IP Touch 4008/4018 Extended Edition

SIP Phone Installation Guide

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1. Overview

The Alcatel-Lucent **IP Touch 40**08/**4018 E**xtended **E**dition phones (IP Touch 40x8 EE) are part of the Alcatel-Lucent IP Touch 8-series Extended Edition phone range.

The following chapters in this document describe SIP stand-alone operations. From firmware version identification to switching from NOE to SIP stand-alone mode, SIP mode initialization (configuration & binary), SIP registration, files update, phone features introduction and troubleshooting.

2. Connecting the Alcatel-Lucent IP Touch 4008/4018 Extended Edition phone

The following figure illustrates the Alcatel-Lucent IP Touch 4018 EE phone connectors. The Alcatel-Lucent IP Touch 4008 EE phone connectors are identical except for the PC connector.
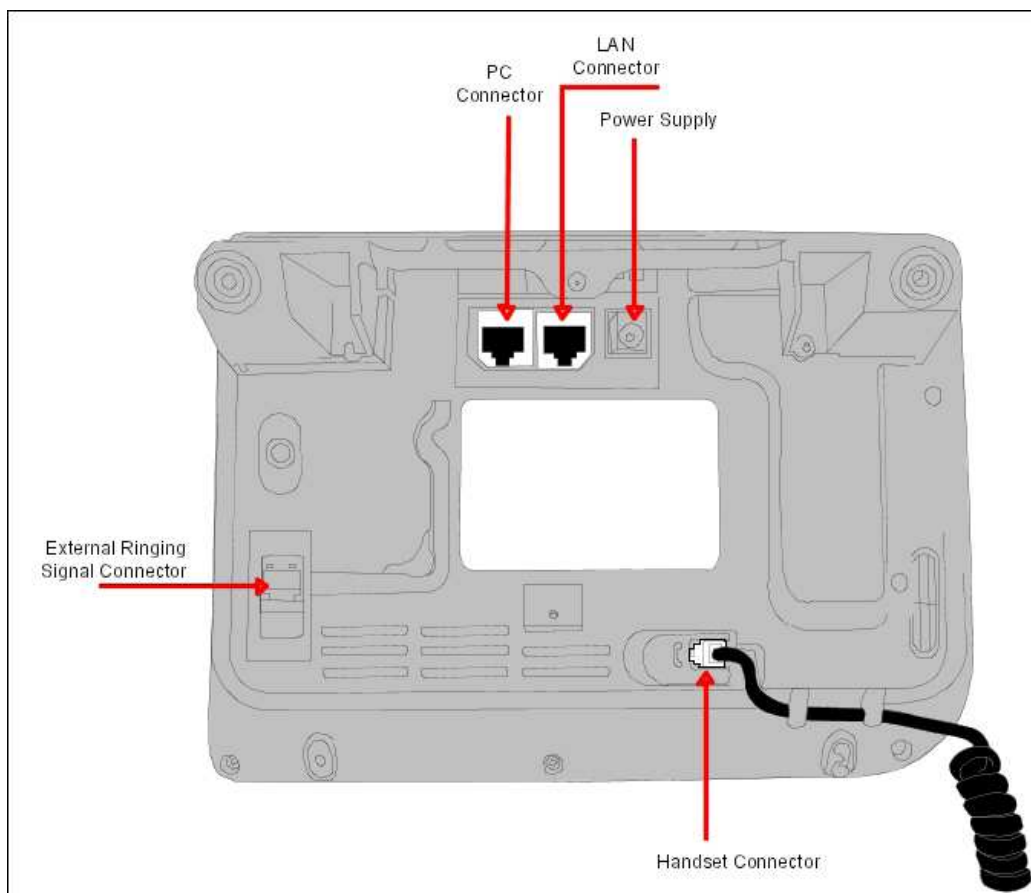
2.1. *Connecting the IP Touch 40x8 EE phone to the LAN*

To connect the set to the LAN:
1. Turn the set over
2. Plug the RJ45 cable into the set LAN connector
3. Connect the RJ45 cable to the LAN itself

2.2. *Connecting power supply*

The following procedure does not apply when power supply is provided via Power over Ethernet (PoE).
To supply power via an AC/DC external adapter:
1. Plug the appropriate cable into the set power supply connector
2. Connect the plug to the power supply. Initialization starts.

