)
account.6.sip_server_host =
account.6.sip_server_port = 5060

Customizing Resource Files

You can configure the phone features via the parameters in the configuration files. You can also customize your phone with a personalized ringtone, language or logo.

Customizing a Ringtone

Yealink IP phones have built-in system ringtones and the default ring type is Ring1. You can change the ring type, or you can customize your personal ringtone and make it take effect via auto provisioning.

The ringtone file must be PCMU audio format, mono channel, 8K sample rate and 16 bit resolution.

The ringtone file format must be .wav.

All ringtone files uploaded must be within 100KB.

Configure the access URL of the customizing ringtone

ringtone.url =

#ringtone.delete =http://localhost/all

#Delete all the custom ringtones uploaded through auto provisioning

ringtone.delete =

For example: enter "ftp://192.168.1.100/Ring9.wav" in the "ringtone.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the ringtone file "Ring9.wav".

You'd better check that the ringtone file has been uploaded to the root directory of the server before provisioning.

For more information about customizing a ringtone file, you can refer to Customizing a Ringtone Using Cool Edit Pro in this guide.

Customizing a LCD Language

You can modify the translation of the languages of the IP phones, but you cannot add new language to the phone. To modify the existing language, you need to edit the language file and upload it to the root directory of the provisioning server, then specify the access URL in the configuration file.

The following figure shows a portion of the language file:

lang-English.txt X		
0		
[lang]		
" Add to Blacklist"=" Add to Blacklist"		
" Add to Contacts"=" Add to Contacts"		
" Delete All"=" Delete All"		
" Delete This"=" Delete This"		
" Delete"=" Delete"		
" Detail"=" Detail"		
" Line:"=" Account:"		
" Mobile:"=" Mobile:"		
" Move to Blacklist"=" Move to Blacklist"		
" Move to Contacts"=" Move to Contacts"		
" Name:"=" Name:"		
" Number%d:"=" Number%d:"		
" Number:"=" Number:"		
" Office:"=" Office:"		
" Other:"=" Other:"		
" Time:"=" Time:"		
" %d. (Empty) "=" %d. (Empty) "		
″%d. DSS Key %d"=" %d. DSS Key %d"		
" %d. Line ID:"=" %d. Account ID:"		
" %d. Line%d Number"=" %d. Account%d No."		
" Conference to: "=" Conference to:"		
" Connecting"=" Connecting"		
"HELD"="Held"		
"HOLD"="Hold"		
" Hang Up"=" Hang up"		
" Input Keyword:"=" Search:"		

Configure the access URL of the LCD language file

##

gui_lang.url =

#gui_lang.delete = =http://localhost/all

#Delete all custom languages downloaded through auto provision

gui_lang.delete =

For example: enter "ftp://192.168.1.100/lang-English.txt" in the "gui_lang.url = " field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the language file "lang-English.txt".

Available languages may be different between different firmware versions. Ask the distributor for the language template file.

Customizing a LCD Logo

Yealink SIP-T2xP IP phones allow you to customize the logo displayed on the phone LCD screen (The SIP-T20P IP phones only support displaying the text logo). Ask the distributor for the logo file, or you can customize a .dob logo file. Upload the logo file to the root directory of the provisioning server and then specify the access URL in the configuration file:

#######################################	<i>*####################################</i>
## Configure the access URL of t	he Logo File ##
#######################################	<i>\</i>
#(SIP-T2xP except T20P IP phones)	
lcd_logo.url =	
#lcd_logo.delete = =http://localhost/all	
#Delete all custom logo files	
lcd_logo.delete =	
For example: enter "ftp://192.168.1.100/logo. auto provisioning process, the phone conne	<u> </u>

"192.168.1.100", and downloads the logo file "logo.dob".

The following table lists the logo file format and resolution for each phone model:

Phone Model	Logo File Format	Resolution	
SIP-T28P	.dob	<=236*82 2 gray scale	
SIP-T26P	.dob	<=132*64 2 gray scale	
SIP-T22P	.dob	<=132*64 2 gray scale	

Upload the logo file to the root directory of the provisioning server. After provisioning, the phone boots up, and you will then find that the customized logo displays on the phone LCD screen.

For more information about customizing a Logo file, refer to Customizing a Logo File Using PictureExDemo in this guide.

Customizing a Wallpaper

Yealink SIPT3xG and VP530 IP phones allow you to customize the wallpaper displayed on the phone LCD screen. Upload the wallpaper image to the root directory of the provisioning server and then specify the access URL in the configuration file:

Configure the access URL of the wallpaper

#(SIP-T3xG/VP530 IP phones only)

wallpaper_upload.url =

##

For example: enter "ftp://192.168.1.100/wallpaper.jpg" in the "wallpaper_upload.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the wallpaper image "wallpaper.jpg".

The following table lists the wallpaper image format and resolution for each phone model:

Phone Model	Wallpaper Image Format	Resolution
VP530	.jpg/.png/.bmp	<=1920*1200
SIP-T38G	.jpg/.png/.bmp	<=480*272
SIP-T32G	.jpg/.png/.bmp	<=480*272

Customizing a Screensaver

Yealink SIP-T3xG IP phones allow you to customize the screensaver displayed on the phone LCD screen. The screensaver will automatically start each time your phone is idle a certain period of time. You can stop the screensaver at any time by pressing any key. Upload the screensaver image to the root directory of the provisioning server and then specify the access URL in the configuration file:

#(SIP-T3xG IP phones only)

screen_saver.pic.url =

For example: enter "ftp://192.168.1.100/screensaver.jpg" in the "screen_saver.pic.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the screensaver image "screensaver.jpg".

The following table lists the screensaver image format and resolution for each phone model:

Phone Model	Screensaver Image Format	Resolution
SIP-T38G	.jpg/.png/.bmp	<=480*272
SIP-T32G	.jpg/.png/.bmp	<=480*272

Customizing Local Contact File

Yealink IP phones allow you to batch upload contact data by auto provisioning. You can create multiple contacts using the supplied template local contact file.

When editing the template local contact file, remember the following:

- <contactData> indicates the start of a contact file and </contactData> indicates the end of a contact file (Applicable to SIP-T2xP/T3xG IP phones).
- Add groups between <groupinfo> and </groupinfo> (applicable to SIP-T2xP/T3xG IP phones).
- Add groups between <root_group> and </root_group> (Applicable to VP530 IP phones).
- Add local contacts between <group> and </group> (Applicable to SIP-T2xP/T3xG IP phones).
- Add local contacts between <root_contact> and </root_contact> (Applicable to VP530 IP phones).
- Add contacts to the blacklist between <blacklist> and </blacklist> (Applicable to SIP-T2xP/T3xG IP phones).
- When specifying the desired line for the contact, the valid values are 0 and line ID, 0 stands for Auto.
- When specifying a ring tone for the contact or the group, the valid values are Auto, Resource:RingN.wav (for the default system ring tone) and Custom:Name.wav (For the customized ring tone).

To customize a local contact file:

- 1. Open the template file using an ASCII editor.
- 2. For each contact that you wish to add, add the following string to the file, each starting on a separate line:

<contact sDisplayName="" sOfficeNumber="" sMobilNumber="" sOtherNumber="" sLine="" sRing="" group=""/> #(For T2xP IP phones)

<contact sDisplayName="" sOfficeNumber="" sMobilNumber="" sOtherNumber="" sLine="" sRing="" group="" photoDefault="" photoSelect=""/> #(For T3xG IP phones)

<contact display_name="" office_number="" mobile_number="" other_number="" line="" ring="" group_id_name="" default_photo="" selected_photo=""/> #(For VP530 IP phones, entering "blacklist" in the "group_id_name ="""field to add the contacts to blacklist)

Where:

sDisplayName=""/display_name="" specifies the name of the contact (This value cannot be blank or duplicated).

