Yealink

Yealink W52P Auto Provisioning User Guide

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Introduction

Yealink W52P IP DECT phones are full-featured devices 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 W52P IP DECT phones with the minimum settings required. Yealink W52P IP DECT phones support FTP, TFTP, HTTP and HTTPS protocols for file download and are configured by default to use TFTP (Trivial File Transfer Protocol).

The purpose of this guide is to serve as a basic guidance for provisioning Yealink W52P IP DECT phones.

Getting Started

This chapter shows you how to get ready for auto provisioning. The topics include:

Configuring a Provisioning Server

Yealink W52P IP DECT phones support using FTP, TFTP, HTTP and HTTPS protocols to download configuration files. You should configure a provisioning server for provisioning purpose. To download the configuration files using TFTP protocol, a TFTP server should be configured as the provisioning server. The following section introduces you how to configure a TFTP server.

For more information about configuring a FTP server or a HTTP server, refer to Configuring a FTP Server on page 36 and Configuring a HTTP Server on page 39.

Configuring a TFTP Server

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

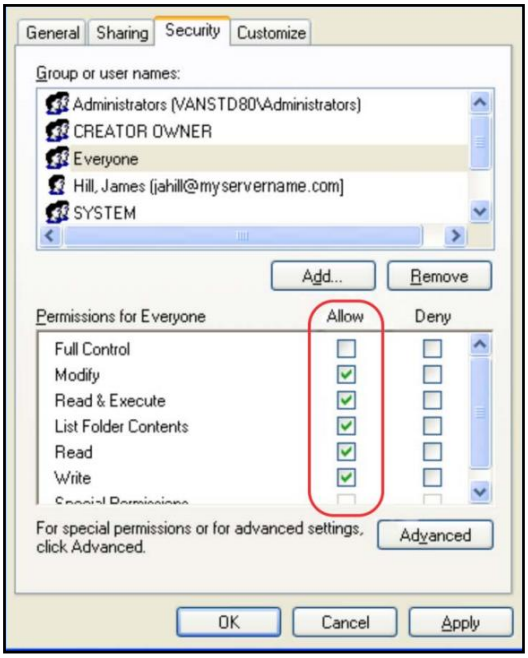
Take 3CDaemon application as an example in this section.

To create a root directory:

1. Create a TFTP root directory on the local system.

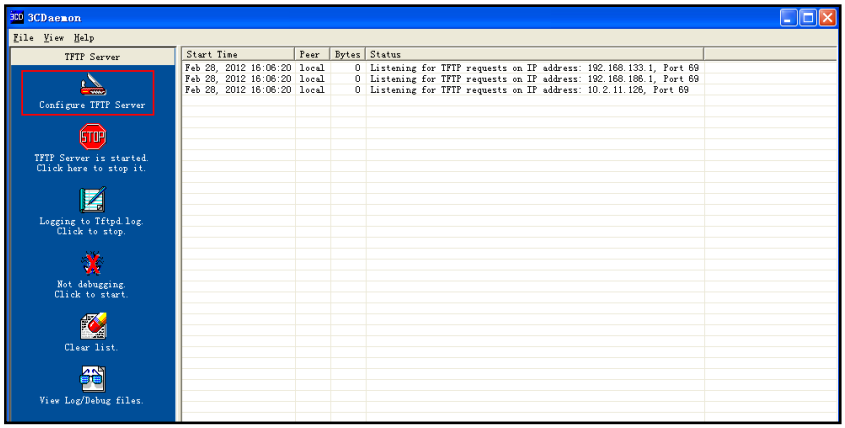
2. Configure the security permissions for the TFTP root directory.

   You need to define a user or a group name, and assign the permissions: read, write, and modify files to the user or the group.

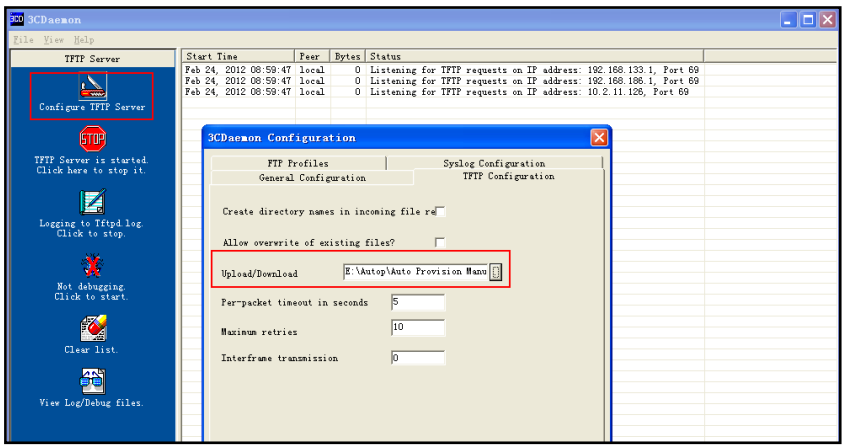


To configure a TFTP server:

1. Double click the 3CDaemon.exe to run the application.
2. Select **Configure TFTP Server**.



3. Click  to locate the TFTP root directory you have configured from the local system.



4. Click **Confirm** to finish configuring the TFTP server.

The server URL "tftp://IP/" (Here "IP" means the IP address of your local system, for example, "tftp://192.168.1.100/") can be used for TFTP download.

Obtaining Configuration Files

Before the provisioning process, you need to obtain the configuration files of the phone. You can ask the Yealink field application engineer or the distributor for 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 tries to download these two configuration files from the provisioning server during the provisioning process.

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 phones of the same phone model. It uses the fixed name "y000000000025.cfg".

Gathering the Following Information

You also need to gather the following information in advance:

MAC Address: The unique 12-digit serial number of the phone that you want to provision separately. You can obtain it from the bar code at the back of the base station.

Registration Information: The SIP credentials such as user name, password and the address of the account's registration server. Ask your system administrator for the information of SIP accounts you want to register. Configure the registration information in the MAC-Oriented file to register SIP accounts on a per-phone basis.

Managing Configuration Files

Auto provisioning allows the phones to be configured automatically via downloading the Common CFG file (y000000000025.cfg) and MAC-Oriented CFG file. You need to edit your configuration files and store them to the root directory of the TFTP server before provisioning.

When editing the configuration files, remember the following:

- Configurations in the configuration files override those stored in the phone's flash memory.
- The .cfg extension of the configuration files must be in lowercase.
- Each line in a configuration file must use the following format and adhere to the following rules:

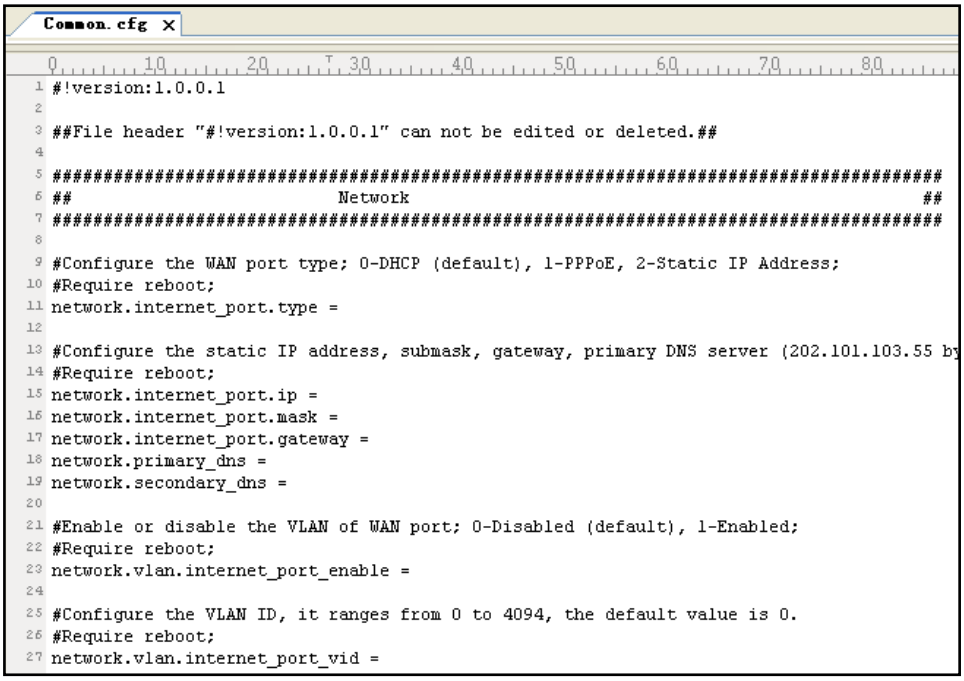
  ```
  variable-name = value
  ```

  - Associate only one value with one variable.
  - Separate variable name and value with an equal sign.
  - Set only one variable per line.
  - Put the variable and value on the same line, and do not break the line.
  - Comment the variable on a separated line. Use the pound (#) delimiter to distinguish the comments.
- The file header "#!version:1.0.0.1" in the configuration files is not a comment and Can Not be edited or deleted.

Editing the Common CFG File

Common CFG file (y000000000025.cfg) contains configuration parameters which apply to all phones of the same phone model.

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



To edit the Common CFG file:

1. Use an ASCII editor to open the file.
2. Edit the parameters in the file.
3. Save the change.
4. Rename the file to be "y000000000025.cfg".
5. Store the file to the root directory of the TFTP server.

The following lists the commonly edited parameters in the Common CFG file:

```
#######################################################
##                  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.
#Require reboot.

network.internet_port.type =

#Configure the network settings of the base station.

network.internet_port.ip =

network.internet_port.mask =

network.internet_port.gateway =

network.primary_dns=
```

network.secondary_dns =

#Configure the HTTP port (80 by default) of the web server. It ranges from 1 to 65535. #Require reboot.

network.port.http =

#Configure the HTTPS port (443 by default) of the web server. It ranges from 1 to 65535. #Require reboot.

network.port.https =

#Configure the recovery mode.

recovery_mode.getwayip=

recovery_mode.phone_ip=

recovery_mode.server_ip=

recovery_mode.netmask=

#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 AES key (16 characters) for decrypting the Common CFG file.

auto_provision.aes_key_16.com =

#Configure the AES key (16 characters) for decrypting the MAC-Oriented CFG file.

auto_provision.aes_key_16.mac =

#Configure the pin code of the base station.

base.pin_code=

#Enable or disable the call waiting feature; 0-Disabled, 1-Enabled (default);

call_waiting.enable =

#Enable or disable the playing of call waiting tone; 0-Disabled, 1-Enabled (default);

call_waiting.tone =

#Configure the area code.

dialplan.area_code.code =

dialplan.area_code.min_len =

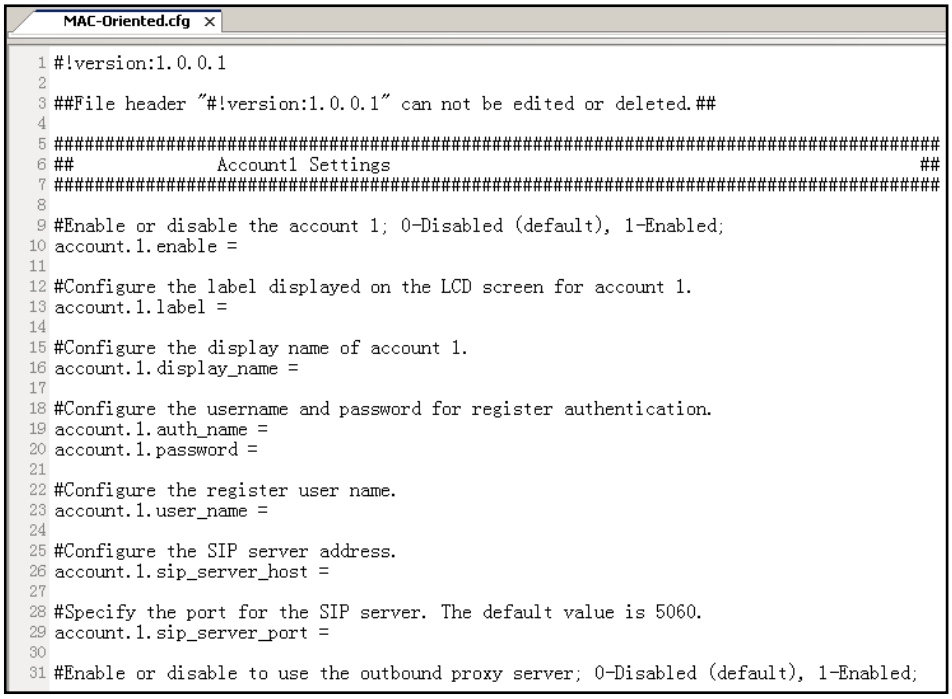
dialplan.area_code.max_len =

dialplan.area_code.line_id =

Editing the MAC-Oriented CFG File

MAC-Oriented CFG file contains configuration parameters which are only effectual for the specific phone.

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



To edit the MAC-Oriented CFG file:

1. Use an ASCII editor to open the file.
2. Edit the parameters in the file.
3. Save the change.
4. Rename the file with the MAC address of the phone, such as: "0015653828DA.cfg".
5. Store the file to the root directory of the TFTP server.

The following lists the commonly edited parameters of account1 in the MAC-Oriented CFG file:

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

#Account 1 Settings
#Enable or disable the account1; 0-Disabled (default), 1-Enabled;

account.1.enable =
```

#Configure the label of account1 which will display on the 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 =

#Enable or disable the anonymous call feature; 0-Disabled (default), 1-Enabled;

account.1.anonymous_call =

#Configure the on code and off code of the anonymous call feature.

account.1.anonymous_call_oncode =

account.1.anonymous_call_offcode =

#Enable or disable the reject anonymous call feature; 0-Disabled (default), 1-Enabled;

account.1.reject_anonymous_call =

#Configure the on code and off code of the reject anonymous call feature.

account.1.anonymous_reject_oncode =

account.1.anonymous_reject_offcode =

Configure the DND feature on account1.

account.1.dnd.enable =

account.1.dnd.on_code =

account.1.dnd.off_code =

#Configure the always forward feature on account1.

account.1.always_fwd.enable =

account.1.always_fwd.target =

account.1.always_fwd.on_code =

account.1.always_fwd.off_code =

Encrypting Configuration Files

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

The AES keys must be configured on the phone before the auto provisioning process. You can configure the AES keys via web user interface at the path: **Phone->Auto Provision**.

Preparing Resource Files

When configuring some specified features, you need to prepare the required resource files beforehand. Store the resource files to the root directory of the TFTP server and specify the access URLs of the resource files in the configuration files. The phone will download the resource files and update the corresponding settings when reading the URLs from the configuration files.

The following sections introduce you how to prepare common resource files and specify the access URLs of the resource files.

Yealink provides some template resource files for customizing the specified features.

Customizing the 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 (*DialPlan.xml*). When the phone downloads the replace rule file, the existing replace rules on the phone will be overwritten. You can create at most 20 replace rules for the phone.

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.
- Create replace rules between <dialrule> and </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 (DialPlan.xml).

The basic expression syntax of the replace rule is listed in the following table:

.	The dot "." can be used as a placeholder or multiple placeholders for any string. Example: "12." would match "123", "1234", "12345", "12abc", etc.
x	The "x" can be used as a placeholder for any character. Example: "12x" would match "121", "122", "123", "12a", etc.
-	Numeric ranges are allowed within the brackets: Digit "-" Digit. Example: "[5-7]" would match the number"5", "6"or "7".
[]	The square bracket "[]" can be used as a placeholder for a single character which matches any of a set of characters. Example: "91[5-7]1234" would match "91**5**1234", "91**6**1234", "91**7**1234", etc.
()	The parenthesis "()" can be used to group together patterns, for instance, to logically combine two or more patterns. Example: "([1-9])([2-7])3" would match "**92**3", "**15**3", "**67**3", etc.
$	The "$" followed by the sequence number of a parenthesis means the characters placed in the parenthesis. The sequence number stands for the corresponding parenthesis. Example: A replace rule configuration, Prefix: "9([5-7]) (.)", Replace: "5$2". When you dial out "96123" on your phone, the phone will replace the number as "5123" and then dial out. "$2" means the characters in the second parenthesis, that is, "123".

To customize a replace rule file:

1. Open the template file (*DialPlan.xml*) 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 rule="" replace="" lines=""/>

   Where:

   rule="" specifies the number to be replaced.

   replace="" specifies the alternate string.

   lines="" specifies the desired line(s) for this rule. When leaving it blank or entering an invalid value, 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:

