Yealink

Yealink Auto Provisioning User Guide

Version 1.2
May 2012

Table of Contents

Introduction 1

Getting Started 3

Obtaining Configuration Information 3
Obtaining Configuration Files 3
Obtaining Phone Information 4
Managing Configuration Files 4
Editing Common CFG File 4
Editing MAC-Oriented CFG File 7
Customizing Resource Files 10
Customizing a Ringtone 10
Customizing a LCD Language 11
Customizing a LCD Logo 12
Uploading Local Contacts 13
Updating Firmware 13

Configuring a TFTP Server 15

Preparing a Root Directory 15
Configuring a TFTP Server 16

Obtaining the Address of Provisioning Server 17

Zero-Sp-Touch 17
Plug and Play (PNP) Server 19
DHCP Options 20
Phone Flash 20

Downloading and Verifying Configurations 23

Downloading Configuration Files 23
Verifying Configurations 23

Troubleshooting 25

Glossary 27

Appendix 29

Configuring a FTP Server 29
Preparing a Root Directory 29
Configuring a FTP server 30
Configuring a HTTP Server 32
Preparing a Root Directory 32
Configuring a HTTP Server 32
Configuring a DHCP server 35
Customizing a Ringtone Using CoolEdit Pro 43
Customizing a Logo File Using PictureExDemo 44

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 SIP-T28(P)
- Yealink SIP-T26(P)
- Yealink SIP-T22(P)
- Yealink SIP-T20(P)
- Yealink SIP-T18(P)
- Yealink SIP-T12(P)
- Yealink SIP-T38(G)
- Yealink SIP-T32(G)
- Yealink VP530

The provisioning process outlined in this document applies to the firmware V70 or higher version of Yealink IP phones.

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

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 "y0000000000XX.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
SIP-T28(P)	y000000000000.cfg
SIP-T26(P)	y000000000004.cfg
SIP-T22(P)	y000000000005.cfg
SIP-T20(P)	y000000000007.cfg
SIP-T12(P)	y000000000008cfg
SIP-T18(P)	y000000000009.cfg
SIP-T38G	y000000000038.cfg
SIP-T32G	y000000000032.cfg
VP530	y000000000023.cfg

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

Obtaining Phone Information

Before you begin the provisioning, you will also need the phone information. For example, 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 includes 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

```
#!version:1.0.0.1

##File header "#!version:1.0.0.1" can not be edited or deleted.##

##############################################################################################
##                                    Network                                               ##
##############################################################################################

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

#Configure the static IP address,submask,gateway and DNS server for the phone;
#Require Reboot;
network.internet_port.ip =
network.internet_port.mask =
network.internet_port.gateway =
network.primary_dns=
network.secondary_dns =

#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 =
```

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

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

```
##################################################
##                  Common CFG File               ##
##################################################
#!version:1.0.0.1
##File header "#!version:1.0.0.1" cannot be edited or deleted.##

#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 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

#Set the auto provisioning mode (0-Disabled (default), 1-Power on, 4-Repeatedly,
#5-Weekly, Power on + Repeatedly, Power on + Weekly)

auto_provision.mode = 1

auto_provision.power_on_enable = 1

auto_provision.repeat.enable = 0

auto_provision.repeat.minutes = 1440
```

auto_provision.schedule.periodic_minute = 1

auto_provision.schedule.time_from = 00:00

auto_provision.schedule.time_to = 00:00

auto_provision.schedule.dayofweek = 0123456

auto_provision.server.url =

auto_provision.server.username =

auto_provision.server.password =

auto_provision.weekly.enalbe = 0

auto_provision.weekly.mask = 0123456

auto_provision.weekly.begin_time = 00:00

auto_provision.weekly.end_time = 00:00

#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

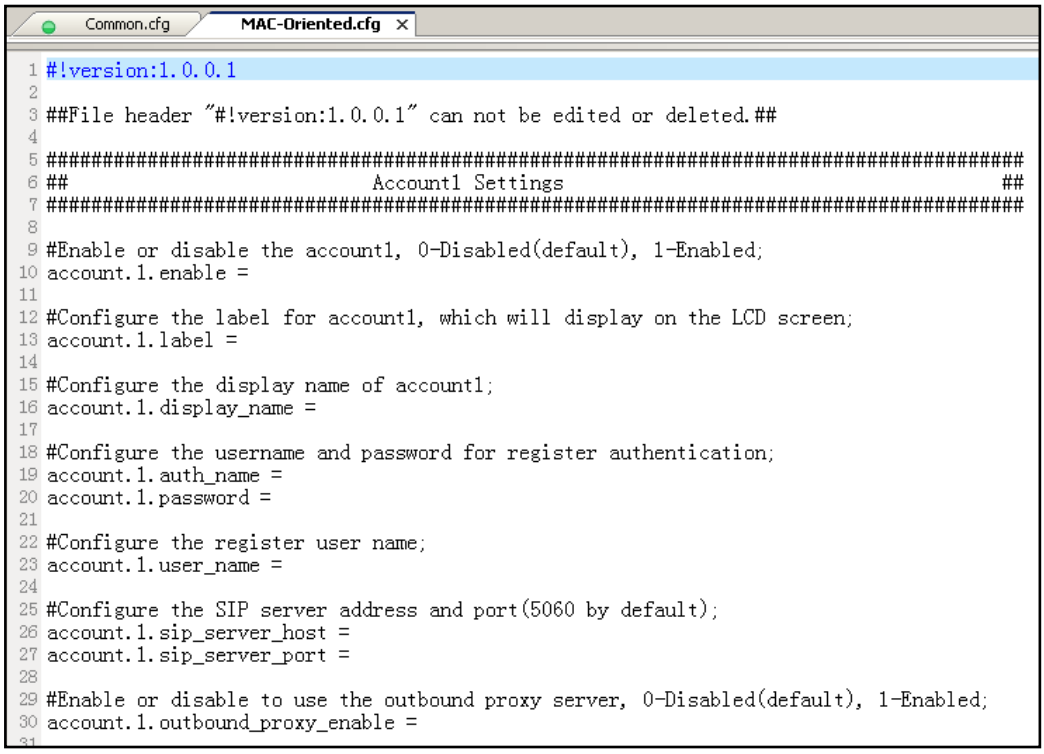
security.user_password =user:user123

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

```
#!version:1.0.0.1

##File header "#!version:1.0.0.1" can not be edited or deleted.##

##########################################################################################
##                              Account1 Settings                                       ##
##########################################################################################

#Enable or disable the account1, 0-Disabled(default), 1-Enabled;
account.1.enable =

#Configure the label for account1, which will display on the LCD screen;
account.1.label =

#Configure the display name of account1;
account.1.display_name =

#Configure the username 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 =

#Enable or disable to use the outbound proxy server, 0-Disabled(default), 1-Enabled;
account.1.outbound_proxy_enable =
```



The parameters commonly edited in the MAC-Oriented CFG file are detailed as following:

```
##########################################################
##                MAC-Oriented CFG File                 ##
##########################################################
#!version:1.0.0.1
#File header "#!version:1.0.0.1" cannot be edited or deleted.##
#Line1 settings
#Activate/Deactivate the account1, 0-Disabled (Default), 1-Enabled
account.1.enable = 0
#Configure the label of account1 which will display on the LCD screen
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

#Activate/Deactivate account2, 0-Disabled(Default), 1-Enabled

account.2.enable = 0

#Configure the label of account2 which will display on the LCD screen

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

#Activate/Deactivate the account3, 0-Disabled(Default), 1-Enabled

account.3.enable = 0

#Configure the label of account3 which will display on the LCD screen

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 T28P, T38G and VP phone only)

#Activate/Deactivate the account4, 0-Disabled(Default), 1-Enabled

account.4.enable = 0

#Configure the label of account4 which will display on the LCD screen

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 T28P and T38G only)

#Activate/Deactivate account5, 0-Disabled(Default) 1-Enabled

account.5.enable = 0

#Configure the label of account5 which will display on the LCD screen

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 T28P and T38G only)

#Activate/Deactivate the account6, 0-Disabled(Default), 1-Enabled

account.6.enable = 0

#Configure the label of account6 which will display on the LCD screen.

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 use 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 provision

ringtone.delete =

For example: enter "ftp://192.168.1.100/Ring9.wav" in the "ringtone.url =" field. During the auto provisioning process, the phone links 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.

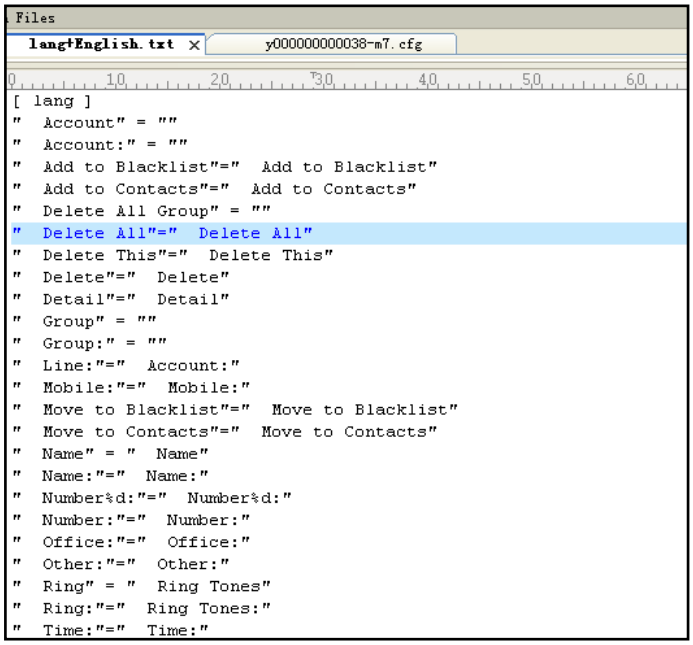
For more information about customizing a ringtone file, you can refer to the Customizing a

Ringtone Using CoolEdit Pro in this guide.

Customizing a LCD Language

Yealink IP phones allow you to modify the translation of the existing languages on the LCD screen, 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:




```
##########################################################
##              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 links to the provisioning server “192.168.1.100”, and download 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/T1xP IP phones allow you to customize the logo displayed on the phone LCD screen (The SIP-T20P IP phone only supports 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:

```
##################################################
##              Configure the access URL of the Logo File              ##
##################################################
#(SIP-T2xP/T1xP only, not applicable to T20P)
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.dob" in the "lcd_logo.url =" field. During the auto provisioning process, the phone links to the provisioning server "192.168.1.100", and downloads the logo file "logo.dob".

The following table lists the logo file format 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
SIP-T18P	.dob	**<=132*64** 2 gray scale
SIP-T12P	.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.

Uploading Local Contacts

Yealink IP phones allow you to batch upload contact data by auto provisioning. Edit the contactData.xml 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:

