

We will commence at:  
**9:00pm~10:00pm CST**



## If you have questions during the Webinar

During the formal presentation: use the chat service on the dashboard

During the Q&A Session: click the “raise hand” icon on the dashboard and we will cue you in and open your audio channel – fire away with your question for everyone to hear!

A photograph of four business professionals (two men and two women) in an office setting. They are standing behind a desk, smiling at the camera. The background shows large windows with horizontal blinds. A green horizontal bar is overlaid across the middle of the image, containing the text 'RPS and AutoProvisioning'.

# RPS and AutoProvisioning

- Y Introduction**
- Y Auto Provisioning order**
- Y Yealink RPS**
- Y Other Auto Provisioning methods**

# Introduction

# What is Auto Provisioning?

Auto Provisioning is a feature used to update phone settings and firmware **automatically**.

This allows the phone to be plugged into an **Ethernet Network** and be automatically configured with the settings needed for the phone to operate.

**In most cases no user intervention is required.**

For a phone to be successfully provisioned, the phone **Must:**

- ❑ Obtain a server address where the configuration files are stored.
- ❑ Download the configuration files from the configured server.
- ❑ Resolve and apply the configuration settings to the phones from the configuration file.
- ❑ Do other updates, for example firmware updating.

## **Auto Provisioning order**

When a Yealink phone boots it will try and obtain a provisioning server address in the following order.

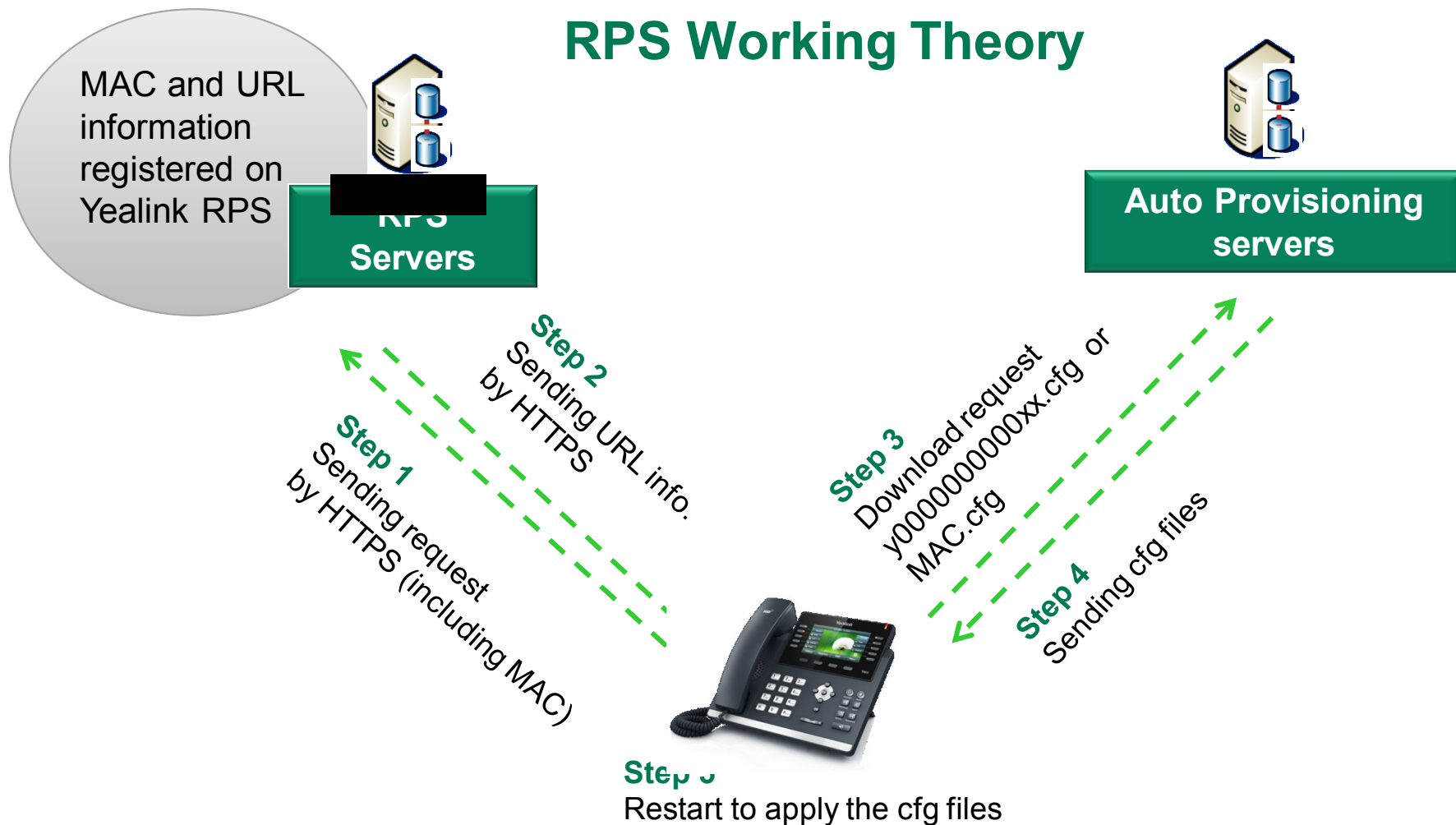
If RPS is enabled, then:

- ☐ Yealink RPS
- ☐ Zero -Touch
- ☐ PnP Server
- ☐ DHCP custom option
- ☐ DHCP option 66
- ☐ DHCP option 43
- ☐ Phone Flash (TFTP/FTP/HTTP/HTTPS)



## **Yealink RPS**

## RPS Working Theory





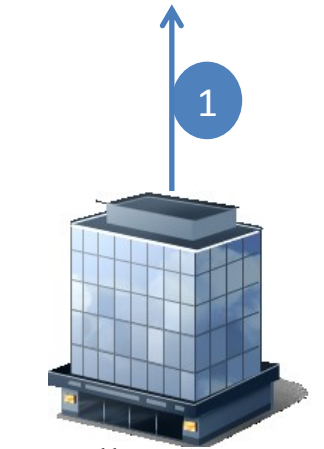
- ❑ Eliminates the need for Manual Configuration
- ❑ Allows direct shipment to customer without the need for the Reseller to configure the phone
- ❑ Plug and Play installation for the customer

Yealink Distributor



Yealink RPS

Reseller



Reseller Customer

**1 Customer orders telephone/service**

# Yealink RPS - Example

Yealink Distributor



Reseller



2



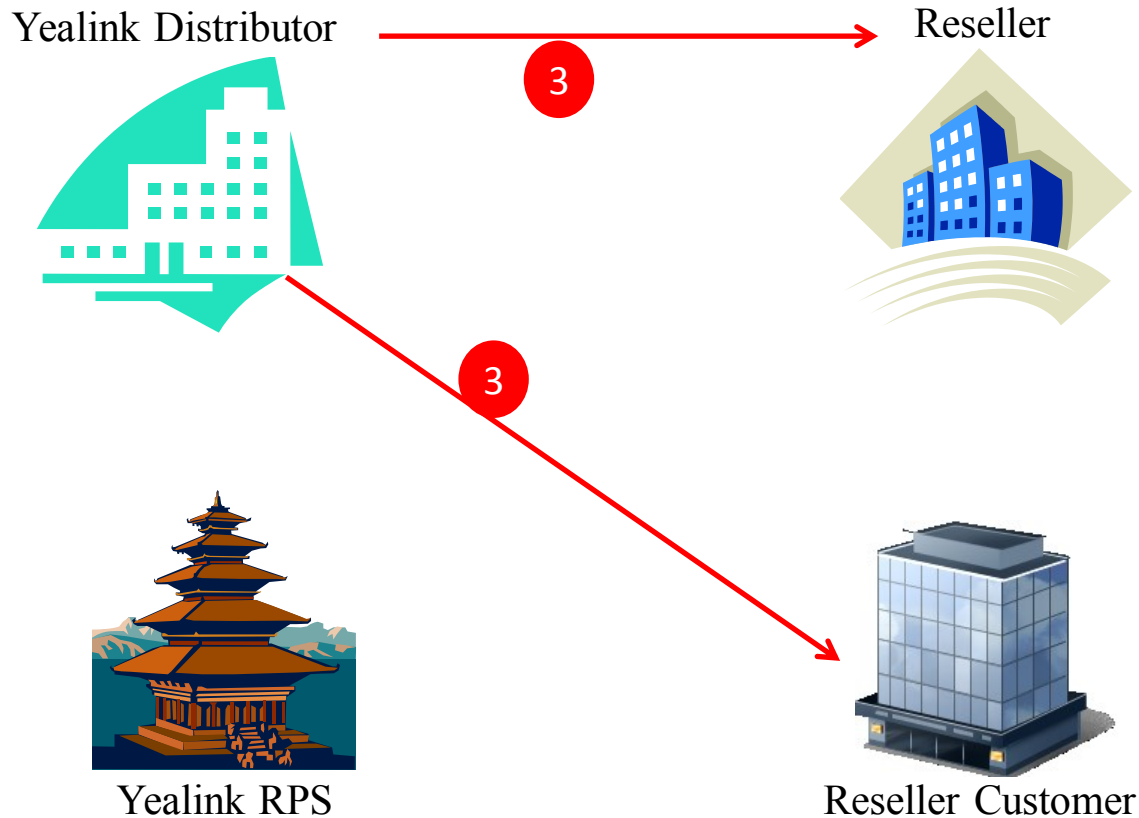
Yealink RPS



Reseller Customer

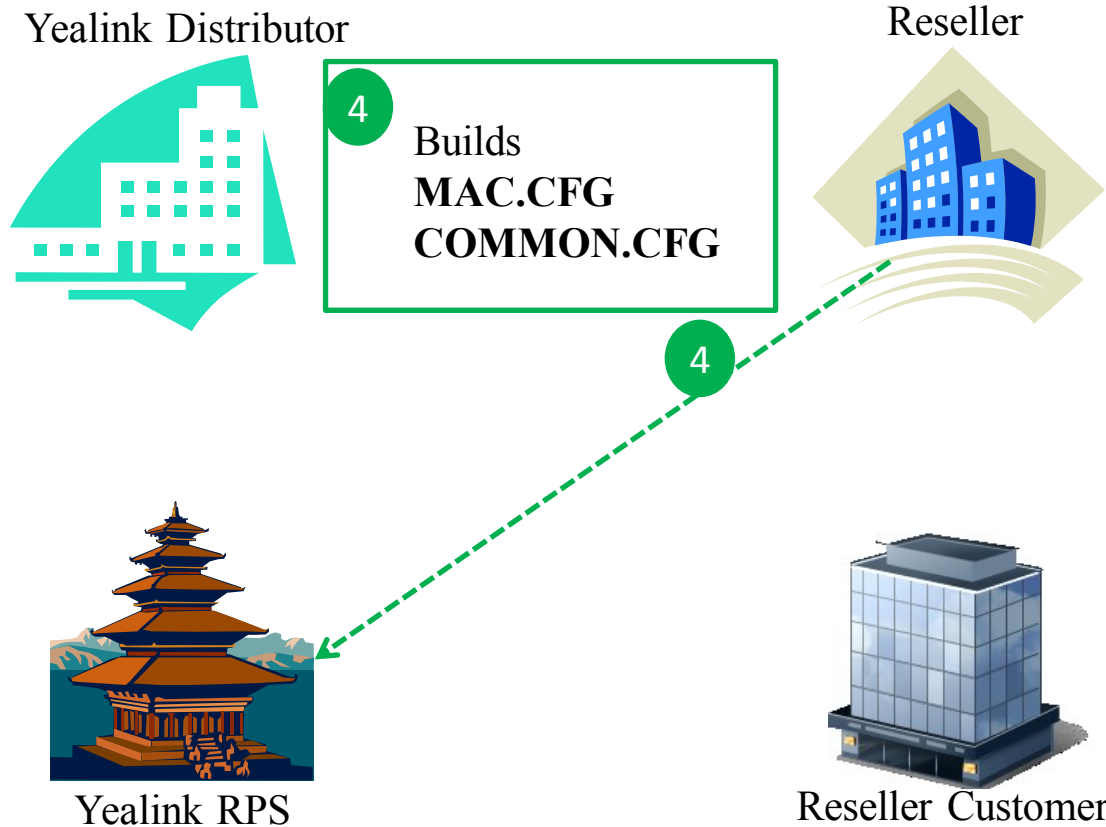
- 1 Customer orders phone
- 2 **Reseller orders phone from Yealink Distributor**