```
<dialrule>
  <data rule="1" replace="05928665234" lines=""/>
  <data rule="2(xx)" replace="002$1" lines="0"/>
  <data rule="5([6-9])(.)" replace="3$2" lines="1,2,3"/>
  <data rule="0(.)" replace="9$1" lines="2"/>
  <data rule="1009" replace="05921009" lines="1"/>
</dialrule>
```

Specifying the Access URL

After editing the replace rule file, you need to store the file to the root directory of the TFTP server, and then specify the access URL of the replace rule file in the configuration file. The parameter "*dialplan_replace_rule.url*" in the Common CFG file is used to specify the access URL of the replace rule file. Enter the URL in the field as following:

```
#######################################################
##              Configure the access URL of the replace rule file              ##
#######################################################
dialplan_replace_rule.url = tftp://192.168.1.100/DialPlan.xml
```

Customizing the Local Contact File

You can add contacts manually on the handset. In some cases, you may want to add multiple contacts to the desired handset at the same time. You can create multiple contacts using the supplied template local contact files (*contact_handsetx_list.xml* or *contact_handsetx_list.csv*).

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

- <root_contact> indicates the start of the template file and </root_contact> indicates the end of the template file.
- Add local contacts between <root_contact> and </root_contact>.
- The name of the contact file **contact_handsetx_list.xml** or **contact_handsetx_list.csv** should be modified according to your requirement ("x" ranges from 0-4 and corresponds to internal handset number 1-5. For example, if you want download this contact file to handset 1, the contact file name must be **contact_handset0_list.xml** or **contact_handset0_list.csv**).

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 display_name="" office_number="" mobile_number=""/>

   Where:

   display_name="" specifies the name of the contact.

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

   mobile_number="" specifies the mobile number of the contact.
3. Specify the values within double quotes.
4. Save the change.
5. Rename the file (e.g. **contact_handset1_list.xml** or **contact_handset1_list.csv** for handset 2).

The following shows an example of the contact_handset1_list.xml file:

```
<root_contact>
  <contact display_name="Alice" office_number="2215" mobile_number=""/>
  <contact display_name="Bob" office_number="2216" mobile_number=""/>
</root_contact>
```

Specifying the Access URL

After editing the local contact file, you need to store the file to the root directory of the TFTP server, and then specify the access URL of the local contact file in the configuration file. The parameter "*handset.X.contact_list.url*" in the Common CFG file is used to specify the access URL of the local contact file. Enter the URL in the field as following:

```
#######################################################
##              Configure the access URL of the local contact file              ##
#######################################################
handset.X.contact_list.url = tftp://192.168.1.100/contact_handset1_list.xml
```

Uploading the Firmware File

You can update the firmware of the base station manually via web user interface. You can also automatically update the firmware of mass base stations via auto provisioning. Obtain the latest firmware file (e.g. 25.10.0.19.rom) from the Yealink FAE. Store the firmware file to the root directory of the TFTP server, and then specify the access URL of this firmware file in the configuration file.

The parameter "*firmware.url*" in the Common CFG file is used to specify the access URL of the firmware file. Enter the URL in the field as following:

```
#######################################################
##              Configure the access URL of the Firmware File              ##
#######################################################
firmware.url = tftp://192.168.1.100/25.10.0.19.rom
```

Obtaining Provisioning Server Address

To connect to the provisioning server and download the configuration files, the phone should obtain the provisioning server address beforehand. Yealink W52P IP DECT phones support obtaining the provisioning server address via three ways: Plug and Play (PnP), DHCP options and phone flash.

When the phone boots up, it will go by the three ways mentioned above to try to obtain the provisioning server address. The priority of ways for obtaining the provisioning server address is: PnP-->DHCP options (Custom option-->option 66 -->option 43) -->phone flash.

This chapter describes how to obtain the provisioning server address using each way and configure the updating modes for triggering the auto provisioning process in detail. The topics include:

Plug and Play (PnP)

Yealink W52P IP DECT phones support obtaining the provisioning server address from the PnP server. To obtain the provisioning server address from the PnP server, make sure the PnP feature is enabled.

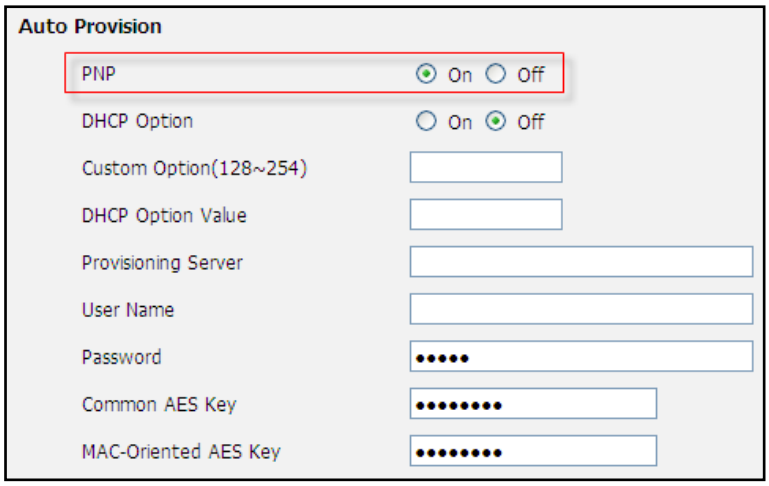
The phone can only obtain the provisioning server address from the PnP server during bootup by default.

Make sure the provisioning server address is preconfigured on the PnP server.

To enable the PnP feature via web user interface:

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

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



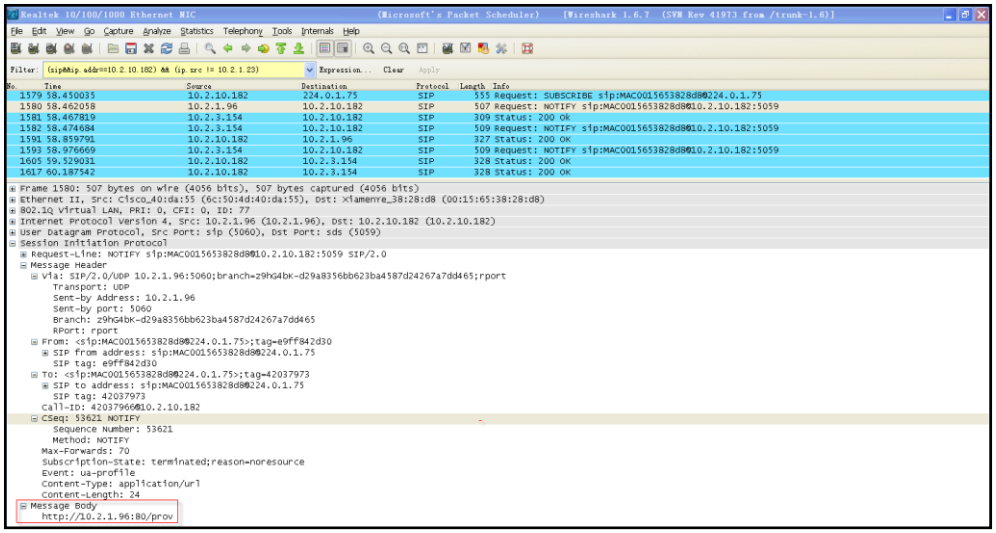
3. Click **Confirm** to accept the change.

To obtain the provisioning server address from the PnP server:

1. Reboot the phone.

   The phone will send SIP SUBSCRIBE messages to a multicast address to request the provisioning server address during bootup. Any PnP server understanding the messages will response with a SIP NOTIFY message. The provisioning server address is contained in the message body. The phone will strip out the provisioning server address in the message.

You can monitor the request and response messages using a WinPcap tool. The following figure shows the example messages of obtaining the TFTP server address from the PnP server:



DHCP Options

Yealink W52P IP DECT phones support obtaining the provisioning server address by

detecting DHCP options.

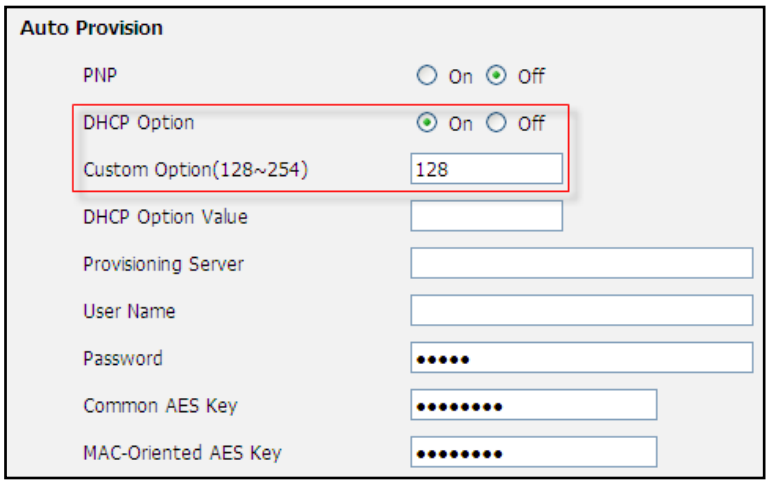
You can configure the phone to obtain the provisioning server address from a custom DHCP option, or the phone will automatically detect the option 66 or option 43. DHCP option 66 is used to identify the TFTP server. DHCP option 43 is a vendor-specific option, which is used to transfer the vendor-specific information.

To obtain the provisioning server address via DHCP options, configure a DHCP server beforehand and make sure that the DHCP option is set properly.

For more information about configuring a DHCP server, refer to Configuring a DHCP Server on page 42.

To configure a custom option via web user interface:

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



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

   If you only mark the **On** radio box in the **DHCP Option** field and leave the **Custom Option (128~254)** field blank, the phone will automatically detect option 66 or option 43.

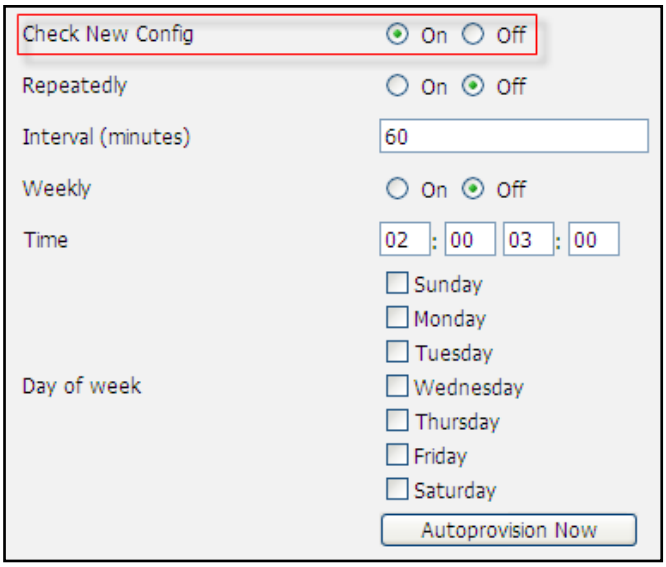
A valid Custom Option value is from 128 to 254. The custom option must be in accordance with the one defined when configuring the DHCP server.

To enable the Power On mode via web user interface:

In order to obtain the provisioning server address using DHCP options during bootup, make sure the Power On mode is activated before rebooting the phone.

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

2. Mark the **On** radio box in the **Check New Config** field.



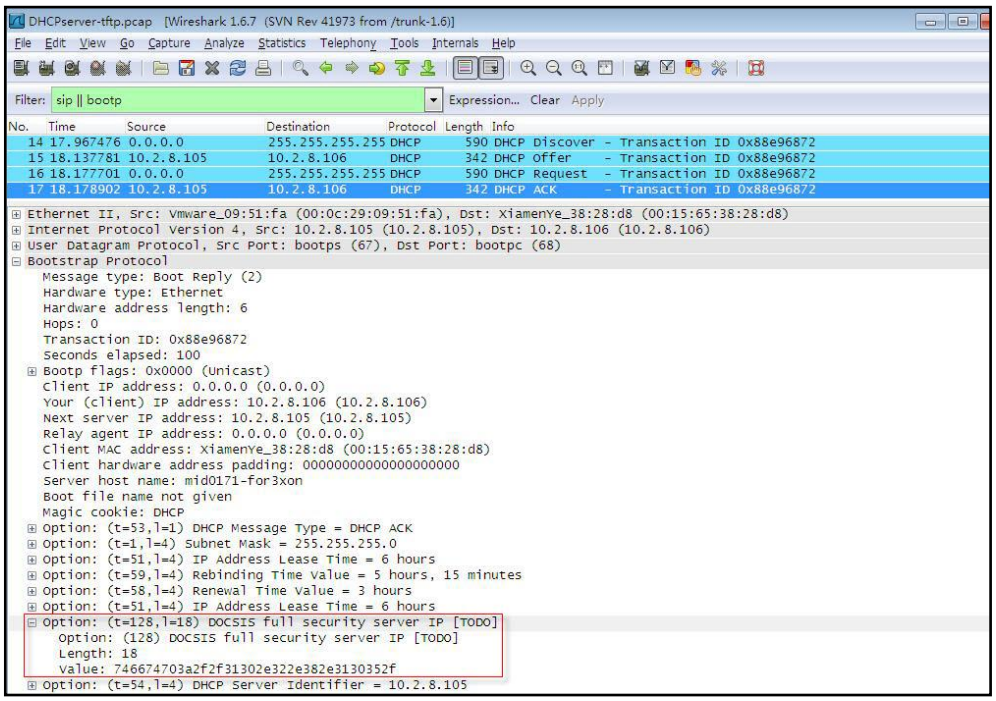
3. Click **Confirm** to accept the change.

To obtain the provisioning server address via DHCP options:

1. Reboot the phone.

   The phone will send DHCP request with DHCP options to request the provisioning server address and receive DHCP response during bootup. The provisioning server address will be embedded inside the DHCP options of the DHCP response received.

You can monitor the request and response messages using a WinPcap tool. The following figure shows the example messages of obtaining the TFTP server address via the custom DHCP option:



Right click the root node of the custom option (option 128) shown on the above figure, and select **Copy**->**Bytes**->**Printable Text Only**. Paste the copied text in your favorite text editor to check the address, for example, tftp://10.2.8.105/.

In addition to the Power On mode, you can also trigger the phone to obtain the provisioning server address via DHCH options using other updating modes. For more information about the other updating modes, refer to Configuring the Updating Mode on page 26.

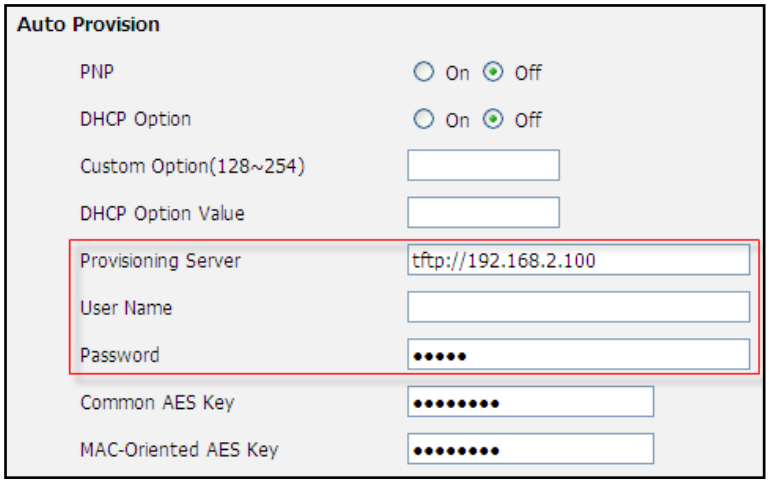
Phone Flash

Yealink W52P IP DECT phones support obtaining the provisioning server address from the phone flash. To obtain the address from the phone flash, you need to configure the TFTP server address manually via web user interface in advance.

To specify the provisioning server URL via web user interface:

If the phone wants to connect to a FTP server, the username and password are required.

1. Click on **Phone**->**Auto Provision**.
2. Enter the URL of the TFTP server in the **Provisioning Server** field.
3. (Optional.) Enter the username of the provisioning server in the **User Name** field.
4. (Optional.) Enter the password of the provisioning server in the **Password** field.



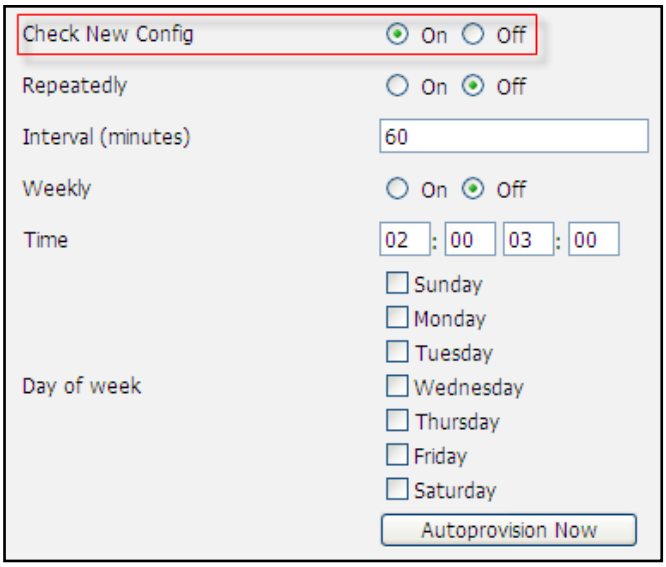
5. Click **Confirm** to accept the change.

To enable the Power On mode via web user interface:

In order to obtain the provisioning server address from the phone flash during bootup, make sure the Power On mode is activated before rebooting the phone.

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

2. Mark the **On** radio box in the **Check New Config** field.



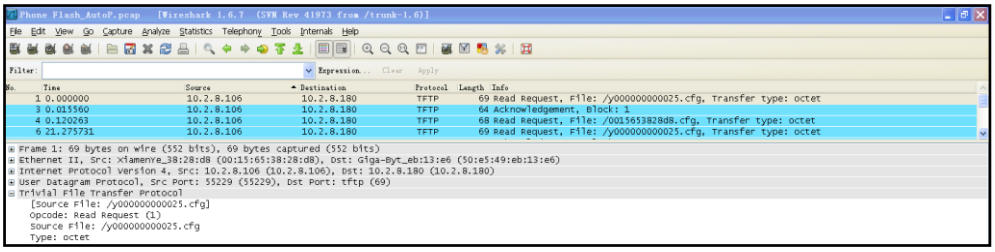
3. Click **Confirm** to accept the change.

To obtain the provisioning server address from the phone flash:

1. Reboot the phone.

   The phone will obtain the provisioning server address by reading the corresponding parameter you have configured via web user interface during bootup.

The following figure shows the example messages of obtaining the provisioning server address from the phone flash and connecting to the provisioning server:



In addition to the Power On mode, you can also trigger the phone to obtain the provisioning server address via the phone flash using other updating modes. For more information about the other updating modes, refer to Configuring the Updating Mode on page 26.

Configuring the Updating Mode

In addition to the Power On mode, the following five updating modes can also be used to trigger the auto provisioning process:

- Repeatedly
- Weekly

- Auto Provision Now
- Multi-mode mixed
- SIP Notify Message

This section introduces each update mode in detail.

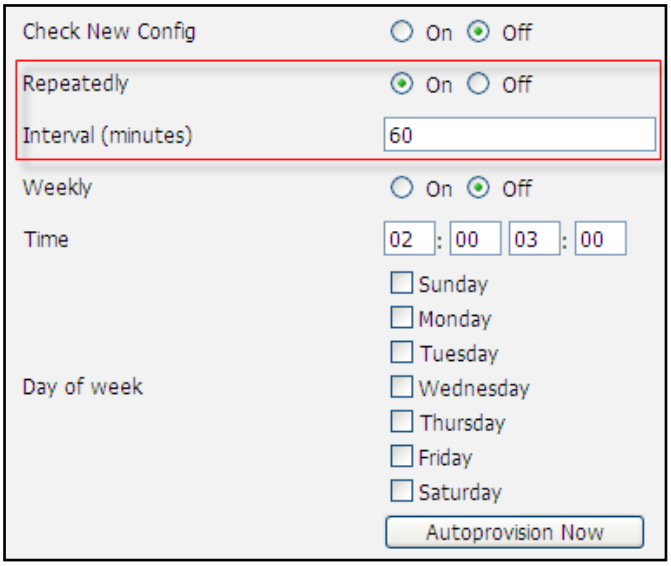
When the phone is during a call, it will keep on asking for the configuration files with an interval of 30 seconds for up to 2 hours.

Repeatedly

You can activate Repeatedly mode via web user interface. The phone will perform auto provisioning process at regular intervals. You can configure the interval for the Repeatedly mode. The default interval is 60 minutes.

To activate Repeatedly mode via web user interface:

1. Click on **Phone**->**Auto Provision**.
2. Mark the **On** radio box in the **Repeatedly** field.
3. Enter the interval time (in minutes) in the **Interval (minutes)** field.



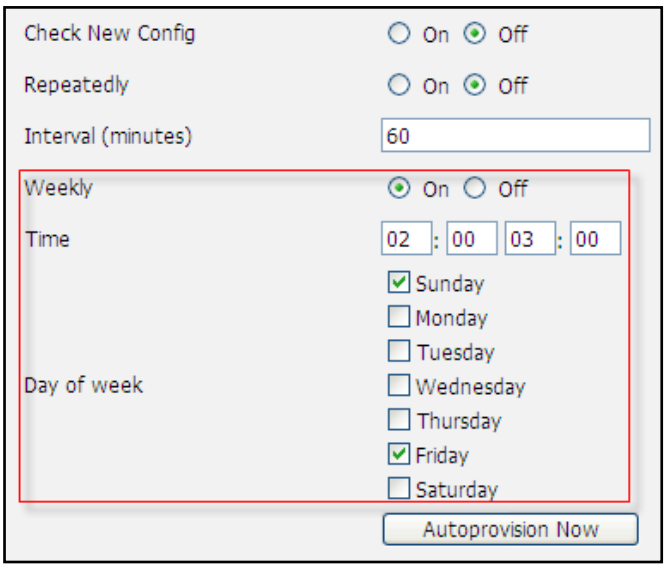
4. Click **Confirm** to accept the change.

Weekly

You can activate Weekly mode via web user interface. The phone will perform auto provisioning process at the fixed time every week. You can configure what time of day and which day of week to trigger the phone to perform the auto provisioning process. For example, you can configure the phone to check and update new configuration between 2 to 3 o'clock on every Friday and Sunday.

To activate Weekly mode via web user interface:

1. Click on **Phone**->**Auto Provision**.
2. Mark the **On** radio box in the **Weekly** field.
3. Enter the desired time in the **Time** field.
4. Select one or more days of week in the **Day of week** field.



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

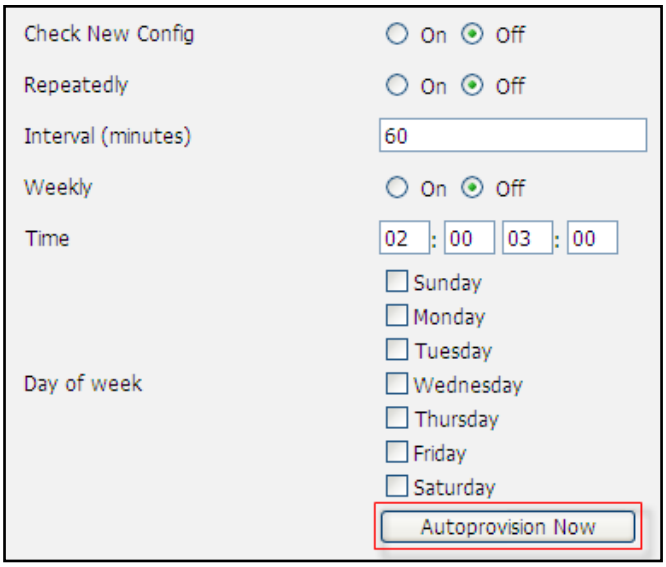
Auto Provision Now

You can use Auto Provision Now mode to manually trigger the phone to perform the auto provisioning process immediately via web user interface.

To use Auto Provision Now mode via web user interface:

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

2. Click the **Autoprovision Now** button.



The phone will perform the auto provisioning process immediately.

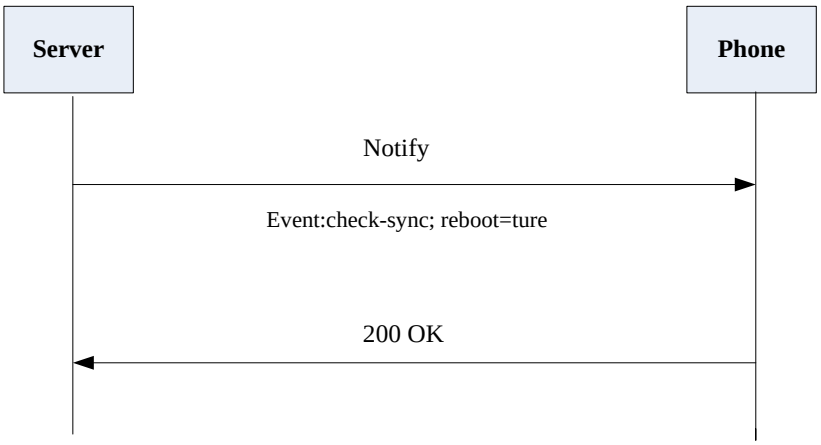
Multi-mode Mixed

You can activate more than one updating mode for auto provisioning. For example, you can activate the "Check New Config" and "Repeatedly" modes simultaneously, the phone will perform the auto provisioning process when it is powered on and at a specified interval.

SIP Notify Message

The phone will perform the auto provisioning process when receiving a SIP Notify message which contains the header "Event:check-sync". If the header of SIP Notify message contains an additional string "reboot=true", the phone will reboot immediately and then perform the auto provisioning process. This updating mode requires server support.