OfficeNumber=""/office_number="" specifies the office number of the contact.

sMobilNumber=""/mobile_number="" specifies the mobile number of the contact.

sOtherNumber=""/other_number="" specifies the other number of the contact.

sLine='''/line=''' specifies the line you want to add this contact to.

sRing=""/ring="" specifies the ring tone for this contact.

group=""/group_id_name="" specifies the existing group you want to add the contact to.

photoDefault=""/default_photo="" specifies the customized photo for the contact. The value format is "Config:name.png".

photoSelect=""/selected_photo="" specifies the system photo for the contact.

3. For each group that you want to add, add the following string to the file, each starting on a separate line:

<group name="" ring=""></group>	#(For T2xP IP phones)
<group name="" ring=""></group>	#(For T3xG IP phones)
<group display="" name="" ring=""></group>	#(For VP530 IP phones)

Where:

group name=""/group display name="" specifies the name of the group.

ring=""/Ring="" specifies the desired ring tone for this group.

4. For each contact that you want to add to the blacklist, add the following string to the file, each starting on a separate line:

<contact sDisplayName="" sOfficeNumber="" sMobilNumber="" sOtherNumber="" sLine=""/> #(For T2xP/T3xG IP phones)

- 5. Specify the values within double quotes.
- 6. Save the change.

After editing the template local contact file, upload the file to the root directory of the provisioning server and then specify the access URL in the configuration file.

The following shows an example of the contactData.xml file used for SIP-T2xP and SIP-T3xG IP phones:

```
<contactData>
 <group>
   <contact sDisplayName="Mary" sOfficeNumber="123" sMobilNumber="456"</pre>
   sOtherNumber="2201" sLine="0" sRing="Auto" group="Family"
  photoDefault="Config:family.png" photoSelect="0"/>
  <contact sDisplayName="Damy" sOfficeNumber="124" sMobilNumber="789"
   sOtherNumber="2202" sLine="1" sRing="Resource:Ring2.wav" group=""
  photoDefault="" photoSelect="3"/>
  <contact sDisplayName="Jack" sOfficeNumber="125" sMobilNumber="234"</pre>
  sOtherNumber="2203" sLine="2" sRing="Custom:lin.wav" group="Family"
  photoDefault="" photoSelect="2"/>
 </group>
 <blacklist>
  <contact sDisplayName="Ada" sOfficeNumber="8800" sMobilNumber="1234"</pre>
  sOtherNumber="0000" sLine="0"/>
 </blacklist>
</contactData>
```



For example: enter "ftp://192.168.1.100/ ContactData.xml" in the "local_contact.data.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the contact file "ContactData.xml".

Yealink IP phones support both the .xml and .csv formats.

Customizing Replace Rule File

You can create replace rules directly in the configuration files, or create multiple replace rules using the supplied template replace rule file. When the IP phones download the replace rule file, the existing replace rules on the phone will be overwritten.

When editing the template replace rule file, remember the following:

 <DialRule> indicates the start of the template file and </DialRule> indicates the end of the template file (Applicable to SIP-T2xP/T3xG IP phones).

- <dialrule> indicates the start of the template file and </dialrule> indicates the end of the template file (Applicable to VP530 IP phones).
- Create replace rules between <DialRule> (<dialrule>) and </DialRule> (</dialrule>).
- When specifying the desired line(s) to apply the replace rule, the valid values are 0 and line IDs. The digit 0 stands for all lines, multiple line IDs are separated by comma.
- Do not modify the file name.
- Refer to the phone-specific user guide for the basic expression syntax of the replace rule.

To customize a replace rule file:

- 1. Open the template file using an ASCII editor.
- 2. For each replace rule you wish to add, add the following string to the file, each starting on a separate line:

```
<Data Prefix="" Replace="" LineID=""/> #(For T2xP/T3xG IP phones)
<data rule="" replace="" lines=""/> #(For VP530 IP phones)
```

Where:

Prefix=""/rule="" specifies the numbers to be replaced.

Replace=""/replace="" specifies the alternate string.

LineID=""/lines="" specifies the desired line(s) for this rule. When leaving it blank, this replace rule will apply to all lines.

- 3. Specify the values within double quotes.
- **4.** Save the change.

The following is an example of a replace rule file used for SIP-T2xP and SIP-T3xG IP phones:

<DialRule>

```
<Data Prefix="1" Replace="05928665234" LineID=""/>
<Data Prefix="2(xx)" Replace="002$1" LineID="0"/>
</DialRule>
```

###########	+++++++++++++++++++++++++++++++++++++++	###########
##	Upload replace rule file	##

For example: enter "ftp://192.168.1.100/DialPlan.xml" in the "dialplan_replace_rule.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the replace rule file "DialPlan.xml".

Customizing Dial-now File

You can create multiple dial-now rules using the supplied template dial-now file. After creating the dial-now rules, save the dial-now file to the root directory of the provisioning server and specify the access URL in the configuration files.

When editing a dial-now file, remember the following:

- <DialNow> indicates the start of a template and </DialNow> indicates the end of a template (applicable to SIP-T2xP/T3xG IP phones).
- <dialnow> indicates the start of a template and </dialnow> indicates the end of a template (applicable to VP530 IP phones).
- Create dial-now rules between <DialNow> (<dialnow >) and </DialNow> (</dialnow>).
- When specifying the desired line(s) for the dial-now rule, the valid values are 0 and line ID. 0 stands for all lines, multiple line IDs are separated by comma.
- Do not modify the file name.
- Refer to the phone-specific user guide for the basic expression syntax of the dial-now rule.

To customize a dial-now file:

- 1. Open the template file using an ASCII editor.
- **2.** For each dial-now rule you wish to add, add the following string to the file, each starting on a separate line:

<data dialnowrule="" lineid=""></data>	#(For T2xP/T3xG IP phones)
<data lines="" rule=""></data>	#(For VP530 IP phones)

Where:

DialNowRule=""/ rule="" specifies the dial-now rule.

LineID=""/ lines="" specifies the desired line(s) for this rule. When leaving it blank, this rule will apply to all lines.

- 3. Specify the values within double quotes.
- 4. Save the change.

The following is an example of a dial-now file used for SIP-T2xP and SIP-T3xG IP phones:

```
<DialNow>
```

```
<Data DialNowRule="1234" LineID="1"/>
<Data DialNowRule="52[0-6]" LineID="1"/>
<Data DialNowRule="xxxxxx" LineID=""/>
</DialNow>
```

##########	***	###########
##	Upload dial-now file	##
##########	***	############

dialplan_dialnow.url =

For example: enter "ftp://192.168.1.100/DialNow.xml" in the "dialplan_dialnow.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100", and downloads the dial-now file "DialNow.xml".

Updating Firmware

Yealink IP Phones allow you to update the firmware manually via web user interface, or batch update the firmware via the auto provisioning. To batch update the phones' firmware via auto provisioning, ask the distributor for the firmware file, upload it to the root directory of the provisioning server, and then specify the access URL in the configuration files.

#######	*****	###
##	Configure the access URL of the firmware file	##
#######	*****	###

firmware.url =

For example: enter "ftp://admin:password@192.168.1.100/2.70.0.35.rom" in the "firmware.url =" field. During the auto provisioning process, the phone connects to the provisioning server "192.168.1.100" ("admin" as the authentication user name and "password" as the authentication password), and downloads the firmware file "2.70.0.35.rom".

Phone Model	Firmware Version
VP530	23.x.x.rom
SIP-T38G	38.x.x.rom
SIP-T32G	32.x.x.rom
SIP-T28(P)	2.x.x.rom
SIP-T26(P)	6.x.x.rom
SIP-T22(P)	7.x.x.rom
SIP-T20(P)	9.x.x.rom

The following table lists the firmware version for each phone mode:

Configuring a TFTP Server

Yealink IP Phones support using the FTP, TFTP, HTTP and HTTPS protocols to download the configuration files. TFTP server is used by default. You can use any protocol for provisioning. The following section takes the TFTP server as an example.

We recommend that you can use 3CDaemon or TFTPD32 tool as a TFTP server. 3CDaemo and TFTPD32 are free applications for Windows. You can download the 3CDaemon software at: http://www.oldversion.com/3Com-Daemon.html and TFTPD32 at: http://tftpd32.jounin.net/.