## Yealink RPS - Example



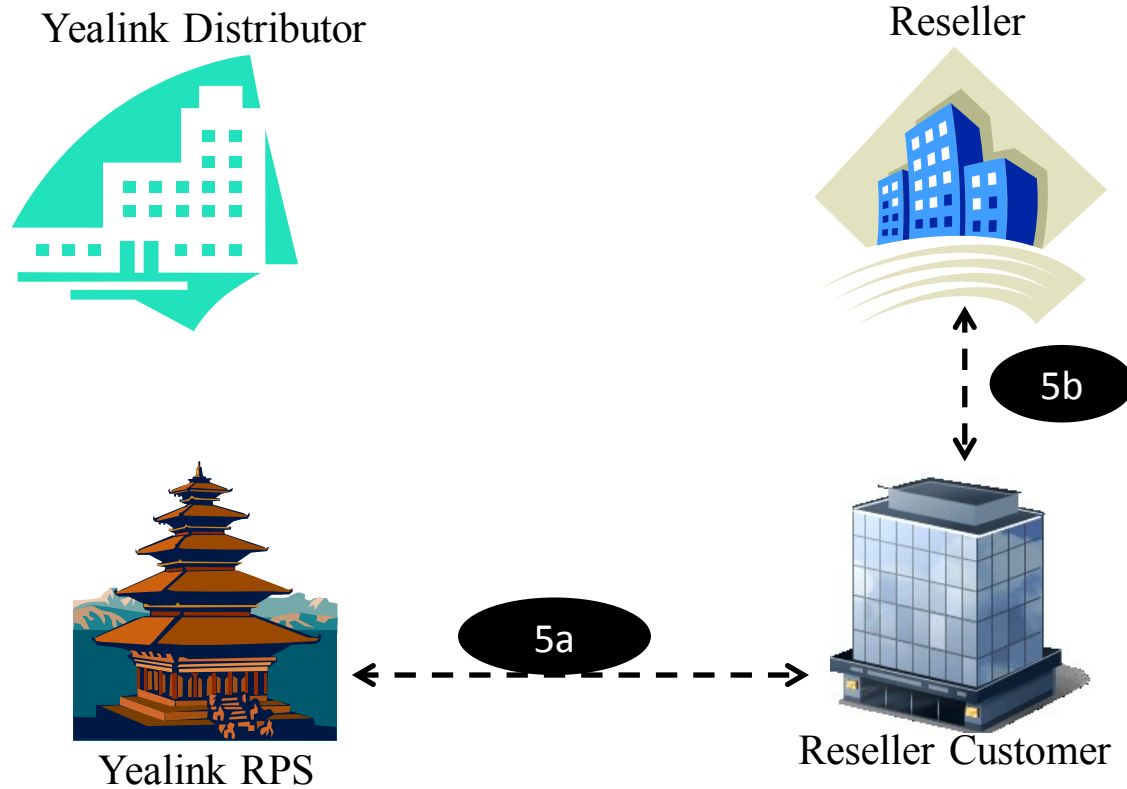
- 1 Customer orders phone
- 2 Reseller orders phone from Yealink Distributor
- 3 Yealink Distributor ships phone to customer and sends MAC details to Reseller**

# Yealink RPS - Example



- 1 Customer orders phone
- 2 Reseller orders phone from Yealink Distributor
- 3 Yealink Distributor ships phone to customer and sends MAC details to Reseller
- 4 **Reseller creates provisioning files**
- 4 **Reseller update RPS with MAC address and provisioning server details**

# Yealink RPS - Example



- 1 Customer orders phone
- 2 Reseller orders phone from Yealink Distributor
- 3 Yealink Distributor ships phone to customer and sends MAC details to Reseller
- 4 Reseller creates provisioning files
- 4 Reseller update RPS with MAC address and provisioning server details

**5a Yealink phone boots and requests Provisioning Server details from RPS, Yealink RPS provides details.**

**5b Phones request and receives CFG files from Provisioning Server**



## What you need to do in RPS process?



Yealink Distributor

- Creates RPS account for Resellers
- Ships phones installed RPS firmware to Customers
- Sends MAC details to Resellers



