Auto Provision Manual

tiptel IP 286

tiptel IP 284 tiptel IP 280

Contents

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1.1 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:

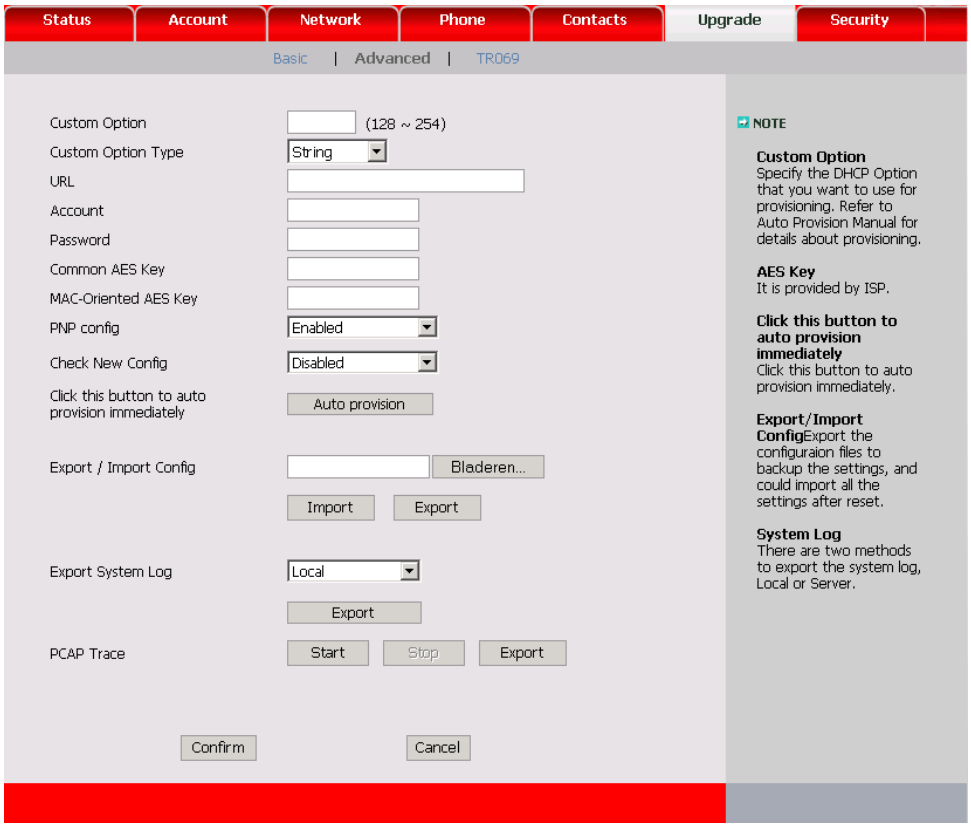
1. Obtain a server address in which store the configuration files.
2. Download the configuration files from the configured server.
3. Resolve and apply the configurations written in the configuration file.
4. Do other updates, for example the firmware updating.

2.1 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:

2.1.1 Pushed by PnP servers



Note： 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

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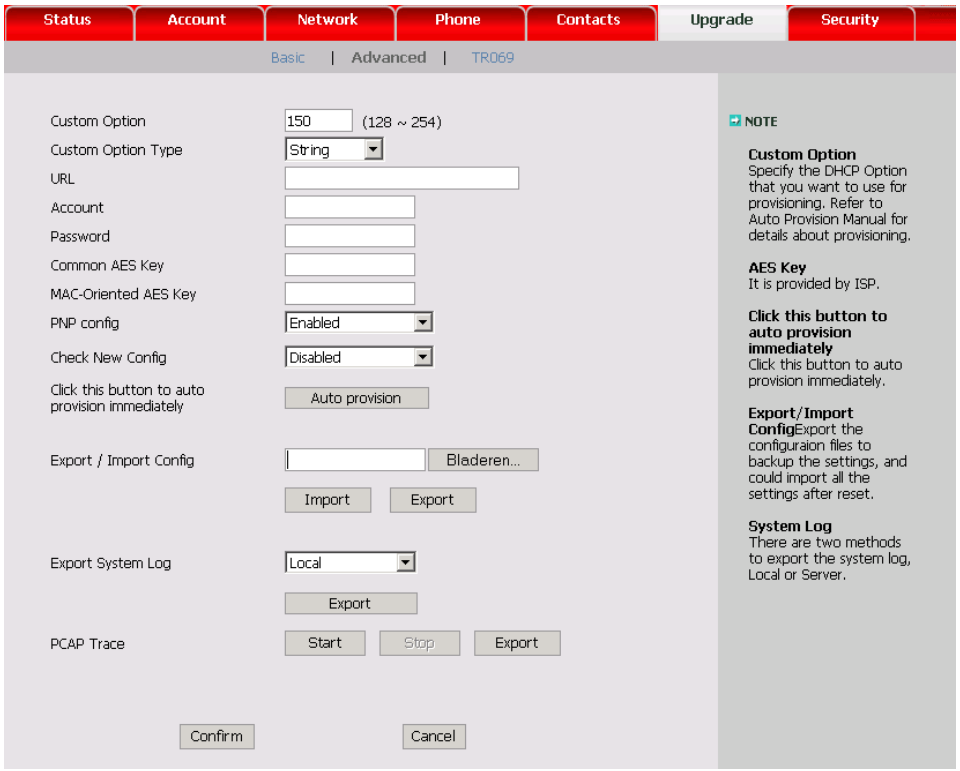
understanding that message will reply with a SIP NOTIFY message containing the Auto Provisioning Server URL where the phones can request their configuration. Modern SIP PBXs/Proxies can provide the PnP configuration data. Please refer to the manual of your PBX/Proxy. This kind of auto provision is mainly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

2.1.2 Detect DHCP custom option.

It must be configured on the phone by web management:



Note: 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.

2.1.3 Detect DHCP Option 66.

The IP 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.

2.1.4 Detect DHCP Option 43.

The IP phones will check this option by default. If the phone fails to get any information from DHCP Option 43 and **Check New Config** is not Disabled, it will go to detect the phone flash.