We provide a simple instruction of configuring a FTP server using 3CDaemon tool in the Configuring a FTP server section.

Preparing a Root Directory

To prepare a root directory:

- 1. Create a root TFTP directory on the local computer.
- 2. Place the configuration files to this root directory.
- 3. Set the security permissions for the TFTP directory folder.
- 4. You need to define a user or a group name, and set the permissions: read, write, and modify files. Security permissions vary by organization.

An example of using the Windows platform is shown as below:

General Sharing Security Custon	ize							
Group or user names:								
🕵 Administrators (VANSTD80\Ad	🕵 Administrators (VANSTD80\Administrators)							
CREATOR OWNER								
🕵 Everyone								
🖸 Hill, James (jahill@myserverna	me.com]							
5 SYSTEM	~							
<	>							
	Add <u>R</u> emove							
Permissions for Everyone	Allow Deny							
Full Control								
Modify								
Read & Execute								
List Folder Contents								
Read								
Write								
Coosial Dormissions								
For special permissions or for advance click Advanced.	ed settings, Advanced							
ОК	Cancel Apply							

Configuring a TFTP Server

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

To configure a TFTP server:

1. Double click the 3CDaemon.exe to start the application. A configuration page shows as below:

300 3CDaemon					
<u> Ĕ</u> ile <u>¥</u> iew <u>H</u> elp					
TFTP Server	Start Tine	Peer		Status	
Configure TFTP Server	Feb 28, 2012 16:06:20 Feb 28, 2012 16:06:20 Feb 28, 2012 16:06:20	local	0	Listening for TFTP requests on IP address: 192.166.133.1, Port 60 Listening for TFTP requests on IP address: 192.166.186.1, Port 69 Listening for TFTP requests on IP address: 10.2.11.128, Port 69	
TFTP Server is started. Click here to stop it.					
Logging to Tftpd log. Click to stop.					
Not debugging.					
Click to start.					
Clear list.					
View Log/Debug files.					

2. Select Configure TFTP Server. Click the button to locate the TFTP root directory on the computer:

300 3CDaemon		
<u>F</u> ile <u>V</u> iew <u>H</u> elp		
TFTP Server	Start Tine Peer Bytes Status	
Configure TFTP Server	Peb 24, 2012 00:59:47 local 0 Listening for TFTF requests on IF address: 132 169 133.1, Port 69 Peb 24, 2012 00:59:47 1 on Listening for TFTF requests on IF address: 102 169 168, 1 Port 69 Peb 24, 2012 00:59:47 local 0 Listening for TFTF requests on IF address: 10.2.11.126, Port 69	
511	3CDaemon Configuration	
TFTP Server is started. Click here to stop it.	FTP Profiles Syxlog Configuration General Configuration TFTP Configuration	
Logging to Tftpd log. Click to stop.	Create directory names in incoming file re	
Not debugging. Click to start.	Upload/Download E:\Autop\Auto Provision Mano	
Clear list.	Maxinum retries 10 Interframe transmission 0	
View Log/Debug files.		

 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://192.168.1.100/") is capable of TFTP downloading.

Obtaining the Address of Provisioning Server

Yealink IP phones support to obtain the provisioning server address during bootup process in the following ways:

- Zero Touch
- Plug and Play (PNP) Server
- DHCP Options
- Phone Flash

When the phone boots up, it will go by the above process to try to obtain the provisioning server address. The priority of obtaining the provisioning server address is as following: Zero Touch -->PNP server -->DHCP options (Custom option --> option 66 -->option 43) -->Phone Flash.

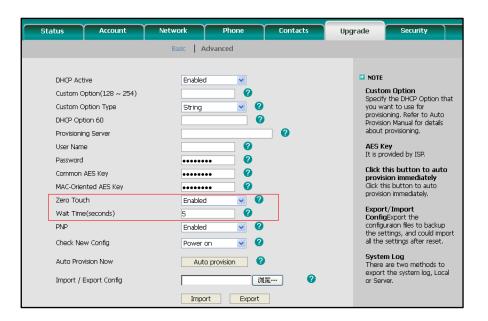
The following sections detail each process.

Zero Touch

Zero Touch allows you to configure the network and provisioning server address via phone user interface during bootup. This feature is helpful when there is a system failure on the phone. To use Zero Touch, you need to make sure that this feature is enabled.

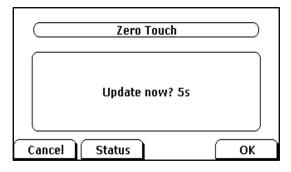
To configure the Zero Touch via web user interface:

- 1. Click on **Upgrade** ->**Advanced**.
- 2. Select Enabled from the pull-down list of Zero Touch.
- 3. Set the waiting time (in seconds) in the Wait Time (seconds) filed.



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

When the Zero Touch is enabled, there will be a configure wizard during the bootup:



Press the **OK** soft key. Then you can configure the network via phone user interface:

1	Network	
WAN Type:	DHCP	•
VLAN Status:	Disable	-
802.1x Mode	Disable	46
VPN Active:	Off	41

Press the Next soft key after finishing the network configuration.

Configure the provisioning server address, authentication username (optional) and password (optional) in the **Auto Provision** interface.

A sample screenshot is shown as below:

Gerver URL: JserName:	
IserName:	
Password:	
ack 2aB Delete	303/2

Plug and Play (PNP) Server

Yealink IP phones support obtaining the provisioning server address from the PNP server. The phone broadcast the PNP subscribe message to obtain a provisioning server address during bootup. To use Plug and play, make sure this feature is enabled.

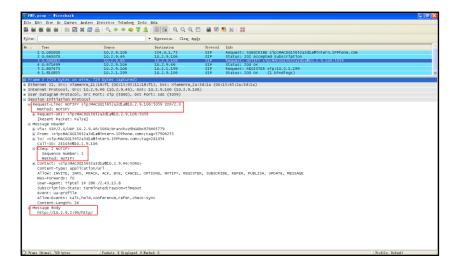
To configure the PNP via web user interface:

- 1. Click on Upgrade ->Advanced.
- 2. Select Enabled from the pull-down list of PNP.

Status	Account	Network	Phone	Contacts	Upgrade	Security
		Basic A	dvanced			
Cust Cust DHCI Prov User Pass Com	P Active om Option(128 ~ 254) om Option Type P Option 60 Isioning Server Name word mon AES Key -Oriented AES Key	Enabled String	· · · · · · · · · · · · · · · · · · ·	0	Spe you pro abc It is Clict Clict	TE stom Option cify the DHCP Option that want to use for visioning. Refer to Auto vision Manual for details ut provisioning. 3 Key provided by ISP. k this button to auto vision immediately.
	Touch	Disableo	0 <u>v</u> t			ort/Import
PNP	Time(seconds)	5 Enabled			con	nfigExport the figuraion files to backup settings, and could import
Cheo	:k New Config	Power	on 💌 🕐			he settings after reset.
Auto	Provision Now	Auti	provision 🕜		The	tem Log ere are two methods to
Impo	ort / Export Config		[浏]	£ 🕜		ort the system log, Local Server.
Expo	rt System Log	Local	rt Export]		
Log	Level	3	*			
Make	e Trace	Star	t Stop	Export	0	
	Confirm		Cancel			

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 contained in the message body. The phone can then connect to the provisioning server and performs the provisioning process.



DHCP Options

Yealink IP phones support obtaining the provisioning server address from DHCP options. You can configure the phone to obtain a provisioning server address from a custom DHCP option, or the phone will automatically detect the Option 66 or Option 43. The Option 66 is used to identify the TFTP server.

To obtain a provisioning server by a custom DHCP option, make sure that the DHCP option is set properly.

To configure the DHCP option via web user interface:

- 1. Click on Upgrade ->Advanced.
- 2. Select Enabled from the pull-down list of DHCP Active.
- 3. Enter the value in the Custom Option (128~254) field.
- 4. Select the desired type from the pull-down list of Custom Option Type.

