

VP2009 Auto Provision Manual

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1. Summary

The presented document will show you how auto provision works and how to make auto provision work. The process of a successful auto provision is:

1. Obtain a server address in which store the configuration files.
2. Download the configuration files from the configured server.
3. Resolve and apply the configurations written in the configuration file.
4. Do other updates, for example the firmware updating.

2. Obtain the server address

When the phone boots up, it will go by the following process to try to obtain the server address:

PnP server → DHCP custom option → DHCP option 66 → DHCP option 43 → Phone Flash

The following are the details of each process:

a) Pushed by PnP servers

The screenshot displays the 'Advanced' configuration page for a Yealink phone. The 'Autoprovision' section is active, showing various settings. The 'PNP Active' option is selected and highlighted with a red rectangle. Below it, 'DHCP Active' is set to 'Off'. The 'Custom Option(128~254)' field is empty. The 'Server URL' is set to 'http://blank'. The 'Common AES Key' and 'MAC-Oriented AES Key' fields are also empty. The 'Power On' option is set to 'Off'. The 'Repeatedly' option is set to 'Off'. The 'Interval(Minutes)' is set to '60'. The 'Weekly' option is set to 'Off'. The 'Time' is set to '02:00' to '03:00'. The 'Day of week' section shows all days from Sunday to Saturday checked. The 'System Log' section shows 'Type' set to 'Local' and 'Server Name' set to '255.255.255.255'. There are buttons for 'Autoprovision Now', 'Export syslog', 'Confirm', and 'Cancel'.

Plug 'n Play (PnP) provides a proprietary method to enable "Auto Provisioning". If PnP config is enabled, the phone will send SIP SUBSCRIBE messages to a multicast address when it boots up. Any SIP server understanding that message will reply with a SIP NOTIFY message containing the Auto Provisioning Server URL where the phones can request their configuration. Modern SIP PBXs/Proxies can provide the PnP configuration data. Please refer to the manual of your PBX/Proxy. This kind of auto provision is mainly used under some possible circumstance like your phones have no default provisioning server set and are not able to detect DHCP options (when they use static IP address). Pay attention to the point that **PnP config** has the highest priority in obtaining the provisioning server address, if it fails to get any information from PnP servers, it will go to the other processes.

b) Detect DHCP custom option

It must be configured on the phone by web management:

The screenshot shows the 'Advanced' configuration page for a Yealink phone. The 'Autoprovision' section is highlighted with a red box. The settings are as follows:

- PNP Active: ☐ On ☒ Off
- DHCP Active: ☒ On ☐ Off
- Custom Option(128~254): 150
- Server URL: http://blank
- Common AES Key: [Empty field]
- MAC-Oriented AES Key: [Empty field]
- Power On: ☒ On ☐ Off
- Repeatly: ☐ On ☒ Off
- Interval(Minutes): 60
- Weekly: ☐ On ☒ Off
- Time: 02 : 00 -- 03 : 00
- Day of week: ☒ Sunday, ☒ Monday, ☒ Tuesday, ☒ Wednesday, ☒ Thursday, ☒ Friday, ☒ Saturday
- System Log Type: ☐ Disabled ☒ Local ☐ Server
- Server Name: 255.255.255.255

Buttons: Autoprovision Now, Export syslog, Confirm, Cancel.

A valid **Custom Option** is from 128 to 254. The **Custom Option Type** must be in accordance with the one defined in the DHCP server. If the phone fails to get any information from custom option, it will go to detect DHCP Option 66.

c) Detect DHCP Option 66

If the DHCP option is enabled, Yealink phones will check this option by default. If the phone fails to get any information from DHCP Option 66, it will go to detect DHCP Option 43.

d) Detect DHCP Option 43

If the DHCP option is enabled, Yealink phones will check this option by default. If the phone fails to get any information from DHCP Option 43, it will go to detect the phone flash.

e) Detect the phone flash

The value is what you can read from the web management of the phone:

The screenshot shows the 'Advanced' tab of the 'Phone' settings. The 'Server URL' field is highlighted with a red box and contains the value 'ftp://account:password@10.1.4.43'. Other settings include PNP Active, DHCP Active, Custom Option, Common AES Key, MAC-Oriented AES Key, Power On, Repeatly, Interval, Weekly, Time, Day of week, System Log, and Server Name.