```
<contactData>
  <group>
    <contact sDisplayName="Mary" sOfficeNumber="1234"
sMobilNumber="12345678901" sOtherNumber="2231" sLine="0" sRing="Auto"/>
    <contact sDisplayName="Damy" sOfficeNumber="1235"
sMobilNumber="12345678902" sOtherNumber="2232" sLine="0" sRing="Auto"/>
    <contact sDisplayName="John" sOfficeNumber="1236"
sMobilNumber="12345678903" sOtherNumber="2233" sLine="0" sRing="Auto"/>
     </group>
 <blacklist>
   <contact sDisplayName="Mili" sOfficeNumber="7788"
sMobilNumber="44444444444" sOtherNumber="2222" sLine="0" sRing="Auto"/>
</blacklist>
</contactData>
```

```
#######################################################
##                  Upload local contact file        ##
#######################################################
```

local_contact.data.url =

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

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

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@192.168.1.100/2.61.0.80.rom” in the “firmware.url =” field. During the auto provisioning process, the phone links to the provisioning server “192.168.1.100” (“admin” as the authentication user name and “password” as the authentication password), and download the firmware file 2.61.0.80.rom.

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 TFTP32 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 TFTP32 at: http://tftpd32.jounin.net/.

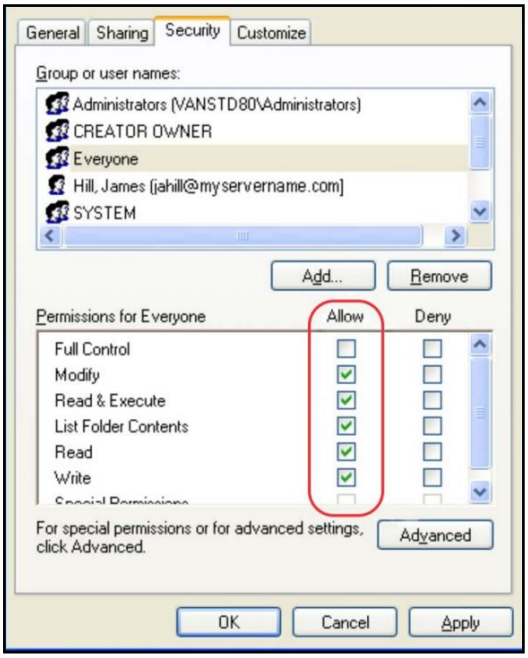
We provide a simple instruction of configuring a TFTP server using 3CDaemon tool in the Configuring a FTP server section.

Preparing a Root Directory

To prepare a root directory:

1. Create a root TFTP directory on the local computer.
2. Store 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:

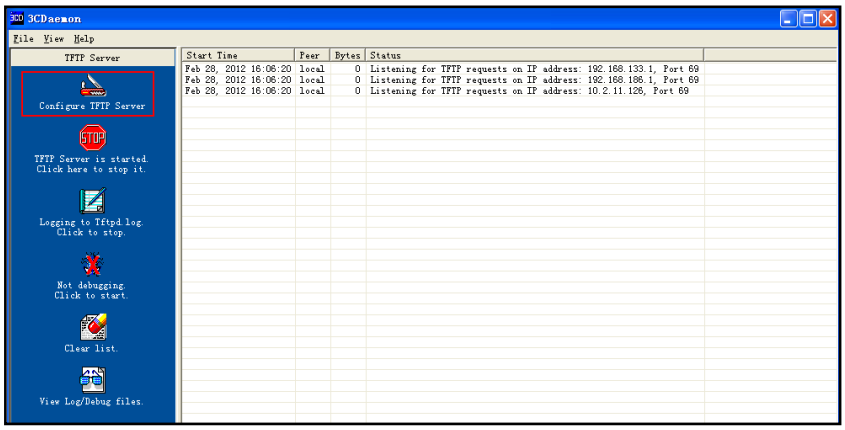


Configuring a TFTP Server