Status	Account	Network	Phone	Contacts	Upgr	ade	Security
		Basic Ad	lvanced				
DHCP AC	tive	Enabled	~			NOTE	
Custom (Option(128 ~ 254)	130	0				m Option / the DHCP Option that
Custom (Option Type	String	v 0			you wa	ant to use for
DHCP Op	ition 60		•			Provisio	oning. Refer to Auto on Manual for details
Provision	ing Server			0			provisioning.
User Nan			0			AES K It is pro	ey ovided by ISP.
Password		••••••					his button to auto
	AES Key	••••••				provis	ion immediately
Zero Tou	ented AES Key	••••••					on immediately.
	icn ie(seconds)	Enabled 5	Ø				t/Import
PNP	le(seconus)	Enabled					Export the uraion files to backup
	<i></i>					the se	ttings, and could import settings after reset.
Uneck Ne	ew Config	Power or	າ 💌 💜			Syster	-
Auto Pro	vision Now	Auto	provision 🛛 😯)		There	are two methods to
Import /	Export Config			_览 🥜		export or Serv	the system log, Local /er.
		Import	Export				
		Inport					
Export S	ystem Log	Local	Q				
		Ex	port				
Log Leve	el .	3	~				
Make Tra	ice	Start	Stop	Export	0		
	Confirm		Cancel				

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

A valid Custom Option is from 128 to 254. The Custom Option Type must be in accordance with the one defined in the DHCP server.

Phone Flash

Yealink IP phones support obtaining a provisioning server address from the phone flash. To obtain a provisioning server address by reading the phone flash, make sure the configuration is set properly. To configure the Phone Flash via web user interface:

- 1. Click on **Upgrade** ->**Advanced**.
- Enter the URL, username and password of the provisioning server in the Provisioning Server, User Name and Password fields (the authentication username and password is optional).
- 3. Select Power on from the pull-down list of Check New Config.

Status Account	Network	Phone	Contacts	Upgrad	le Security
	Basic Ad	vanced			
DHCP Active Custom Option(128 ~ 254) Custom Option Type DHCP Option 60 Provisioning Server User Name	Enabled 130 String tftp://192 admin	 ♥ ♥ ♥ ♥ ♥ 	Ø		NOTE Custom Option Specify the DHCP Option that you want to use for provisioning. Refer to Auto Provision Manual for details about provisioning. AES Key It is provided by ISP.
Password Common AES Key MAC-Oriented AES Key Zero Touch Wait Time(seconds) PNP	Disabled 5 Enabled				It's provided by IS- Click this button to auto provision immediately Click this button to auto provision immediately. Export/Import Configuient files to backup the settings, and could import all the settings after reset.
Check New Config Auto Provision Now Import / Export Config	Power or Auto	n V V V V V V V V V V V V V V V V V V V	. 0		System Log There are two methods to export the system log, Local or Server.
Export System Log	Import Local Exp	Export			
Log Level	3	~			
Make Trace	Start	Stop	Export		
Confirm		Cancel			

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

If the configuration files have been AES encrypted, the AES Keys will be needed. The Common AES Key is for decrypting the Common CFG file. The MAC-Oriented AES Key is for decrypting the MAC-Oriented CFG file. The keys must be 16 bytes and the supported characters are: $0 \sim 9$, $A \sim Z$, $a \sim z$ and the following special characters are also supported: # \$ % * +, - . : = ? @ [] ^ _ { } { }.

Reboot the phone after the above configurations. During bootup, the phone will connect to the provisioning server, using the authentication user name and password filled in the **User Name** and **Password** fields. If the phone fails to get any information from the phone flash, the current round of auto provisioning process will stop.

Downloading and Verifying Configurations

Downloading Configuration Files

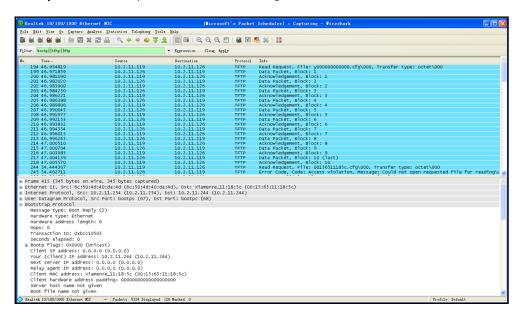
Once obtained a provisioning server address from one of the ways introduced above, the phone will connect to the provisioning server and download the configuration files. During the provisioning process, the phone will try to download the Common CFG file firstly, and then try to download the MAC-Oriented CFG file from the root directory of the provisioning server. If resource files need to be updated and the access URL has been specified in the configuration files. The phone will then try to download and update the resource files.

Verifying Configurations

After auto provisioning, the phone boots up. You can then verify the update via phone user interface, or you can verify it via web user interface of the phone. For more information, refer to the user guide of the Yealink IP phones.

During the auto provisioning process, you can monitor the downloading request and response message by a WinPcap tool.

If the MD5 value of the CFG file is different from that of the last one, the phone updates the configuration and then reboots. Otherwise, the phone gives up update and doesn't reboot.



Example1: Yealink IP phone downloads configuration files from the TFTP server.

Realtek 10/100/1000 Ethe	rnet NIC	(Micros	oft's Packet	ot Scheduler) : Capturing - Wireshark
le Edit View Go Capture &	nalyze Statistics Telephony Ico	ls Help		
	(28日) 《 * * @ 7	2 0 0 0 0		8 % 🖬
lter: ftp tftp http bootp		• Eggression Cleag A	pply	
	Source	Destination	Protocol	
151 34.500098	10.2.11.126	10.2.11.115	FTP	Response: 220 3Com 3CDaemon FTP Server Version 2.0
153 34,507326	10.2.11.115	10,2,11,126	FTP	Request: USER 1ff
154 34.509003	10.2.11.126	10.2.11.115	FTP	Response: 331 User name ok, need password
155 34.513482	10.2.11.115	10.2.11.126	FTP	Request: PASS 111111
156 34, 515044	10.2.11.126	10.2.11.115	FTP	Response: 230 User logged in
157 34.523305	10.2.11.115	10.2.11.126	FTP	Request: TYPE I
158 34,524405	10.2.11.126	10.2.11.115	FTP	Response: 200 Type set to I.
159 34.529402	10.2.11.115	10.2.11.126	FTP	Request: PASV
160 34, 532697	10.2.11.126	10.2.11.115	FTP	Response: 227 Entering passive mode (10,2,11,126,5,189)
164 34.541081	10.2.11.115	10.2.11.126	FTP	Response: 22 mintering passive mode (10,2,11,120,3,189) Request: SIZE V000000000000.cfg
165 34.543289	10.2.11.126	10.2.11.115	FTP	Response: 213 3986
103 54.345289	10.2.11.120	10.2.11.115		kesponse: 213 3980
166 34.552631	10.2.11.115	10.2.11.126	FTP	Request: RETR y00000000000.cfg
167 34.554557	10.2.11.126	10.2.11.115	FTP	Response: 125 Using existing data connection
177 34.593926	10.2.11.126	10.2.11.115	FTP	Response: 226 Closing data connection; File transfer successful.
188 36.338570	10.2.11.115	10.2.11.126	FTP	Request: QUIT
189 36.340311	10.2.11.126	10.2.11.115	FTP	Response: 221 service closing control connection
195 37.025137	10.2.11.126	10.2.10.115	FTP	[TCP Retransmission] Response: 221 Service closing control connection
216 42.191295	10.2.11.126	10.2.11.115	FTP	Response: 220 3Com 3CDaemon FTP Server Version 2.0
218 42.199981	10.2.11.115	10.2.11.126	FTP	Request: USER 1ff
219 42.200926	10.2.11.126	10.2.11.115	FTP	Response: 331 User name ok, need password
220 42.205441	10.2.11.115	10.2.11.126	FTP	Request: PASS 111111
221 42.206670	10.2.11.126	10.2.11.115	FTP	Response: 230 User logged in
222 42.210856	10.2.11.115	10.2.11.126	FTP	Request: TYPE I
223 42.211775	10.2.11.126	10.2.11.115	FTP	Response: 200 Type set to I.
224 42,222780	10.2.11.115	10.2.11.126	FTP	Request: PASV
225 42.226037	10.2.11.126	10.2.11.115	FTP	Response: 227 Entering passive mode (10,2,11,126,5,193)
229 42.232726	10.2.11.115	10.2.11.126	FTP	Request: SIZE 00156511185c.cfg
230 42.234476	10.2.11.126	10.2.11.115	FTP	Response: 213 Error accessing file
231 42,240170	10.2.11.115	10.2.11.126	FTP	Request: RETR 00156511185c.cfg
232 42.241397	10.2.11.126	10.2.11.115	FTP	Response: 550 File unavailable
245 42.728589	10.2.11.126	10.2.11.115	FTP	Response: 220 3Com 3Cbaemon FTP Server Version 2.0
247 42.736866	10.2.11.115	10.2.11.126	FTP	Request: USR 1ff
248 42.737875	10.2.11.126	10.2.11.115	FTP	Response: 331 User name ok, need password
249 42.742202	10.2.11.115	10.2.11.126	FTP	Request: PASS 11111
250 42.743675	10.2.11.126	10.2.11.115	FTP	Response: 230 User logged in
251 42.757760	10.2.11.120	10.2.11.126	FTP	Request: TYPE I
252 42.759005	10.2.11.126	10.2.11.126	FTP	Response: 200 Type set to I.
		10.2.11.115		Response: 200 type set to 1.
253 42.763681	10.2.11.115	10.2.11.126	FTP	Request: PASV
254 42.767121	10.2.11.126	10.2.11.115	FTP	Response: 227 Entering passive mode (10,2,11,126,5,194)
258 42.781389	10.2.11.115	10.2.11.126	FTP	Request: SIZE 00156511185c.cfg
259 42.783327	10.2.11.126	10.2.11.115	FTP	Response: 213 Error accessing file
260 42.787362	10.2.11.115	10.2.11.126	FTP	Request: RETR 00156511185c.ctg
261 42,788746	10.2.11.126	10.2.11.115	FTP	Response: 550 File unavailable