The following figure shows the message flow:



Downloading Configuration Files

Downloading Configuration Files from the Provisioning Server

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

Resolving and Applying the Configurations

After downloading the configuration files, the phone calculates the MD5 values of the two configuration files respectively. If the MD5 values are the same to those of the last downloaded ones, the phone gives up updating the configurations. If the MD5 values are different, the phone applies the configurations, resolves the access URLs of the resource files and downloads the resource files.

If the configuration files have been AES encrypted, the phone uses the Common AES key to decrypt the Common CFG file and the MAC-Oriented AES key to decrypt the MAC-Oriented CFG file after downloading the configuration files.

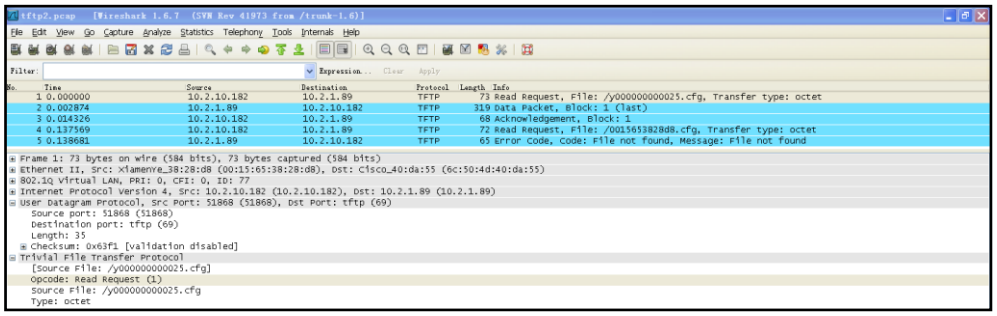
The phone reboots only when applying some specific parameters, you can refer to the section "Description of Configuration Parameters in CFG Files" for more information.

Verifying Configurations

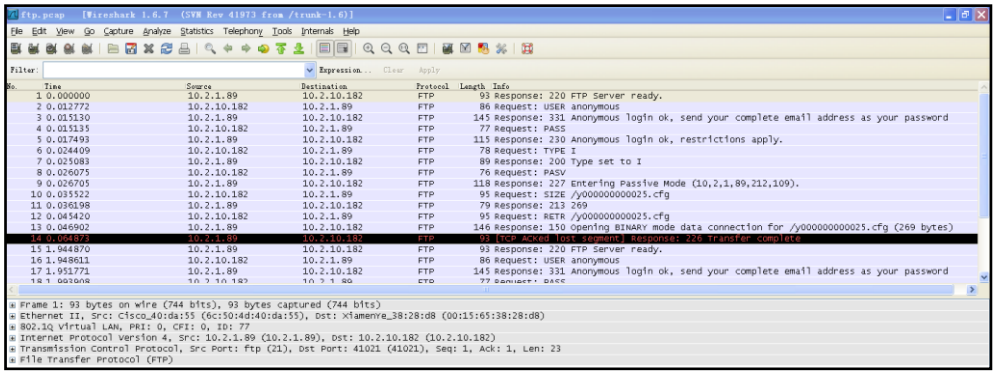
After auto provisioning, you can verify the update on your handset or via web user interface.

You can also monitor the downloading request and response messages by a WinPcap tool during the auto provisioning process. The following are some examples.

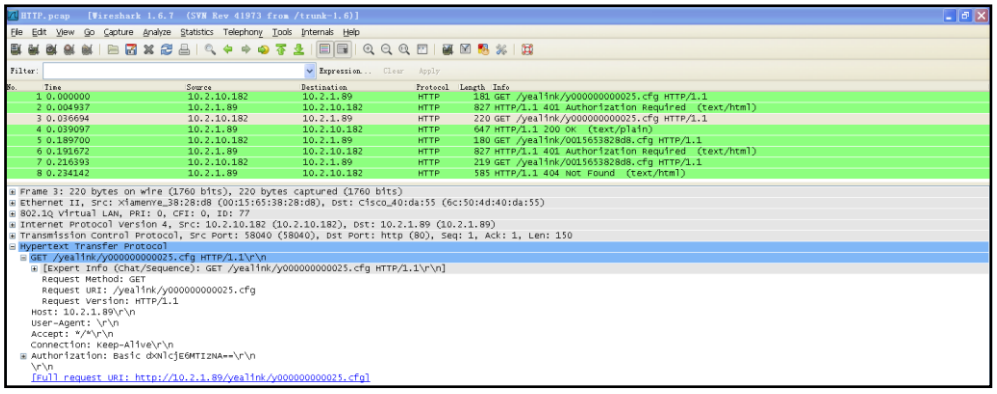
Example1: Yealink W52P IP DECT phone downloads configuration files from the TFTP server.



Example 2: Yealink W52P IP DECT phone downloads the configuration files from the FTP server.



Example 3: Yealink W52P IP DECT 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 provisioning the Yealink W52P IP DECT phones.

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

Why does the phone fail to download the configuration files?

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

Why does the provisioning server return a HTTP 404 error?

- Ensure that the HTTP server is properly set up.
- Ensure that the requested configuration files exist on the HTTP server.

Why the permission is 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 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.
- Ensure the configurations of network are properly set in the configuration files.

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 apply the configurations?

- Ensure the phone have downloaded the configuration files.
- Ensure the file header in the configuration file is not deleted.
- Ensure the parameters are correctly set in the configuration files.
- Contact your system administrator for more information.

Appendix

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.

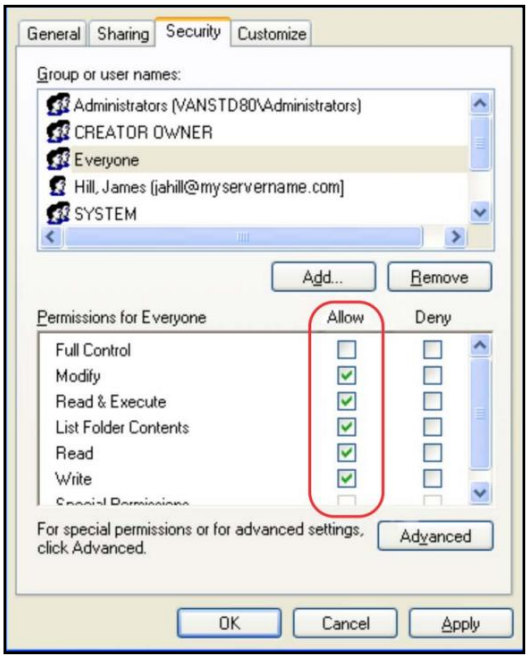
Configuring a FTP Server

This section shows you how to configure a FTP server using 3CDaemon.

To create a root directory:

1. Create a FTP root directory on the local system.
2. Configure the security permissions for the TFTP root directory.

   You need to define a user or a group name, and assign the permissions: read, write, and modify files to the user or group.

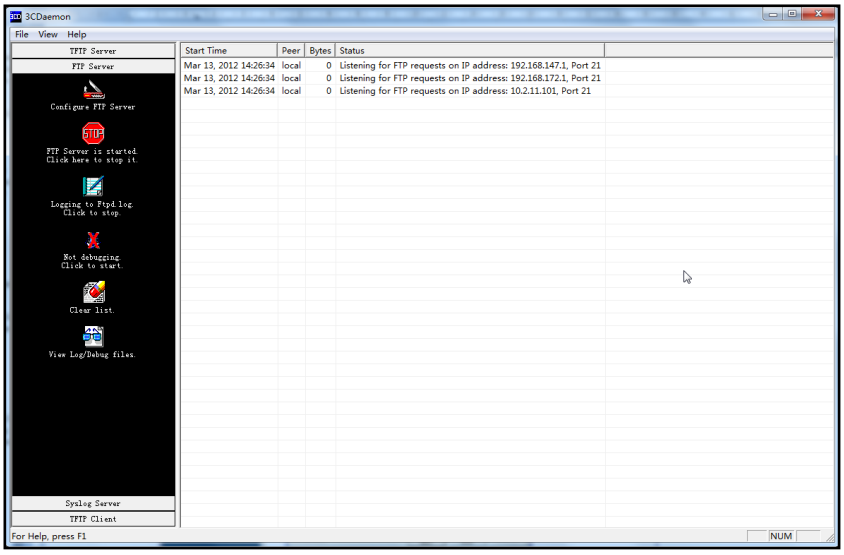


3. Place the configuration files and resource files to this directory.

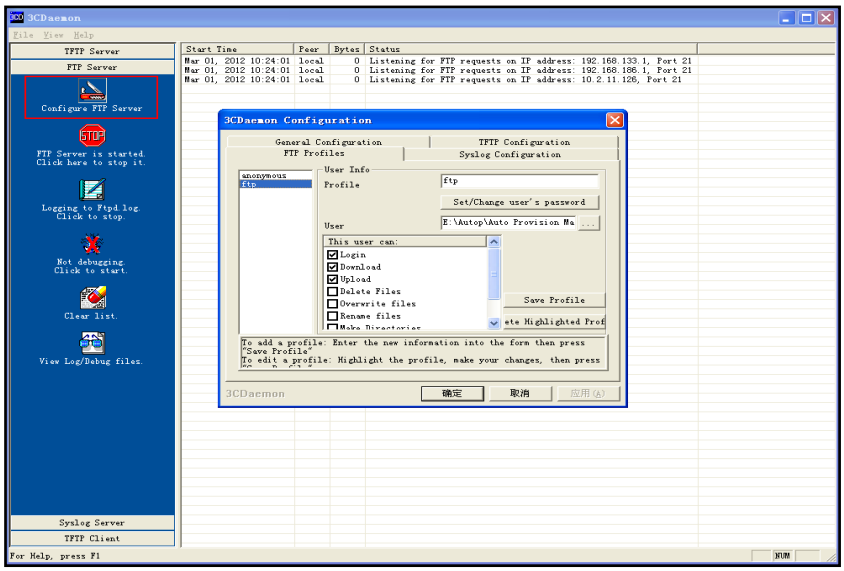
To configure a FTP server:

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

2. Click **FTP Server** on the left of the main page.

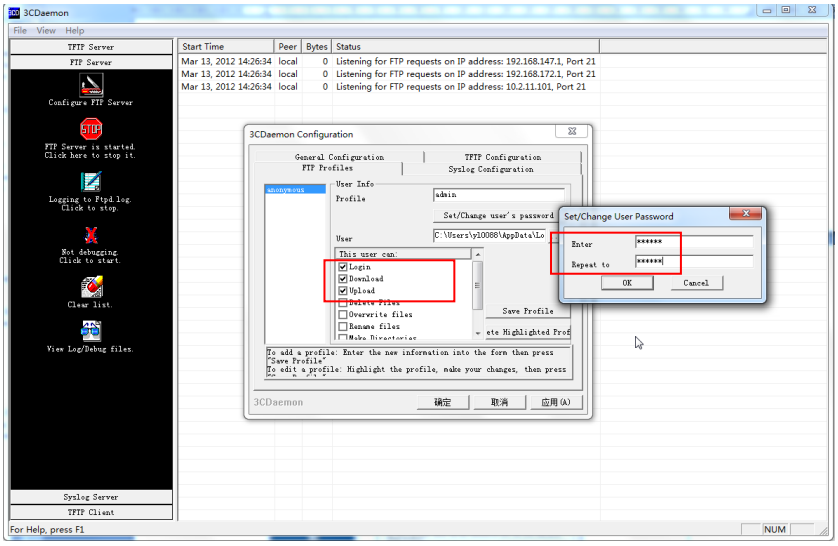


3. Select **Configure FTP Server**.
4. Click ... to locate the FTP root directory from the local system:

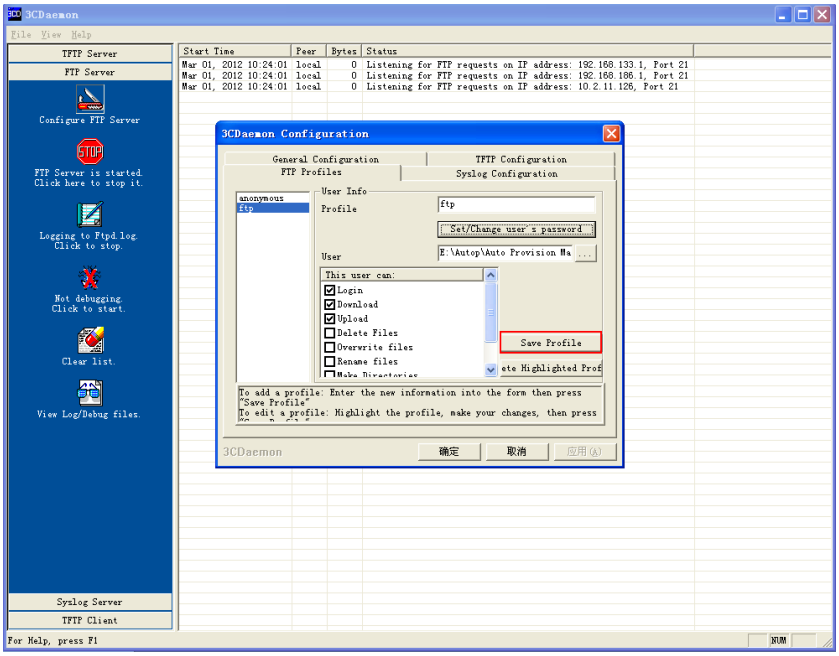


5. Enter the new authentication username in the **Profile** filed.
6. Click **Set/Change user's password** to set the password in the pop-up dialogue box.
7. Click **OK** to accept the change.

8. Check the check boxes of **Login**, **Download** and **Upload** to make sure the FTP user has the login, download and upload permission.



9. Click **Save Profile** to save the settings.



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

The server URL "ftp://username:password@IP/" (Here "IP" means the IP address of your local system, "username" and "password" are the authentication for FTP download. For example, "ftp://admin:123456@192.168.1.100/") can be used for FTP download.

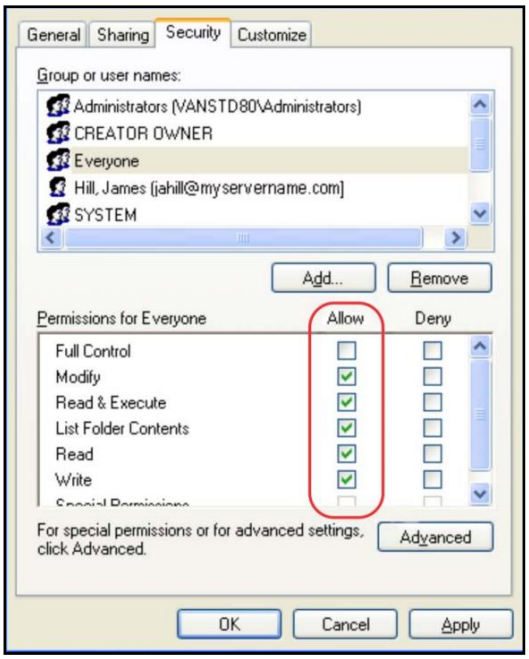
Configuring a HTTP Server

This section shows you how to configure a HTTP server using HFS tool. You can download HFS tool at: http://www.snapfiles.com/get/hfs.html.

To create a root directory:

1. Create a HTTP root directory on the local system.
2. Configure the security permissions for the TFTP root directory.

   You need to define a user or a group name, and assign the permissions: read, write, and modify files to the user or group.

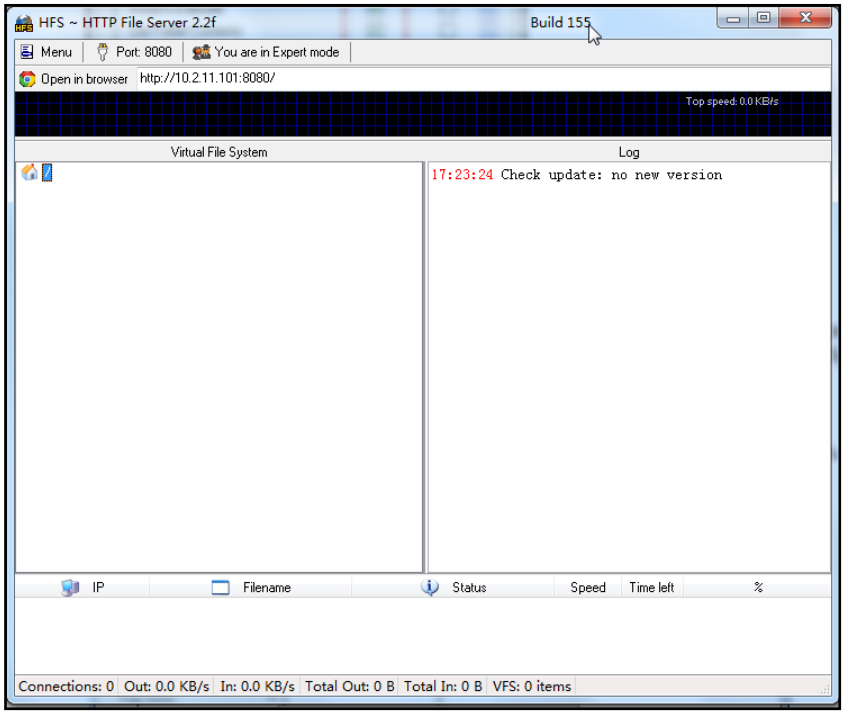


3. Place the configuration files to this root directory.

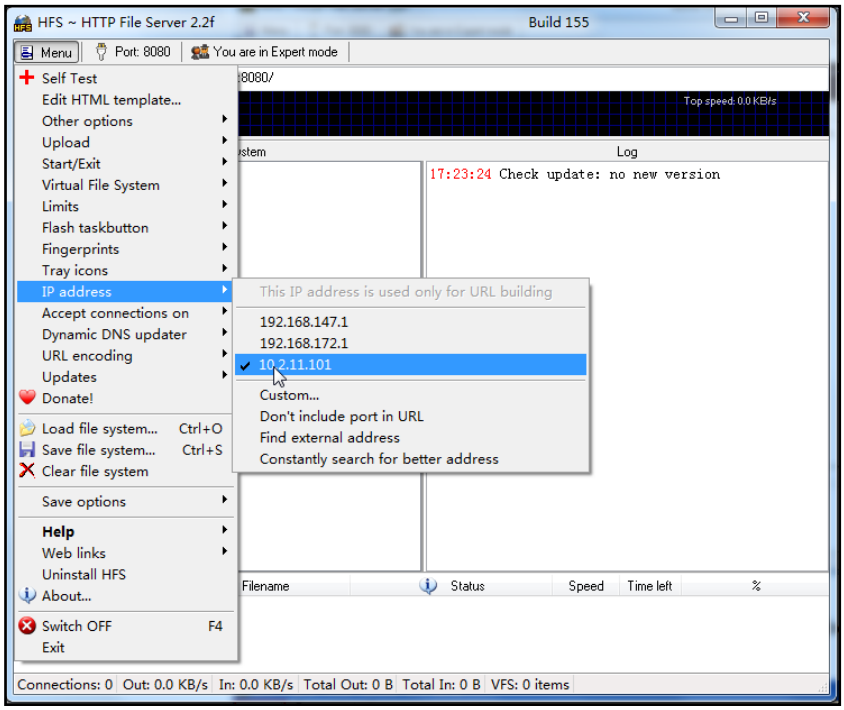
To configure a HTTP server:

1. Double click the hfs.exe to start the application.

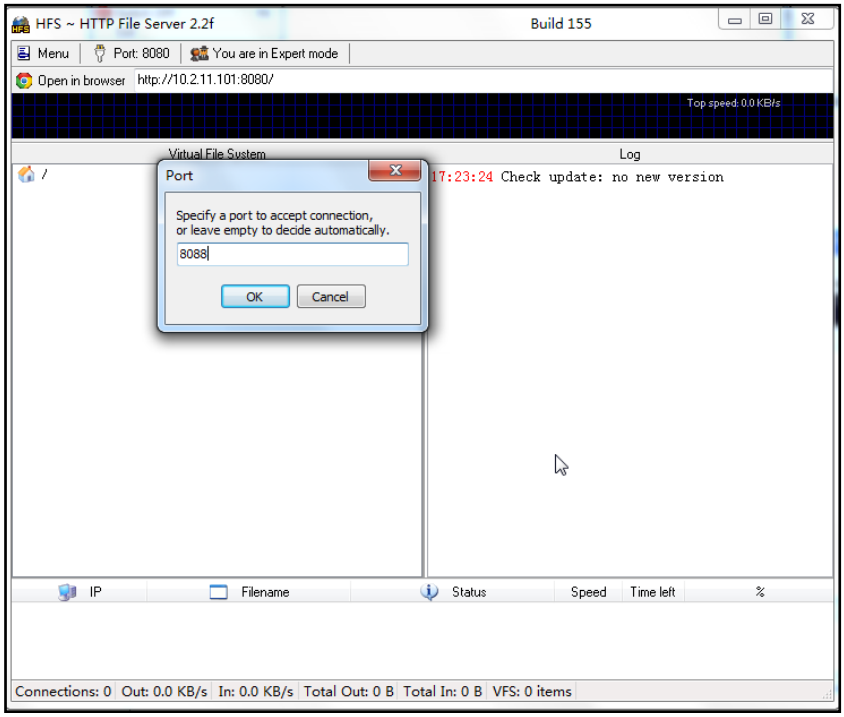
   The main configuration page is shown as below:



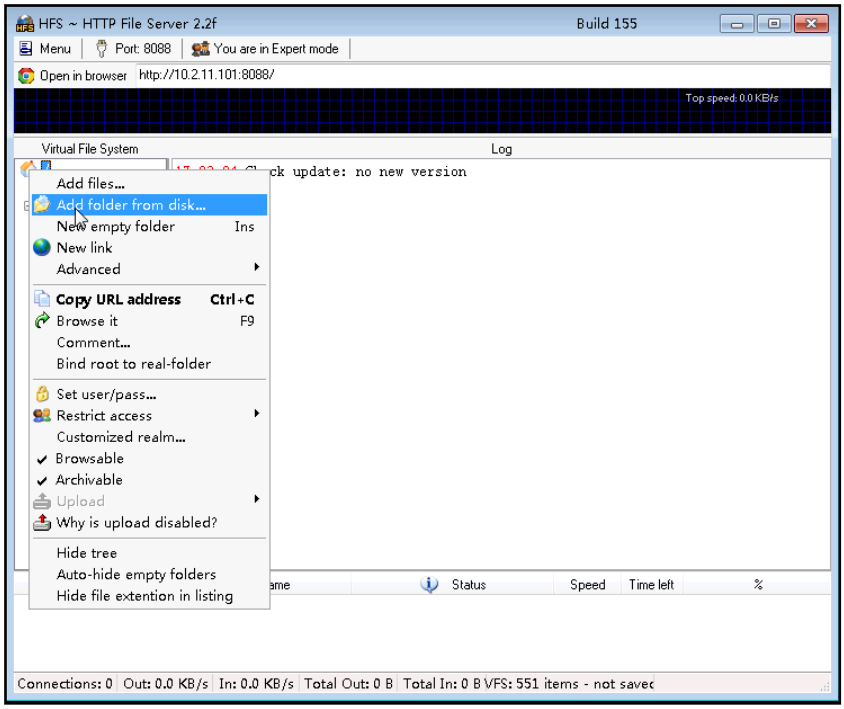
2. Click **Menu** in the main page and select the IP address of the PC from **IP address**.



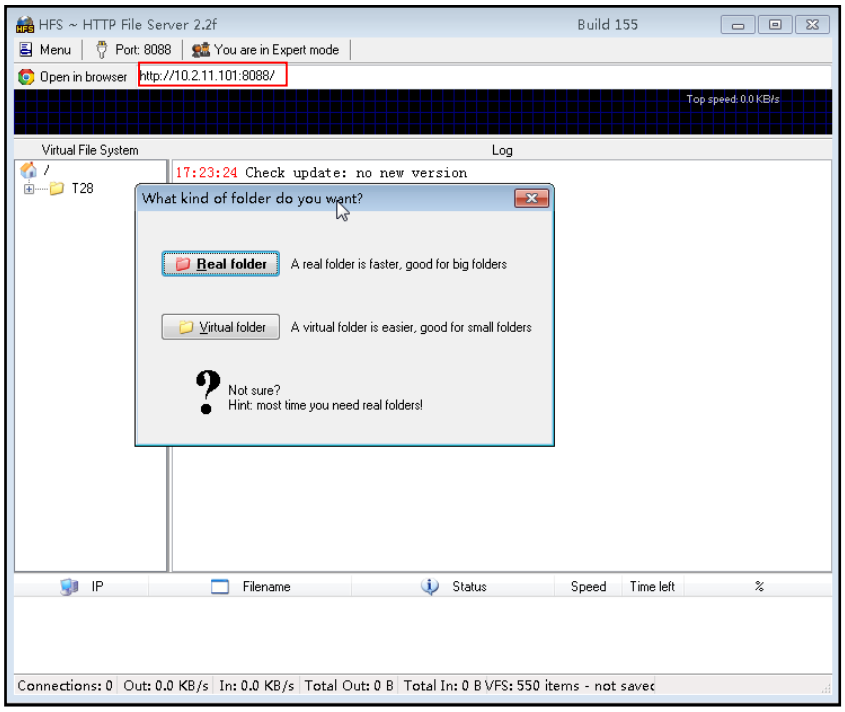
The default HTTP port is 8080. You can also reset the HTTP port (make sure the port isn't in use before you reset).



3. Right click the icon on the left of the main page, select **Add folder from disk**.



4. Locate the root directory of the HTTP server from the local system. Select the kind of folder you want.



The server URL "http:// IP:Port/" shown in the "Open in browser" address bar can be used for HTTP download. For example, the server URL "http:// 10.2.11.101:8088/" is shown 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 if the HTTP server is accessible before provisioning.

Yealink W52P IP DECT phone also supports 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 platform using DHCP Turbo. You can download this software at: http://www.tucows.com/preview/265297 and install it following the setup wizard.

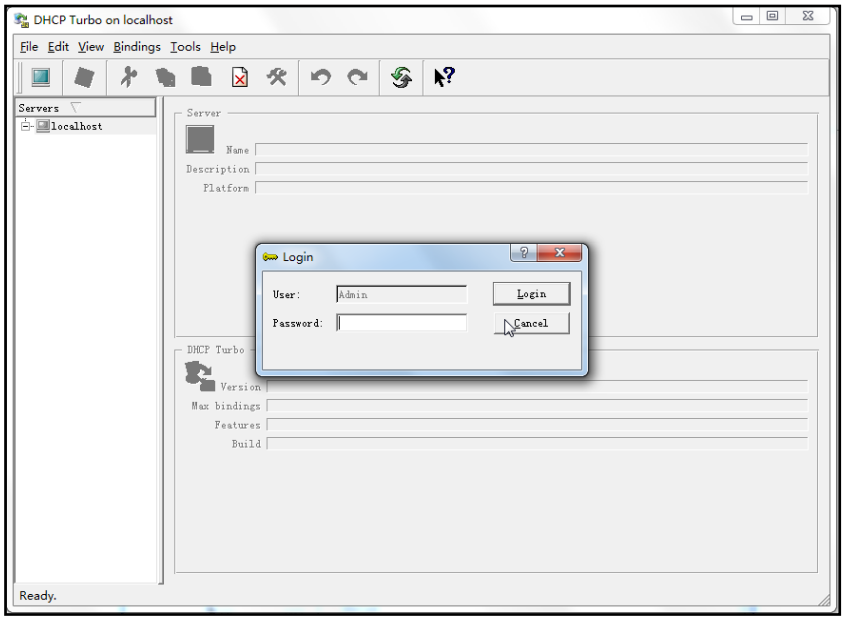
Before configuring the DHCP server, make sure that:

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

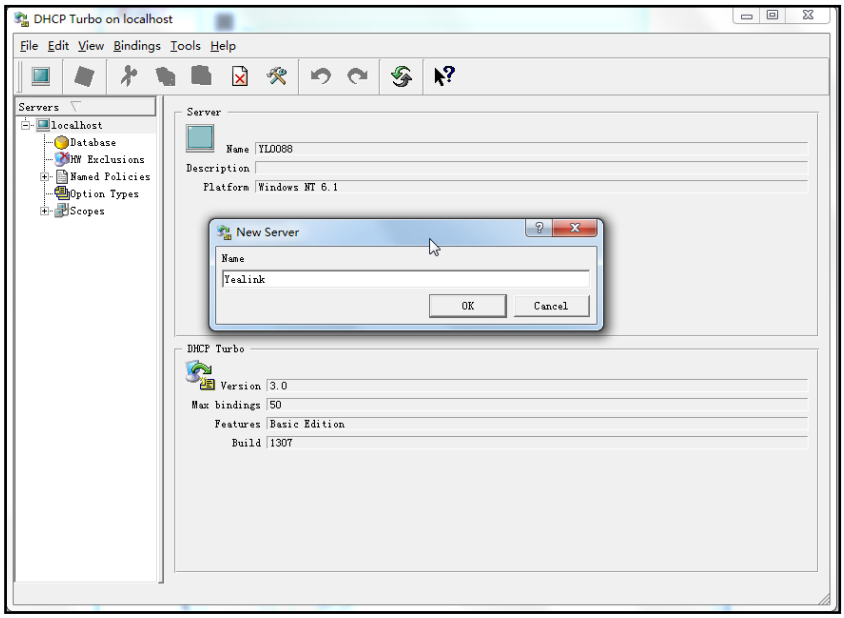
To configure a DHCP server:

1. Double click the dhcpt.exe (known as DHCP Turbo) to run the application.

2. Double click **localhost** in the **Servers** sidebar.
3. Leave the **Password** field blank and click **Login**.

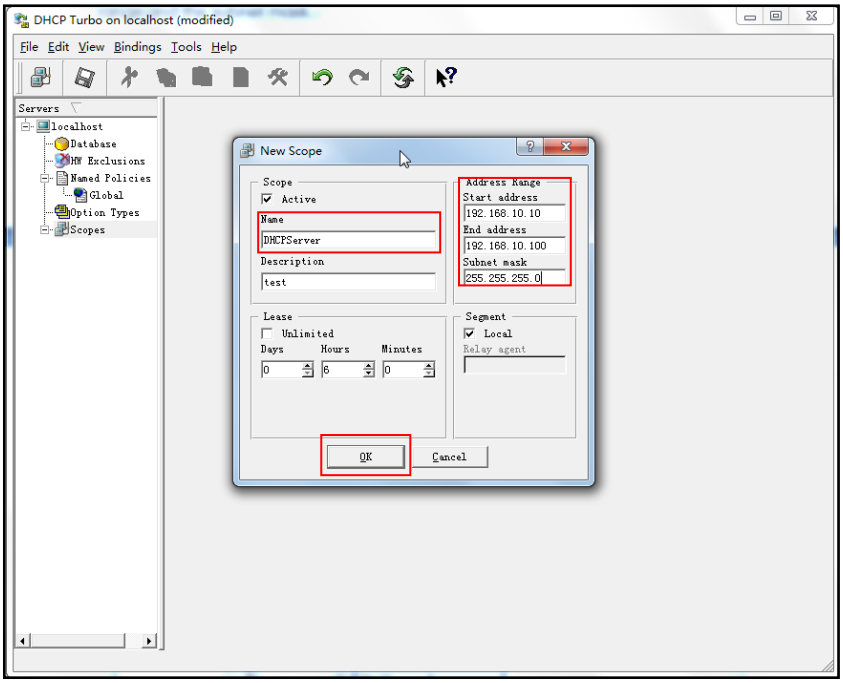


4. Right click **localhost** and select **New Server** to add a new DHCP server.
5. Enter the name of the new server in the **Name** field.



6. Right click **Scopes** under **Localhost** and select **New Scope**.
7. Enter the name of the new scope in the **Name** field.
8. Enter valid values in the **Start address**, **End address** and **Subnet Mask** to specify a valid range of IP addresses.

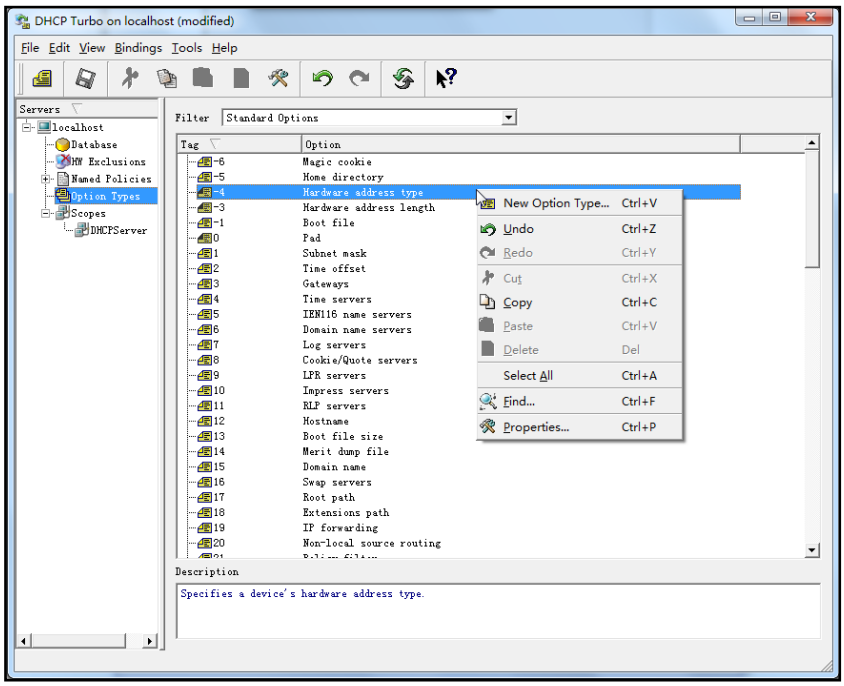
9. Click **OK** to finish the configuration of the new scope.



10. Click  to accept the change.

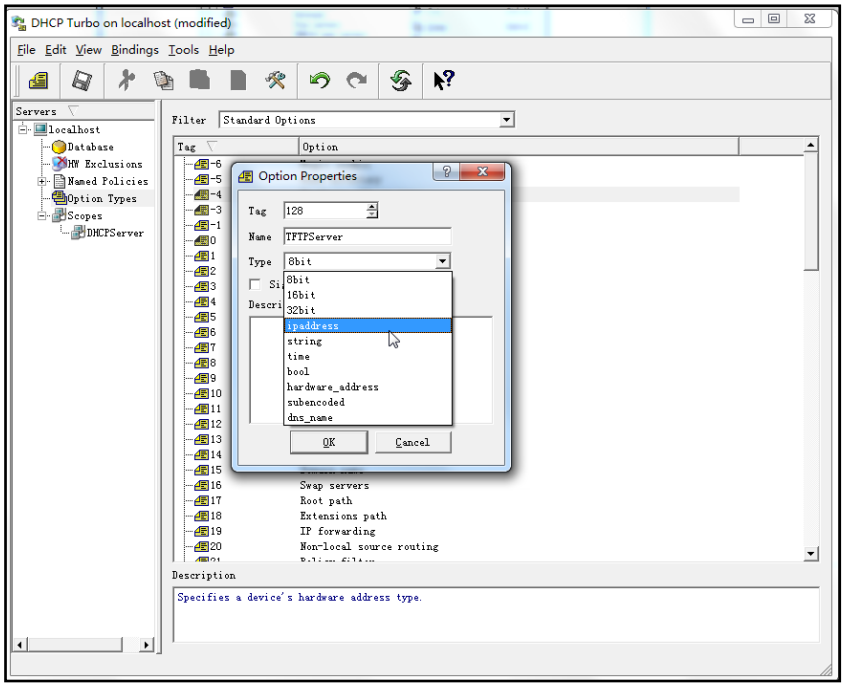
To add a custom option via DHCP Turbo:

1. Right click **Option Types** under **Localhost** and select **New Option Type**.

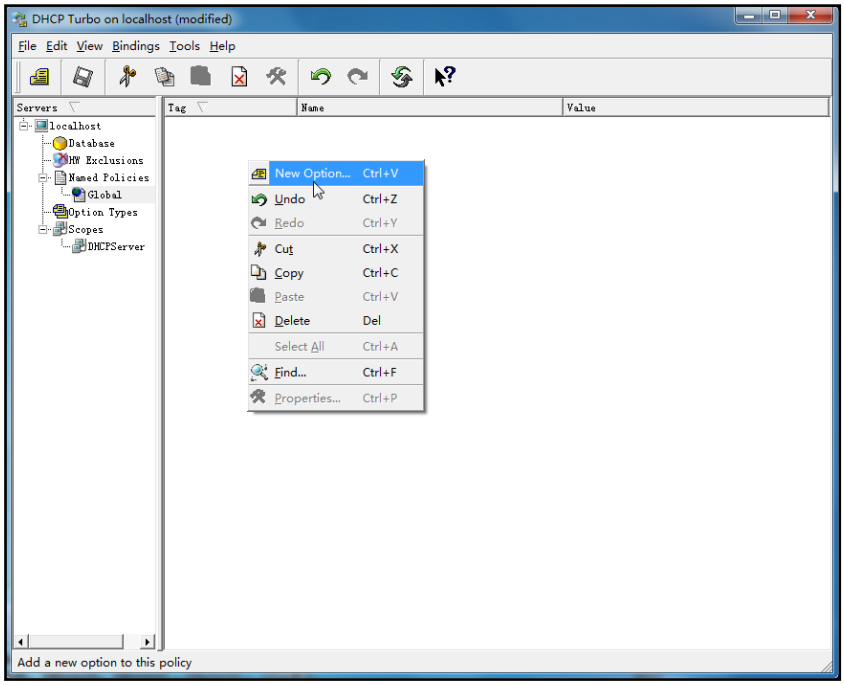


2. Enter the desired tag number of the custom DHCP option in the **Tag** field. For example, 128. Custom DHCP option tag number ranges from 128 to 254.
3. Enter the name of the custom DHCP option in the **Name** field.

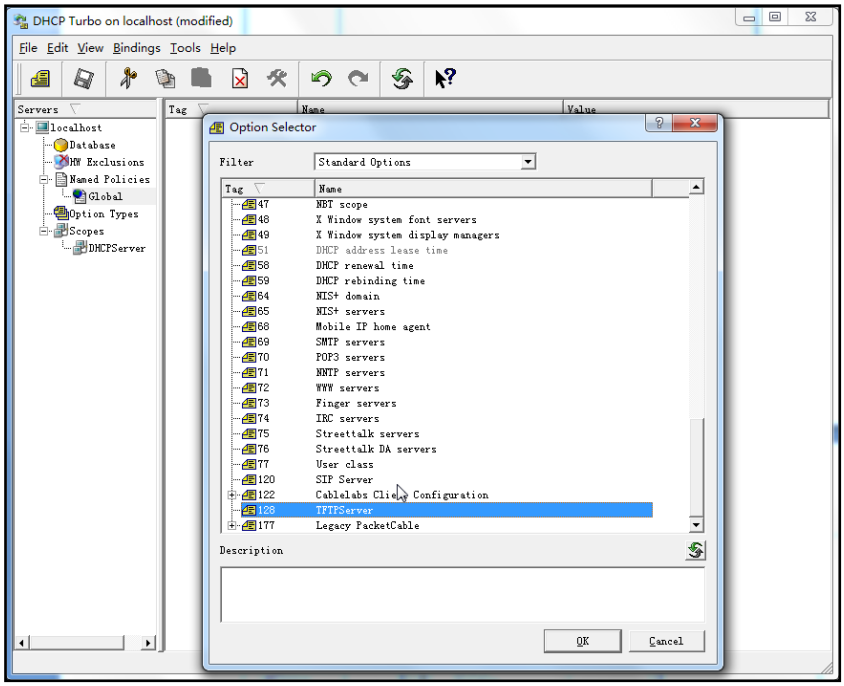
4. Select the option type from the pull-down list of **Type**. Commonly, **string** is selected. Yealink W52P IP DECT phones support **string** and **ipaddress** option types only.



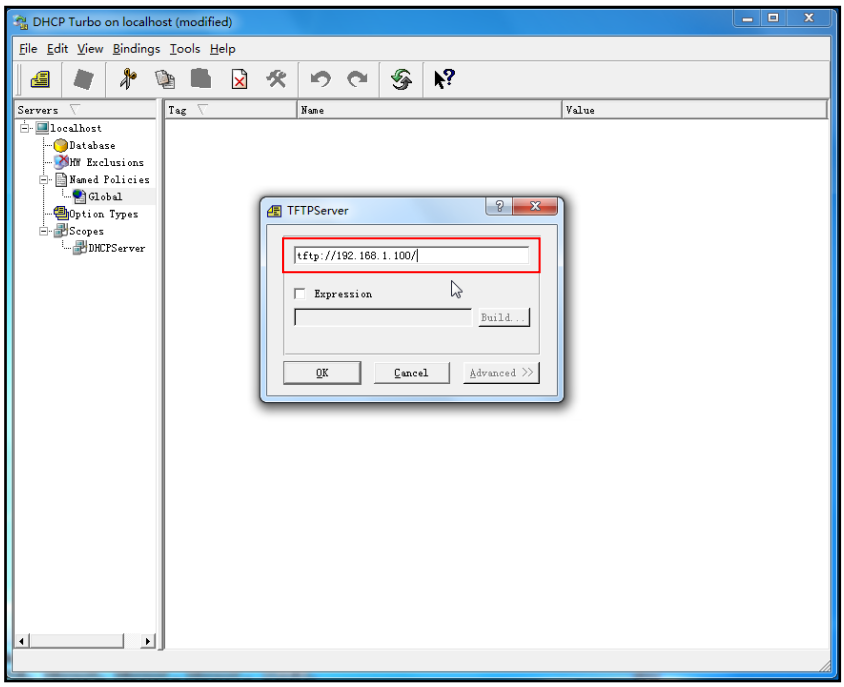
5. Click **OK** to finish setting the option properties.
6. Click  to accept the change.
7. Click **Named Policies**->**Global**, right click the main page and select **New Option**.



8. Scroll down and double click the custom option **128**.

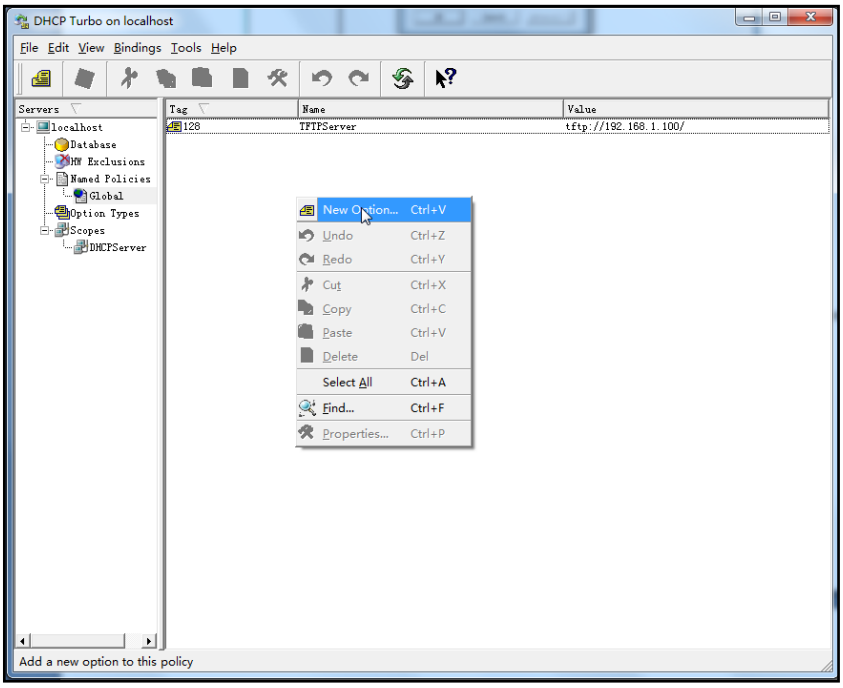


9. Enter the TFTP server address in the input field.
10. Click **OK** to finish setting a custom option.
11. Click  to accept the change.

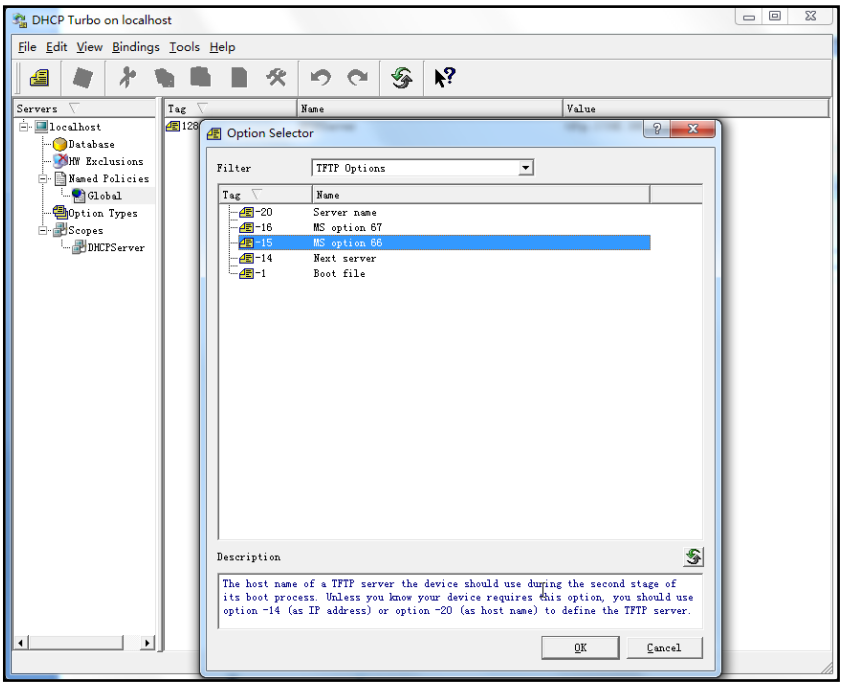


To add the option 66 via DHCP Turbo:

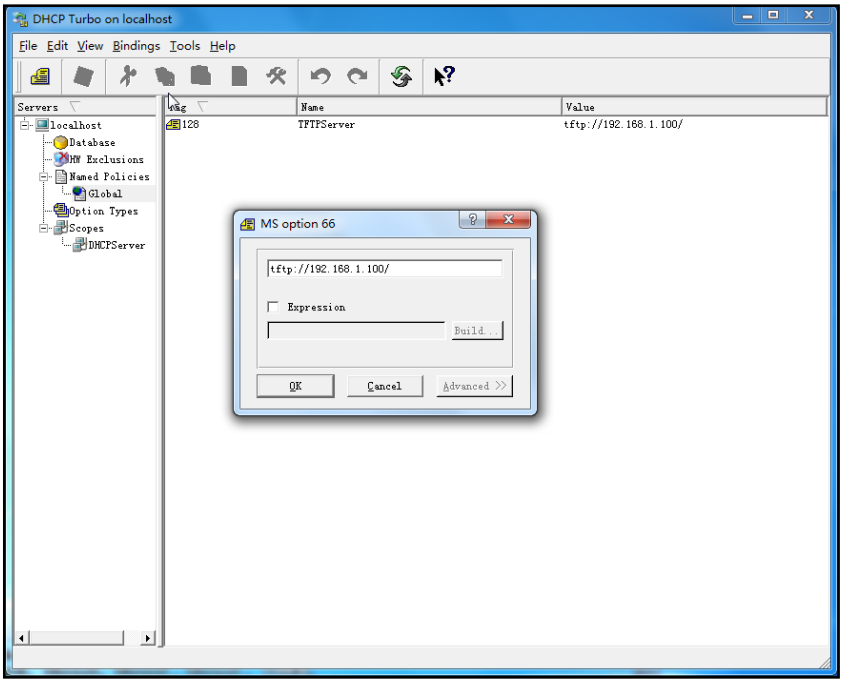
1. Click **Named Policies->Global**, right click the main page and select **New Option**.



2. Enter **TFTP Options** in the **Filter** field.
3. Double click the option 66.



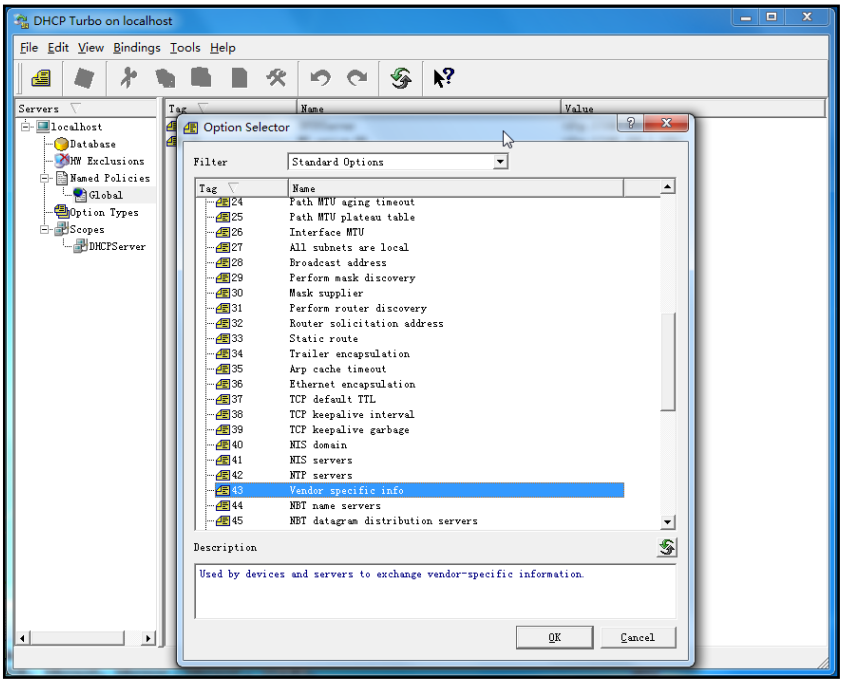
4. Enter the TFTP server address in the input field.



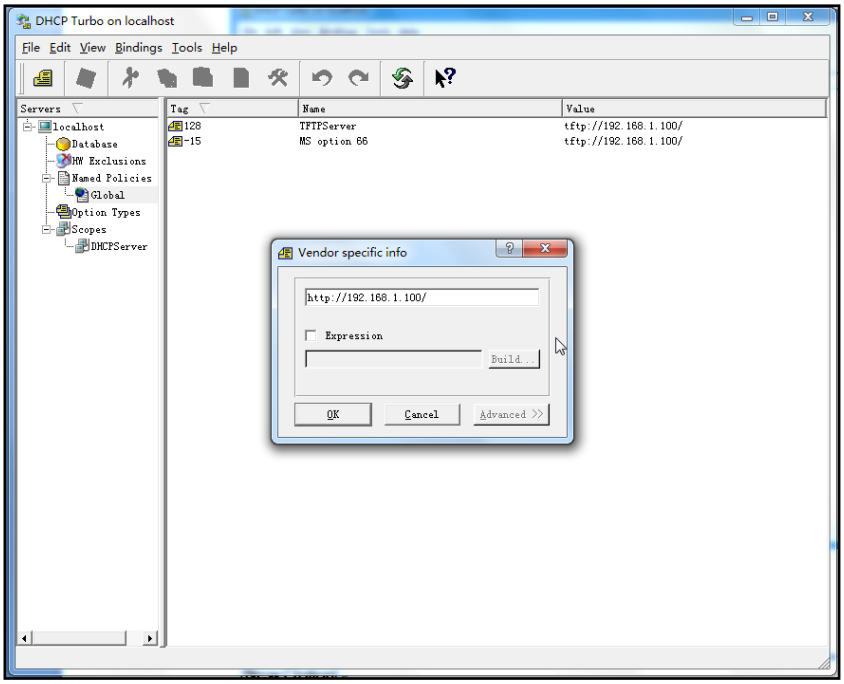
5. Click **OK** to finish setting the option 66.
6. Click to accept the change.

To add the option 43 via DHCP Turbo:

1. Click **Named Policies->Global**, right click the main page and select **New Option**.
2. Double click the option 43.



3. Enter the provisioning server address in the input field.



4. Click **OK** to finish setting the option 43.
5. Click to accept the change.

Description of Configuration Parameters in CFG Files

Parameter	Permitted Values	Descriptions	Web Setting Path
network.internet_port.type =	0, 1 or 2	It configures the Internet port type. **0**-DHCP **1**-PPPoE **2**-Static IP Address The default value is 0. It takes effect after reboot.	Network->Basic
network.internet_port.ip =	IP Address	It configures the IP address when the Internet (WAN) port type is defined as Static IP Address. The default value is blank. It takes effect after reboot.	Network->Basic->WAN->Static IP Address->IP Address
network.internet_port.mask =	IP Address	It configures the subnet mask when the Internet (WAN) port type is defined as Static IP Address.	Network->Basic->WAN->Static IP Address->Subnet