The supported protocols of a URL are: HTTP/HTTPS/FTP/TFTP. For example, the following settings will make the phone access to FTP server ftp://account:password@10.1.4.43. If the phone fails to get any information from phone flash, the current round of obtaining server address will stop here.

Note: there are 4 kind of auto provision setting:

Power on, obtain the server address once the phone is power on.

Repeatly, obtain the server address with the interval configured.

Weekly, obtain the server address in the configured period.

Autoprovision Now, obtain the server address now.

While the **Power on** option is selected, phone will go through the whole process. Else, it will go to detect the phone flash only.

3. Download configuration files

There are 2 configuration files both of which are CFG formatted that the phone will try to download from the server during provisioning. We call them Common CFG file and MAC-Oriented CFG file. The Common CFG file will be effectual for all the VP2009 phones. However, a MAC-Oriented CFG file will only be effectual for the specific phone which can be told by its MAC address. A MAC-Oriented CFG file is named after a MAC address of the specific phone. The names of the Common CFG file for VP2009 is: y000000000022.cfg

For instance, for a VP2009 whose MAC address is 001565113af8, the 2 configuration files for it will be: y000000000022.cfg and 001565113af8.cfg.

To have this name division on configuration files will help when doing same auto provision to mass phones. For example, assumed that you have 1000 pieces of VP2009 and you want to update firmware for all phones, you just need to prepare only one y000000000022.cfg which defines the firmware update request, then put it onto the provisioning server.

Note: In case that the phone is on a live call, it will keep on asking for the CFG files with an interval of 5 minutes till the call is end.

4. Resolve and apply the configurations

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

The screenshot shows the 'Advanced' configuration page for a Yealink device. The 'Autoprovision' section is highlighted with a red box. It contains the following settings:

- PNP Active: ☒ On ☐ Off
- DHCP Active: ☒ On ☐ Off
- Custom Option(128~254):
- Server URL:
- Common AES Key:
- MAC-Oriented AES Key:
- Power On: ☐ On ☒ Off
- Repeatly: ☐ On ☒ Off
- Interval(Minutes):
- Weekly: ☐ On ☒ Off
- Time: : -- :
- Day of week: ☒ Sunday, ☒ Monday, ☒ Tuesday, ☒ Wednesday, ☒ Thursday, ☒ Friday, ☒ Saturday
- System Log: ☐ Disabled ☒ Local ☐ Server
- Server Name:

Buttons at the bottom include 'Confirm', 'Cancel', and 'Autoprovision Now'.

In a CFG file, there are texts defining configurations. Here's a brief description to the texts. Take the AES_KEY section in the following picture for example.

```

1 [ cfg:/rundata/config/system.ini,reboot=1 ]
2 ;;Auto Provision
3 AutoProvision.bEnablePowerOn = 0
4 AutoProvision.bEnablePowerOn = 0
5 AutoProvision.strWeeklyMask = 0123456
6 AutoProvision.strWeeklyBeginTime = 02:00
7 AutoProvision.strWeeklyEndTime = 03:00
8 AutoProvision.bEnableRepeat = 0
9 AutoProvision.nRepeatMinutes = 60
10 AutoProvision.bEnablePNP = 0
11 AutoProvision.strPNPMulticastIP = 224.0.1.75
12 AutoProvision.bEnableDHCPOption = 0
13 AutoProvision.listUserOptions =
14 AutoProvision.strServerURL = http://blank
15 AutoProvision.strKeyAES16 =
16 AutoProvision.strKeyAES16MAC =
17
18

```

The following texts are system-defined that cannot be changed manually; otherwise it will cause a failure to auto provision:

1. The directory of the section [cfg:/rundata/config/system.ini,reboot=1]
2. The parameters AutoProvision.strKeyAES16 and AutoProvision.strKeyAES16MAC