Reseller

- Applies RPS account from Yealink Distributors
- Orders phones installed RPS firmware from Yealink Distributors
- Creates Auto Provisioning Server
- Creates **Correct Provisioning files** including common.cfg and mac.cfg
- Login Yealink RPS to update MAC address and provisioning server details



Reseller Customer

- Orders phone from Resellers
- Make sure phones can connect to Public network

## Auto Provisioning Server

- ❖ Contains the configuration files for each phone
  - y0000000000xx.cfg (Common file)
  - MAC-based.cfg (Unique file)
- ❖ Located at Reseller
- ❖ Web Server Based
- ❖ Supports HTTPS/HTTP/FTP/TFTP
  - Uses Port 80 or 443(encrypted certificate based)

## Configuration Files

### MAC-based.cfg

- Unique per phone
- SIP account ID
- SIP account password
- Codecs
- Display name
- SIP Server
- SIP Port

### y00000000000xx.cfg

- Unique per model
- BLF
- Network parameters
- Certificate
- SYSLog info
- SYSlog level (needs to be 6)
- VPN
- Auto provision check time

#### Directory structure

- CustName\Location\accounts\Model
- CustName\Location\Sales\Model

- ❑ The phone will download two configuration files Common CFG file and MAC-based CFG file from the provisioning server.
- ❑ The **Common CFG file** will be used by all phones of the relevant model while **the MAC-based CFG file** will only be used by the phone with the corresponding MAC Address.
- ❑ A common CFG file has a fixed name for each model while a MAC-Oriented CFG file is named after a MAC address of the specific phone.

# Yealink Configuration File Names

Model	Hardware	Firmware	Common Configuration File
W52P-HS	26.x.x.x	26.x.x.x	
W52P-Base	25.x.x.x	25.x.x.x	y0000000000025.cfg
T46	28.x.x.x	28.x.x.x	y0000000000028.cfg
T42	29.x.x.x	29.x.x.x	y0000000000029.cfg
T41	36.x.x.x	36.x.x.x	y0000000000036.cfg
T38	21.x.x.x	38.x.x.x	y0000000000038.cfg
T32	22.x.x.x	32.x.x.x	y0000000000032.cfg
T28	1.x.x.x	2.x.x.x	y0000000000000.cfg
T26	4.x.x.x	6.x.x.x	y0000000000004.cfg
T22	5.x.x.x	7.x.x.x	y0000000000005.cfg
T21	34.x.x.x	34.x.x.x	y0000000000034.cfg
T20	7.x.x.x	9.x.x.x	y0000000000007.cfg
T19	31.x.x.x	31.x.x.x	y0000000000031.cfg

- ❑ Example common configuration file (M7) for upgrading phone firmware

```
#!/version:1.0.0.1
```

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

```
#####
```

```
###          Configure the access URL of firmware          ##
```

```
#####
```

#Before using this parameter, you should store the desired firmware (x.72.x.x.rom) #to the provisioning server.

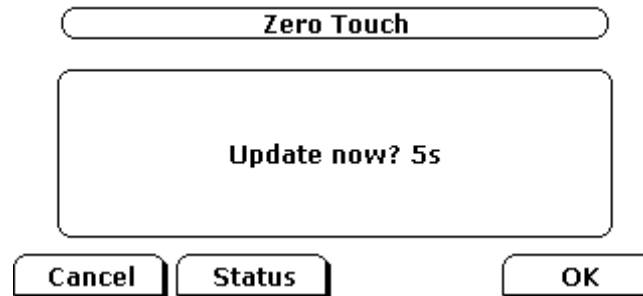
firmware.url = <http://10.2.5.237:8080/28.72.0.25.rom>



## Configuration Files Tools

- Yealink Configuration Generator Tool (CGT) provides you with quicker and easier configuration generation, modification, conversion and encryption. [Yealink Configuration Generator Tool](#)
- AutoProvisioning template packed in Yealink website [Yealink T19P/T2XP/T4X AutoProvisioning Template\\_V72](#)
- AutoProvisioning Guide in Yealink [Yealink Support Module](#)