		The default value is blank. It takes effect after reboot.	Mask
network.internet_port.gateway =	IP Address	It configures the default gateway when the Internet (WAN) port type is defined as Static IP Address. The default value is blank. It takes effect after reboot.	Network->Basic->WAN->Static IP Address->Default Gateway
network.primary_dns =	IP Address	It configures the primary DNS server when the Internet (WAN) port type is defined as Static IP Address. The default value is blank. It takes effect after reboot.	Network->Basic->WAN->Static IP Address->Primary DNS
network.secondary_dns =	IP Address	It configures the secondary DNS server when the Internet (WAN) port type is defined as Static IP Address. The default value is blank. It takes effect after reboot.	Network->Basic->WAN->Static IP Address->Secondary DNS
network.pppoe.user =	String	It configures the username for PPPoE connection. The default value is blank. It takes effect after reboot.	Network->Basic->PPPoE->User
network.pppoe.password =	String	It configures the password for PPPoE connection. The default value is blank. It takes effect after reboot.	Network->Basic->PPPoE->Password
network.vlan.internet_port_enable =	0 or 1	It enables or disables VLAN for the Internet (WAN) port. **0**-Disabled **1**-Enabled The default value is 0. It takes effect after reboot.	Network->Advanced->VLAN->Active
network.vlan.internet_port_vid =	Integer from 1 to 4094	It configures VLAN ID of the Internet (WAN) port. The default value is 1. It takes effect after reboot.	Network->Advanced->VLAN->VID
network.vlan.internet_p	Integer from 0 to 7	It configures VLAN priority of the Internet (WAN) port.	Network->Advanced->

ort_priority =		The default value is 0. It takes effect after reboot.	VLAN->Priority
network.port.http =	Integer from 1 to 65535	It configures the HTTP port of the web server. The default value is 80. It takes effect after reboot.	Network-> Advanced-> Web Server Type->HTTP Port
network.port.https =	Integer from 1 to 65535	It configures the HTTPS port of the web server. The default value is 443. It takes effect after reboot.	Network-> Advanced-> Web Server Type->HTTPS Port
wui.https_enable =	0 or 1	It enables or disables the phone to use HTTPS protocol to access the web user interface. **0**-Disables **1**-Enabled The default value is 1. It takes effect after reboot.	Network-> Advanced-> Web Server Type->HTTPS
wui.http_enable =	0 or 1	It enables or disables the phone to use HTTP protocol to access the web user interface. **0**-Disables **1**-Enabled The default value is 1. It takes effect after reboot.	Network-> Advanced-> Web Server Type->HTTP
network.port.max_rtpport =	Integer from 0 to 65535	It configures the maximum local RTP port. The default value is 12780. It takes effect after reboot.	Network-> Advanced->Local RTP Port-> Maximum RTP Port
network.port.min_rtpport =	Integer from 0 to 65535	It configures the minimum local RTP port. The default value is 11780. It takes effect after reboot.	Network-> Advanced->Local RTP Port->Minimum RTP Port
network.qos.rtptos =	Integer from 0 to 63	It configures the voice QoS. The default value is 40. It takes effect after reboot.	Network-> Advanced->Voice QoS->Voice QoS
network.qos.signaltos =	Integer from 0 to 63	It configures the SIP QoS. The default value is 26.	Network-> Advanced->Voice

		It takes effect after reboot.	QoS->SIP QoS
network.802_1x.mode =	0 or 1	It configures the 802.1x mode. **0**-Disabled **1**-Enabled (EAP-MD5) The default value is 0. It takes effect after reboot.	Network->Advanced->802.1x->802.1x Mode
network.802_1x.identity =	String	It configures the username for 802.1x authentication. The default value is blank. It takes effect after reboot.	Network->Advanced->802.1x->Identity
network.802_1x.md5_password =	String	It configures the password for 802.1x authentication. The default value is blank. It takes effect after reboot.	Network->Advanced->802.1x->MD5 Password
network.vpn_enable =	0 or 1	It enables or disables the VPN feature. **0**-Disabled **1**-Enabled The default value is 0. It takes effect after reboot.	Network->Advanced->vpn->Active
network.lldp.enable =	0 or 1	It enables or disables the LLDP feature. **0**-Disabled **1**-Enabled The default value is 1. It takes effect after reboot.	Network->Advanced->LLDP->Active
network.lldp.packet_interval =	Integer from 1 to 3600	It configures the interval (in seconds) the phone broadcasts the LLDP request. The default value is 60. It takes effect after reboot.	Network->Advanced->LLDP->Packet Interval
syslog.mode =	1 or 2	It configures the uploading location for the system log. **1**-Loacl **2**-Server The default value is 1. It takes effect after reboot.	Phone->Configuration->Export System Log
syslog.serve	IP Address	It configures the IP address of the syslog server when the syslog mode is	Phone->

r =		configured as Server. The default value is blank. It takes effect after reboot.	Configuration->Server Name
syslog.log_level =	Integer from 0 to 6	It configures the detailed level of the system log. The default value is 3. It takes effect after reboot.	Phone->Configuration->Log Level
voice.vad=	0 or 1	It enables or disables the VAD feature on the phone. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Voice&Eco->Echo Cancellation->VAD
voice.cng =	0 or 1	It enables or disables the CNG feature on the phone. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Voice&Eco->Echo Cancellation->CNG
voice.jib.adaptive =	0 or 1	It configures the type of jitter buffer. **0**-Fixed **1**-Adaptive The default value is 1.	Phone->Voice&Eco ->Jitter Buffer->Type
voice.jib.min =	Integer	It configures the minimum delay (in milliseconds) of jitter buffer. The default value is 0.	Phone->Voice&Eco ->Jitter Buffer->Minimum Delay
voice.jib.max =	Integer	It configures the maximum delay (in milliseconds) of jitter buffer. The default value is 300.	Phone->Voice&Eco ->Jitter Buffer->Maximum Delay
voice.jib.normal =	Integer	It configures the normal delay (in milliseconds) of jitter buffer. The default value is 120.	Phone->Voice&Eco ->Jitter Buffer->Normal
redirect.enable =	0 or 1	It enables or disables the HTTP(S) and (T)FTP redirection. **0**-Disabled **1**-Enabled The default value is 0.	

base.pin_code =	String	It configures the system pin of the base station. The default value is 0000.	Security->Base PIN->Base Unit PIN
auto_provision.mode =	0 or 1	It enables or disables the phone to check the new configuration when powered on. **0**-Disabled **1**-Enabled The default value is 1.	
auto_provision.pnp_enable =	0 or 1	It enables or disables the Plug and Play feature. The phone broadcasts the PNP subscribe message to obtain a provisioning server address during bootup. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Auto Provision->PNP
auto_provision.pnp_domain_name =	Domain Name	It configures the domain name of the PNP server. The default value is 224.0.1.75.	
auto_provision.pnp_event_vendor =	String	It configures the vendor name of the device. The default value is yealink.	
auto_provision.repeat.enable =	0 or 1	It enables or disables the phone to check the new configuration repeatedly. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Auto Provision-> Repeatedly
auto_provision.repeat.minutes =	Integer from 1 to 43200	It configures the interval (in minutes) the phone repeatedly checks the new configuration. The default value is 1440.	Phone->Auto Provision->Interval (Minutes)
auto_provision.weekly.enable =	0 or 1	It enables or disables the phone to check the new configuration weekly. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Auto Provision->Weekly

auto_provision.weekly.mask =	Combination of 0, 1, 2, 3, 4, 5 and 6	It configures the days of week the phone checks the new configuration weekly. The default value is 0123456.	Phone->Auto Provision->Day of week
auto_provision.weekly.begin_time =	Time format	It configures the begin time of day the phone checks the new configuration weekly. The default value is 02:00.	Phone->Auto Provision->Time
auto_provision.weekly.end_time =	Time format	It configures the end time of day the phone checks the new configuration weekly. The default value is 03:00.	Phone->Auto Provision->Time
auto_provision.server.url =	URL	It configures the URL of the auto provisioning server. The default value is blank.	Phone->Auto Provision->Provisioning Server
auto_provision.server.username =	String	It configures the username for authentication during auto provisioning. The default value is blank.	Phone->Auto Provision->User Name
auto_provision.server.password =	String	It configures the password for authentication during auto provisioning. The default value is blank.	Phone->Auto Provision-> Password
auto_provision.common_file_name =	String	It configures the fixed file name of the Common CFG file.	
auto_provision.dhcp_option.enable=	0 or 1	It enables or disables the phone to obtain the provisioning server address by detecting DHCP options. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Auto Provision->DHCP Option
auto_provision.dhcp_option.option60_value =	String	It configures the value (vendor name of the device) of DHCP option 60. The default value is yealink.	Phone->Auto Provision->DHCP Option Value
auto_provision.dhcp_option.list_user_options =	Integer from 128 to 254	It configures the custom DHCP option number. The default value is blank.	Phone->Auto Provision->Custom Option(128~254)

auto_provision.aes_key_16.com =	String	It configures the AES key (16 characters) for decrypting the Common CFG file. The valid characters contain: 0 ~ 9, A ~ Z, a ~ z,#$%*+,-.:=?@[]^_{}~. The default value is blank.	Phone->Auto Provision-> Common AES Key