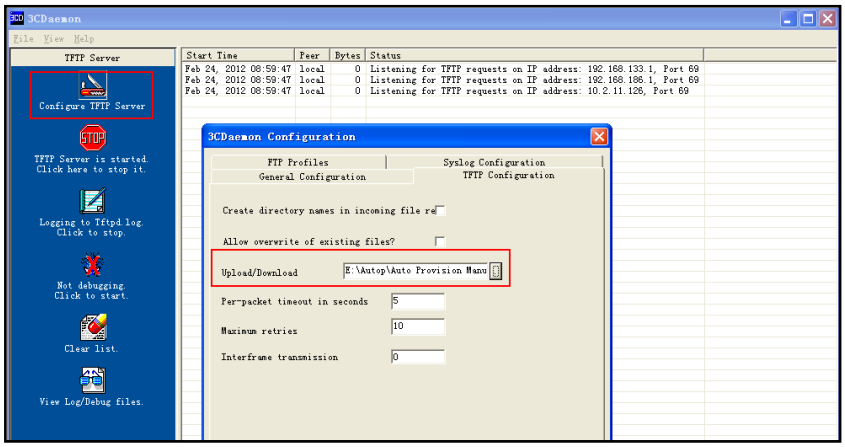
If you have a 3CDaemon application installed on your computer, use it directly. Otherwise, download and install it.

To configure a TFTP server:

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



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



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://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-Sp-Touch
- Plug and Play (PNP) Server
- DHCP Options
- Phone Flash

When the phone boots up, it will go by the following process to obtain the provisioning server address step by step: Zero-Sp-Touch -->PNP server -->DHCP options (Custom option --> option 66 -->option 43) -->Phone Flash.

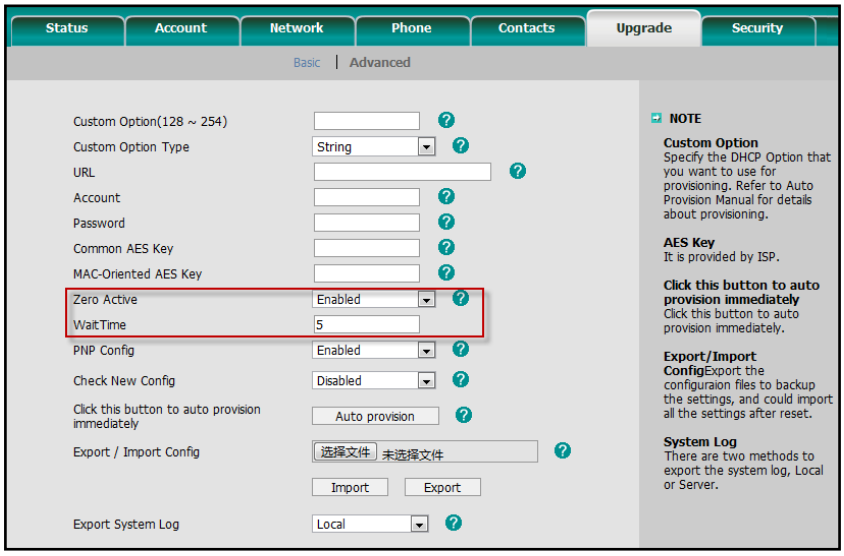
The following sections detail each process.

Zero-Sp-Touch

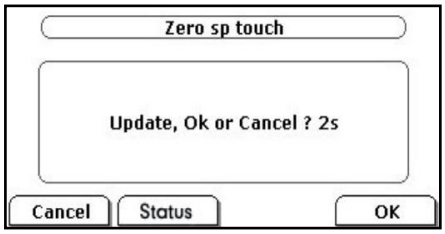
Zero-Sp-Touch allows you to configure the network and provisioning server address via phone user interface during bootup. This feature is helpful when there is a system failure on the phone. To use Zero-Sp-Touch, you need to make sure that this feature is enabled.

To configure the Zero-Sp-Touch via web user interface:

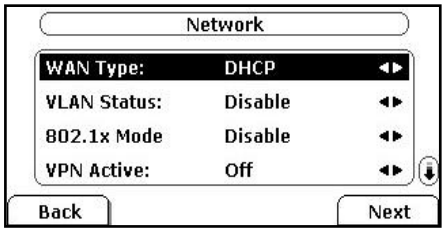
1. Click on **Upgrade** ->**Advanced**.
2. Select **Enabled** from the pull-down list of **Zero Active**.
3. Set the waiting time(in seconds) in the **Wait Time** filed.



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

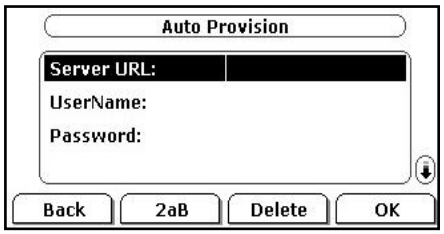


Press the **OK** soft key. Then you can configure the network on the LCD screen:



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 below:

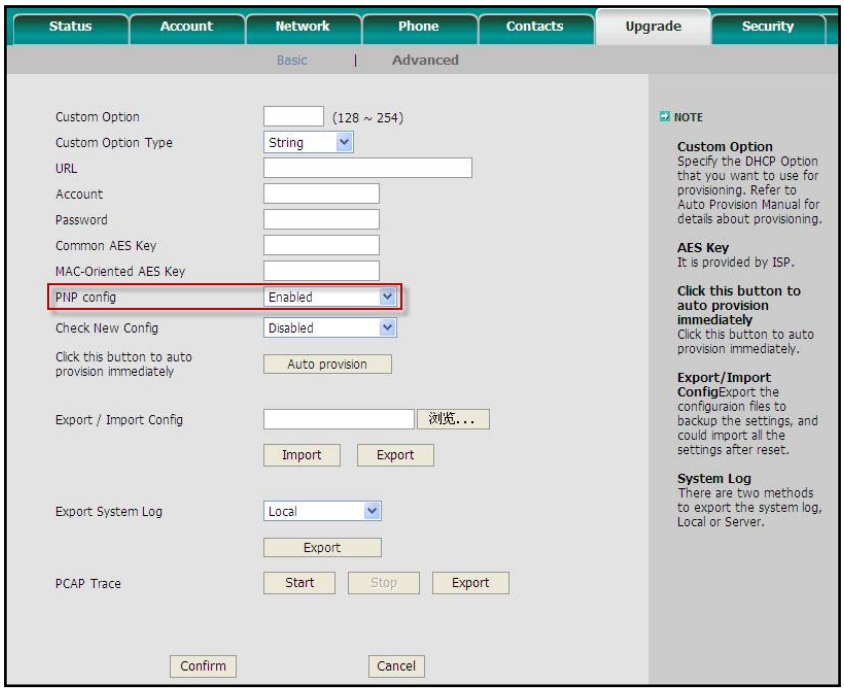


Plug and Play (PNP) Server

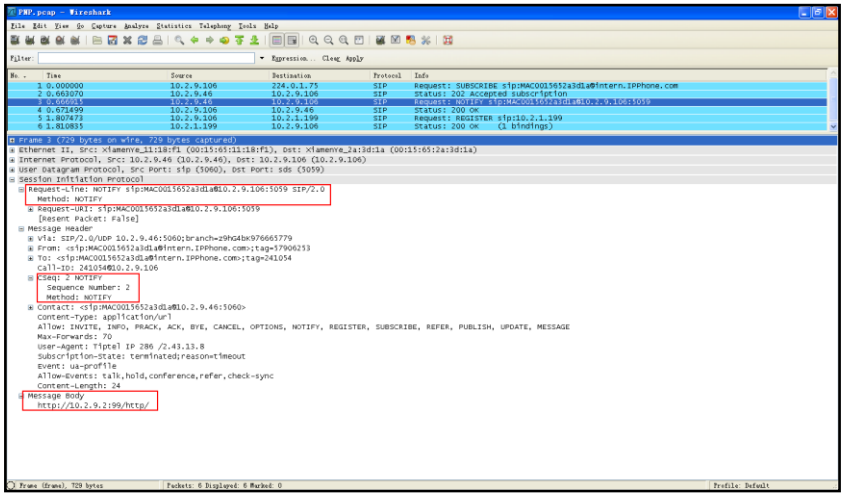