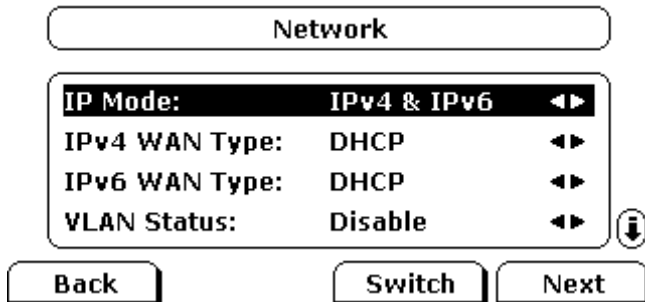
## **Other Auto Provisioning methods**





Zero Active	<input type="text" value="Enabled"/>	
Wait Time (0~100s)	<input type="text" value="5"/>	

- ❑ When Zero Touch is enabled, a configuration wizard will be displayed after the phone has booted



Network

IP Mode:	IPv4 & IPv6	◀▶
IPv4 WAN Type:	DHCP	◀▶
IPv6 WAN Type:	DHCP	◀▶
VLAN Status:	Disable	◀▶

Back Switch Next ⓘ

Network Configuration Options



Auto Provision

URL:
User Name:
Password:

Back 2aB Delete OK ⓘ

Provisioning Server Address, Authentication  
user name (optional) and password (optional)  
Configuration Options

- ❑ Zero Touch allows you to configure the network parameters and provisioning server address via the phone's user interface during startup

## Auto Provision

PNP Active

☒ On ☐ Off ?

- ❑ Yealink Phones Support PnP
- ❑ Phone sends a SUBSCRIBE message to obtain provisioning server address details during startup.
- ❑ PnP server responses with a **SIP NOTIFY** message, and an address of the provisioning server.

# Plug and Play (PnP) Server

The image shows a Wireshark capture of a SIP session. The packet list at the top shows six packets. Packet 3 is a NOTIFY request from 10.2.9.46 to 10.2.9.106. The packet details pane shows the structure of this message, with several fields highlighted by red boxes.

No.	Time	Source	Destination	Protocol	Info
1	0.000000	10.2.9.106	224.0.1.75	SIP	Request: SUBSCRIBE sip:MAC0015652a3d1a@intern.IPPhone.com
2	0.663070	10.2.9.46	10.2.9.106	SIP	Status: 202 Accepted subscription
3	0.666915	10.2.9.46	10.2.9.106	SIP	Request: NOTIFY sip:MAC0015652a3d1a@10.2.9.106:5059
4	0.671499	10.2.9.106	10.2.9.46	SIP	Status: 200 OK
5	1.807473	10.2.9.106	10.2.1.199	SIP	Request: REGISTER sip:10.2.1.199
6	1.810835	10.2.1.199	10.2.9.106	SIP	Status: 200 OK (1 bindings)

Frame 3 (729 bytes on wire, 729 bytes captured)

- Ethernet II, Src: XiamenYe\_11:18:f1 (00:15:65:11:18:f1), Dst: XiamenYe\_2a:3d:1a (00:15:65:2a:3d:1a)
- Internet Protocol, Src: 10.2.9.46 (10.2.9.46), Dst: 10.2.9.106 (10.2.9.106)
- User Datagram Protocol, Src Port: sip (5060), Dst Port: sds (5059)
- Session Initiation Protocol
  - Request-Line: NOTIFY sip:MAC0015652a3d1a@10.2.9.106:5059 SIP/2.0  
Method: NOTIFY
  - Request-URI: sip:MAC0015652a3d1a@10.2.9.106:5059  
[Resent Packet: False]
  - Message Header
    - Via: SIP/2.0/UDP 10.2.9.46:5060;branch=z9hg4bk976665779
    - From: <sip:MAC0015652a3d1a@intern.IPPhone.com>;tag=57906253
    - To: <sip:MAC0015652a3d1a@intern.IPPhone.com>;tag=241054  
Call-ID: 241054@10.2.9.106
    - CSeq: 2 NOTIFY  
Sequence Number: 2  
Method: NOTIFY
    - Contact: <sip:MAC0015652a3d1a@10.2.9.46:5060>  
Content-Type: application/ur1  
Allow: INVITE, INFO, PRACK, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REGISTER, SUBSCRIBE, REFER, PUBLISH, UPDATE, MESSAGE  
Max-Forwards: 70  
User-Agent: Tiptel IP 286 /2.43.13.8  
Subscription-State: terminated;reason=timeout  
Event: ua-profile  
Allow-Events: talk,hold,conference,refer,check-sync  
Content-Length: 24
  - Message Body  
http://10.2.9.2:99/http/