auto_provision.aes_key_16.mac =	String	It configures the AES key (16 characters) for decrypting the MAC-Oriented CFG file. The valid characters contain: 0 ~ 9, A ~ Z, a ~ z,#$%*+,-.:=?@[]^_{}~. The default value is blank.	Phone->Auto Provision-> MAC-Oriented AES Key
sip.rfc2543_hold =	0 or 1	It enables or disables the phone to support RFC 2543 hold (c=0.0.0.0). **0**-Disabled **1**-Enabled The default value is 0.	Phone->Features-> General Information->RFC 2543 Hold
sip.use_out_bound_in_dialog =	0 or 1	It enables or disables the phone to keep sending the SIP messages to the outbound server in a dialog. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features-> General Information->Use Outbound Proxy In Dialog
sip.reg_surge_prevention =	Integer from 0 to 60	It configures the time for the SIP registration. The phone registers an account at random in the time after bootup. The default value is 0.	Network->Advanced->Registration random-> Registration random
recovery_mode.gatewayip =	IP Address	It configures the IP address of the gateway when using the recovery mode for provisioning. The default value is 192.168.0.1.	Phone->Upgrade ->Recovery Mode>GatewayIP
recovery_mode.phone_ip =	IP Address	It configures the IP address of the phone when using the recovery mode for provisioning. The default value is 192.168.0.100.	Phone->Upgrade ->Recovery Mode->IP
recovery_mode.server_ip =	IP Address	It configures the IP address of the TFTP server when using the recovery mode for provisioning. The default value is 192.168.0.23.	Phone->Upgrade->ServerIP

recovery_mode.netmask =	String	It configures the netmask when using the recovery mode for provisioning. The default value is 255.255.0.0.	Phone->Upgrade ->Recovery Mode->Netmask
handset.X.incoming_lines = (X ranges from 1 to 5.)	Number	It configures the lines to receive incoming calls for handset X. Each line ID should be separated by comma.	Account->Number Assignment-> Incoming lines
handset.X.name = (X ranges from 1 to 5.)	String	It configures the name of handset X. The default value is HX.	Account->Handset Name
handset.X.dial_out_default_line= (X ranges from 1 to 5.)	Integer from 1 to 5	It configures the default line to place outgoing calls for handset X. The default value is 1.	Account->Number Assignment-> Outgoing lines->default
handset.X.dial_out_lines = (X ranges from 1 to 5.)	Number	It configures the lines to place outgoing calls for handset X. Each line ID should be separated by comma.	Account->Number Assignment-> Outgoing lines
transfer.semi_attend_tran_enable =	0 or 1	It enables or disables the phone LCD screen of the transferee to display the missed call prompt when receiving a semi_attended transfer call. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features-> General Information-> Semi-Attended Transfer
transfer.blind_tran_on_hook_enable =	0 or 1	It enables or disables the phone to complete the blind transfer through on-hook. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Features-> General Information->Blind Transfer On Hook
transfer.on_hook_trans_enable =	0 or 1	It enables or disables the phone to complete the attended transfer through on-hook.	Phone->Features-> General Information ->Attended Trans

		0-Disabled **1**-Enabled The default value is 0.	OnHook
security.trust_certificates =	0 or 1	It enables or disables the phone to only accept the certificates in the Trusted Certificates list. **0**-Disabled **1**-Enabled The default value is 1.	Security->Trusted Certs->Only Accept Trusted Certificates
security.user_password =	String	It configures the login password of the user, var and administrator. The valid value format is username: password.	Security->Password
lang.wui =	English, Chinese_S, Turkish, Portuguese, Spanish, Italian, French or Deutsch	It configures the language of the web user interface.	Phone->Preference ->WEB Language
local_time.time_zone =	Integer from -11 to 12	It configures the time zone. The default value is +8.	Phone->Preference ->Time Zone
local_time.time_zone_name =	String	It configures time zone name. The default time zone name is China(Beijing).	Phone->Preference ->Time Zone
local_time.ntp_server1 =	Domain Name or IP Address	It configures the domain name or IP address of the NTP server 1. The default value is cn.pool.ntp.org.	
local_time.ntp_server2 =	Domain Name or IP Address	It configures the domain name or IP address of the NTP server 2. The default value is cn.pool.ntp.org.	
local_time.interval =	Integer	It configures the update interval (in seconds) when using the NTP server. The default value is 1000.	
local_time.summer_time =	0, 1 or 2	It enables or disables the daylight saving time (DST) feature. **0**-Disabled	Phone->Preference ->Daylight Saving Time

		1-Enabled **2**-Automatic The default value is 2	
local_time.dst_time_type =	0 or 1	It configures the DST type when the DST feature is enabled. **0**-By Date **1**-By Week The default value is 0.	Phone->Preference ->Fixed Type
local_time.start_time =	MM/DD/HH	It configures the month, day and hour of day that DST starts. **Value formats are:** • Month/Day/Hour (for By Date) • Month/ Day of Week/ Day of Week Last in Month/ Hour of Day (for By Week) The default value is 1/1/0.	Phone->Preference ->Start Month/Start Date/Start Hour of Day (for By Date) Phone->Preference ->Start Month/Start Week Last in Month/ Start Day of Week/ Start Hour of Day (for By Week)
local_time.end_time =	MM/DD/HH	It configures the month, day and hour of day that DST ends. **Value formats are:** • Month/Day/Hour (for By Date) • Month/Week Last in Month/Day of Week/Hour of Day (for By Week) The default value is 12/31/23.	Phone->Preference ->Stop Month/ Stop Date/ End Hour of Day (for By Date) Phone->Preference ->Stop Month/ Stop Week Last in Month/ Stop Day of Week/ End Hour of Day (for By Week)
local_time.offset_time =	Integer from -300 to 300	It configures the offset time (in seconds). The default value is 60	Phone->Preference ->Offset(minutes)
local_time.dhcp_time =	0 or 1	It enables or disables the phone to update time with the offset time obtained from the DHCP server. It is only available to the time zone 0. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Preference ->DHCP Time
local_time.manual_time_	0 or 1	It configures the phone to set the time manually or obtain the time from the NTP	

enable =		server. 0-Manual time 1-NTP time The default value is 1.	
dialplan.area_code.code =	Integer	It configures the area code. The default value is blank.	Phone->Dial Plan->Area Code->Code
dialplan.area_code.min_len =	Integer from 1 to 15	It configures the minimum length of the number prefixed with the area code. The default value is 1.	Phone->Dial Plan->Area Code->Minimum Length(1-15)
dialplan.area_code.max_len =	Integer from 1 to 15	It configures the maximum length of the number prefixed with the area code. The value must be larger than the minimum length. The default value is 15.	Phone->Dial Plan->Area Code->Maximum Length(1-15)
dialplan.area_code.line_id =	Number	It configures the lines applying the area code. Each line ID should be separated by comma. The default value is blank.	Phone->Dial Plan->Area Code->Account
dialplan.block_out.number.X = (X ranges from 1 to 10.)	Number or String	It configures the block out number X. The default value is blank.	Phone->Dial Plan->Block Out->BlockOut NumberX
dialplan.block_out.line_id.X = (X ranges from 1 to 10.)	Number	It configures the lines applying the block out number X. Each line ID should be separated by comma. The default value is blank.	Phone->Dial Plan->Block Out->Account
dialplan.replace.prefix.X = (X ranges from 1 to 20.)	String	It configures the string to be replaced. The default value is blank.	Phone->Dial Plan->Replace Rule->Number
dialplan.replace.replace.	String	It configures the alternate string instead of what the user enters.	Phone->Dial Plan->Replace

X = (X ranges from 1 to 20.)		The default value is blank.	Rule->Replace
dialplan.replace.line_id.X = (X ranges from 1 to 20.)	Number	It configures the lines applying the replace rule. Each line ID should be separated by comma. The default value is blank.	Phone->Dial Plan->Replace Rule->Account
bw.feature_key_sync =	0 or 1	It enables or disables the feature key synchronization. **0**-Disabled **1**-Enabled The default value is 0.	
call_waiting.enable =	0 or 1	It enables or disables the call waiting feature. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features->General Information->Call Waiting
call_waiting.tone =	0 or 1	It enables or disables the phone to play the call waiting tone. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features->General Information->Call Waiting Tone
features.dnd_refuse_code =	404, 480 or 486	It configures the return code when DND mode is activated. **404**-No Found **480**-Temporarily not available **486**-Busy here The default value is 480.	Phone->Features->General Information-> Return Code When DND
features.normal_refuse_code =	404, 480 or 486	It configures the return code when refusing a call. **404**-No Found **480**-Temporarily not available **486**-Busy here The default value is 486.	Phone->Features->General Information-> Return Code When Refuse
features.relog_offtime =	Integer from 1 to 1000	It configures the overtime (in minutes) of logging the web user interface.	Phone->Features->General

		The default value is 5.	Information-> logout_time(1~1000)(minutes)
features.save_call_history =	0 or 1	It enables or disables the phone to save call history. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features->General Information->Save Call Log
phone_setting.is_deal180 =	0 or 1	It enables or disables the phone to deal with the 180 SIP message received after the 183 SIP message. **0**-Disabled **1**-Enabled The default value is 1.	Phone->Features->General Information->180 Ringing Workaround
phone_setting.emergency.number =	String	It configures the emergency numbers. The default value is blank.	Phone->Features->General Information-> Emergency Numbers