Yealink IP phones support obtaining the provisioning server address from the PNP server. The phone broadcast the PNP Subscribe message to obtain a provisioning server address during bootup. To use Plug and play, make sure this feature is enabled.

To configure the PNP via web user interface:

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



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 link to the provisioning server and performs the provisioning process.



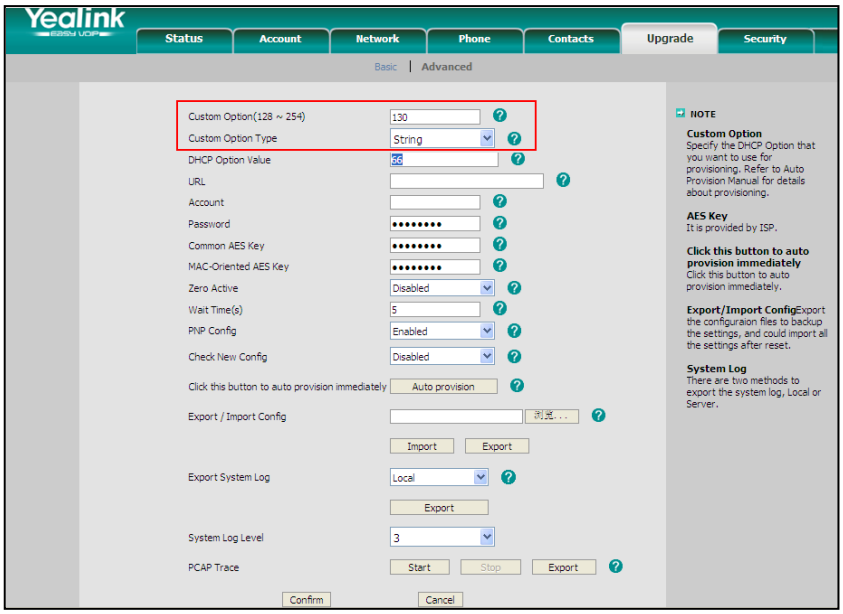
DHCP Options

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.

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. Enter the value (128-254) in the **Custom Option** field.
3. Select the desired type from the pull-down list of **Custom Option Type**.



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

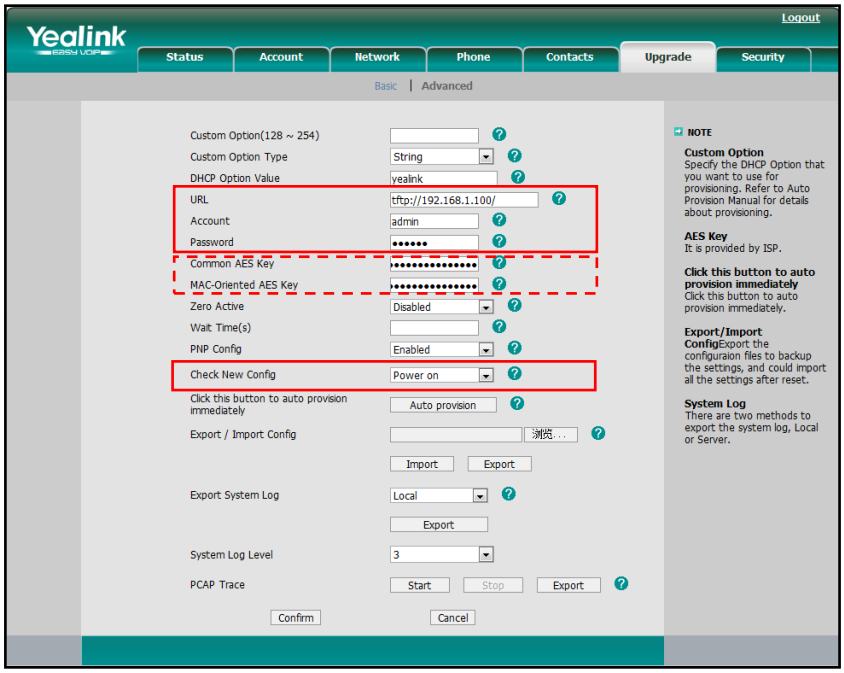
Yealink IP phones support obtaining a provisioning server address from the phone flash.

To obtain a provisioning server 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**.
2. Enter the URL, username and password of the provisioning server in the **URL**, **Account** and **Password** fields (the authentication username and password is optional).

3. Select **Power on** from the pull-down list of **Check New Config**.



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 ~ 9, A ~ Z, a ~ z and the following special characters are also supported: # $ % * + , - . : = ? @ [ ] ^ _ { } ~.

Reboot the phone after the above configurations. During bootup, the phone will link to the provisioning server "192.168.1.100", using the authentication user name and password filled in the **Account** and **Password** fields. If the phone fails to get any information from the phone flash, the current round of obtaining the provisioning server address will stop.

Downloading and Verifying Configurations

Downloading Configuration Files