You can only specify a valid value after the equal sign “=”. This is a section for specifying the AES keys. So you can make it like follow to specify 1234567890123456 for both **Common AES Key** and **MAC-Oriented AES Key**:

```
[ cfg:/rundata/config/system.ini,reboot=1 ]
AutoProvision.strKeyAES16 = 1234567890123456
AutoProvision.strKeyAES16MAC = 1234567890123456
```

The lines start with **;;** are instructions, they don't make any sense to the configuration, just for easy understanding when read by certain person. For the detailed instruction of the parameters written in the CFG files, please refer to the **Appendix A**.

Note: If the phone finds that the downloaded CFG files are completely the same as it is applied the very last time, the auto provision will stop here. The phone knows it by comparing the MD5 value of the downloaded CFG files and the latest applied CFG files.

5. Do other updates

It depends on the texts written in the CFG files to decide whether to make other updates. There are mainly the following other updates:

a) Update Firmware

The section defining request for firmware update in the CFG files:

```
#####
[ rom:Firmware]
url =
```

```
#####
```

An example:

```
[ rom:Firmware]
url = ftp://pablo:123@192.168.0.231/VP2009/22.20.0.2.rom
```

This URL will make the phone use account: pablo and password: 123 to access the ftp server: <ftp://192.168.0.231>, download and upgrade the firmware 22.20.0.2.rom from folder VP2009.

b) Upload Video

The section defining request for video upload in the CFG files:

```
#####
[ bin:/rundata/userdata/AD/filename.mov,reboot=0 ]
url =
```

```
#####
```

An example:

```
[ bin:/rundata/userdata/AD/myvideo.mov,reboot=0 ]
```

```
url = ftp://pablo:123@192.168.0.231/VP2009/myvideo.mov
```

This URL will make the phone use account: pablo and password: 123 to access the ftp server: <ftp://192.168.0.231>, download the video myvideo.mov from folder VP2009. Please be noted that the file name of video is no blank space and special characters include.

c) Upload Photo

The section defining request for photo upload in the CFG files:

I) Screensaver Photo

```
#####
```

```
[ bin:/rundata/userdata/ePhoto/XXX.XXX,reboot=0 ]
```

```
url =
```

```
#####
```

II) Wallpaper

```
#####
```

```
[ bin:/rundata/userdata/wallpaper/XXX.XXX,reboot=0 ]
```

```
url =
```

```
#####
```

An example:

```
[ bin:/rundata/userdata/wallpaper/mywallpaper.jpg,reboot=0 ]
```

```
url = ftp://pablo:123@192.168.0.231/VP2009/mywallpaper.jpg
```

This URL will make the phone use account: pablo and password: 123 to access the ftp server: <ftp://192.168.0.231>, download the wallpaper mywallpaper.jpg from folder VP2009. Please be noted that the file name of wallpaper is no blank space and special characters include.

d) Upload Local Phone Book

The section defining request for Local Phone Book upload in the CFG files:

```
#####
```

```
[bin:/rundata/data/contactData.xml,reboot=0]
```

```
url =
```

```
#####
```

An example:

```
[bin:/rundata/data/contactData.xml,reboot=0]
```

```
url = ftp://pablo:123@192.168.0.231/VP2009/contactData.xml
```

Note that the name has to be contactData.xml.

The format of the XML file is different from the file which you use in "Remote Phone Book". It's the same as the "Local Phone Book". You can export an existed "Local Phone Book" to see what the format is exactly.

About "Remote Phone Book" update, please refer to the **Appendix A** as below.

e) Upload Ringtone

The section defining request for Ringtone upload in the CFG files:

```
#####
```



```
[ bin:/rundata/userdata/sound/XXX.wav,reboot=0]
```

```
url =
```

```
#####
```

An example:

```
[ bin:/rundata/userdata/sound/my.wav,reboot=0]
```

```
url = ftp://pablo:123@192.168.0.231/VP2009/my.wav
```

This URL will make the phone use account: pablo and password: 123 to access the ftp server: <ftp://192.168.0.231>, download the ringtone my.wav from folder VP2009. Please be noted that the file name of ringtone is no blank space and special characters include.