Frame (frame), 729 bytes      Packets: 6 Displayed: 6 Marked: 0      Profile: Default

- ❑ Yealink Phones support DHCP custom options or via Option 66 and 43.
- ❑ Custom option, DHCP option 66 then DHCP option 43
- ❑ **The Option 66 is used to identify the TFTP server.**
- ❑ Option 43 can be used to encapsulate vendor specific options
- ❑ DHCP Custom Option must be supported by DHCP Server

DHCP Active	<input checked="" type="radio"/> On <input type="radio"/> Off ?
Custom Option(128~254)	<input type="text"/> ?
DHCP Option Value	<input type="text" value="yealink"/> ?

# DHCP Options

option128 ok.pcap [Wireshark 1.6.12 (SVN Rev 46251 from /trunk-1.6)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help





Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	0.0.0.0	255.255.255.255	DHCP	DHCP Discover - Transaction ID 0x4c4c7706
2	0.000895	10.3.5.162	10.3.5.117	DHCP	DHCP Offer - Transaction ID 0x4c4c7706
3	0.119569	0.0.0.0	255.255.255.255	DHCP	DHCP Request - Transaction ID 0x4c4c7706
4	0.120392	10.3.5.162	10.3.5.117	DHCP	DHCP ACK - Transaction ID 0x4c4c7706
5	3.141401	10.3.5.117	10.3.5.162	HTTP	GET /dhcptest128/y0000000000010.cfg HTTP/1.1
6	3.144660	10.3.5.162	10.3.5.117	HTTP	Continuation or non-HTTP traffic
7	3.620680	10.3.5.117	10.3.5.162	HTTP	GET /dhcptest128/00156539bf6e.cfg HTTP/1.1
8	3.622216	10.3.5.162	10.3.5.117	HTTP	Continuation or non-HTTP traffic
9	3.645530	10.3.5.117	10.3.5.162	HTTP	GET /dhcptest128/00156539bf6e.cfg HTTP/1.1
10	3.646984	10.3.5.162	10.3.5.117	HTTP	Continuation or non-HTTP traffic
11	5.675009	10.3.5.117	10.3.5.162	HTTP	GET /dhcptest128/00156539bf6e.cfg HTTP/1.1
12	5.676517	10.3.5.162	10.3.5.117	HTTP	Continuation or non-HTTP traffic

Option: (t=1,l=4) Subnet Mask = 255.255.255.0  
Option: (t=51,l=4) IP Address Lease Time = 6 hours  
Option: (t=59,l=4) Rebinding Time Value = 5 hours, 15 minutes  
Option: (t=58,l=4) Renewal Time Value = 3 hours  
Option: (t=43,l=34) Vendor-Specific Information  
Option: (t=128,l=35) DOCSIS full security server IP [TODO]  
Option: (t=66,l=34) TFTP Server Name = "http://10.3.5.162:8080/dhcptest66/"  
Option: (66) TFTP Server Name  
Length: 34  
Value: 687474703a2f2f31302e3332e352e3136323a383038302f64...  
Option: (t=54,l=4) DHCP Server Identifier = 10.3.5.162  
End option

## Web Interface

- ❑ Yealink Phones allow manual entry of the Provisioning Server.
- ❑ This is done via the web interface of the phone.
- ❑ Enter the Server URL and Username and Password if required.

Server URL	<input type="text" value="http://10.2.4.38:8080/T4X/"/>	
User Name	<input type="text" value="Tony"/>	
Password	<input type="password" value="....."/>	
Common AES Key	<input type="password" value="....."/>	
MAC-Oriented AES Key	<input type="password" value="....."/>	

# Coming soon....

Our next Yealink Webinar:  
“**How to address OPENVPN  
issues with Yealink phone?**”

**Wednesday May 28<sup>st</sup>**

Info and Registration: [Yealink Webinar](#)





If you would like to ask a question, click the “**Raised Hand**” icon in your GoToWebinar Dashboard.

We will activate your voice channel and cue you in.



# Thank You!

## **Contact Information**

[www.yealink.com](http://www.yealink.com)

[support@yealink.com](mailto:support@yealink.com)

[Support.usa@yealink.com](mailto:Support.usa@yealink.com)

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