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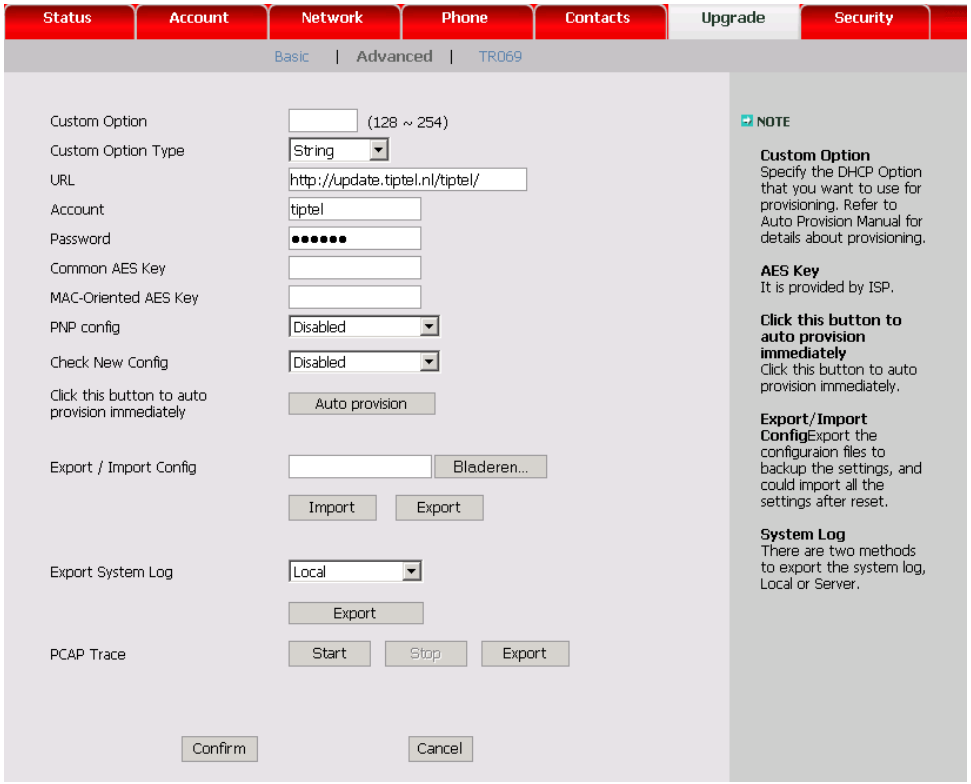
2.1.5 Detect the phone flash.

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



Note: This process depends on the setting of **Check New Config** and if it is set to be **Disabled**, the phone won't detect the FLASH. The supported protocols of a **URL** are: HTTP/HTTPS/FTP/TFTP. **Account** and **Password** will be used to access to the URL if required. FTP server always has this requirement. For example, the following settings will make the phone access to FTP server 192.168.0.231, using account Vin and Passwords 123 (on the web it is hid by 3 points), when the phone powers on. If the phone fails to get any information from phone flash, the current round of obtaining server address will stop here.

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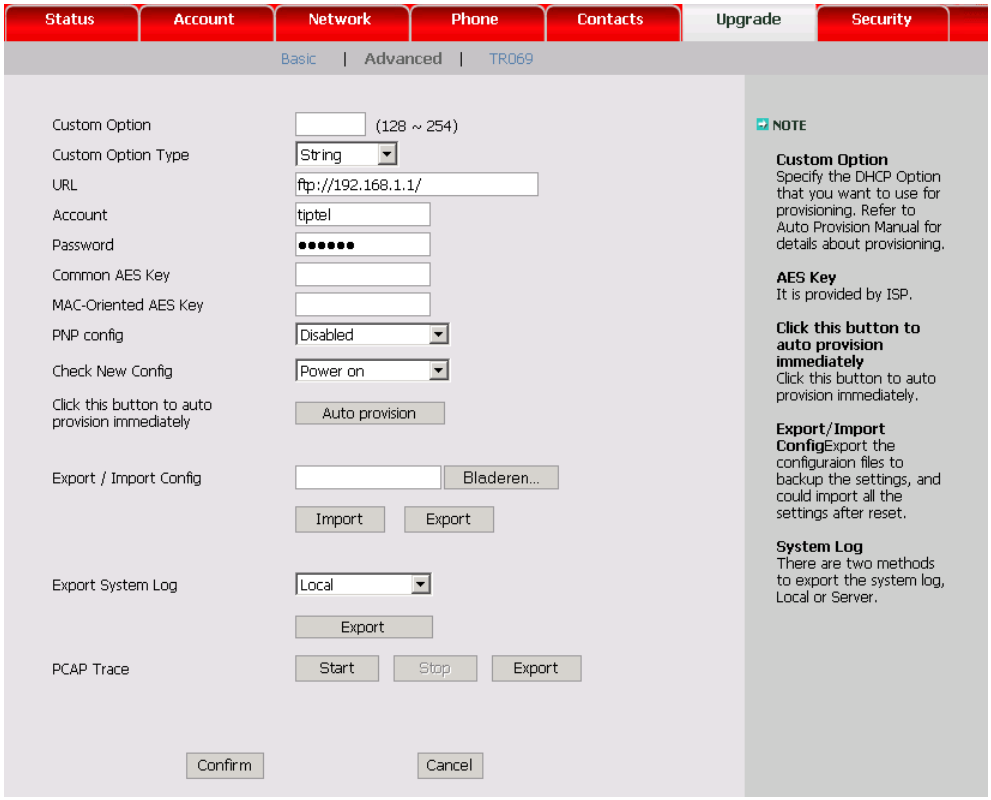

2.2 Download configuration files

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 phones of the right model. However, a MAC-Oriented CFG file will only be effectual for the specific phone which can be told by its 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. The names of the Common CFG file for each model are:

IP 286: y000000000000.cfg
IP 284: y000000000004.cfg
IP 280: y000000000007.cfg

There are 11 zeros between the letter y and the last number. Except 0 for IP 286 which is special, the last number for other models is decided by the hardware version of the relevant model, for it is the first number of the hardware version of the model. For instance, for a IP 284 whose MAC address is 001565113af8, the 2 configuration files for it will be: y000000000004.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 IP 286 and you want to update firmware for all phones, you just need to prepare only one y000000000000.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 30 seconds for up to 2 hours.

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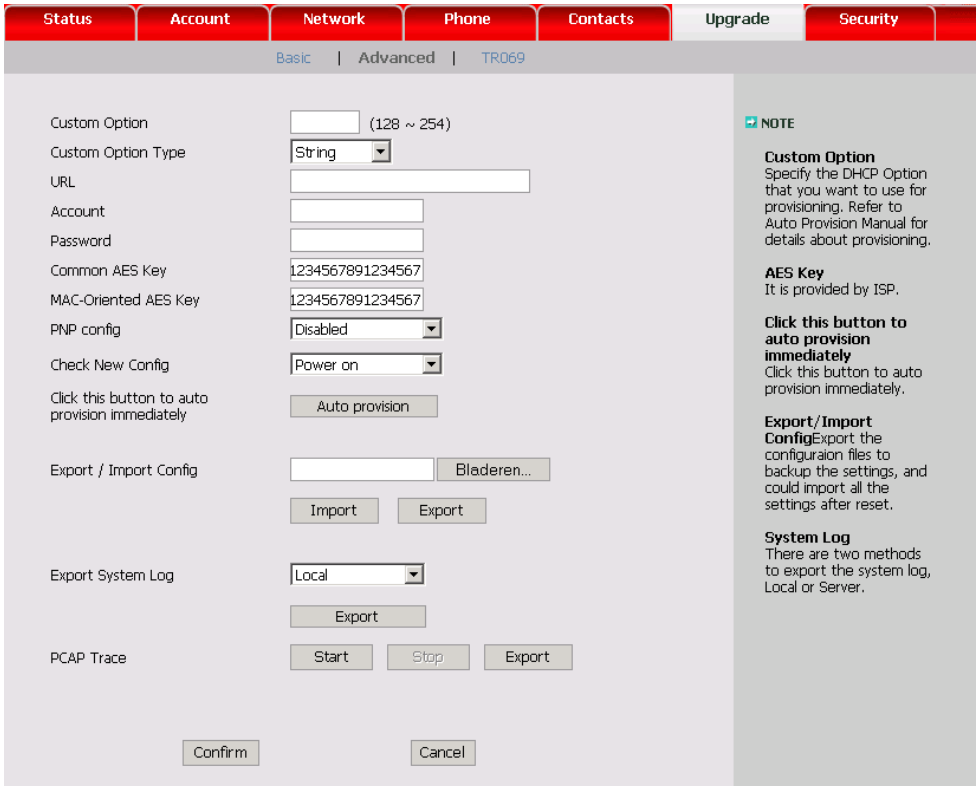
2.3 Resolve and apply the configurations

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: # $ % * + , - . : = ? @ [ ] ^ _ { } ~



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.