Example 2: Yealink IP phone downloads the configuration files from the FTP server.

Example 3: Yealink IP phone downloads the configuration files from the HTTP server.

Realtek 10/100/1000 Ether	rnet NIC	(Licroso	ft's Packet	Scheduler) : Capturing - Vireshark
Eile Edit View Go Capture An	alyze Statistics Telephony Tool:	s <u>H</u> elp		
R R R R R R B R X	28 🔒 🔍 🔶 🔶 😽 🕹		🖸 😹 🗹 🥊	5 % 🛱
Filter: http		▼ Expression Clear App	ly .	
No Time	Source	Destination	Protocol	Info
240 6.882104	10.2.11.126	10.2.11.244	HTTP	POST /cgi-bin/ConfigManApp.com HTTP/1.1 (application/x-www-form-urlencoded)
321 8.003114	10.2.11.126	10.2.11.244	HTTP	GET /cg1-bin/ConfigManApp.com?Id=7&Ajax=1&sid=0.8358257513087566 HTTP/1.1
506 10.693593	10.2.11.244	10.2.11.126	HTTP	GET /y0000000000.cfg HTTP/1.1
513 10.721055	10.2.11.126	10.2.11.244	HTTP	HTTP/1.1 200 OK (application/octet-stream)
832 15.256265	10.2.11.244	10.2.11.126	HTTP	GET /00156511185c.cfg HTTP/1.1
836 15.261886	10.2.11.126	10.2.11.244	HTTP	HTTP/1.1 404 Not Found (text/html)
3271 61.877302	10.2.11.126	10.2.11.244	HTTP	GET /cgi-bin/ConfigManApp.com?Id=7&Ajax=1&sid=0.9395627115025837 HTTP/1.1
3325 71.873594	10.2.11.126	10.2.11.244	HTTP	GET /cgi-bin/ConfigManApp.com?Id=7&Ajax=1&sid=0.9869411162705095 HTTP/1.1
3392 81.867954	10.2.11.126	10.2.11.244	HTTP	GET /cği-bin/ConfigManApp.com?Id=7&Ajax=1&sid=0.9273850928056307 HTTP/1.1
3416 86.440448	10.2.11.126	10.2.11.244	HTTP	GET /cgi-bin/ConfigManApp.com?Id=1 HTTP/1.1
3424 86.489121	10.2.11.126	220.181.126.59	HTTP	POST /check_outchain.php HTTP/1.1
3426 86.534643	220.181.126.59	10.2.11.126		HTTP/1.1 200 OK
3441 86.987334	10.2.11.126	113.108.86.110	HTTP	GET /tips/120001831/4 HTTP/1.1
3447 87.016789	113.108.86.110	10.2.11.126		HTTP/1.1 200 OK
3456 87.099539	10.2.11.126	124.115.7.154	HTTP	GET /psb?/7d03ad87-1870-4c6d-9b00-f14a612243dd/aNZFCw0nEvP9mD7wy1*GT5VZXKeYtaLI7a7j2V87
3462 87.258033	124.115.7.154	10.2.11.126	HTTP	HTTP/1.1 200 OK (JPEG JFIF image)
3471 87.336851	10.2.11.126	124.115.7.154	HTTP	GET /psb?/7d03ad87-1870-4c6d-9b00-f14a612243dd/*roLNHYyvvcDjAPZ6NU0jsc21pGumzLBsoqMReOu
3476 87.415143	124.115.7.154	10.2.11.126	HTTP	HTTP/1.1 200 OK (JPEG JFIF image)
3523 88.562549	10.2.11.126	10.2.11.244	HTTP	GET /js/common.js?2127787626 HTTP/1.1 HTTP/1.1 200 ok (application/x-javascript)
3532 88.754752	10.2.11.244	10.2.11.126		http/1.1 200 ok (application/x-javascript)
3547 92.026186	58.218.203.104	10.2.11.160	HTTP	Continuation or non-HTTP traffic
3585 94.901678	10.2.11.126	117.25.132.114	HTTP	GET /client/hw_MB_201201175705.gif HTTP/1.1
3594 94.954821	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (GIF89a)
3619 100.038609	10.2.11.126	117.25.132.114	HTTP	GET /client/hr_OR_201201173029.swf HTTP/1.1
3647 100.274677	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (application/x-shockwave-flash)
3663 103.063716	10.2.11.244	10.2.11.126	HTTP	GET /y0000000000.cfg HTTP/1.1
3665 103.068789	10.2.11.126	10.2.11.244	HTTP	HTTP/1.1 200 OK (application/octet-stream)
3677 103.961308	10.2.11.244	10.2.11.126	HTTP	GET /00156511185c.cfg HTTP/1.1
3681 103.965999	10.2.11.126	10.2.11.244	HTTP	HTTP/1,1 404 Not Found (text/html)
3693 105.387490	10.2.11.126	117.25.132.114	HTTP	GET /client/d41403a82c85e181489e19951886a4f91616.gif HTTP/1.1
3704 105.454796	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (GIF89a)
3736 110. 533263	10.2.11.126	117.25.132.114	HTTP	GET /client/d61787baa02f32e5f406fcec7233b3dd1616.swf HTTP/1.1
3757 110.704253	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (application/x-shockwave-flash)
3786 115.939709	10.2.11.126	117.25.132.114	HTTP	GET /client/f897788d893a51f9e10fdd35dcaa9dce1616.gif HTTP/1.1
3798 116.023309	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (GIF89a)
3836 121.112817	10.2.11.126	117.25.132.114	HTTP	GET /client/2653ebf6ed947c591afd87c1e9cd3bd01616.swf HTTP/1.1
3859 121.303246	117.25.132.114	10.2.11.126	HTTP	HTTP/1.1 200 OK (application/x-shockwave-flash)
3884 126.365017	10.2.11.126	117.25.132.114	HTTP	GET /client/hr_OR_201201063207.gif HTTP/1.1
		111 7 11 1 76	0.10	
Frame 4025 (523 bytes on	wire, 523 bytes captured)			

Troubleshooting

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

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

Why does the phone fail to download the configuration file?