firmware.url =	URL	It configures the access URL of firmware file.	
trusted_certificates.url =	URL	It configures the access URL of the trusted certificate file.	
trusted_certificates.delete =	URL	It deletes all the trusted certificate files.	
server_certificates.url =	URL	It configures the access URL of the server certificate file.	
server_certificates.delete =	URL	It deletes all the server certificate files.	
auto_dst.url =	URL	It configures the access URL of the DST Time file.	
dialplan_replace_rule.url =	URL	It configures the access URL of the replace rule file.	
custom_factory_configur	URL	It configures the access URL of the customized factory configuration file.	

ation.url =			
configuration.url =	URL	It configures the access URL of the configuration file.	
openvpn.url =	URL	It configures the access URL of the openVPN tar file.	
custom_mac_cfg.url =	URL	It configures the access URL of the custom MAC-Oriented CFG file.	
blacklist.url =	URL	It configures the access URL of the blacklist file.	
handset.X.contact_list.url = (X ranges from 1 to 5.)	URL	It configures the access URL of the contact t file of handset X.	
xsi.user =	String	It configures the username provided on the Xtended Services Platform server. The default value is blank.	Contacts->Network Directories->XSI->XSI Server
xsi.password =	String	It configures the password provided on the Xtended Services Platform server. The default value is blank.	Contacts->Network Directories->XSI->XSI Username
xsi.host =	URL	It configures the URL of the Xtended Services Platform server. The default value is blank.	Contacts->Network Directories->XSI->XSI Password
bw_phonebook.group_enable =	0 or 1	It enables or disables the Group item to be added to the BroadSoft phonebook. **0**-Disabled **1**-Enabled The default value is 1.	Contacts->Network Directories->Directories->Group
bw_phonebook.group_common_enable =	0 or 1	It enables or disables the GroupCommon item to be added to the BroadSoft phonebook. **0**-Disabled **1**-Enabled The default value is 0.	Contacts->Network Directories->Directories->GroupCommom

bw_phonebook.enterprise_enable =	0 or 1	It enables or disables the Enterprise item to be added to the BroadSoft phonebook. **0**-Disabled **1**-Enabled The default value is 0.	Contacts->Network Directories->Directories->Enterprise
bw_phonebook.enterprise_common_enable =	0 or 1	It enables or disables the EnterpriseCommon item to be added to the BroadSoft phonebook. **0**-Disabled **1**-Enabled The default value is 0.	Contacts->Network Directories->Directories->EnterpriseCommom
bw_phonebook.call_log_enable =	0 or 1	It enables or disables the network call log feature. **0**-Disabled **1**-Enabled The default value is 0.	Contacts->Network Directories->Directories->Network CollLog
remote_phonebook.data.1.url =	URL	It configures the access URL of the remote phonebook.	Contacts->Remote Phone Book->Name
remote_phonebook.data.1.name =	String	It configures the display name of the remote phonebook.	Contacts->Remote Phone Book->Phone Book URL
directory.update_time_interval =	Integer from 60 to 86400	It configures the interval (in seconds) for the phone to update the data of the remote phonebook from the remote phonebook server. The default value is 1440.	Contacts->Remote Phone Book->SRemoteNameFlashTime(Minutes)(60-86400)
voice.tone.country =	Custom, Australia, Austria, Brazil, Belgium, China, Czech, Denmark, Finland, France,	It configures the tone type for the phone. The default value is Custom.	Phone->Tones

	Germany, Great Britain, Greece, Hungary, Lithuania, India, Italy, Japan, Mexico, New Zealand, Netherlands, Norway, Portugal, Spain, Switzerland, Sweden, Russia, United States, Chile, Czech ETSI		
voice.tone.ring =	String	It customizes the ring tone when "voice.tone.country" is configured as Custom. The value format is F/D. F: the frequency of the tone (ranges from 200 to 7000 Hz). D: the time duration (in milliseconds, ranges from 0 to 30000ms) of playing the tone. You can configure at most eight different tones for one condition, each tone separated by comma (e.g. 250/200, 0/1000, 200/500, 1000/2000). The default value is blank.	Phone->Tones
voice.tone.busy =	String	It customizes the busy tone when "voice.tone.country" is configured as Custom. The value format is F/D. The default value is blank.	Phone->Tones
voice.tone.callwaiting =	String	It customizes the call waiting tone when "voice.tone.country" is configured as	Phone->Tones

		Custom. The value format is F/D. The default value is blank.	
account.X.enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Basic->Account Active
account.X.label = (X ranges from 1 to 5.)	String	It configures the label displayed on the LCD screen for account X. The default value is blank.	Account->Basic->Label
account.X.display_name = (X ranges from 1 to 5.)	String	It configures the display name for account X. The default value is blank.	Account->Basic->Name
account.X.auth_name = (X ranges from 1 to 5.)	String	It configures the username for register authentication for account X. The default value is blank.	Account->Basic->Name
account.X.password = (X ranges from 1 to 5.)	String	It configures the password for register authentication for account X. The default value is blank.	Account->Basic->Password
account.X.user_name = (X ranges from 1 to 5.)	String	It configures the register username for account X. The default value is blank.	Account->Basic->Register Name
account.X.sip_server_host = (X ranges from 1 to 5.)	Domain Name or IP Address	It configures the domain name or IP address of the SIP server for account X. The default value is blank.	Account->Basic->SIP Server
account.X.sip_server_port = (X ranges from 1 to 5.)	Integer	It configures the port of the SIP server for account X. The default value is 5060.	Account->Basic->SIP Server->Port

account.X.transport = (X ranges from 1 to 5.)	0, 1, 2 or 3	It configures the transport type for account X. **0**-UDP **1**-TCP **2**-TLS **3**-DNS SRV The default value is 0.	Account->Basic->Transport
account.X.outbound_proxy_enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to use the outbound proxy server for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Basic->Enable Outbound Proxy Server
account.X.outbound_host = (X ranges from 1 to 5.)	Domain Name or IP Address	It configures the domain name or IP address of the outbound proxy server for account X. The default value is blank.	Account->Basic->Outbound Proxy Server
account.X.outbound_port = (X ranges from 1 to 5.)	Integer	It configures the port of the outbound proxy server for account X. The default value is 5060.	Account->Basic->Outbound Proxy Server->Port
account.X.backup_outbound_host = (X ranges from 1 to 5.)	Domain Name or IP Address	It configures the domain name or IP address of the backup outbound proxy server for account X. The default value is blank.	Account->Basic->Backup Outbound Proxy Server
account.X.backup_outbound_port = (X ranges from 1 to 5.)	Integer	It configures the port of the backup outbound proxy server for account X. The default value is 5060.	Account->Basic->Backup Outbound Proxy Server->Port
voice_mail.number.X = (X ranges from 1 to 5.)	String	It configures the voice mail access code for account X. The default value is blank.	Phone->Features->LineX->voice mail
account.X.proxy_require	String	It configures the proxy server for account X.	Account->Basic->Proxy Require

= (X ranges from 1 to 5.)		The default value is blank.	
account.X.anonymous_call = (X ranges from 1 to 5.)	0 or 1	It enables or disables the anonymous call feature for account X. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Features->LineX->Anonymous Call->Anonymous Call
account.X.anonymous_call_oncode = (X ranges from 1 to 5.)	String	It configures the anonymous call on code for account X. The default value is blank.	Phone->Features->LineX->Anonymous Call->Anonymous Call On Code
account.X.anonymous_call_offcode = (X ranges from 1 to 5.)	String	It configures the anonymous call off code for account X. The default value is blank.	Phone->Features->LineX->Anonymous Call-> Anonymous Call Off Code
account.X.reject_anonymous_call = (X ranges from 1 to 5.)	0 or 1	It enables or disables the anonymous call rejection feature for account X. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Features->LineX->Anonymous Call-> Anonymous Call Rejection
account.X.anonymous_reject_oncode = (X ranges from 1 to 5.)	String	It configures the anonymous call rejection on code for account X. The default value is blank.	Phone->Features->LineX->Anonymous Call->Anonymous Call Rejection On Code
account.X.anonymous_reject_offcode = (X ranges from 1 to 5.)	String	It configures the anonymous call rejection off code for account X. The default value is blank.	Phone->Features->LineX->Anonymous Call->Anonymous Call Rejection Off Code
account.X.sip_listen_port	Integer	It configures the SIP port for account X. The default value is 5060.	Account->Advanced->Local

= (X ranges from 1 to 5.)			SIP Port
account.X.expires = (X ranges from 1 to 5.)	Integer	It configures the register expiry time (in seconds) for account X. The default value is 3600.	Account->Advanced->Login Expire (seconds)
account.X.100rel_enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the 100 reliable retransmission feature for account X. **0**-Disabled **1**-Enabled The default value is 1.	Account->Advanced->100 reliable retransmission
account.X.precondition = (X ranges from 1 to 5.)	0 or 1	It enables or disables the resource reservation for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Enable Precondition
account.X.subscribe_register = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to subscribe the register status for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Subscribe Register