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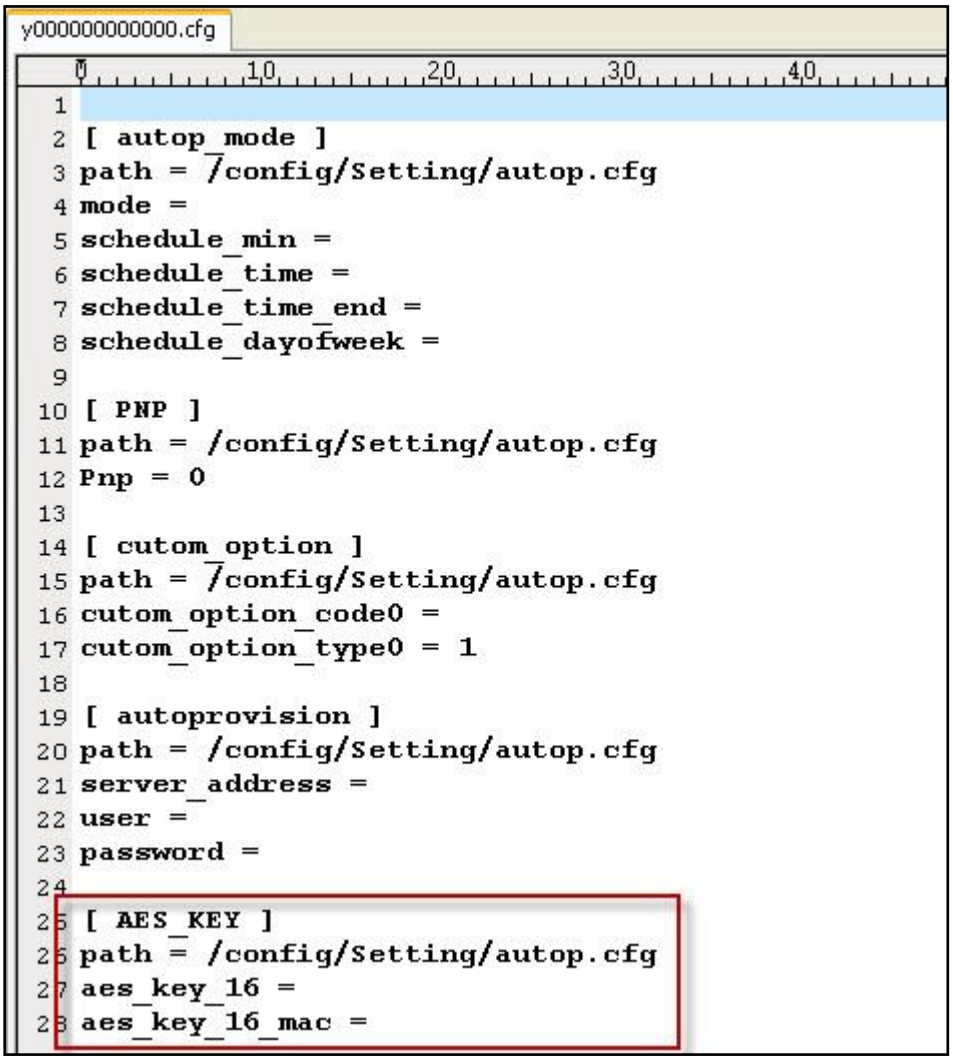

The following texts are system-defined that cannot be changed manually; otherwise it will cause a failure to auto provision:

1. The section header [AES_KEY]
2. The directory of the section path = /config/Setting/autop.cfg
3. The parameters aes_key_16 and aes_key_16_mac

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**:

[AES_KEY]
path = /config/Setting/autop.cfg
aes_key_16 = 1234567890123456
aes_key_16_mac =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.

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2.4 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:

2.4.1 Upload ringtone

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

```
##########################################################################################
[ ringtone ]
path = /tmp/download.cfg
server_address =
##########################################################################################
```

The server_address must link to a .wav file. The wav file should not be larger than 100kB.
For example: ftp://Vin:123@192.168.0.231/Ring20.wav

2.4.2 Update LCD language

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

```
##########################################################################################
[ Lang ]
path = /tmp/download.cfg
server_address =
##########################################################################################
```

The server_address must be like *serverAddress/lang-*.txt*. For example:
http://192.168.0.231/provision/lang-German.txt
And note that it does not enable you to add new languages. It just enables you to modify the existent languages.
Please refer to another manual for details on this point - **How to modify the language by auto provision**

2.4.3 Upload local contacts

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

```
##########################################################################################
[ ContactList ]
path = /tmp/download.cfg
server_address =
##########################################################################################
```

An example of server_address: http://192.168.0.132:9/provision/contactData1.xml
Note that the name has to be contactData1.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.

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2.4.4 Update firmware

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

```
##########################################################################################
[ firmware ]
path = /tmp/download.cfg
server_type =
server_ip =
server_port =
login_name =
login_pswd =
http_url =
firmware_name =
##########################################################################################
```

An example:

[firmware]
path = /tmp/download.cfg
server_type = ftp
server_ip = 192.168.0.231
server_port = 21
login_name = Vin
login_pswd = 123
http_url = http://192.168.0.231/IP 286/
firmware_name = 0.0.0.143.rom

The above section will make the phone access to ftp server *192.168.0.231*, using port *21*, user name "*Vin*" and password "*123*" to download the *0.0.0.143.rom.* And if the *server_type = http*, it will go to *http://192.168.0.231/IP 286/ to download the 0.0.0.143.rom* and then update.

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2.4.5 Upload LCD logo

The section defining request for uploading LCD logo in the CFG files:

```
##########################################################################################
 [ Logo ]
 path = /tmp/download.cfg
 server_address =
##########################################################################################
```

An example:

```
[ Logo ]
path = /tmp/download.cfg
server_address = http://192.168.0.231/IP 286/logo.dob
```

The above section will make the phone access to the HTTP server to get the dob file and after provision, the new logo will be used.