6. Appendix A

a) Description of configuration parameters in CFG file

Section Header and Path	Parameters	Permitted Values	Descriptions
<p>[cfg:/rundata/config/user/voip/sipAccount0.cfg, reboot=0]</p> <p>Note:</p> <p>1. VP2009 support 4 accounts, for each account, there are completely same parameters and they share same permitted values and default values. The difference is just on the path. The path for account1 is /rundata/config/user/voip/sipAccount0.cfg Account2 is /rundata/config/user/voip/sipAccount1.cfg Account3 is /rundata/config/user/voip/sipAccount2.cfg Account4 is /rundata/config/user/voip/sipAccount3.cfg</p> <p>2. "reboot=0" means phone won't reboot after update</p>	account.Enable	0 or 1	It defines the Line Active value of account1. 0 stands for off 1 stands for on The default is: 0
	account.DisplayName	String	It defines the Display Name of account1. The default is blank.
	account.UserName	String	It defines the User Name of account1. The default is blank.
	account.AuthName	String	It defines the Register Name of account1. The default is blank.
	account.password	String	It defines the Password of registration for account1. The default is blank.
	account.SIPServerHost	Domain name or IP Address	It defines the SIP Server of account1. The default is blank.
	account.SIPServerPort	Integer	It defines the Port of the SIP Server of account1. The default is 5060.
	account.SIPListenPort	Integer	It defines the Local SIP Port of account1. The default is 5062.
	account.Expire	Integer	It defines the value of

			Login Expire of account1. The default is 3600.
	account.UseOutboundProxy	0 or 1	It defines the value of Enable Outbound Proxy Server of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	account.OutboundHost	Domain name or IP Address	It defines the Outbound Proxy Server of account1. The default is blank.
	account.OutboundPort	Integer	It defines the Port of the Outbound Proxy Server of account1. The default is 5060.
	account.BakOutboundHost	Domain name or IP Address	It defines the Backup Outbound Proxy Server of account1. The default is blank.
	account.BakOutboundPort	Integer	It defines the Port of Backup Outbound Proxy Server of account1. The default is 5060.
	account.EnableUserEqualPhone	0 or 1	It defines the value of Use user=phone of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	account.Enable 100rel	0 or 1	It defines the value of 100 reliable retransmission of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	account.SubscribeRegister	0 or 1	It defines the value of Subscribe Register of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	account.EnableSessionTimer	0 or 1	It defines the value of Use Session Timer of account1. 0 stands for Disabled.

			1 stands for Enabled. The default is 0.
	account.SessionExpires	Integer from 1 to 999	It defines the value of Session Timer of account1. The default is 100.
	account.SessionRefresher	0 or 1	It defines the value of Refresher of account1. 0 stands for Uac. 1 stands for Uas. The default is 0.
	account.SubscribeMWI	0 or 1	It defines the value of Subscribe for MWI of account1. 0 stands for Disable. 1 stands for Enable. The default is 0.
	account.SubscribeMWIExpire	Integer from 0 to 7200	It defines the value of MWI Subscription Period of account1. The default is 3600.
	account.Transport	0 or 1	It defines the value of Transport of account1. 0 stands for UDP. 1 stands for TCP. The default is 0.
	account.CIDSource	0 or 1	It defines the value of Caller ID Header of account1. 0 stands for FROM. 1 stands for PAI. The default is 0.
	account.VoiceMail	String	It defines Voice Mail number of account1. The default is blank.
	account.RegisterMAC	0 or 1	It defines the value of SIP Send MAC of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	DTMF.DTMFInbandTransfer	0,1 or 2	It defines the value of DTMF Type of account1. 0 stands for INBAND. 1 stands for RFC2833.