2.3. *Plugging a PC to an IP Touch 4018 EE phone*

Only one additional equipment can be connected to the set connector labeled PC on an IP Touch 4018 EE phone.
Note 1: reminder, the Alcatel-Lucent IP Touch 4008 EE phone set has no PC connector.
Note 2: if 802.1x authentication is used, the PC port cannot be used until the IP Touch 418 EE phone authentication is completed.

3. SIP stand-alone mode

3.1. *Firmware version identification*

In addition to existing call processing support for the Alcatel-Lucent OmniPCX™ Communication Servers (NOE signaling protocol), the Alcatel-Lucent IP Touch 40x8EE phone can also be configured as Session Initiation Protocol (SIP) endpoints and, therefore, operate in a standard SIP environment. The Alcatel-Lucent IP Touch 40x8 EE phone may also switch to SIP survival mode in SIP standalone mode.

Firmware version identification – phone out of the box.
In this context, the phone is natively configured in NOE mode

1- Power on the phone.
2- At the phase 2/5 network setup, press the "i" key and just after press the "#" key.
3- '0 - MAC address' menu appears.
4- Scroll down to '2 - Soft infos'.
5- Press the OK key.
6- The version is displayed : 'Version NOE 4.xx.xx'. If the version is at least 4.xx.xx, SIP boot mode is possible.

Firmware version identification – phone already installed.
  1- Power on the phone.
  2- At the phase 2/5 network setup, press the "i" key and just after the "#" key.
  3- '0 - MAC address' menu appears.
  4- Scroll down to '2 - Soft infos'.
  5- Press the OK key.
  6- Scroll down to 'Run mode':
     - if NOE is displayed, it means that the NOE signaling protocol is running,
     - if SIP is displayed, it means that the SIP signaling protocol mode is running.

3.2. *Switching From NOE To SIP Mode*

There are two methods.

Method 1 - Manual
  1- Power on the phone.
  2- At the phase 2/5 network setup, press the "i" key and just after the "#" key.
  3- '0 - MAC address' menu appears.
  4- Scroll down to '2 - Soft infos'.
  5- Press OK.
  6- 'Version NOE x.xx.xx' is displayed.
  7- Scroll down to 'Run mode', 'Set Mode: NOE' is displayed.
  8- Press OK to switch from NOE to SIP mode.
  9- Press '#' to save the new configuration.
  10- Press the Hang Up key to reset the device to take into account the new configuration.

For checking SIP status, follow 'Firmware version identification already installed' section.