Note that the logo should be of DOB format and within the size limit:

IP 286: not larger than 236 * 82

IP 284: not larger than 132*64

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Appendix A

1. Description of configuration parameters in CFG file

Section Header and Path	Parameters	Permitted Values	Descriptions
[autop_mode] path = /config/Setting/autop.cfg	**mode**	0,1,4,5,6,7	It defines the value of **Check New Config**. 0:Disabled 1:Power on 4:Repeatedly 5:Weekly 6:Power on + Repeatedly 7:Power on + Weekly The default is 0.
	schedule_min	1 to 43200	It is available when mode is 4 or 6.It stands for the interval time (by minutes) of checking new config.
	schedule_dayofweek	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
	schedule_time	Time as 19:45	It is available when mode is 5 or 7.It means the phone will check new config at a time between schedule_time and schedule_time_end on a specified day every week.
	schedule_time_end	Time as 19:45	
[PNP] path = /config/Setting/autop.cfg	**Pnp**	0 or 1	It defines the value of **PNP config.** 0 stands for Disabled. 1 stands for Enabled. The default is 0.
[cutom_option] path = /config/Setting/autop.cfg	**cutom_option_code 0**	Integer from 129 to 254	It defines the **Custom Option**. The default is blank.
	cutom_option_type	0 or 1	It defines the **Custom Option Type**..

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	0		0 stands for IP Address. 1 stands for String. The default is 1.
[AES_KEY] path = /config/Setting/autop.cfg	**aes_key_16**	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: #$%*+,-.:=?@[]^_{}~
	aes_key_16_mac	16-byte string	It defines the MAC-Oriented AES Key which is used for decrypting the MAC-OrientedCFG file. The valid characters are the same as **aes_key_16.**
[autoprovision] path = /config/Setting/autop.cfg	**server_address**	HTTP/HTTPS/FTP/TFTP Address	It defines the **URL** which is supposed to be the auto provisioning server.
	user	String	It defines the **Account** which may be used when the access to the URL requires authentication.
	password	String	It defines the **Password** which may be used when access to the URL requires authentication.
[account] path = /config/voip/sipAccount0.cfg	**Enable**	0 or 1	It defines the **Line Active** value of account1. 0 stands for off 1 stands for on The default is 0.
	Label	String	It defines the **Label** of account1. The default is blank.
	DisplayName	String	It defines the **Display Name** of account1. The default is blank.
	AuthName	String	It defines the **Register Name** of account1. The default is blank.
	UserName	String	It defines the **User Name** of account1. The default is blank.
	password	String	It defines the **Password** of registration for account1. The default is blank.
	SIPServerHost	Domain name or IP Address	It defines the **SIP Server** of account1. The default is blank.

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	SIPServerPort	Integer	It defines the **Port** of the SIP Server of account1. The default is 5060.
	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.
	OutboundHost	Domain name or IP Address	It defines the **Outbound Proxy Server** of account1. The default is blank.
	OutboundPort	Integer	It defines the **Port** of the Outbound Proxy Server of account1. The default is 5060.
	Transport	0,1 or 2	It defines the value of **Transport** of account1. 0 stands for UDP. 1 stands for TCP. 2 stands for TLS. The default is 0.
	BakOutboundHost	Domain name or IP Address	It defines the **Backup Outbound Proxy Server** of account1. The default is blank.
	BakOutboundPort	Integer	It defines the **Port** of Backup Outbound Proxy Server of account1. The default is 5060.
	proxy-require	String	It defines the value of **Proxy Require** of account1. The default is blank.
	AnonymousCall	0 or 1	It defines the value of **Anonymous Call** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	RejectAnonymousCall	0 or 1	It defines the value of **Anonymous Call Rejection** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	Expire	Integer	It defines the value of **Login Expire** of account1. The default is 3600.
	SIPListenPort	Integer	It defines the value of **Local SIP Port** of account1.

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			The default is 5060.
	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.
	precondition	0 or 1	It defines the value of **Enable Precondition** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	SubsribeRegister	0 or 1	It defines the value of **Subscribe Register** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	SubsribeMWI	0 or 1	It defines the value of **Subscribe for MWI** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	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.
	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.
	SessionExpires	Integer from 1 to 999	It defines the value of **Session Timer** of account1. The default is blank.
	SessionRefresher	0 or 1	It defines the value of **Refresher** of account1. 0 stands for Uac. 1 stands for Uas. The default is 0.
	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.
	srtp_encryption	0 or 1	It defines the value of **Voice**

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			Encryption (SRTP) of account1. 0 stands for off. 1 stands for on. The default is 0.
	ptime	0,10,20,30, 40,50 or 60	It defines the value of **ptime** of account1. 0 stands for Disabled. 10 stands for 10ms. 20 stands for 20ms. And alike. The default is 20.
	ShareLine	0 or 1	It defines the value of **Shared Line** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	dialoginfo_callpick up	0 or 1	It defines the value of **Dialog-Info Call Pickup** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	AutoAnswer	0 or 1	It defines the value of **Auto Answer** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	MissedCallLog	0 or 1	It defines the value of **Missed call log** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	AnonymousCall_O nCode	string	It defines the **On Code** of **Anonymous Call** of account1. The default is blank.
	AnonymousCall_Of fCode	string	It defines the **Off Code** of **Anonymous Call** of account1. The default is blank.
	AnonymousReject_ OnCode	string	It defines the **On Code** of **Anonymous Call Rejection** of account1. The default is blank.
	AnonymousReject_ OffCode	string	It defines the **Off Code** of **Anonymous Call Rejection** of account1. The default is blank.

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	BLANumber	string	It defines the value of **BLA Number** of account1. The default is blank
	BLASubscribePeriod	Integer from 60 to 7200	It defines the value of **BLA Subscription Period** of account1. The default is 300.
	SubscribeMWIExpire	Integer from 0 to 84600	It defines the value of **MWI Subscription Period** of accont1. The default is 3600.
	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.
	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 1.
	RegisterLine	0 or 1	It defines the value of **SIP Send Line** of account1. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	RegFailRetryInterval	Integer from 0 to 1800	It defines the value of **SIP Registration Retry Timer** of accont1. The default is 30.
[account] path = /config/voip/sipAccount1.cfg	For different models, there're different numbers of Account. For each Account, there are completely same parameters and they share same permitted values and default values. The difference is just on the path. For example, the path of Account1 is path = /config/voip/sipAccount0.cfg.While for Account2 is path = /config/voip/sipAccount1.cfg,and other sections alike.		
[DTMF] path = /config/voip/sipAccount0.cfg	**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.
	InfoType	0,1,2 or 3	It defines the value of **How to INFO DTMF** of account1. 0 stands for Disabled. 1 stands for DTMF-Relay. 2 stands for DTMF.