			2 stands for SIP INFO. The default is 1.
	DTMF.DTMFPayload	Integer from 96 to 255	It defines the value of DTMF Payload of account1. The default is 101.
	NAT.MaxRTPPort	Integer from 0 to 65535	It defines the Max value of RTP Port of account1. The default is 11800
	NAT.MinRTPPort	Integer from 0 to 65535	It defines the Min value of RTP Port of account1. The default is 11780
	NAT.NATTraversal	0 or 1	It defines the value of NAT Traversal of account1. 0 stands for Disabled. 1 stands for STUN. The default is 0.
	NAT.STUNServer	Domain name or IP Address	It defines the value of STUN Server of account1. The default is blank.
	NAT.STUNPort	Integer	It defines the Port of STUN Server of account1. The default is 3478.
	NAT.EnableUDPUpdate	0 or 1	It defines the value of UDP Keep-alive Message of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	NAT.UDPUpdateTime	Integer	It defines the value of UDP Keep-alive Interval of account1. The default is 30(seconds).
	NAT.rport	0 or 1	It defines the value of Rport of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	ADVANCED.default_t1	Float	It defines the value of SIP Session Timer T1 of account1. The default is 0.5.
	ADVANCED.default_t2	Float	It defines the value of SIP Session Timer T2 of

			account1. The default is 4.
	ADVANCED.default_t4	Float	It defines the value of SIP Session Timer T4 of account1. The default is 5.
	ADVANCED.VideoBandwidth	0,128,192,256,320,384,512,768 or 1024	It defines the value of Bandwidth for Video. 0 stands for auto. 32 stands for 32kbps. 64 stands for 64kbps. 128 stands for 128kbps. 192 stands for 192kbps. 256 stands for 256kbps. 320 stands for 320kbps. 384 stands for 384kbps. 512 stands for 512kbps. 768 stands for 768kbps. 1024 stands for 1024kbps. The default is 0.
	enable	0 or 1	It defines the activity of a specific codec. 0 means to disable the codec. 1 means to enable the codec.
	PayloadType	Audio codec can choose one of the following: PCMU PCMA G729 G722 G723 GSM AACLC iLBC Video codec can choose one of the following:	It stands for a specific Codec type.

		H264 H263 mp4v-es	
	priority	Audio Codec: Integer from 1 to 8 Video Codec: Integer from 1 to 3	It stands for the priority of a specific enabled codec.
	rtpmap	Integer	It defines the payload of the codec.
	para	String	It defines the payload of the media format.
	<p>For each account there are totally 8 usable Audio Codecs and 3 usable Video Codecs. Each one has a section in configuration files and so there are sections from audio0 to audio8 and video0 to video2 for each account.</p> <p>They have default values as below. If you want to change one of them, please note that there should be no same parameter values for the same account:</p> <p>audio0.enable = 1 audio0.priority = 2 audio0.PayloadType = PCMA audio0.rtpmap = 8</p> <p>audio1.enable = 1 audio1.priority = 1 audio1.PayloadType = PCMU audio1.rtpmap = 0</p> <p>audio2.enable = 1 audio2.priority = 3 audio2.PayloadType = G729 audio2.rtpmap = 18</p> <p>audio3.enable = 0 audio3.priority = 4 audio3.PayloadType = G722 audio3.rtpmap = 9</p> <p>audio4.enable = 0</p>		

	<p>audio4.priority = 5 audio4.PayloadType = G723 audio4.rtpmap = 4</p> <p>audio5.enable = 0 audio5.priority = 6 audio5.PayloadType = GSM audio5.rtpmap = 3</p> <p>audio6.enable = 0 audio6.priority = 7 audio6.PayloadType = AACLC audio6.rtpmap = 102</p> <p>audio7.enable = 0 audio7.priority = 8 audio7.PayloadType = iLBC audio7.rtpmap = 122</p> <p>video0.enable = 1 video0.priority = 1 video0.PayloadType = H264 video0.rtpmap = 99 video0.para = profile-level-id=42800D; packetization-mode=0; max-mbps=11880</p> <p>video1.enable = 1 video1.priority = 2 video1.PayloadType = H263 video1.rtpmap = 34 video1.para = CIF=1; QCIF=1</p> <p>video2.enable = 1 video2.priority = 3 video2.PayloadType = mp4v-es video2.rtpmap = 102 video2.para = CIF=1 QCIF=1 MaxBR=3840</p>		
[rom:Firmware]	url	HTTP/HTTPS /FTP/TFTP Address	It defines the URL which is supposed to be the auto provisioning server.
[psw:/rundata/data/htpasswd]	admin	String	It defines the new password for admin .
	Var	String	It defines the new