Once obtains a provisioning server address from one of the way introduced above. The phone will link to the provisioning server and download the configuration files. During the provisioning process, the phone will try to download the Common CFG file first, 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 file. The phone will then try to download and update the resource files.

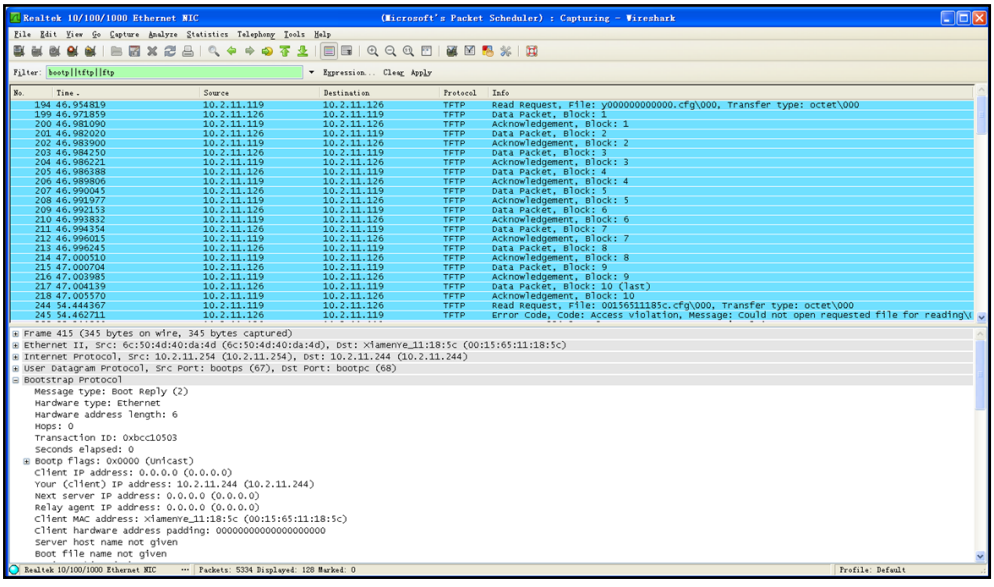
Verifying Configurations

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.

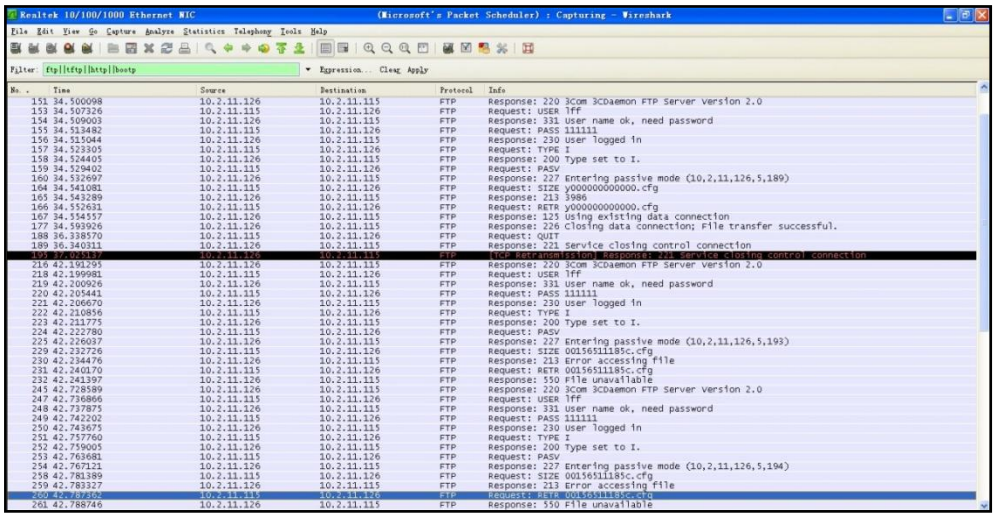
During the auto provisioning process, you can monitor the downloading request and response message by a WinPcap tool.

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.

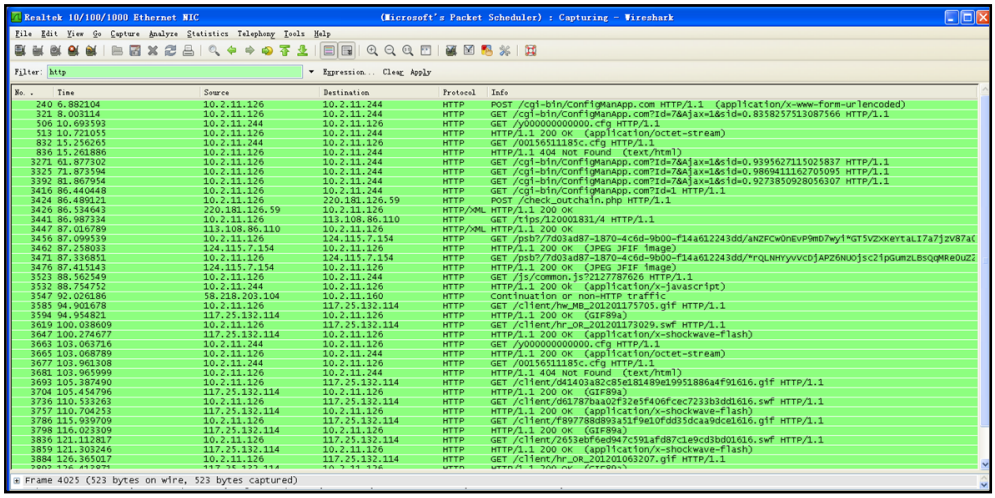
Example1: Yealink IP phone downloads configuration files from the TFTP server.



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.



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 o 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

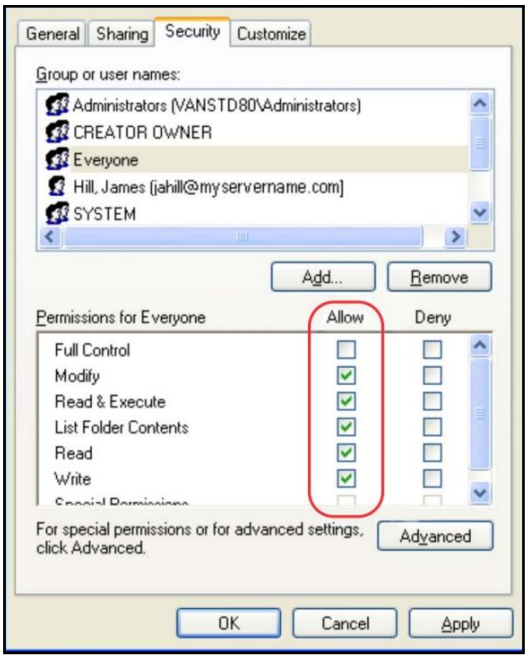
This chapter shows you how to configure a FTP server using 3CDaemon and how to configure a HTTP server using HFS tool. You can download the 3CDaemon software at: http://www.oldversion.com/3Com-Daemon.html and HFS at: http://www.snapfiles.com/get/hfs.html

Preparing a Root Directory

To prepare a root directory:

1. Create a root FTP directory on the local computer.
2. Store 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:



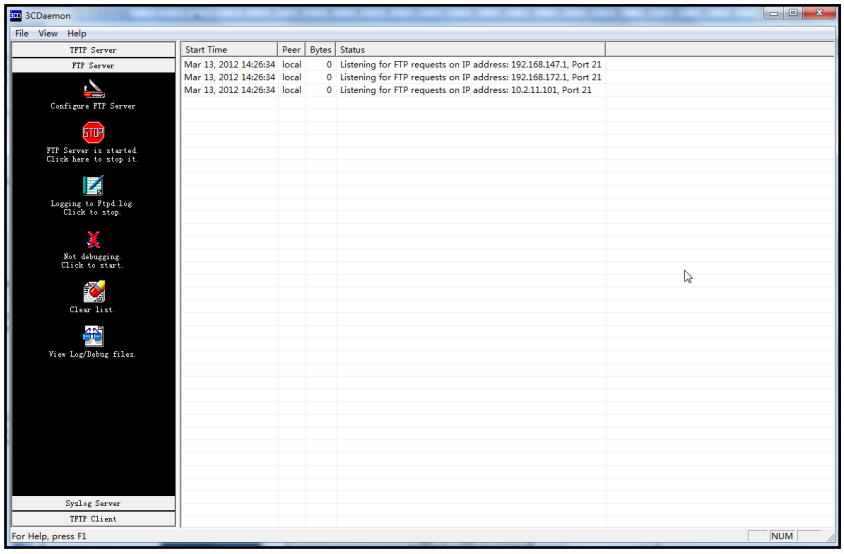
Configuring a FTP server

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

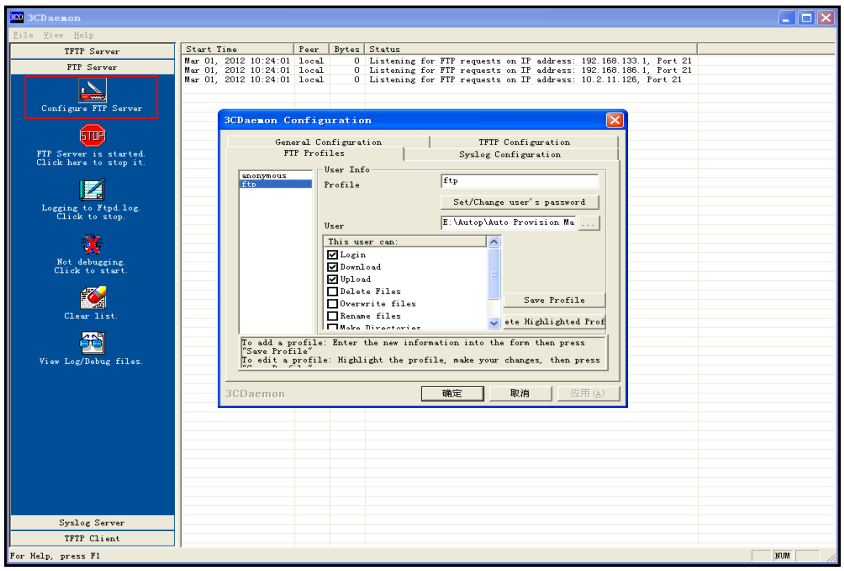
To configure a FTP server:

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:



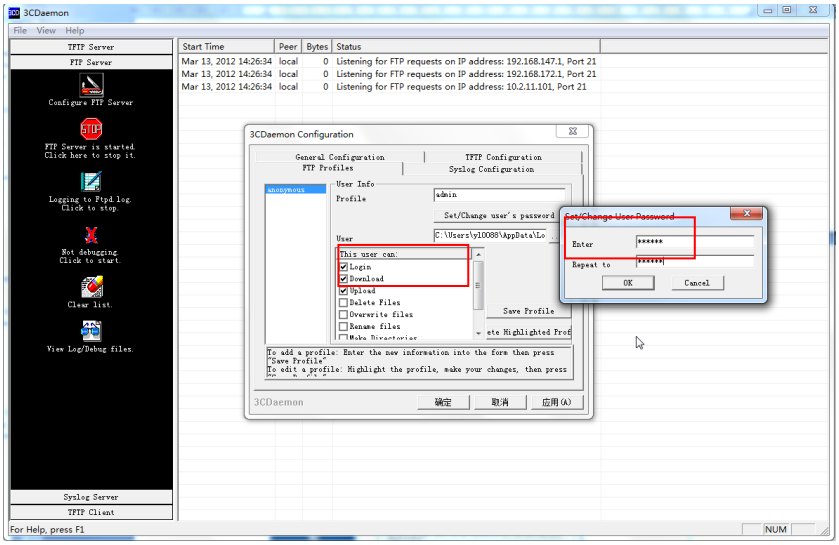
3. Select **Configure FTP Server**.
4. Click the button to locate the TFTP root directory on the computer:



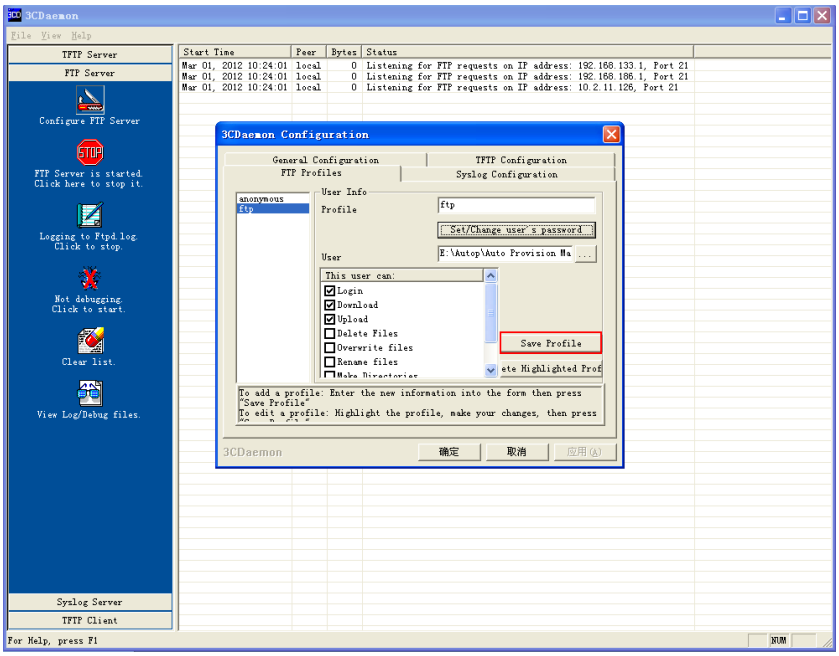
5. Enter the new authentication username in the **Profile** filed.
6. Click the **Set/Change user's password** button to set the password in the pop-up

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.



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 TFTP download.

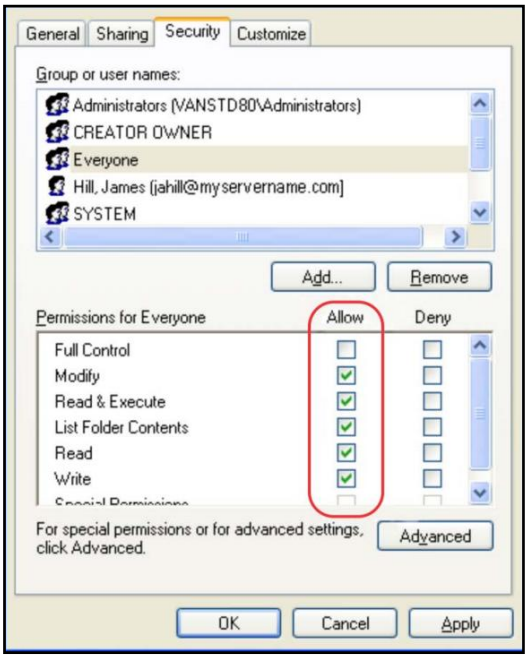
Configuring a HTTP Server

Preparing a Root Directory

To prepare a root directory:

1. Create a root HTTP directory on the local computer.
2. Store 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:



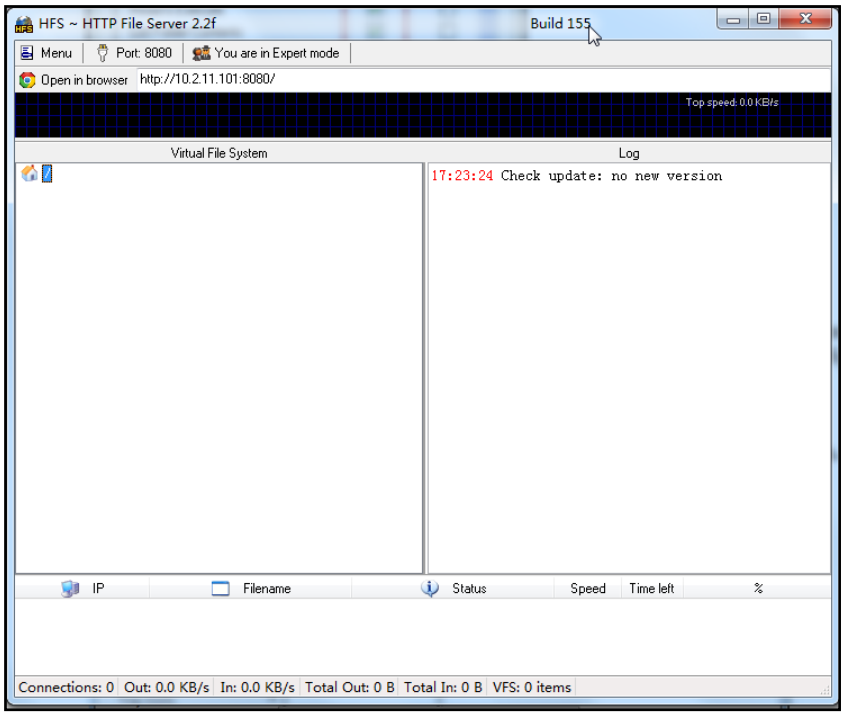
Configuring a HTTP Server

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

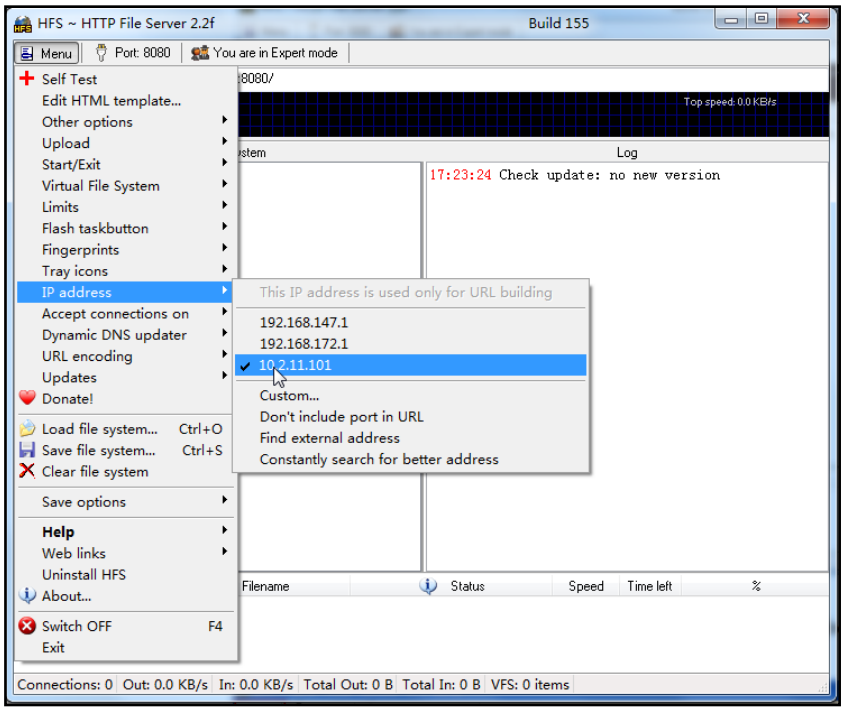
To configure a HTTP server:

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

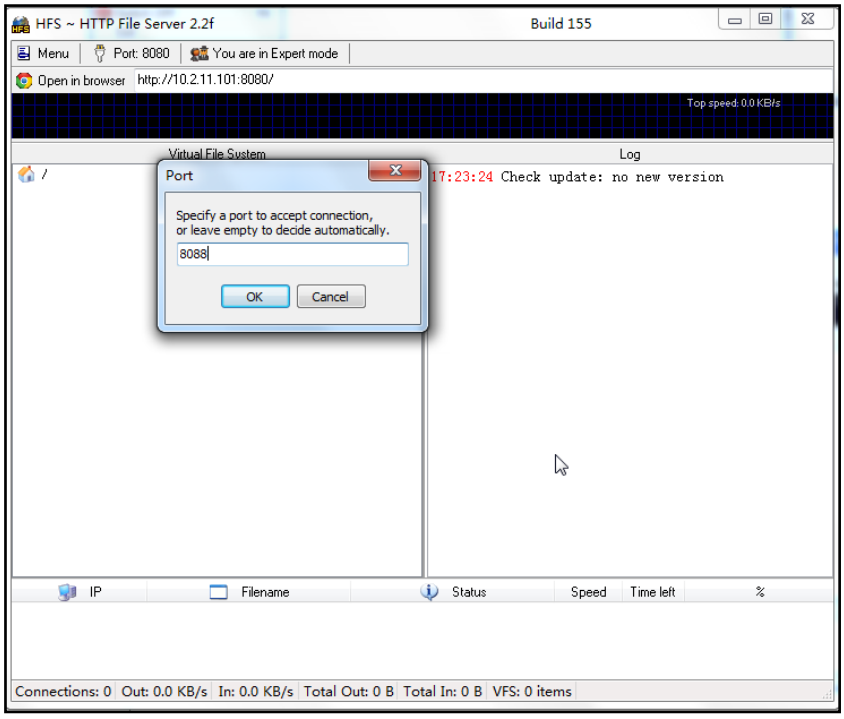
The main configuration page is shown as below:



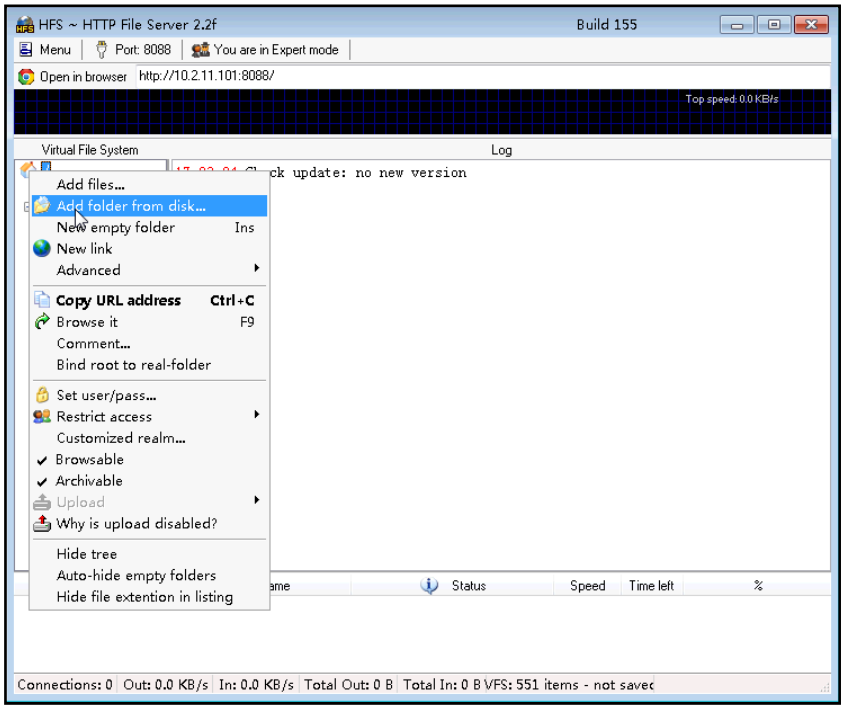
2. Click **Menu** in the main page and select the IP address of the PC from **IP address**.



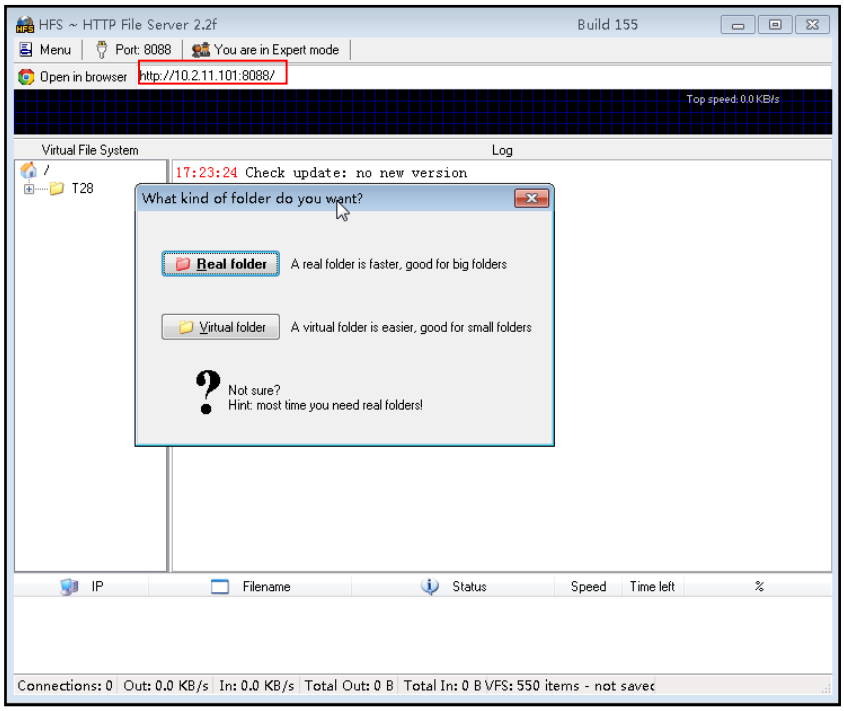
The default HTTP port is 8080. You can also reset the HTTP port (make sure the port isn't used before you reset).



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



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



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.

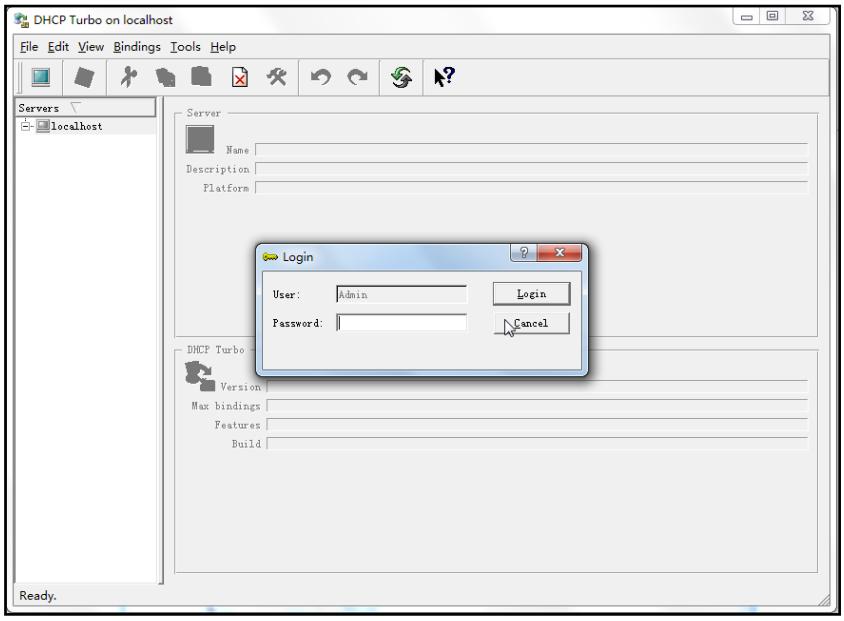
Before configuring the DHCP Turbo, make sure that:

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

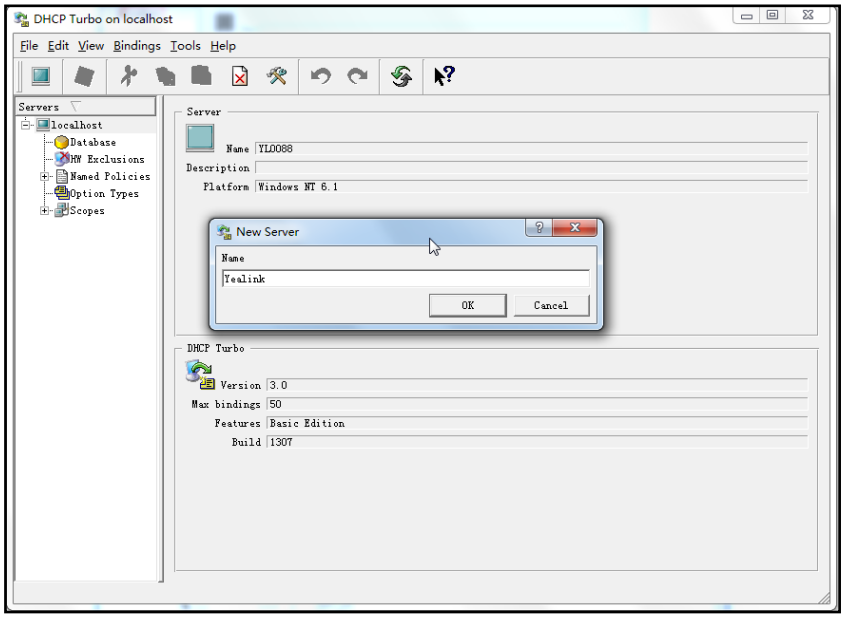
To configure the DHCP Turbo:

1. To start the DHCP Turbo application, double click the **localhost**.

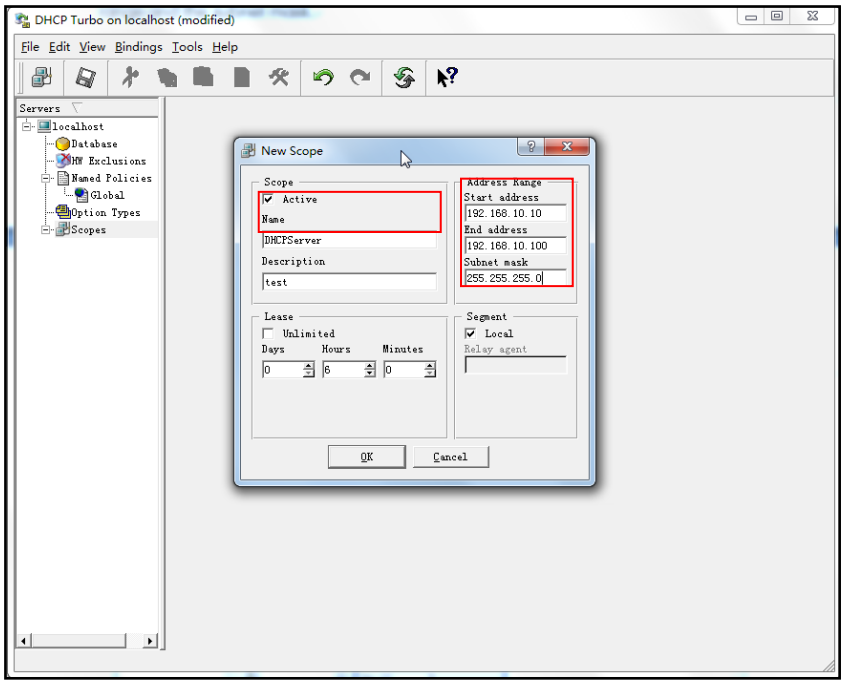
2. Click the **Login** button (the login password is blank) to log in.