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			3 stands for Telephone-Event. The default is Disabled.
	DTMFPayload	Integer from 96 to 255	It defines the value of **DTMF Payload** of account1. The default is 101.
[NAT] path = /config/voip/sipAccount0.cfg	**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.
	STUNServer	Domain name or IP Address	It defines the value of **STUN Server** of account1. The default is blank.
	STUNPort	Integer	It defines the **Port** of STUN Server of account1. The default is 3478.
	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 1.
	UDPUpdateTime	Integer	It defines the value of **UDP Keep-alive Interval** of account1. The default is 30(seconds).
	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] path = /config/voip/sipAccount0.cfg	**default_t1**	Float	It defines the value of **SIP Session Timer T1** of account1. The default is 0.5.
	default_t2	Float	It defines the value of **SIP Session Timer T2** of account1. The default is 4.
	default_t4	Float	It defines the value of **SIP Session Timer T4** of account1. The default is 5.
[blf] path = /config/voip/sipAccount0.cfg	**SubscribePeriod**	Integer	It defines the value of **Subscribe Period** of account1. The default is 1800(seconds).
	BLFList_URI	String	It defines the value of **BLFList URI** of account1. The default is blank.
	enable	0 or 1	It defines the activity of a specific

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<table>
<tr><td rowspan="4">[audio0]
path = /config/voip/sipAccount0.cfg</td><td></td><td></td><td>codec.
0 means to disable the codec.
1 means to enable the codec.</td></tr>
<tr><td>PayloadType</td><td>One of the following:
PCMU
PCMA
G723_53
G723_63
G729
G722
G726-16
G726-24
G726-32
G726-40</td><td>It stands for a specific Codec type.</td></tr>
<tr><td>priority</td><td>Integer from 0 to 10</td><td>It stands for the priority of a specific enabled codec.</td></tr>
<tr><td>rtpmap</td><td>Integer</td><td>It defines the payload of the codec.</td></tr>
<tr><td>[audio1]
path = /config/voip/sipAccount0.cfg</td><td colspan="3" rowspan="10">The parameters and the Permitted values are the same as[audio0]. For each account there are totally 10 usable codecs and each one has a section in configuration files and so there are sections from [audio0] to [audio10] for each account. (audio 6 is just a reserved section)
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:
[audio0]
enable = 1
PayloadType = PCMU
priority = 1
rtpmap = 0
[audio1]
enable = 1
PayloadType = PCMA
priority = 2
rtpmap = 8
[audio2]
enable = 0
PayloadType = G723_53
priority = 0
rtpmap = 4
[audio3]
enable = 0
PayloadType = G723_63
[audio4]
enable = 1
PayloadType = G729
priority = 3
rtpmap = 18
[audio5]
enable = 1
PayloadType = G722
priority = 4
rtpmap = 9
[audio6]
enable = 0
PayloadType = iLBC
priority = 0
rtpmap = 102
[audio7]
enable = 0
PayloadType = G726-16
priority = 0
[audio8]
enable = 0
PayloadType = G726-24
priority = 0
rtpmap = 102
[audio9]
enable = 0
PayloadType = G726-32
priority = 0
rtpmap = 2
[audio10]
enable = 0
PayloadType = G726-40
priority = 0
rtpmap = 104</td></tr>
<tr><td>[audio2]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio3]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio4]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio5]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio7]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio8]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio9]
path = /config/voip/sipAccount0.cfg</td></tr>
<tr><td>[audio10]
path = /config/voip/sipAccount0.cfg</td></tr>
</table>

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	priority = 0 rtpmap = 4	rtpmap = 112	
[WAN] path = /config/Network/Network.cfg	**WANType**	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.
	WANStaticIP	IP Address	It defines the **IP Address** when using static WAN settings. The default is blank.
	WANSubnetMask	Network Mask	It defines the **Subnet Mask** when using static WAN settings. The default is blank.
	WANDefaultGateway	IP Address	It defines the **Default Gateway** when using static WAN settings. The default is blank.
[DNS] path = /config/Network/Network.cfg	**PrimaryDNS**	IP Address	It defines the **Primary DNS** when using static WAN settings. The default is blank.
	SecondaryDNS	IP Address	It defines the **Secondary DNS** when using static WAN settings. The default is blank.
[PPPoE] path = /config/Network/Network.cfg	**PPPoEUser**	string	It defines the **User** name when using PPPoE WAN settings. The default is blank.
	PPPoEPWD	string	It defines the **Password** when using PPPoE WAN settings. The default is blank.
[LAN] path = /config/Network/Network.cfg	**LANTYPE**	0 or 1	It defines the type of **PC Port (LAN)**. 0 stands for **Rooter**. 1 stands for **Bridge**. The default is 1.
	RouterIP	IP Address	It defines the **IP Address** when the LAN is set as Rooter. The default is 10.0.0.1
	LANSubnetMask	Network Mask	It defines the **Subnet Mask** when the LAN is set as Rooter. The default is 255.255.255.0.
	EnableDHCP	0 or 1	It means whether to enable **DHCP** server when the LAN is set as Rooter. 0 stands for Disabled. 1 stands for Enabled. The default is 1.

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	DHCPStartIP	IP Address	It defines the IP Address range the DHCP rooter will allocate. The default is from 10.0.0.10 to 10.0.0.100.
	DHCPEndIP	IP Address	
[VLAN] path = /config/Network/Network.cfg	**ISVLAN**	0 or 1	It defines the VLAN **Active** option of **LAN Port**. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	VID	Integer from 0 to 4094	It defines the **VID** of **LAN Port**. The default is 0.
	USRPRIORITY	Integer from 0 to 7	It defines the VLAN **USRPRIORITY** of **LAN Port**. The default is 0.
	PC_PORT_VLAN_ENABLE	0 or 1	It defines the VLAN **Active** option of **PC Port**. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	PC_PORT_VID	Integer from 0 to 4094	It defines the **VID** of **PC Port**. The default is 0.
	PC_PORT_PRIORITY	Integer from 0 to 7	It defines the VLAN **USRPRIORITY** of **PC Port**. The default is 0.
[QOS] path = /config/Network/Network.cfg	**RTPTOS**	Integer from 0 to 63	It defines the value of **Voice QoS**. The default is 40
	SIGNALTOS	Integer from 0 to 63	It defines the value of **SIP QoS.** The default is 40
[RTPPORT] path = /config/Network/Network.cfg	**MaxRTPPort**	Integer from 0 to 65535	It defines the **MaxRTPPort** of **Local RTP Port.** The default is 11800.
	MinRTPPort	Integer from 0 to 65535	It defines the **MinRTPPort** of **Local RTP Port.** The default is 11780.
[SYSLOG] path = /config/Network/Network.cfg	**SyslogdIP**	IP Address	It defines the server where the syslog is supposed to be exported onto.
[telnet] path = /config/Network/Network.cfg	**telnet_enable**	0 or 1	It defines whether to enable or disable Telnet to the phone. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
[Lang]	**WebLanguage**	Language	It defines the **Language** used on the

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path = /config/Setting/Setting.cfg		Name	Webpage. The default is “English”. The other Languages are: Turkish, Czech, Russian, Chinese_S depending on the firmware support.
[Time] path = /config/Setting/Setting.cfg	**TimeZone**	Time Zone from -11 to +12	It defines the **Time Zone** you expect to use on the phone. The default is +8.
	TimeServer1	Domain name or IP Address	It defines the **Primary NTP Server**. The default is cn.pool.ntp.org.
	TimeServer2	Domain name or IP Address	It defines the **Secondary NTP Server**. The default is cn.pool.ntp.org.
	Interval	Integer	It defines the **Update Interval** when using NTP Server. The default is 1000(seconds).
	SummerTime	0, 1 or 2	It defines the activity of **Daylight Saving Time**. 0 stands for Disabled. 1 stands for Enabled. 2 stands for Automatic. The default is 2.
	DSTTimeType	0 or 1	It defines the **Fixed Type** of Daylight Saving Time. 0 stands for By Date. 1 stands for By Week. The default is blank.
	StartTime	SPECIAL	It defines the **StartTime** of Daylight Saving Time. If the **Fixed Type** for Daylight Saving time is **By Date**, its value rule is MM/DD/HH which means Month/Day/Hour. If the **Fixed Type** for Daylight Saving time is **By Week**, its value rule is Start Month/ Start Day of Week/ Start Day of Week Last in Month/ Start Hour of Day. For a value of 1/4/2/5 in this case, it means the start time is at 5 o’clock on Tuesday of the 4th week in January. The default is blank.
	EndTime	SPECIAL	It defines the **EndTime** of Daylight Saving Time.