account.X.subscribe_mwi = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to subscribe the message waiting indicator for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Subscribe for MWI
account.X.cid_source = (X ranges from 1 to 5.)	0 or 1	It configures the SIP header(s) from which the phone reads the caller ID and presents on the LCD screen when receiving an incoming call. **0**-FROM **1**-PAI The default value is 0.	Account->Advanced->Caller ID Header
account.X.session_timer.e	0 or 1	It enables or disables the session timer for account X.	Account->Advanced->Use

nable = (X ranges from 1 to 5.)		**0**-Disabled **1**-Enabled The default value is 0.	Session Timer
account.X.session_timer.expires = (X ranges from 1 to 5.)	Integer from 1 to 9999	It configures the interval (in seconds) for refreshing the SIP session for account X. The default value is blank.	Account->Advanced->Session Timer (seconds)
account.X.session_timer.refresher = (X ranges from 1 to 5.)	0 or 1	It configures the refresher of the session timer for account X. **0**-Uac **1**-Uas The default value is 0.	Account->Advanced->Refresher
account.X.enable_user_equal_phone = (X ranges from 1 to 5.)	0 or 1	It enables or disables the "user=phone" for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Use user=phone
account.X.srtp_encryption = (X ranges from 1 to 5.)	0 or 1	It enables or disables the voice encryption service for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Voice Encryption(SRTP)
account.X.ptime = (X ranges from 1 to 5.)	0 (Disabled), 10, 20, 30, 40, 50 or 60.	It configures the RTP packet time for account X. The default value is 20.	Account->Advanced->Ptime (ms)
account.X.subscribe_mwi_expires = (X ranges from 1 to 5.)	Integer from 0 to 84600	It configures MWI subscribe expiry time (in seconds) for account X. The default value is 3600.	Account->Advanced->MWI Subscription Period (Scope:0~84600) (seconds)
account.X.subscribe_mwi_to_vm = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to subscribe to the voice mail for the message waiting indicator for account X. **0**-Disabled **1**-Enabled	Account->Advanced->SubscribeMWIToVM

		The default value is 0.	
account.X.register_mac = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to send the MAC address in the register message for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->SIP Send MAC
account.X.register_line = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to send the line number in the register message for account X. **0**-Disabled **1**-Enabled The default value is 1.	Account->Advanced->SIP Send Line
account.X.reg_fail_retry_interval = (X ranges from 1 to 5.)	Integer from 0 to 1800	It configures the interval (in seconds) the phone retries to register account X when registration fails. The default value is 30.	Account->Advanced->SIP Registration Retry Timer(Scope:0~1800)(seconds)
account.X.enable_signal_encode = (X ranges from 1 to 5.)	0 or 1	It enables or disables the phone to encode SIP signal for account X. **0**-Disabled **1**-Enabled (RC4) The default value is 0.	Account->Advanced->Signal Encode
account.X.signal_encode_key = (X ranges from 1 to 5.)	String	It configures the key for the phone to encode the SIP signal with RC4 for account X. The default value is blank.	Account->Advanced->Signal Encode Key
account.X.dtmf.type = (X ranges from 1 to 5.)	0, 1, 2 or 3	It configures the DTMF type for account X. **0**-INBAND **1**-RFC2833 **2**-SIP INFO **3**-AUTO+SIP INFO The default value is 1.	Account->Advanced->DTMF Type
account.X.dtmf.dtmf_pay	Integer from 96 to 225	It configures the RFC2833 payload for account X.	Account->Advanced->DTMF

load = (X ranges from 1 to 5.)		The default value is 101.	Payload(scope:96~255)
account.X.dtmf.info_type = (X ranges from 1 to 5.)	0, 1, 2 or 3	It configures the DTMF info type when the DTMF type is configured as "SIP INFO" or "AUTO+SIP INFO" for account X. **0**-Disabled **1**-DTMF-Relay **2**-DTMF **3**-Telephone-Event The default value is 1.	Account->Advanced->How to INFO DTMF
account.X.nat.nat_traversal = (X ranges from 1 to 5.)	0 or 1	It enables or disables the NAT traversal for account X. **0**-Disabled **1**-STUN The default value is 0.	Account->Basic->NAT Traversal
account.X.nat.stun_server = (X ranges from 1 to 5.)	Domain Name or IP Address	It configures the domain name or IP address of the STUN server for account X. The default value is blank.	Account->Basic->STUN Server
account.X.nat.stun_port = (X ranges from 1 to 5.)	Integer	It configures the port of the STUN server for account X. The default value is 3478.	Account->Basic->STUN Server->Port
account.X.nat.udp_update_enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the NAT keep-alive for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->UDP Keep-alive Message
account.X.nat.udp_update_time = (X ranges from 1 to 5.)	Integer	It configures the keep-alive interval (in seconds) for account X. The default value is 30.	Account->Advanced->UDP Keep-alive Interval (seconds)

account.X.nat.rport = (X ranges from 1 to 5.)	0 or 1	It enables or disables the NAT Rport for account X. **0**-Disabled **1**-Enabled The default value is 0.	Account->Advanced->Rport
account.X.advanced.timer_t1 = (X ranges from 1 to 5.)	Float	It configures the session timer T1 (in seconds) for account X. The default value is 0.5.	Account->Advanced->SIP Session Timer (seconds) T1
account.X.advanced.timer_t2 = (X ranges from 1 to 5.)	Float	It configures the session timer T2 (in seconds) for account X. The default value is 4.	Account->Advanced->SIP Session Timer (seconds) T2
account.X.advanced.timer_t4 = (X ranges from 1 to 5.)	Float	It configures the session timer T4 (in seconds) for account X. The default value is 5.	Account->Advanced->SIP Session Timer (seconds) T4
account.X.codec.Y.enable = (X ranges from 1 to 5. Y ranges from 1 to 13.)	0 or 1	It enables or disables the specified codec for account X. **0**-Disabled **1**-Enabled	Account->Codecs
account.X.codec.Y.payload_type = (X ranges from 1 to 5. Y ranges from 1 to 13.)	PCMU, PCMA, G723_53, G723_63, G729, G722, G726-16, G726-24, G726-32, G726-40	It configures the payload type of the specified codec for account X.	Account->Codecs
account.X.codec.Y.priority = (X ranges	Integer from 0 to 10	It configures the priority of the enabled codec for account X.	Account->Codecs

from 1 to 5. Y ranges from 1 to 13.)			
account.X.codec.Y.rtpmap = (X ranges from 1 to 5. Y ranges from 1 to 13.)	Integer	It configures rtpmap of the audio codec for account X.	
account.X.dnd.enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the DND feature for account X. **0**-Disabled **1**-Enabled The default value is 0.	Phone->Features->LineX->DND ->DND
account.X.dnd.on_code = (X ranges from 1 to 5.)	String	It configures the DND on code for account X. The default value is blank.	Phone->Features->LineX->DND->On Code
account.X.dnd.off_code = (X ranges from 1 to 5.)	String	It configures the DND off code for account X. The default value is blank.	Phone->Features->LineX->DND->Off Code
account.X.always_fwd.enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the always forward feature for account X. **0**-Enabled **1**-Disabled The default value is 0.	Phone->Features->LineX->Forward->Alawys
account.X.always_fwd.target = (X ranges from 1 to 5.)	String	It configures the target number of the always forward feature for account X. The default value is blank.	Phone->Features->LineX->Forward->Always->Target
account.X.busy_fwd.enable = (X ranges	0 or 1	It enables or disables the busy forward feature for account X. **0**-Enabled	Phone->Features->LineX->Forward->Busy

from 1 to 5.)		**1**-Disabled The default value is 0.	
account.X.busy_fwd.target = (X ranges from 1 to 5.)	String	It configures the target number of the busy forward feature for account X. The default value is blank.	Phone->Features->LineX->Forward->Busy->Target
account.X.timeout_fwd.enable = (X ranges from 1 to 5.)	0 or 1	It enables or disables the timeout forward feature for account X. **0**-Enabled **1**-Disabled The default value is 0.	Phone->Features->LineX->Forward->No Answer
account.X.timeout_fwd.target = (X ranges from 1 to 5.)	String	It configures the target number of the timeout forward feature for account X. The default value is blank.	Phone->Features->LineX->Forward->No Answer->Target
account.X.timeout_fwd.timeout = (X ranges from 1 to 5.)	0, 6, 12, … 120	It configures the ring time before forwarding the incoming call for account X. The default value is 0.	Phone->Features->LineX->Forward->No Answer->After Ring Time(seconds)
account.X.always_fwd.off_code = (X ranges from 1 to 5.)	String	It configures the always forward off code for account X. The default value is blank.	Phone->Features->LineX->Forward->Always->Off Code
account.X.always_fwd.on_code = (X ranges from 1 to 5.)	String	It configures the always forward on code for account X. The default value is blank.	Phone->Features->LineX->Forward->Always->On Code
account.X.busy_fwd.off_code = (X ranges from 1 to 5.)	String	It configures the busy forward off code for account X. The default value is blank.	Phone->Features->LineX->Forward->Busy->Off Code
account.X.busy_fwd.on_	String	It configures the busy forward on code for account X.	Phone->Features->LineX->Forward->B

code = (X ranges from 1 to 5.)		The default value is blank.	usy->On Code
account.X.timeout_fwd.off_code = (X ranges from 1 to 5.)	String	It configures the timeout forward off code for account X. The default value is blank.	Phone->Features->LineX->Forward->No Answer->Off Code
account.X.timeout_fwd.on_code = (X ranges from 1 to 5.)	String	It configures the timeout forward on code for account X. The default value is blank.	Phone->Features->LineX->Forward->No Answer->On Code