Method 2 - Automatic
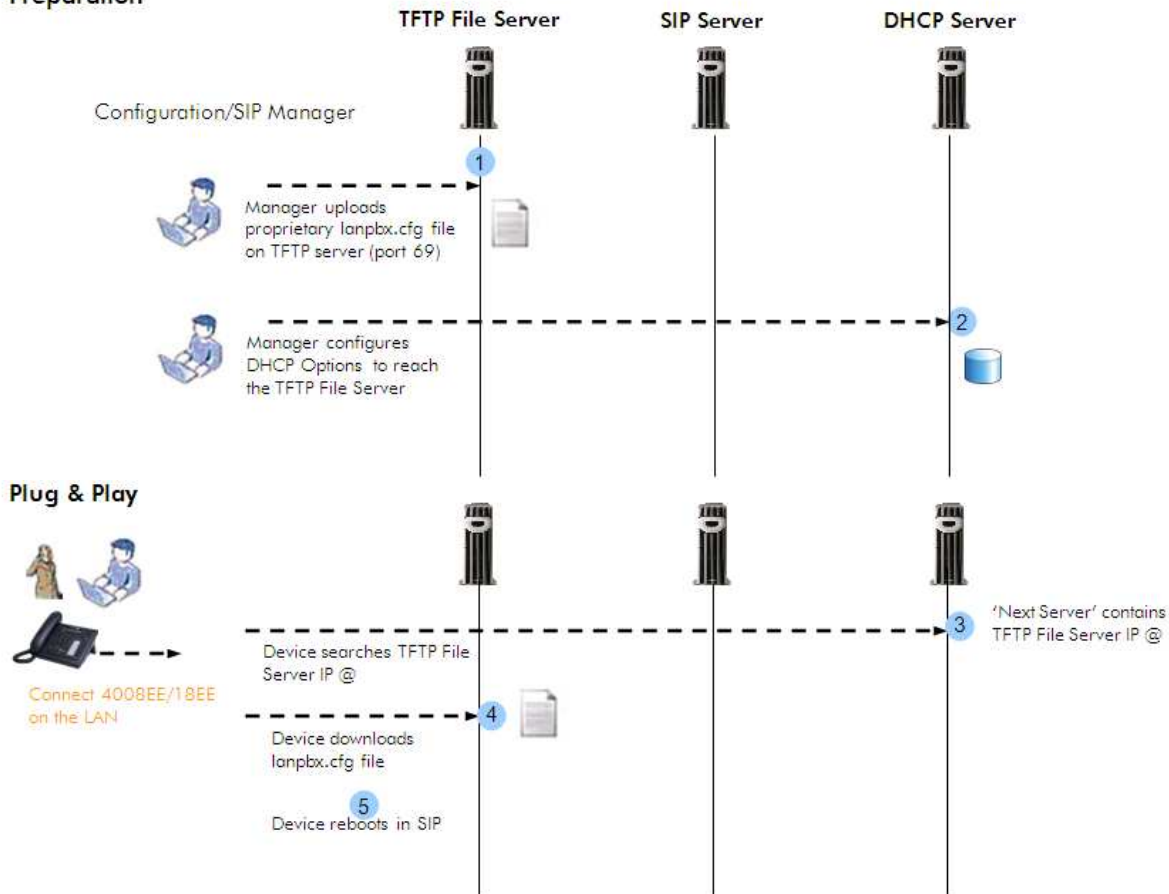
'lanpbx.cfg' file template: use a text editor to create a very simple file with this contents:
APPLICATION_TYPE=APPL_SIP

This file must be reachable from root location of the TFTP Server.

The IP Touch 40x8EE phone is compatible with any DHCP server that correctly supports the BOOTP server IP address - siaddr (also called 'next-server') field. See standard RFC 951 for further information.

3.3. *Initializing an IP Touch 40x8 EE phone*

3.3.1. SIP configuration files

There are two configuration files.

The first file, named "sipconfig.txt", is the global configuration file and it should contain parameters applying to all phones found on the system (proxy IP address, Registrar server IP address, preferred codecs, SNTP server IP address …). Again, this file is downloaded only if the download server address is provisioned, using the download protocol indicated in the corresponding parameter (HTTP(S) or TFTP).
This file is optional since all parameters may be configured in the specific configuration file. It is optional from an administrator point of view: in other words, the phone always tries to download this file. If the file does not exist at server side, the phone receives a "*file not found*" error and continues with the next file seamlessly.

The second file, named "sipconfig-*MacAddress*.txt", is specific to each phone found on the system and as such, should only contain parameters dedicated to a phone (user name…). However, this rule is not enforced.
The name of this file is constructed by inserting the physical address of the phone (in hexadecimal without columns) before the ".txt" extension. As an example, if the phone physical address is "00:80:9F:56:07:AE", the specific file name will be "sipconfig-00809F5607AE.txt".
This file is mandatory since it contains configuration parameters specific to each phone. Again, it is mandatory from an administrator point of view: the phone always tries to download this file, but if it does not exist at server side and if the phone has already some parameters stored in FLASH memory (see below), it continues its initialization with these flashed parameters.
The parameters, provisioned using the global configuration file, are overwritten by specific configuration file parameters if both exist.

For more information on the structure of the sip configuration files, see: § SIP Configuration Files Description.

3.3.2. SIP binary files

The SIP binary files must be set into the server at the same location as the sipconfig.txt and sipconfig-MacAddress.txt configuration files.

For IP Touch 4008EE phone, the available binary files are:

– noesip4008 (application)

– datsip4008 (resources including the ringing melodies)

For IP Touch 4018EE phone, the available binary files are:

– noesip4018 (application)

– datsip4018 (resources including the ringing melodies)

These binary files are downloaded from the server whose IP address is either retrieved from a DHCP server (dynamic configuration) or defined in the set itself (static configuration).

3.3.3.   Selecting the downloading mode

Binary (`noesip40x8` and `datsip40x8`) and Configuration files (`sipconfig.txt` and `sipconfig-`*`MacAddress`*`.txt`) are downloaded from the server defined via DHCP or the set itself.