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			Its rule is similar to StartTime. The default is blank.
	OffSetTime	Integer from -300 to 300	It defines the Offset of Daylight Saving Time. The default is blank.
	TimeFormat	0 or 1	It defines the value of **Time Format**. 0 stands for 12 Hour format. 1 stands for 24 Hour format. The default is 0.
	DateFormat	Integer from 0 to 6	It defines the value of **Date Format**. 0 stands for WWW MMM DD. eg. Tues Oct 20. 1 stands for DD-MMM-YY. eg. 20-Oct-09. 2 stands for YYYY-MM-DD. eg. 2009-10-20. 3 stands for DD/MM/YYYY. eg. 20/10/2009. 4 stands for MM/DD/YY. eg. 10/20/09. 5 stands for DD MMM YYYY. eg. 20 Oct 2009. 6 stands for WWW DD MMM. eg. Tues 20 Oct. The default is 0.
[PhoneSetting] path = /config/Setting/Setting.cfg	**InterDigitTime**	Integer	It defines the **Inter Digit Time**. The default is 4(seconds).
	FlashHookTimer	Integer from 0 to 800	It defines the **Flash Hook Time**. The default is 1(ms)
	Lock	0,1,2 or 3	It defines the type of **Keyboard Lock**. 0 stands for Disabled. 1 stands for Menu Key. 2 stands for Function Key. 3 stands for All Keys. 4 stands for Lock&Answer. The default is 0.
	Ringtype	Ring name	It defines the default Ring tone that has been built in the phone flash, for example,Ring1.wav,Ring2.wav and alike.
	Contrast	Integer from 1 to 10	It defines the **LCD Contrast**. The parameter depends on model types. Eg. SIP-T20P doesn't support it.

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			The default is 6.
	BackLight	1,2 or 3	It defines the **Backlight Brightness**. The parameter depends on model types.SIP-T20 doesn't support it. The default is 2.
	BacklightTime	15,30,60 or 120	It defines the **Backlight Time**. The parameter depends on model types.SIP-T20 doesn't support it. The default is 30.
	ProductName	String	It defines the **Product Name** which you can see via LCD interface. The default value for IP phone models are IP 286, IP 284 and IP 280 respectively.
	RingVol	Integer from 0 to 15	It defines the ring volume. 0 is the minimum value meaning silence. 15 is the maximum value.
	HandFreeSpkVol	Integer from 0 to 15	It defines the receiving volume of Speaker. The default is 8.
	HandFreeMicVol	Integer from 0 to 15	It defines the sending volume of Speaker. The default is 8.
	HandSetSpkVol	Integer from 0 to 15	It defines the receiving volume of Handset. The default is 8.
	HandSetMicVol	Integer from 0 to 15	It defines the sending volume of Handset. The default is 8.
	HeadSetSpkVol	Integer from 0 to 15	It defines the receiving volume of Headset. The default is 8.
	HeadSetMicVol	Integer from 0 to 15	It defines the sending volume of Headset. The default is 8.
[SignalToneVol] path = /config/Setting/Setting.cfg	**Handset**	Integer from 0 to 15	It defines the volume of dial tone on Handset. The default is 8.
	Headset	Integer from 0 to 15	It defines the volume of dial tone on headset. The default is 8.
	Handfree	Integer from 0 to 15	It defines the volume of dial tone on Speaker. The default is 8.

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[AlertInfo0] path = /config/Setting/Setting.cfg	**Text**	String	It defines the first **Internal Ringer Text**. The default is blank.
	Ringer	Integer	It defines the ringer for the first Internal Ringer Text. The ringer is defined by its order number. The default is 1.
[AlertInfo1] path = /config/Setting/Setting.cfg	They have same path and parameters as [AlertInfo0] and share the same Permitted Values and default values.		
[AlertInfo2] path = /config/Setting/Setting.cfg			
[AlertInfo3] path = /config/Setting/Setting.cfg			
[AlertInfo4] path = /config/Setting/Setting.cfg			
[AlertInfo5] path = /config/Setting/Setting.cfg			
[AlertInfo6] path = /config/Setting/Setting.cfg			
[AlertInfo7] path = /config/Setting/Setting.cfg			
[AlertInfo8] path = /config/Setting/Setting.cfg			
[AlertInfo9] path = /config/Setting/Setting.cfg			
[AlwaysFWD] path = /config/Features/Forward.cfg	**Enable**	0 or 1	It defines whether the **Always Forward** is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	Target	Phone number	It defines the **Target** number that the phone will **Always Forward to**. The default is blank.
	On_Code	String	It defines the **On Code** for **Always Forward**. The default is blank.
	Off_Code	String	It defines the **Off Code** for **Always Forward**. The default is blank.
[BusyFWD] path = /config/Features/Forward.cfg	**Enable**	0 or 1	It defines whether the **Busy Forward** is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	Target	Phone	It defines the **Target** number that the

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		number	phone will **Busy Forward to**. The default is blank.
	On_Code	String	It defines the **On Code** for **Busy Forward**. The default is blank.
	Off_Code	String	It defines the **Off Code** for **Busy Forward**. The default is blank.
[TimeoutFWD] path = /config/Features/Forward.cfg	**Enable**	0 or 1	It defines whether the **No Answer Forward** is enabled. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	Target	Phone number	It defines the **Target** number that the phone will **No Answer Forward to**. The default is blank.
	On_Code	String	It defines the **On Code** for **No Answer Forward**. The default is blank.
	Off_Code	String	It defines the **Off Code** for **No Answer Forward**. The default is blank.
	Timeout	Integer	It defines the time after which the call will be forwarded when using **No Answer Forward**. The default is 10(seconds).
[Features] path = /config/Features/Phone.cfg	**Call_Waiting**	0 or 1	It defines the activity of **Call Waiting**. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	Hotlinenumber	Phone number	It defines the **Hotline Number**. The default is blank.
	BusyToneDelay	0,3 or 5	It defines **BusyToneDelay**, the Delay of Busy Tone which is played when the other party hangs up. The default is 0(seconds).
	LCD_Logo	0 or 1	It defines the value of **Use Logo**, meaning whether to enable Logo on LCD. It only affects IP 284. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	DND_Code	404, 480 or 486	It defines the value of **Return code when DND**.