- Ensure that the Auto Provisioning feature is enabled.
- Check that the provisioning server or the network is reachable.
- Check that authentication credentials configured on the phone are correct.
- Ensure that the configuration file exists on the provisioning server.

Why does the provisioning server return a HTTP 404?

- Check that the provisioning server is properly set up.
- Revisit the path configuration (URL rewriting, port).
- Ensure that the requested file exists on the provisioning server.

Why does the phone display "Network Unavailable"?

- Ensure that the Ethernet cable is plugged into the Internet port on the phone and the ethernet cable is not loose.
- Ensure that the switch or hub in your network is operational.
- Check the configuration of network is properly set in the configuration files.
- Contact your system administrator for more information.

Why does the permission denied when uploading files to a FTP server?

- Ensure that the root directory of the FTP server contains the full directory path.
- On the provisioning server, check the file permissions, if necessary, change the file permission.
- Contact your system administrator for more information.

Why does not the phone obtain the IP address from DHCP server?

- Ensure that your settings are right on the DHCP Server.
- Ensure your phone is configured to obtain the IP address via DHCP server.
- Contact your system administrator for more information.

Why does not the phone download the ringtone?

- Make sure that the ringtone file's type is .wav format.
- Make sure that the size of the ringtone file is no larger than the phone support.
- Check the ringtone's properties are all right for the phone.
- Ensure the network is available and the root directory is right for downloading.
- Ensure that the ringtone file exists on the provisioning server.

Why does not the phone apply the configurations?

- Ensure the configuration files are different from the last ones.
- Ensure the phone have downloaded the configuration files.
- Ensure the parameters are correctly set in the configuration files.
- Contact your system administrator for more information.

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 a FTP Server

This chapter shows you how to configure a FTP server using 3CDaemon and how to configure a HTTP server using HFS tool. You can download the 3CDaemon software at: http://www.oldversion.com/3Com-Daemon.html and HFS at: http://www.snapfiles.com/get/hfs.html

Preparing a Root Directory

To prepare a root directory:

- 1. Create a root FTP directory on the local computer.
- 2. Place the configuration files to this root directory.
- 3. Set the security permissions for the FTP directory folder.
- 4. You need to define a user or group name, and set the permissions: read, write, and modify files. Security permissions vary by organization.

An example of using the Windows platform is shown as below:

Administrators (VANSTD) CREATOR OWNER	30\Admini	strators)		^
2 Everyone				
Hill, James (jahill@myser		.com]		~
	_	vdd	Remov	_
Permissions for Everyone		Allow	Deny	
Full Control				^
Modify				
Read & Execute				
List Folder Contents				
Read				
Write				
Consist Dormissions			-	~
For special permissions or for a click Advanced.	dvanced	settings,	Advance	b

Configuring a FTP server

If you have a 3CDaemon application installed on your computer, open it now, or otherwise, download and install it.

To configure a FTP server:

- 1. Double click the 3CDaemon.exe to start the application.
- 2. Click the FTP Server button on the left of the main page.

A screenshot is shown as below:

3CDaemon	1.000				
File View Help					
TFIP Server	Start Time	Peer	Bytes	Status	
FIP Server	Mar 13, 2012 14:26:34			Listening for FTP requests on IP address: 192.168.147.1, Port 21	
· · · ·	Mar 13, 2012 14:26:34		0	Listening for FTP requests on IP address: 192.168.172.1, Port 21	
	Mar 13, 2012 14:26:34	local	0	Listening for FTP requests on IP address: 10.2.11.101, Port 21	
Configure FIP Server					
FTP Server is started. Click here to stop it.					
Logging to Ftpd log. Click to stop.					
X					
Not debugging. Click to start.					N
1					2
Clear list.					
6					
View Log/Debug files.					
Syslog Server					
TFIP Client					
For Help, press F1					NUM

3. Select Configure FTP Server.

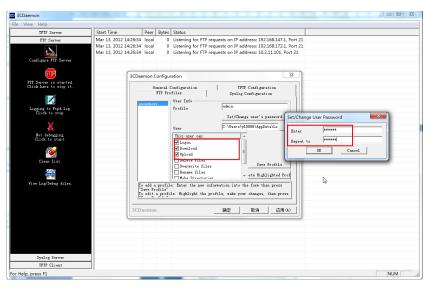
4. Click the 🚺 button to locate the FTP root directory on the computer:

300 3CD aemon		
<u>K</u> ile <u>Y</u> iew <u>H</u> elp		
TFTP Server	Start Time Peer Bytes Status	
FTP Server	Mar Ol. 2012 10:24:01 local O Listening for FTP requests on LP address: 192.168.133.1, Port 21 Mar Ol. 2012 10:24:01 local O Listening for FTP requests on LP address: 192.168.136.1, Port 21 Mar Ol. 2012 10:24:01 local O Listening for FTP requests on LP address: 192.161.186.1, Port 21	
Configure FTP Server	3CDnemon Configuration	
FTP Server is started. Click here to stop it.	General Configuration TFTF Configuration FTF Frofiles Syslog Configuration View Info	
Logging to Ptpd. log.	tip Frofile ftp Set/Change user's password	
Čličk to stop. –	User E: Mutop Muto Provision Ba	
Not debugging. Click to start.	☑ Login ☑ Download ☑ Vpload	
Clear list.	Dolate Files Overwrite files Brane files Webe Directories V ete Highlighted Frof	
View Log/Debug files.	To add a profile: Enter the new information into the form then press "Sawe Profile" To odit a profile: Mighlight the profile, make your changes, then press	
	3CDaemon 職定 取消 应用 (g)	
Syslog Server		
TFTP Client		
For Help, press F1		NUN //

- 5. Enter the new authentication username in the Profile filed.
- 6. Click the Set/Change user's password button to set the password in the pop-up

dialogue box.

- 7. Click the **OK** button to save.
- 8. Mark the check boxes of Login, Download and Upload to make sure the FTP user has the login, download and upload permission.



9. Click the Save Profile button to save the settings and finish the configurations.

CDaemon	
Eile Yiew Melp	
TFTP Server Start Time Peer Bytes Status	
FTP Server Mar 01, 2012 10:24:01 local 0 Listening for FTP requests on IP address; 192; 165; 133, 1, Port 21	
FIF Server Mar 01, 2012 10:24:01 local 0 Listening for FTP requests on IF address: 152:165.166.1, Fort 21 Mar 01, 2012 10:24:01 local 0 Listening for FTP requests on IF address: 152:165.166.1, Fort 21	
Configure FTP Server	
3CDaemon Configuration	
General Configuration TFTP Configuration FTP Provide Configuration	
Click here to ston it	
anonymous User Info	
ftp Profile Itp	
Set/Change user = parsword	
Logging to Riph log. Click to stop. E: \Autop\auto Provision IIa	
User 2. Autopitato Provision Ha	
This user can:	
Not debugging	
Click to start.	
Delete Files	
Derev File Save Profile	
Close List	
in datase interestariae with the Highlighted Prof	
To add a profile: Enter the new information into the form then press	
View Log/Debug files. To edit a profile. Highlight the profile, make your changes, then press	
View Log Debug File:	
3CDaemon 确定 取消 应用 (A)	
Syzlog Server	
TFTP Client	
For Help, press Fi	

10. Click the **Confirm** button to finish configuring the FTP server.

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://admin:123456@192.168.1.100/") is capable of FTP download.

Configuring a HTTP Server

Preparing a Root Directory

To prepare a root directory:

- 1. Create a root HTTP directory on the local computer.
- 2. Place the configuration files to this root directory.
- 3. Set the security permissions for the HTTP directory folder.
- 4. You need to define a user or group name and set the permissions: read, write, and modify files. Security permissions vary by organization.