They can be downloaded via 3 methods (IMPORTANT, the used method is under customer IT Management policy):

– Either TFTP

– or HTTP

– or HTTPS. HTTPS guarantees the authentication, based on TLS client authentication mechanism, and the confidentiality of the files. This download requires certificates.

When downloading fails, the parameters stored in flash memory of the set are used.

3.3.4.   TFTP

Method 1 - Manual

1- Power on the phone.
2- At the phase 2/5 network setup, press the "i" key and just after the "#" key.
3- 'MAC address' menu appears.
4- Scroll down to 'IP parameters'.
5- Press OK.
6- Set following parameters (press OK to select or to change value).
   IP Mode: Static
   IP @: @ you want to give to your SIP phone
   Subnet: Subnet mask
   Router: Default gateway of your subnet
   DL scheme (download scheme): TFTP
   Use default port: Yes
   DL @: TFTP Server @
   DL port: 69
7- Press OK to save.

Warning: no administrator action within 30 seconds in the configuration menu will automatically lead to quit this menu.

Method 2 - Automatic

The IP Touch 40x8EE phone is compatible with any DHCP server that correctly supports the BOOTP server IP address - siaddr (also called 'next-server') field. See standard RFC 951 for further information.
The syntax for the 'Option' 43 IP is as follows:

<opcode> <length> <IP>
<opcode> = 0x40 (64 decimal)
<length> = 0x04 (4 decimal)
<IP> = IP Address in hexadecimal – e.g. for 192.168.1.30 content should be (0xC0 A8 01 1E)