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			404 means 404 (Not Found) 480 means 480 (Temporarily not available) 486 means 486 (Busy here) The default is 480.
	Refuse_Code	404, 480 or 486	It defines the value of **Return code when refuse**. 404 means 404 (Not Found) 480 means 480 (Temporarily not available) 486 means 486 (Busy here) The default is 486.
	DND_On_Code	String	It defines **DND On Code**. The default is blank.
	DND_Off_Code	String	It defines **DND Off Code**. The default is blank.
	ButtonSoundOn	0 or 1	It defines whether to enable dialing tone. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
[AutoRedial] path = /config/Features/Phone.cfg	**EnableRedial**	0 or 1	It defines whether to enable/disable **Auto redial**. 0 stands for Disabled. 1 stands for Enabled. The default is 0.
	RedialInterval	Integer from 1 to 300	It defines the value of **Auto redial interval**. The default is 10 (seconds).
	RedialTimes	Integer from 1 to 300	It defines the value of **Auto redial times**. The default is 10.
[PoundSend] path = /config/Features/Phone.cfg	**Enable**	0,1 or 2	It defines the **Key As Send**. 0 stands for Disabled. 1 stands for # key. 2 stands for * key. The default is 1.
[Emergency] path = /config/Features/Phone.cfg	**Num**	Phone numbers separated by commas	It defines the **Emergency** numbers separated by commas. For example, it can be specified as:911,999,110,120 The default is blank.
[memory1] path = /config/vpPhone/vpPhone.ini	**type**	blf or bla	It is used when configuring a DSS Key as **BLF** or **Shared Line**. blf stands for BLF.

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			bla stands for Shared Line. The default is blank.
	Line	Integer from 0 to max line number	Seen from the web, it reflects the value under **Line** title. It defines the **Line** you are going to use for a specific function (if the function needs to specify a line). Normally,0 stands for Auto,1 stands for Line1 and so on. However, it's a little different when configured as bla or blf in which case 0 stands for Line1, 1 stands for Line2 and so on. The default is 0.
	Value	It depends	Seen from the web, it reflects the value under **Extension** title. Normally, the value is an extension number while in some cases it's not. For example, when you configure a key as URL, the value must be a url string. The default is blank.
	PickupValue	string	It is used only for BLF. It defines the pickup number that your server allocates.
	DKtype	Integer	It's a number reflects the key function. 0:N/A 1:Conference 2:Forward 3:Transfer 4:Hold 5:DND 6:Redial 7:Call Return 8:SMS 9:Call Pickup 10:Call Park 11:DTMF 12:Voicemail 13:SpeedDial 14:Intercom 15:Line(for line key only) 16:BLF 17:URL 18:Group Listening 19:Public Hold 20:Private Hold 21:Shared Line 22:XML PhoneBook The default is 0.
[memory2] path = /config/vpPhone/vpPhone.ini	From [memory1] to [memory2] are used for 10 DSS Keys on the phone IP 286/IP 284. For a phone having no DSS keys like IP280, it's no use configuring the parameters.		
[memory3]			

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path = /config/vpPhone/vpPhone.ini			
[memory4] path = /config/vpPhone/vpPhone.ini			
[memory5] path = /config/vpPhone/vpPhone.ini			
[memory6] path = /config/vpPhone/vpPhone.ini			
[memory7] path = /config/vpPhone/vpPhone.ini			
[memory8] path = /config/vpPhone/vpPhone.ini			
[memory9] path = /config/vpPhone/vpPhone.ini			
[memory10] path = /config/vpPhone/vpPhone.ini			
[memory11] path = /config/vpPhone/vpPhone.ini	From [memory11] to [memory16] are used for Line keys. The available sections depend on the numbers of Line keys. For IP 280 which have only 2 line keys, only the first 2 sections are available. For IP 284,only the first 3 sections are available. In addition, the settings for a Line key is not completely the same as a DSS key. For example, a line key cannot be configured as blf.		
[memory12] path = /config/vpPhone/vpPhone.ini			
[memory13] path = /config/vpPhone/vpPhone.ini			
[memory14] path = /config/vpPhone/vpPhone.ini			
[memory15] path = /config/vpPhone/vpPhone.ini			
[memory16] path = /config/vpPhone/vpPhone.ini			
[Profile] path = /config/vpm.cfg	**VAD**	0 or 1	It defines the activity status of **VAD**. 0 stands for Disabled. 1 stands for Enabled. The default is 0
	CNG	0 or 1	It defines the activity status of **CNG**. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	ECHO	0 or 1	It defines the activity status of **Echo canceller**. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	SIDE_TONE	-3 or -32768	It is an invisible setting which can only be configured via auto provision. -32768 stands for Disable Side tone. -3 stands for Enable Side tone. The default is -3.

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[Jitter] path = /config/vpm.cfg	**Adaptive**	0 or 1	It defines the Type of Jitter Buffer. 0 stands for Fixed. 1 stands for Adaptive. The default is 1.
	Min	Integer	It defines the value of **Min Delay**. The default is 0.
	Max	Integer	It defines the value of **Max Delay**. The default is 300.
	Nominal	Integer	It defines the value of **Normal Delay**. The default is 120.
[Message] path = /config/Features/Message.cfg	**VoiceNumber0**	String	It defines **Voice Mail** number of account1. The default is blank.
	VoiceNumber1	String	It defines **Voice Mail** number of account2. The default is blank.
	VoiceNumber2	String	It defines **Voice Mail** number of account3 if the account exists. The default is blank.
	VoiceNumber3	String	It defines **Voice Mail** number of account4 if the account exists. The default is blank.
	VoiceNumber4	String	It defines **Voice Mail** number of account5 if the account exists. The default is blank.
	VoiceNumber5	String	It defines **Voice Mail** number of account6 if the account exists. The default is blank.
[Country] path = /config/voip/tone.ini	**Country**	string	It defines the country name that relates to its own tone rules. The valid values can be seen from the webpage which are like China, France and so on. It can be specified as Custom in which case the tone rules can be customized.
[Tone Param] path = /config/voip/tone.ini	**dial**	string	It defines the tone of **Dial** which will be active when the Country is chosen to be “Custom”. The format of the string is like 100/200/300 which means it will be a tone of 100Hz with 200ms duration, followed by a 300ms pause and then repeat. 0 stands for silence.

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			The default is blank.
	ring	string	It defines the tone of **Ring Back**. The format is the same as dial. The default is blank.
	busy	string	It defines the tone of **Busy**. The format is the same as dial. The default is blank.
	congestion	string	It defines the tone of **Congestion**. The format is the same as dial. The default is blank.
	callwaiting	string	It defines the tone of **Call Waiting**. The format is the same as dial. The default is blank.
	dialrecall	string	It defines the tone of **Dial Recall**. The format is the same as dial. The default is blank.
	record	string	It defines the tone of **Record**. The format is the same as dial. The default is blank.
	info	string	It defines the tone of **Info**. The format is the same as dial. The default is blank.
	stutter	string	It defines the tone of **Stutter**. The format is the same as dial. The default is blank.
	message	string	It defines the tone of **Message**. The format is the same as dial. The default is blank.
	autoanswer	string	It defines the tone of **Auto Answer**. The format is the same as dial. The default is blank.
[Default] path = /config/voip/tone.ini	**dial**	0 or 1	It defines whether to enable the customized ringtone of **Dial** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	ring	0 or 1	It defines whether to enable the customized ringtone of **Ring Back** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	busy	0 or 1	It defines whether to enable the customized ringtone of **Busy** when in

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			Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	congestion	0 or 1	It defines whether to enable the customized ringtone of **Congestion** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	callwaiting	0 or 1	It defines whether to enable the customized ringtone of **Call Waiting** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	dialrecall	0 or 1	It defines whether to enable the customized ringtone of **Dial Recall** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	record	0 or 1	It defines whether to enable the customized ringtone of **Record** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	info	0 or 1	It defines whether to enable the customized ringtone of **Info** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	stutter	0 or 1	It defines whether to enable the customized ringtone of **Stutter** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
	message	0 or 1	It defines whether to enable the customized ringtone of **Message** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled.