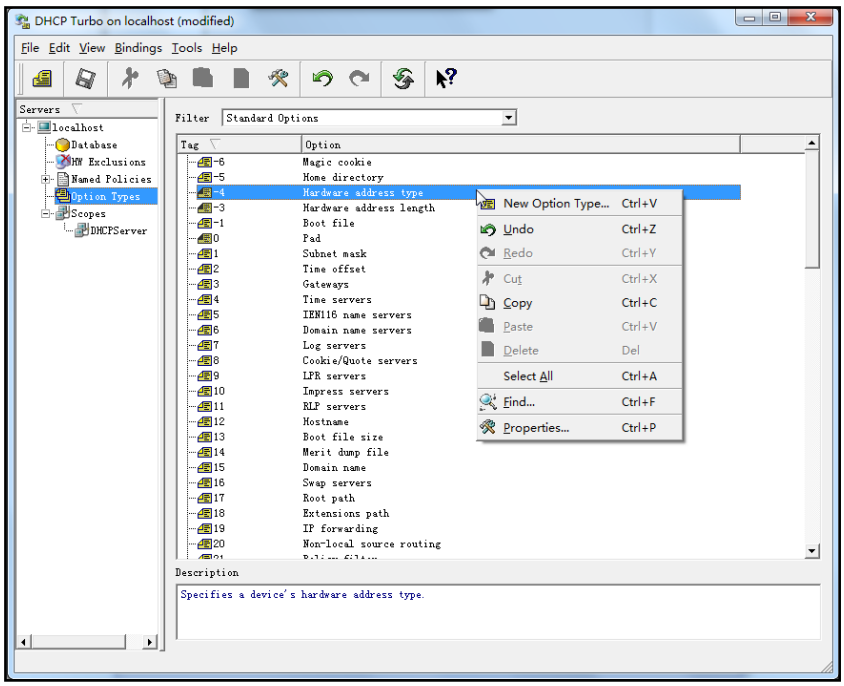
3. You can then edit the existed DHCP server, or you can right click the **localhost** and select **"New Server"** to add a new DHCP server.



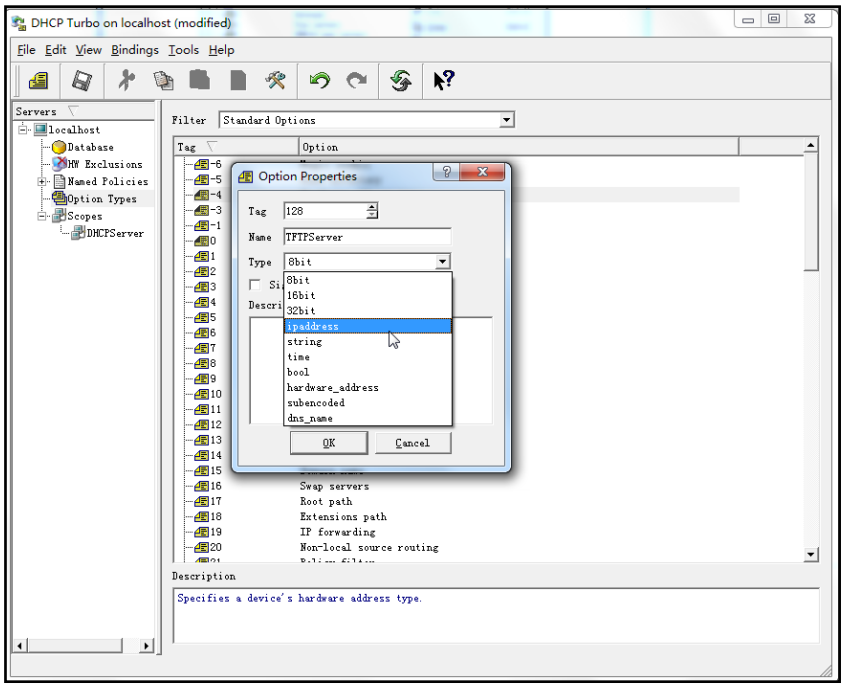
4. Right click the **Scopes** and select **New Scope**.
5. Configure the DHCP server name, the DHCP IP range and the subnet mask.



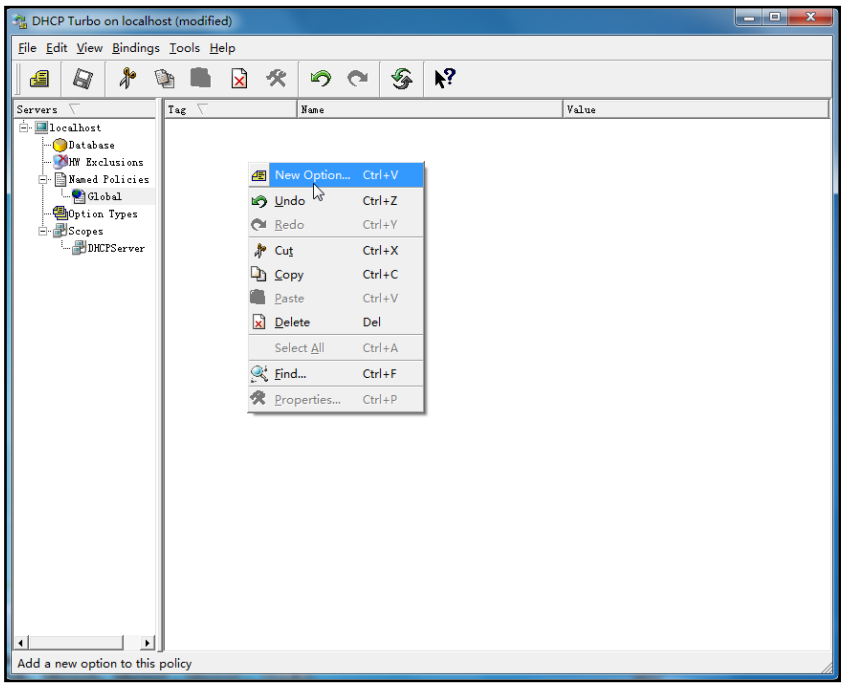
6. You can add a custom option via DHCP Turbo. Click **Option Type,** right click and select the **New Option Type** on the right of the main page.



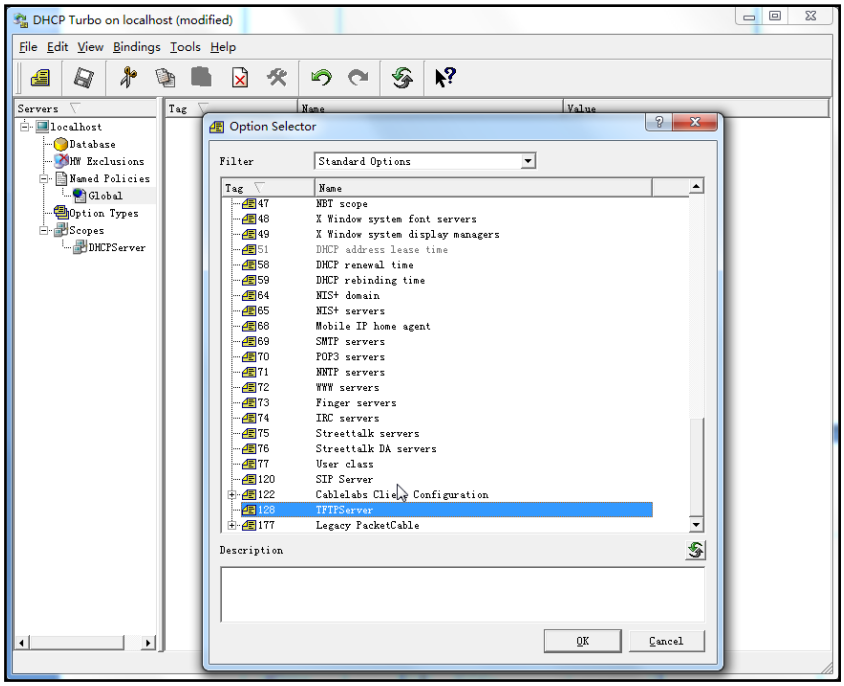
7. Set the custom DHCP option (custom DHCP option tag number ranges from 128 to 254) and select the option type (Yealink support the **String** and **IP Address** option type only). Click the **OK** button to finish setting the option properties. Click to save the change.



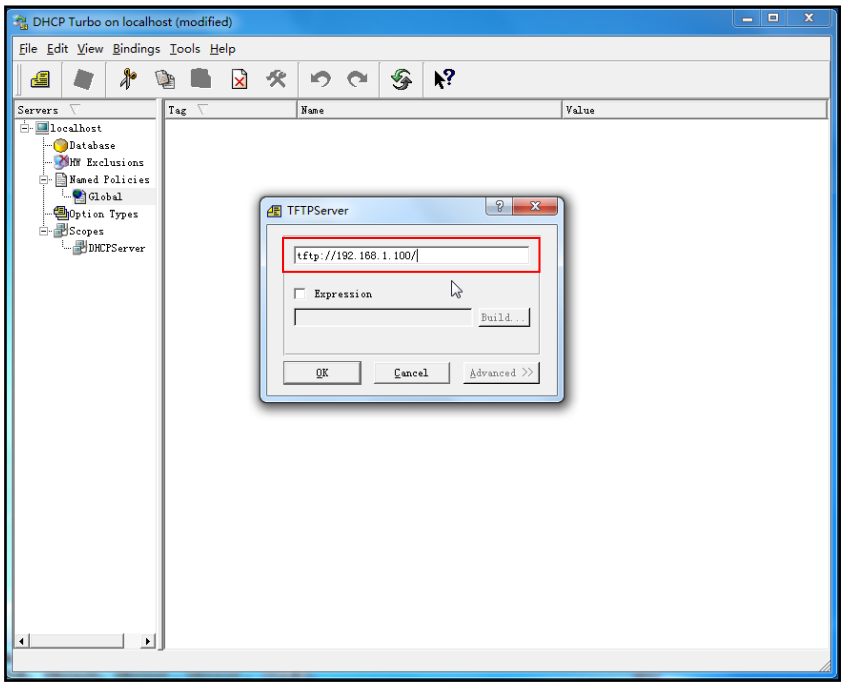
8. Click **Named Policies**-->**Global**, right click and select **New Option** on the left of the main page.



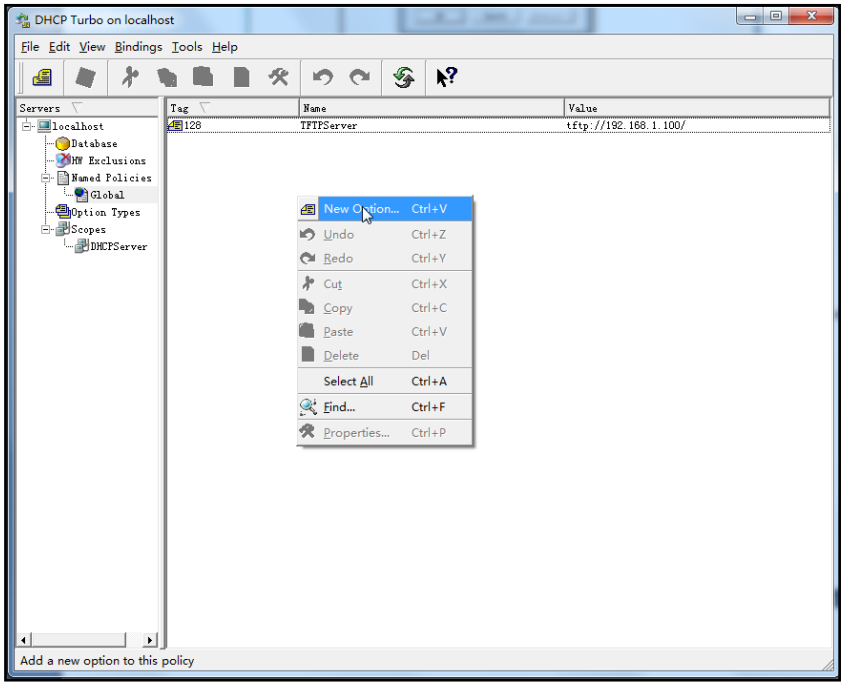
9. Scroll down and double click the custom option 128.

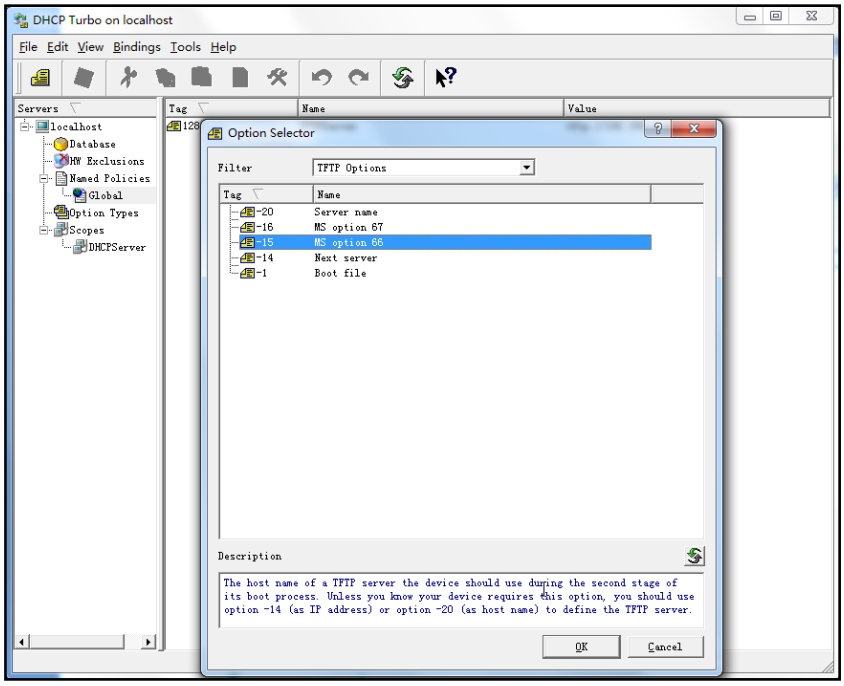


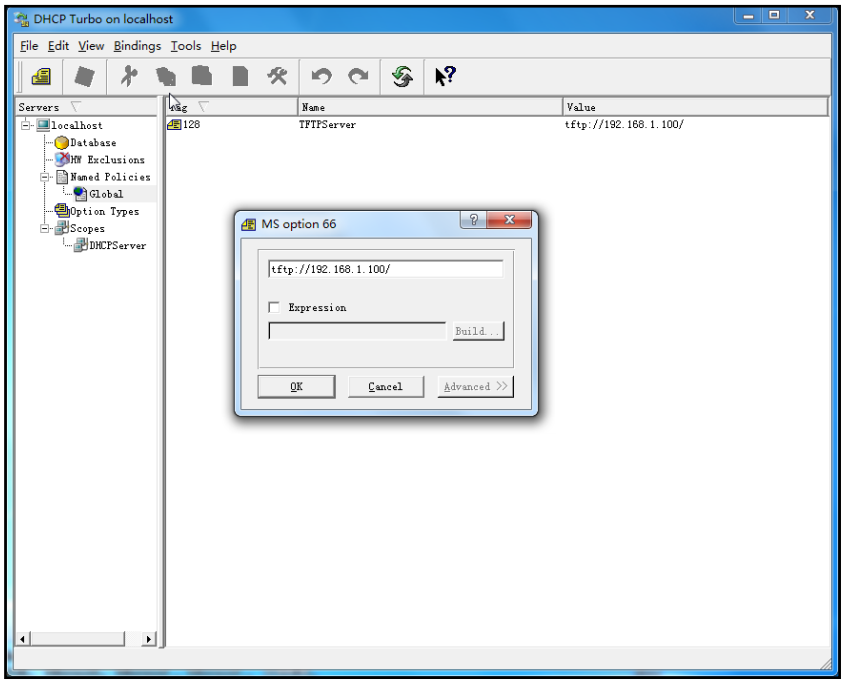
10. Fill the provisioning server address in the input field.
11. Click the **OK** button to finish setting a custom option.
12. Click to save the change.

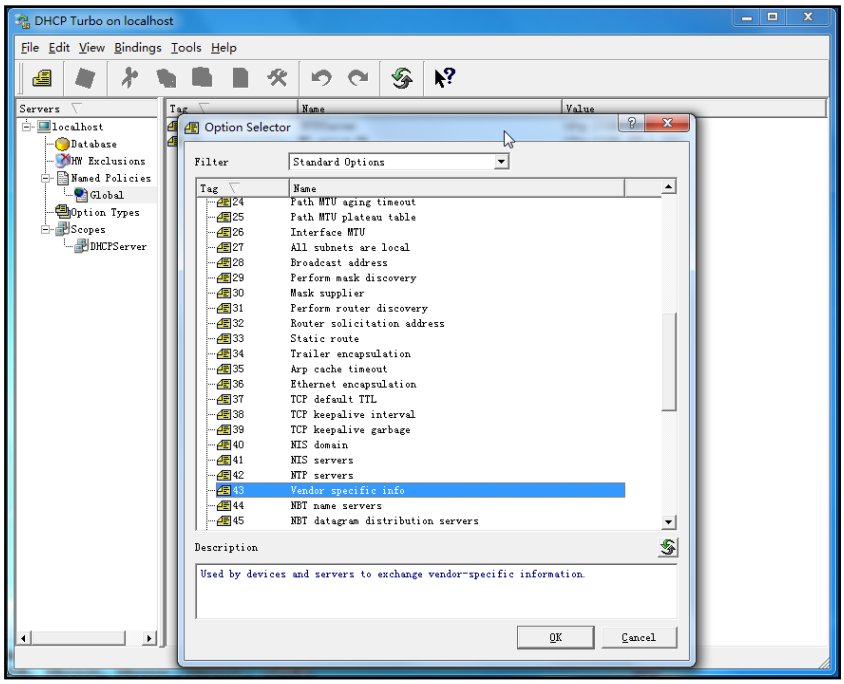


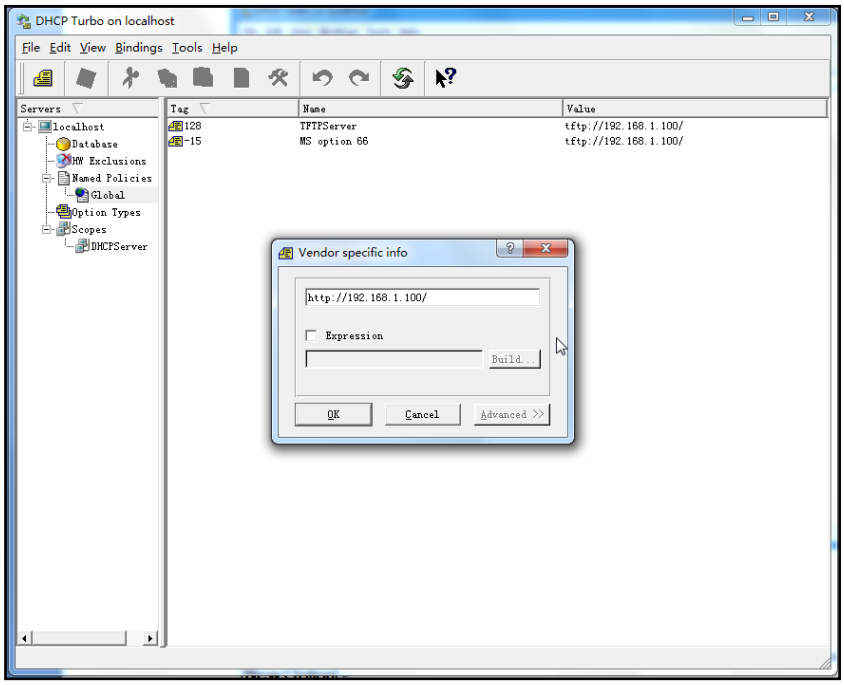
You can add the option 66 via DHCP Turbo. The following figures show the detailed processes.






DHCP Turbo on localhost
File Edit View Bindings Tools Help
Servers
localhost
Database
MW Exclusions
Named Policies
Global
Option Types
Scopes
DHCPServer
Tag
Name
Value
128
TFTPServer
tftp://192.168.1.100/
MS option 66
tftp://192.168.1.100/
Expression
Build...
OK
Cancel
Advanced >>


DHCP Turbo on localhost