An example of using the Windows platform is shown as below:

Administrators (VANSTD80\Administrators) CREATOR OWNER				
🕼 Everyone				
🙎 Hill, James (jahill@my	servername	e.com]		
SYSTEM				~
<			>	
		Add	Bemov	e
Permissions for Everyone		Allow	Deny	
Full Control				^
Modify		~		
Read & Execute		~		
List Folder Contents		~		
Read		~		
Write		~		
Coopiel Dormissions				~
For special permissions or fo click Advanced.	or advanced	settings,	Advance	ed .

Configuring a HTTP Server

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

To configure a HTTP server:

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

The main configuration page is shown as below:

HFS ~ HTTP File Server 2.2f	Build 155	
🖺 Menu 🖑 Port: 8080 🎎 You are in Expert mode	V3.	
Open in browser http://10.2.11.101:8080/		
	Top spee	1: 0.0 KB/s
Virtual File System	Log	
	17:23:24 Check update: no new version	
🧊 IP 📃 Filename	Status Speed Time left	%
Connections: 0 Out: 0.0 KB/s In: 0.0 KB/s Total Out: 0 B Tot	tal In: 0 B 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 2.2f	Build 155
📕 Menu 📍 Port: 8080 🕵 You	are in Expert mode
Self Test Edit HTML template Other options Upload Start/Exit Virtual File System Limits Flash taskbutton Fingerprints	8080/ stem Log 17:23:24 Check update: no new version
Tray icons	This IP address is used only for URL building 192.168.147.1 192.168.172.1 10.2.11.101 Custom
 ➢ Load file system Ctrl+O Gave file system Ctrl+S X Clear file system 	Don't include port in URL Find external address Constantly search for better address
Save options	Filename 🕡 Status Speed Time left %
Switch OFF F4 Exit Connections: 0 Out: 0.0 KB/s In:	0.0 KB/s Total Out: 0 B Total In: 0 B VFS: 0 items

The default HTTP port is 8080. You can also reset the HTTP port (make sure the port isn't used before you reset).

HFS ~ HTTP File Server 2.2f	Build 155 🗖 🔲 🕱
🛓 Menu 🖑 Port: 8080 🥵 You are in Expert mode	
Open in browser http://10.2.11.101:8080/	
	Top speed: 0.0 KB/s
Virtual File System	Log
7 Port Specify a port to accept connection, or leave empty to decide automatically. soss OK Cancel	17:23:24 Check update: no new version
🗊 IP 🗔 Filename	Status Speed Time left %
Connections: 0 Out: 0.0 KB/s In: 0.0 KB/s Total Out: 0 B Tot	al Tay 0. B. VEC: 0 itams
Connections, o Out; 0.0 Kb/s In; 0.0 Kb/s Total Out; 0 B Tot	arm. o b vrs. o items

Right click the
 icon on the left of the main page, select Add folder from disk to add the HTTP Server root directory.

🚔 HFS ~ HTTP File Server 2.2f	Build 155 🗾 🖃 🗾
🖺 Menu 🖑 Port: 8088 🅵 You are in Expert mode	
Open in browser http://10.2.11.101:8088/	
	Top speed: 0.0 KB/s
	og
Add files	
🛯 🔌 Add folder from disk	
New empty folder Ins	
🕙 New link	
Advanced	
Copy URL address Ctrl+C	
🗭 Browse it F9	
Comment Bind root to real-folder	
♂ Set user/pass Set user/pass Restrict access	
Set Restrict access	
✓ Browsable	
✓ Archivable	
📥 Upload 🔹	
📤 Why is upload disabled?	
Hide tree	
Auto-hide empty folders	Speed Time left %
Hide file extention in listing	
Connections: 0 Out: 0.0 KB/s In: 0.0 KB/s Total Out: 0 B Total In: 0 B VF	-S: 551 items - not savec

4. Locate the root directory from the computer system. Select the kind of folder which you want.

🔒 HFS ~ HTTP File	ə Server 2.2f	Build 155	
🛃 Menu 🛛 🖑 Port:	:8088 🛛 🕵 You are in Expert mode		
💿 Open in browser	http://10.2.11.101:8088/		
		Тор	speed: 0.0 KB/s
Virtual File System	Log		
🚯 I	17:23:24 Check update: no new version		
i∃i⊃ T28	What kind of folder do you want?	1	
	~		
	A real folder A real folder is faster, good for big folders		
	Virtual folder A virtual folder is easier, good for small folders		
	0		
	Not sure? Hint: most time you need real folders!		
	 France most time you need real folders: 		
L			
🧊 IP	🗖 Filename 🔱 Status	Speed Time left	%
Connections: 0 Ou	ut: 0.0 KB/s In: 0.0 KB/s Total Out: 0 B Total In: 0 B VFS: 550	tems - not savec	

5. Check the server URL "http:// IP:Port/" in the "Open in browser" address bar (For example, the server URL "http:// 10.2.11.101:8088/" is showed on the screenshot). We recommend that you can fill the server URL in the address bar of the web browser and then press <Enter> key to check the HTTP server before provisioning.

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 about installing and configuring an Apache HTTPS Server, refer to the network resource.

Configuring a DHCP server

This section shows you how to configure a DHCP server for windows using DHCP Turbo. You can down this software from website at: http://www.tucows.com/preview/265297 and install it following the setup wizard.

Before configuring the DHCP Turbo, make sure that:

- 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 the localhost.



😰 DHCP Turbo on localhost
Eile Edit View Bindings Iools Help
■ * * * * × × * * * * * * * * * * * * *
Servers C- localhost Base Description Platform Description Platform Description Pasword: DMCP Turbo Name Login Pasword: Pasword: Pasword: Pasword: Patters Build DMCP Turbo Patters Build
Ready.

3. You can then edit the existed DHCP server, or you can right click the **localhost** and select **"New Server"** to add a new DHCP server.

BHCP Turbo on localhost	
<u>File Edit View Bindings Iools H</u> elp	
📃 💐 🤾 🐂 🖬 🛛 🛠 🥱 🧐 🚱 📢	
Servers Server Name TLO000 Description Platform Windows MT 6.1 New Server Vealink Use Vealink Use Version 3.0 Max bindings 50 Features Basic Edition Build 1307	

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

		_ 0 X
Sa DHCP Turbo on localhost (modifie		
<u>File Edit View Bindings Tools He</u>		
🔐 🕢 ⊁ 🐚 🖿	■ % Ø @ % №?	
Servers V		
Iocalhost		
	New Scope	
- Named Policies	Scope Address Kange	
	Active Start address	
- Scopes	Rane End addrarr	
	DHCPServer IS2.168.10.100 Description Subnet mask	
	test Subnet mask	
	Lease Segment Unlimited V Local	
	Days Hours Minutes Relay agent	
	<u>QK</u> <u>Cancel</u>	
• • •		
		10

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

B DHCP Turbo on localho ile <u>E</u> dit <u>V</u> iew <u>B</u> indings								
a a * •		*	C	G	 ₩?			
ervers $ abla$	Filter Standa	rd Ontions				-		
- localhost	,	-						
	Tag ∇	Option						
		Magic						
🛨 🔛 Named Policies	<u>4</u> -5 <mark>4</mark> -4		irectory re addre					
			re addre		th 😼	New Option Type	. Ctrl+V	
		Boot f		6			0.1.7	
	🚛 0	Pad			5	Undo	Ctrl+Z	
	🚛 1	Subnet	mask		0	<u>R</u> edo	Ctrl+Y	
		Time o			Jr.	Cut	Ctrl+X	
		Gatewa			~	-		
		Time s			L <u>b</u>	Copy	Ctrl+C	
			name se name se			Paste	Ctrl+V	
		Log set		rvers				
			/Quote s	ervers		<u>D</u> elete	Del	
		LPR set				Select All	Ctrl+A	
		Impres	s server	s		-		
	🚛 11	RLP set	rvers		2	Eind	Ctrl+F	
	🚛 12	Hostna	ne		1	Properties	Ctrl+P	
	🚝 13		ile size		~	Troperacour	cum	
	🚛 14		dump fil	e				
		Domain						
	<u></u> 16 	Swap s Root p						
			atn ions pat	ь				
			earding					
			cal sour	ce rout	ing			
	49.91		£:11		-			
	Description							
	Specifies a de	vice's hardwar	e addre	ss type.				
<u>ا ا</u>	1							

7. Set the custom DHCP option (custom DHCP option tag number ranges from 128 to 254) and select the option type (Yealink support the String and IP Address option type only). Click the OK button to finish setting the option properties. Click is ave the change.