			password for var .
	user	String	It defines the new password for user .
[cfg:/rundata/config/system.ini, reboot=1]	Network.eWANType	0,1 or 2	It defines the type of Internet Port (WAN) . 0 stands for DHCP. 1 stands for PPPoE. 2 stands for Static IP Address. The default is 0.
	Network.strWanIP	IP Address	It defines the IP Address when using static WAN settings. The default is blank.
	Network.strWanMask	Network Mask	It defines the Subnet Mask when using static WAN settings. The default is blank.
	Network.strWanGateway	IP Address	It defines the Default Gateway when using static WAN settings. The default is blank.
	Network.strWanPrimary DNS	IP Address	It defines the Primary DNS when using static WAN settings. The default is blank.
	Network.strWanSecondaryDNS	IP Address	It defines the Secondary DNS when using static WAN settings. The default is blank.
	Network.strPPPoEUser	string	It defines the User name when using PPPoE WAN settings. The default is blank.
	Network.strPPPoEPin	string	It defines the Password when using PPPoE WAN settings. The default is blank.
	VLAN.bEnable	0 or 1	It defines whether to enable VLAN . 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	VLAN.nID	Integer from	It defines the value of

		0 to 4094	VID. The default is 0.
	VLAN.nPriority	Integer from 0 to 7	It defines the value of USRPRIORITY . The default is 0.
	LocalTime.strTimeName	Time from -11 to +12	It defines the Time Zone you expect to use on the phone. The default is +8.
	LocalTime.strZoneName	string	It defines the Time Zone Name you expect to use on the phone. The default is China(Beijing)
	LocalTime.!bDSTEnable	0 or 1	It defines whether to enable Daylight saving time. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	LocalTime.bNTPEnable	0 or 1	It defines whether to use NTP server time. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	LocalTime.strPrimaryNTPServer	Domain name or IP Address	It defines the Secondary NTP Server . The default is time.windows.com
	LocalTime.strSecondaryNTPServer	Domain name or IP Address	It defines the Secondary NTP Server . The default is cn.pool.ntp.org.
	LocalTime.nNTPPort	Integer	It defines the Port of NTP Server . The default is 123
	LocalTime.nNTPLeaseSeconds	Integer	It defines the Lease of NTP Server . The default is 3600
	AutoProvision.bEnablePowerOn	0 or 1	It defines whether to check new config Power On 0 stands for Disabled. 1 stands for Enabled.

			The default is 0.
	AutoProvision.bEnable Weekly	0 or 1	It defines whether to check new config Weekly 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AutoProvision.strWeeklyMask	0,1,2,3,4,5,6 or a combination of these numbers	It is available when mode is 5 or 7. It defines the day of week when there's a need to check new config. If it is set to be 0123456, it means every day. 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday
	AutoProvision.strWeeklyBeginTime	Time as 02:00	It means the phone will check new config at a time between schedule_time and schedule_time_end on a specified day every week.
	AutoProvision.strWeeklyEndTime	Time as 03:00	
	AutoProvision.bEnableRepeat	0 or 1	It defines whether to check new config Repeatly 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AutoProvision.nRepeat Minutes	1 to 43200	It is available when AutoProvision.bEnableRepeat is 1. It stands for the interval time (by minutes) of checking new config.
	AutoProvision.bEnablePNP	0 or 1	It defines the value of PNP config . 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AutoProvision.strPNPMulticastIP	IP Address	It defines the value of PNP Multicast IP .