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			The default is 1.
	autoanswer	0 or 1	It defines whether to enable the customized ringtone of **Auto Answer** when in Custom mode. 0 stands for Disabled. 1 stands for Enabled. The default is 1.
[DialNow] path = /tmp/dialnow.xml	**1**	string	It defines one piece of dialnow rule. The numeral 1 doesn't relate to the order this rule will appear as. The default is blank.
	2	string	It defines one piece of dialnow rule. The numeral 2 doesn't relate to the order this rule will appear as. The default is blank.
	3	string	It defines one piece of dialnow rule. The numeral 3 doesn't relate to the order this rule will appear as. The default is blank.
	4	string	It defines one piece of dialnow rule. The numeral 4 doesn't relate to the order this rule will appear as. The default is blank.
	… from 1 to 20…	string	…
	20	string	It defines one piece of dialnow rule. The numeral 20 doesn't relate to the order this rule will appear as. The default is blank.
[AreaCode] path = /config/DialRule/areacode.cfg	**Code**	Integer	It defines the **Code** of Area Code. The default is blank.
	minlen	Integer	It defines the **Min Length** of Area Code. The default is blank.
	maxlen	Integer	It defines the Max Length of Area Code. The default is blank.
[BlockOut] path = /config/DialRule/BlockOut.cfg	**1**	Number or String	It defines a number which will be block when dial it out. Besides a specific number, it support some special characters: "." stands for an arbitrary number or string with arbitrary length. "x" stands for one arbitrary number or string. For other details, please refer to

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			User Manual.
	2	They share the same Permitted Value and rules as **1**.	
	3		
	4		
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	8		
	9		
	10		
[RemotePhoneBook0] path = /config/Setting/Setting.cfg	**URL**	HTTP URL	It defines the **Phone book url** which must be a url linking to an XML-format phonebook like http://192.168.0.231/Vin/phonebook1.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.
[RemotePhoneBook1] path = /config/Setting/Setting.cfg	They share the same parameters and Permitted Values as [RemotePhoneBook0].		
[RemotePhoneBook2] path = /config/Setting/Setting.cfg			
[RemotePhoneBook3] path = /config/Setting/Setting.cfg			
[RemotePhoneBook4] path = /config/Setting/Setting.cfg			
[AdminPassword] path = /config/Setting/autop.cfg	**password**	String	It defines the new password for **admin**.
[UserPassword] path = /config/Setting/autop.cfg	**password**	String	It defines the new password for **user**.
[Webserver Type] path = /config/Advanced/Advanced.cfg	**WebType**	0,1,2 or 3	It defines the **WebServer Type.** 0 stands for Disabled. 1 stands for HTTP & HTTPS. 2 stands for HTTP Only. 3 stands for HTTPS Only. The default is 1.

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i. Configure the Expansion Module via Auto Provision

Connect the expansion module to the phone.

Open the .CFG file which you want to use for provision, and edit it as below:

[key0]
Path= /config/vpPhone/Ext38_00000000000001.cfg
DKtype =
Line =
Value =
Type =
PickupValue =

[key1]
Path= /config/vpPhone/Ext38_00000000000001.cfg
DKtype =
Line =
Value =
Type =
PickupValue =

Note:
Ext38_00000000000001.cfg means the first expansion module. If you want to configure more than one expansion module, it will be **Ext38_00000000000002.cfg, Ext38_00000000000003.cfg [key0]** means the first DSS key on the expansion module, **[key1]** means the second DSS key ……

Write the relevant parameter on "**DKtype =**" "**Line =** " "**Value =** " "**Type =**" "**PickupValue =** ". For details please see the manual below.

type	blf or bla	It is used when configuring a DSS Key as **BLF** or **Shared Line**. blf stands for BLF. bla stands for Shared Line. No default value.
Line	Integer from 0 to max line number	Seen from the web, it reflects the value under **Line** title. It defines the **Line** you are going to use for a specific function (if the function needs to specify a line). Normally,0 stands for Auto,1 stands for Line1 and so on.

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		However, it's a little different when configured as bla or blf in which case 0 stands for Line1, 1 stands for Line2 and so on. The default is 0.
Value	It depends	Seen from the web, it reflects the value under **Extension** title. Normally, the value is an extension number while in some cases it's not. For example, when you configure a key as URL, the value must be a url string. No default value.
PickupValue	string	It is used only for BLF. It defines the pickup number that your server allocates.
DKtype	Integer	It's a number reflects the key function. 0:N/A 1:Conference 2:Forward 3:Transfer 4:Hold 5:DND 6:Redial 7:Call Return 8:SMS 9:Call Pickup 10:Call Park 11:Custom 12:Voicemail 13:SpeedDial 14:Intercom 15:Line(for line key only) 16:BLF 17:URL 18:Group Listening 19:Public Hold 20:Private Hold The default is 0.

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For example if your want to configure some BLF No. to the expansion module, you can refer to the picture below:

```
[ Key0 ]
Path=/config/vpPhone/Ext38_00000000000001.cfg
DKtype = 16
Line = 0
Value = 800
type = blf
PickupValue =

[ Key1 ]
Path=/config/vpPhone/Ext38_00000000000001.cfg
DKtype = 16
Line = 0
Value = 801
type = blf
PickupValue =

[ Key2 ]
Path=/config/vpPhone/Ext38_00000000000001.cfg
DKtype = 16
Line = 0
Value = 802
type = blf
PickupValue =
```

The example for the setting of each type.

1、 BLF setting

[Key0]
DKtype = 16
Line = 1
Value = 263
type = blf
PickupValue = *97

2、Speed Dial setting

[Key0]
DKtype = 13
Line = 2
Value = 1000
type =
PickupValue =

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3、KeyEvent setting

[Key0]
DKtype = 1
Line = 0
Value =
type =
PickupValue =

4、Intercom setting

[Key0]
DKtype = 14
Line = 3
Value = 456
type =
PickupValue =

5、Share Line setting

[Key0]
DKtype = 21
Line = 2
Value = 21
type = bla
PickupValue =

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6、URL setting

[Key0]
DKtype = 17
Line = 0
Value = http://tiptel.voismart.com/ok.php
type =
PickupValue =

3. Put the .cfg file to your provision server and follow the normal auto provision process to do it.

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