File Edit View Bindings Tools Help
Servers
localhost
Database
MW Exclusions
Named Policies
Global
Option Types
Scopes
DHCPServer
Option Selector
Filter
Standard Options
Tag
Name
24 Path MTU aging timeout
25 Path MTU plateau table
26 Interface MTU
27 All subnets are local
28 Broadcast address
29 Perform mask discovery
30 Mask supplier
31 Perform router discovery
32 Router solicitation address
33 Static route
34 Trailer encapsulation
35 Arp cache timeout
36 Ethernet encapsulation
37 TCP default TTL
38 TCP keepalive interval
39 TCP keepalive garbage
40 NIS domain
41 NIS servers
42 NTP servers
43 Vendor specific info
44 NBT name servers
45 NBT datagram distribution servers
Description
Used by devices and servers to exchange vendor-specific information.
OK
Cancel


DHCP Turbo on localhost
File Edit View Bindings Tools Help
Servers
localhost
Database
MW Exclusions
Named Policies
Global
Option Types
Scopes
DHCPServer
Tag
Name
Value
128
TFTPServer
tftp://192.168.1.100/
-15
MS option 66
tftp://192.168.1.100/
Vendor specific info
http://192.168.1.100/
Expression
Build...
OK
Cancel
Advanced >>

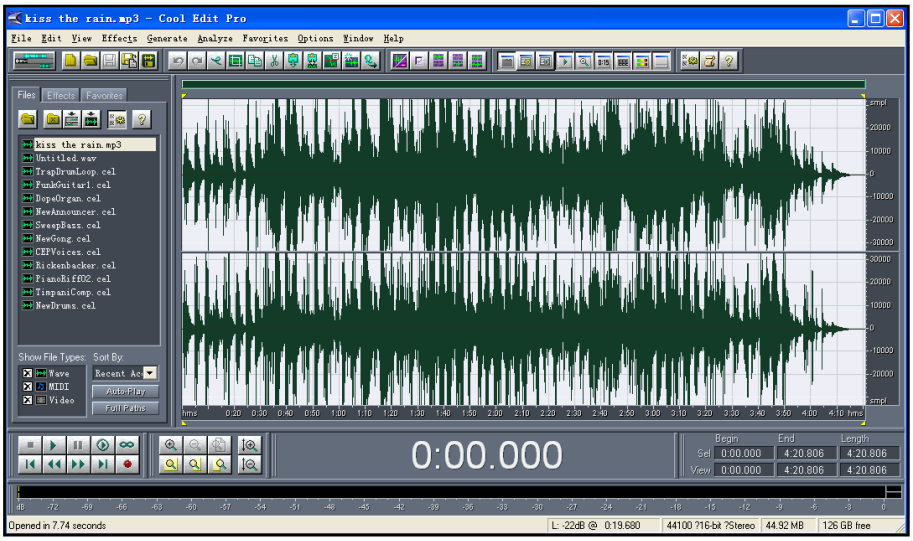
Customizing a Ringtone Using CoolEdit Pro

If you have installed the Coo 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.

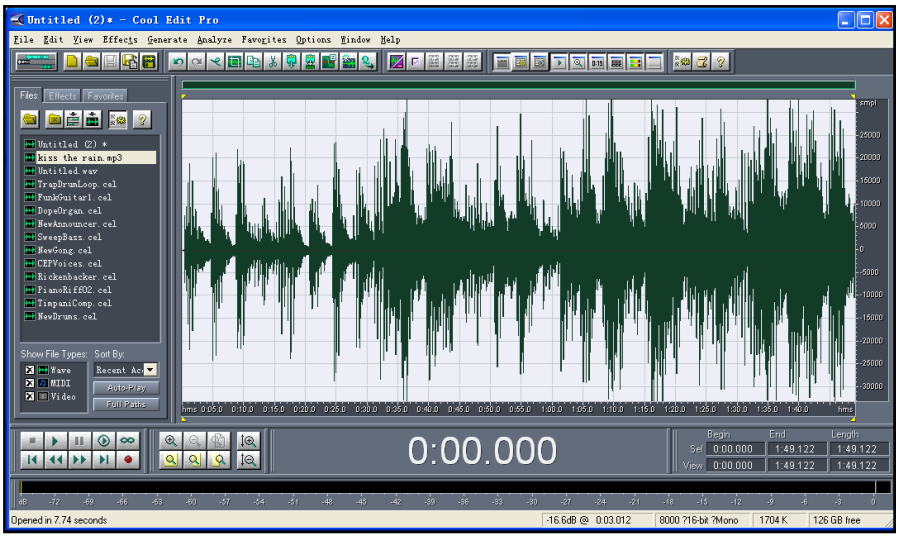
To customize a ringtone using Coo Edit Pro:

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:



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.

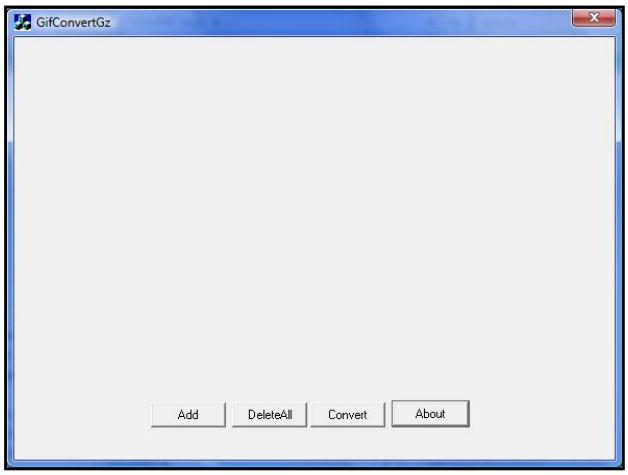


7. Select **File->Save as** to save the new audio file. On the Save waveform page, select the file format as **A/mu-law wave**.

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.

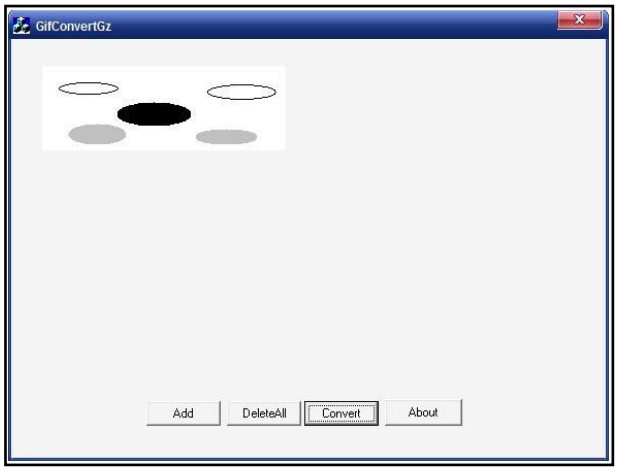
1. Double click the PictureExDemo.exe.



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.