			The default is 224.0.1.75
	AutoProvision.bEnabledDHCPOption	0 or 1	It defines the value of DHCP Option 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AutoProvision.listUserOptions	Integer from 129 to 254	It defines the Custom Option . The default is blank.
	AutoProvision.strServerURL	HTTP/HTTPS /FTP/TFTP Address	It defines the URL which is supposed to be the auto provisioning server.
	AutoProvision.strKeyAES16	16-byte String	It defines the Common AES Key which is used for decrypting the common CFG file. Besides 0 ~ 9, A ~ Z, a ~ z, the valid characters include the following special ones: # \$ % * + , - . : = ? @ [] ^ _ { } ~
	AutoProvision.strKeyAES16MAC	16-byte string	It defines the MAC-Oriented AES Key which is used for decrypting the MAC-Oriented CFG file. The valid characters are the same as aes_key_16 .
	QoS.nSIPQoS	0,2,4,8 or 16	It defines the SIP QoS. 0 stands for Normal-Service. 2 stands for Minimize-Cost. 4 stands for Maximize-Reliability. 8 stands for Maximize-Throughput. 16 stands for Minimize-Delay. The default is 0.
	QoS.nRTPQoS	0,2,4,8 or 16	It defines the RTP QoS. 0 stands for Normal-Service. 2 stands for

			Minimize-Cost. 4 stands for Maximize-Reliability. 8 stands for Maximize-Throughput. 16 stands for Minimize-Delay. The default is 0.
	HttpServer .bEnable	0 or 1	It defines whether to enable HTTP Server . 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	HttpServer .nPort	Integer from 0 to 65535	It defines the Port of HTTP server . The default is 80.
	HttpsServer.bEnable	0 or 1	It defines whether to enable HTTPS Server . 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	HttpsServer.nPort	Integer from 0 to 65535	It defines the Port of HTTPS server . The default is 443.
	vaServer.nFrameRate	10fps、15fps、 20fps、25fps、 or 30fps	It defines the value of Frame Rate . The default is 443.
	vaServer.nSlowIDRSpa n	Integer	It defines the value of I-frame refresh (s) . The default is 30.
	TVOut.bNTSC	0 or 1	It defines the type of TV OUT . 0 stands for PLA 1 stands for NTSC The default is 1.
	Features.!bEnableTelMo de	0 or 1	It defines whether the Tel Mode is enabled. 0 stands for Disable. 1 stands for Enable. The default is 0.
	Features.bEnableDirectI P	0 or 1	It defines whether the Direct IP Call is enabled. 0 stands for Disable. 1 stands for Enable.

			The default is 1.
[cfg:/rundata/config/user/user.ini,reboot=0]	Language.strGUILanguage	Language Name	It defines the Language used on the Webpage. The default is "English".
	Language.strWebLanguage	Language Name	It defines the Language used on the Webpage. The default is "English".
	ScreenSaver.eType	0 or 1	It defines the Type of Screen Saver . 0 stands for Photo. 1 stands for Movie. The default is 1.
	ScreenSaver.nTimeout	Integer from 0 to 18000	It defines the time to Screen Saver . The default is 60(s).
	Sleep.nTimeout	Integer from 0 to 18000	It defines the time to Sleep . The default is 600(s).
	AlwaysForward.bEnable	0 or 1	It defines whether the Always Forward is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AlwaysForward.strTarget	Phone number	It defines the Target number that the phone will Always Forward to . The default is blank.
	AlwaysForward.nOnCode	String	It defines the On Code for Always Forward . The default is blank.
	AlwaysForward.nOffCode	String	It defines the Off Code for Always Forward . The default is blank.
	BusyForward.bEnable	0 or 1	It defines whether the Busy Forward is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	BusyForward.strTarget	Phone number	It defines the Target number that the phone will Busy Forward to . The default is blank.