📲 DHCP Turbo on localhost (modified)
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>B</u> indings <u>T</u> ools <u>H</u> elp
Servers V
Servers ↓ Filter Standard Options ▼
Database Tag 🗸 Option
• Mared Policies • Mared Policies • Mared Policies
- Detion Types -4
16bit
- All S S S S S S S S S S S S S S S S S S
- III hardware_address
-E 11 -E 12 dns_name
-#13 #14
-2216 Swap servers -2217 Root path
- AB 18 Extensions path
IP forwarding 20 Non-local source routing
Description
Specifies a device's hardware address type.

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

	눩 📕 🔀	*	Ø (2	G	k ?
ervers 🗸	Tag ∇	N	ame			Value
localhost						
- Named Policies	4	E New C	Option			
Global		🗘 <u>U</u> ndo	3	Ctrl	+Z	
		Redo		Ctrl	+Υ	
DHCPServer		P Cut		Ctrl	+X	
		у Д_ ⊆ору		Ctrl		
		Paste		Ctrl		
	6	Delete		Del		
	-	Select		Ctrl	+A	
		K	<u> </u>	Ctrl		
		-	2	Ctrl		
		Prope	rties	Ctrl	+P	

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

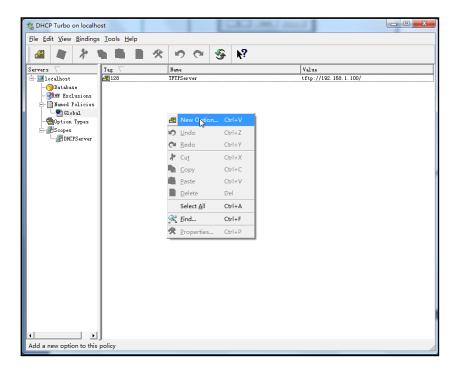
DHCP Turbo on localhost (mod		
<u>File Edit View B</u> indings <u>T</u> ools	Help	
	k? ≫ ∞ ∞ % k?	
Servers Tag	Nane Value	
- Iocalhost	😰 Option Selector	
💭 Database		
	Filter Standard Options	
E. Named Policies	Tag 🗸 Hane	
- Scopes		
DHCPServer		
	AE 59 DHCP rebinding time	
	A A A A A A A A A A A A A A A A A A A	
	T3 Finger servers	
	🖅 74 IRC servers	
	- 120 SIP Server ⊕ 122 Cablelabs Clie Configuration	
	- I28 TFTFServer	
	Æ 177 Legacy PacketCable ▼	
	Description	
	<u>QK</u> <u>Cancel</u>	

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

웹 DHCP Turbo on localhost (modified)	— — X
<u>File E</u> dit <u>V</u> iew <u>B</u> indings <u>I</u> ools <u>H</u> elp	
\$ 🖗 🐘 🗟 🛠 🕫 😵 💦	
Servers Tag Name Value Blocalhost	
- Muned Policies	
Option Types Georges	
L DHCPServer	
T Expression &	
Build	
QK Cancel Advanced >>	
4	

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

 Click Named Policies-->Global, right click and select New Option on the left of the main page.



- 2. Select the TFTP Options in the Filter field.
- 3. Scroll down and double click the **MS option 66**.

State DHCP Turbo on localhost		
<u>File Edit View B</u> indings Too	ols <u>H</u> elp	
	■ ■ % ゆ @ § N?	
Servers V Tag	Value	
🗄 💷 localhost 🖉 🖅		
	Filter TFTP Options	
- Global	Tag 🔽 Name	
	-ÆE-20 Server name -ÆE-16 MS option 67	
DHCPServer	-42-15 MS option 66	
	-Æ5-14 Next server -Æ5-1 Boot file	
	Description S	
	The host name of a TFTP server the device should use durying the second stage of	
	its boot process. Unless you know your device requires this option, you should use option -14 (as IP address) or option -20 (as host name) to define the TFTP server.	
	grint in (in in data chi) or option to (an not have) to active the fifth server.	
▲ ▶]	<u>QK</u> <u>Cancel</u>	

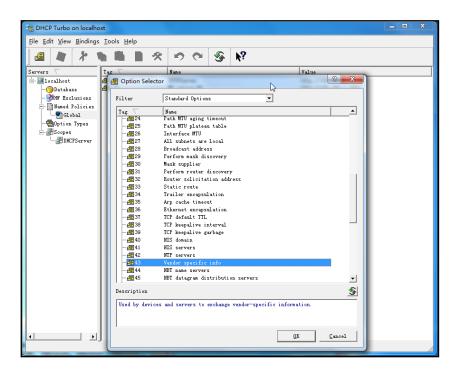
4. Fill the provisioning server address in the input field.

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Instance Instance			6	G	N ?	
	Collast Col	MS op	TFTPServer tion 66 //192.168.1.10		<pre> tftp://192.188.1.100</pre>	 /

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

You also can add the option 44. The following figures show the detailed processes.

- 1. Click Named Policies-->Global, right click and select New Option on the left of the main page.
- 2. Select the Standard Options in the Filter field.
- 3. Scroll down and double click the option 43.



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

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		Build	23	
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		<u>QK</u> <u>Cancel</u> <u>A</u> dvanced >>		
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- 5. Click the **OK** button to finish setting a custom option.
- 6. Click 🔄 to save the change.

Customizing a Ringtone Using Cool Edit Pro

If you have installed the Cool Edit application, double click to open it. Otherwise, you can download the installation package from the website: http://www.toggle.com/lv/group/view/kl36218/Cool_Edit_Pro.htm and install it.

To customize a ringtone using Coo Edit Pro:

- 1. Open the Cool Edit Pro application.
- 2. Click File to open an audio file.
- 3. Locate the ringtone file, click **Open**, the file is uploaded as follows.

A sample audio file loaded is shown as below:

🌉 kiss the rain.mp3 - Coo	l Edit Pro			
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48 -72 -59 -56 -53	-60 -57 -54 -51 -48	45 42 39 36 33 30 27	-24 -21 -18 -15 -12 -9 -5	* 0
Opened in 7.74 seconds		L: -22dB	@ 0.19.680 44100 716-bit 7Stereo 44.92 MB 126	GB free

- 4. Select and copy the audio waveform.
- 5. Select File->New to create a new file, set the audio format as PCMU, the channels as Mono, the sample rate as 8000 and the resolution as 16-bit.
- 6. Paste the audio waveform to the new file.



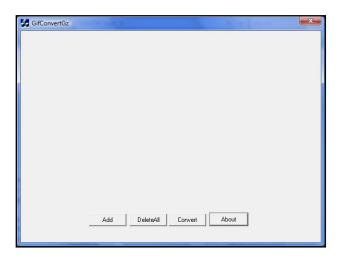
7. Select File->Save as to save the new audio file. On the Save waveform page,

select the file format as A/mu-law wave.

Customizing a Logo File Using PictureExDemo

The original picture format must be .bmp or .gif. We recommend placing all files and the PictureExDemo application to the root directory of the PC.

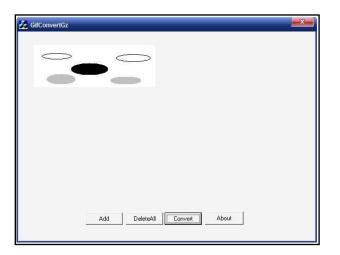
1. Double click the PictureExDemo.exe.



2. Click Add button to open a .bmp or .gif file.

You can repeat the second step to add multiple original picture files.

3. Click the **Convert** button.



Then you can find the .dob logo files in the adv directory.