	BusyForward.nOnCode	String	It defines the On Code for Busy Forward . The default is blank.
	BusyForward.nOffCode	String	It defines the Off Code for Busy Forward . The default is blank.
	NoAnswerForward.bEnable	0 or 1	It defines whether the No Answer Forward is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	NoAnswerForward.strTarget	Phone number	It defines the Target number that the phone will No Answer Forward to . The default is blank.
	NoAnswerForward.nTimeout	Integer from 0 to 100	It defines the time after which the call will be forwarded when using No Answer Forward . The default is 60(seconds).
	NoAnswerForward.nOnCode	String	It defines the On Code for No Answer Forward . The default is blank.
	NoAnswerForward.nOffCode	String	It defines the Off Code for No Answer Forward . The default is blank.
	CallOption.eCallMode	0 or 1	It defines the mode of the call. 0 stands for voice. 1 stands for video. The default is 1.
	CallOption.bActiveCamera	0 or 1	It defines the activity of Camera . 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	CallWaiting.bEnable	0 or 1	It defines the activity of Call Waiting . 0 stands for Disabled. 1 stands for Enabled. The default is 1.

	CallWaiting.bEffectPstn	0 or 1	It defines the activity of Call waiting Effect on PSTN . 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	AutoAnswer.bEnable	0 or 1	It defines the activity of Auto Answer . 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	AutoAnswer.nTimeout	0, 5, 15 or 30	It defines the time to Auto Answer . 0 stands for 0s. 5 stands for 5s. 15 stands for 15s. 30 stands for 30s. The default is 0.
	KeyAsSend.eType	0, 1 or 2	It defines the Key as send . 0 stands for Disable. 1 stands for #. 2 stands for *. The default is 1.
	DateTime.eDateFormat	1,2 or 3	It defines the format of Date . 1 stands for DDMMYYYY. 2 stands for MMDDYYYY. 3 stands for YYYYMMDD. The default is 3.
	DateTime.eTimeFormat	1 or 2	It defines the format of Time . 1 stands for 24hours. 2 stands for 12hours. The default is 1.
	DND.bEffectPstn	0 or 1	It defines the activity of DND Effect on PSTN . 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	DefaultIme.strAdminPwd	123、2aB、ABC or abc	It defines the input method when Setting

			Interface.
	DefaultIme.strSecurity	123、2aB、ABC or abc	It defines the input method when Security Interface.
[bin:/rundata/data/dialplan.xml,reboot=0]	URL	It defines the Dial plan url which must be a url linking to an XML-format dialplan like ftp://pablo:123@192.168.0.231/VP2009/dialplan.xml The default is blank. Note that the name has to be dialplan.xml.	
[bin:/rundata/data/dsskey.xml,reboot=0]	URL	It defines the Dsskey url which must be a url linking to an XML-format dsskey like ftp://pablo:123@192.168.0.231/VP2009/dsskey.xml The default is blank. Note that the name has to be dsskey.xml.	
#Remote Phone Book0 [bin:/rundata/data/remotobook.xml,reboot=0]	URL	FTP URL	It defines the Phone book url which must be a url linking to an XML-format phonebook like ftp://pablo:123@192.168.0.231/VP2009/remoteb ook1.xml The default is blank.
	Name	String	It defines the Phone book name of the first Remote phonebook. For more details, please refer to the instruction to Remote phonebook.
#Remote Phone Book1 [bin:/rundata/data/remotobook.xml,reboot=0]	They share the same parameters and Permitted Values as #Remote Phone Book0.		
#Remote Phone Book2 [bin:/rundata/data/remotobook.xml,reboot=0]			
#Remote Phone Book3 [bin:/rundata/data/remotobook.xml,reboot=0]			

#Remote Phone Book4 [bin:/rundata/data/remotebook. xml,reboot=0]	
#Remote Phone Book5 [bin:/rundata/data/remotebook. xml,reboot=0]	
#Remote Phone Book6 [bin:/rundata/data/remotebook. xml,reboot=0]	

Note: if you leave a parameter as blank, the value of this parameter will be deleted. For example:

```
[psw:/rundata/data/htpasswd]  
admin=  
var=  
user=
```

It will configure the password of Admin user as NULL.