3.3.5. HTTP(S)
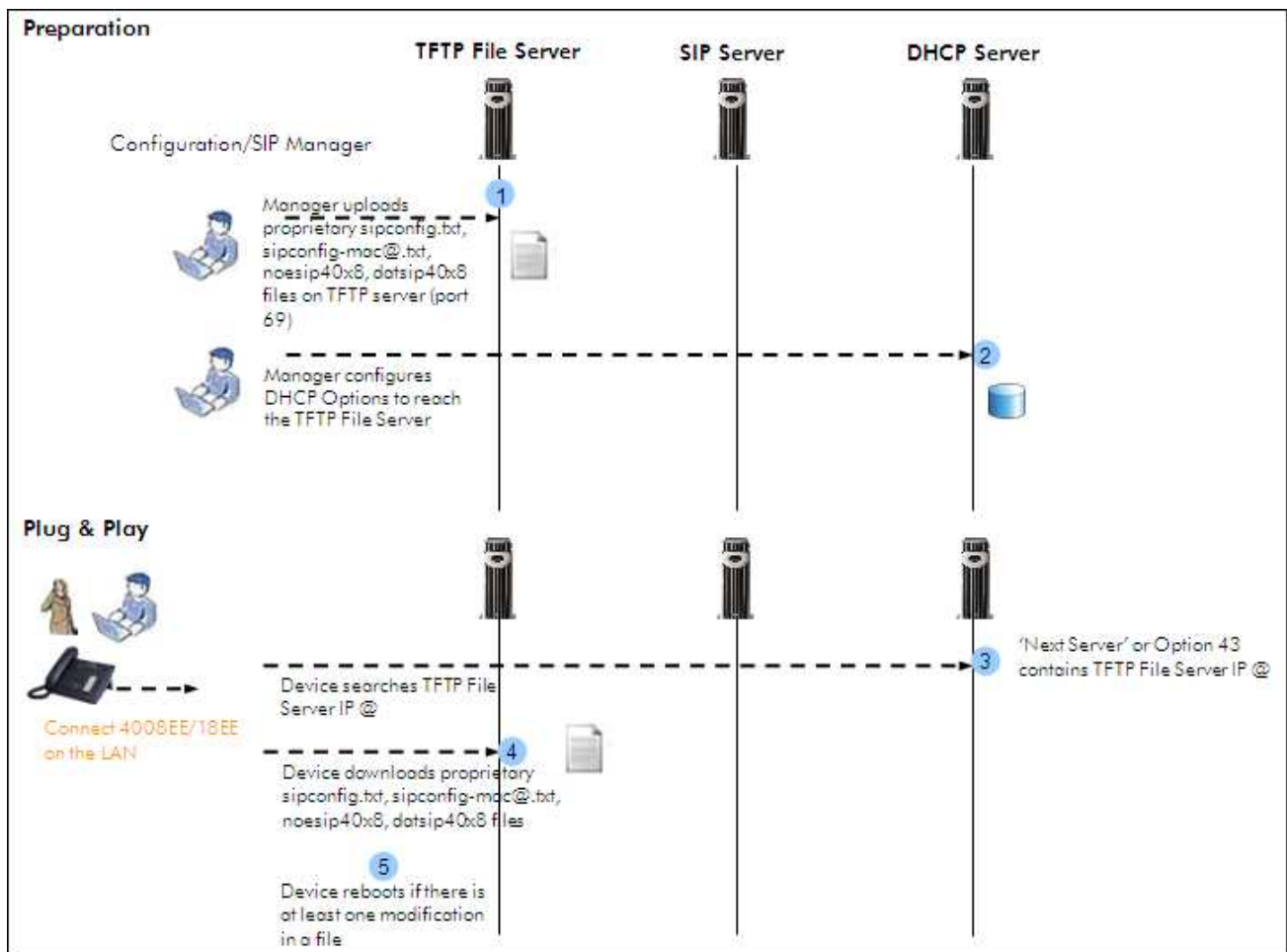
Method 1 – Manual

1- Power on the phone.
2- At the phase 2/5 network setup, press the "i" key and just after the "#" key.
3- 'MAC address' menu is displayed.
4- Scroll down to 'IP parameters'.
5- Press OK.
6- Set following parameters (OK to select or change value).
   IP Mode: Static
   IP @: @ you want to give to your SIP phone
   Subnet: Subnet mask
   Router: Default gateway of your subnet
   DL scheme (download scheme): HTTP or HTTPS
   Use default port: Yes
   DL @: HTTP(S) Server @
   DL port: 80 (443)
   DL Path: The path to the directory where Configuration and Binaries are located
7- Press OK to save.

Warning: no administrator action within 30 seconds in the configuration menu will automatically lead to quit this menu.

Method 2 - Automatic

Preparation

HTTP(S) File Server   SIP Server   DHCP Server

Configuration/SIP Manager

1. Manager uploads proprietary sipconfig.txt, sipconfig-mac@.txt, noesip40x8, dotsip40x8 files on HTTP(S) server [port 80(443)]

2. Manager configures DHCP Options to reach the HTTP(S) File Server

Plug & Play

Connect 4008EE/18EE on the LAN

3. 'Next Server' or Option 43 contains the URL of the Configuration & Binary files

Device searches HTTP(S) File Server IP @

4. Device downloads proprietary sipconfig.txt, sipconfig-mac@.txt, noesip40x8, dotsip40x8 files

5. Device reboots if there is at least one modification in a file

DHCP options possibilities:

- Using TFTP

Priority 0* >>> Option 43 >>> with sub option 64:   ⇒ Windows 2003 Server >>> Option 43 + Sub option 64
                                                      ⇒ Linux (5305) >>> Option 43 + sub option 64

Priority 1* >>>Next Server – Siaddr: ⇒Windows 2003 Server >>> Option 66 (URL) + Option 67 (dummy)
                                          ⇒Linux (5305) Siaddr

- Using Http(s)

Priority 0* >>> Option 43 >>> with sub option 67: ▷ Windows 2003 Server >>> Option 43 + Sub option 67
▷ Linux (5305) >>> Option 43 + sub option 67

Priority 1* >>>Next Server – Siaddr: ▷ Windows 2003 Server >>> Option 66 (URL) + Option 67 (dummy)
▷ Linux (5305) Siaddr

   * Priority is used in case of both Options are used !

- 'Next server' Siaddr (server identifier address) (option 66 in Windows server- see bellow)

The syntax for the ''Next Server' is as follows:

`(config-dhcp)#option 066 ip 192.168.4.248`

- Option 43

The syntax for the 'Option' 43 URL is as follows:

<opcode> <length> <URL>
<opcode> = 0x43 (67 decimal)
<length> = length of URL in hexadecimal
<URL> = URL

Example with Windows 2003 DHCP server

TFTP configuration: Using Windows Server 2003 the 'Next Server' – 'siaddr' value can be set by setting option 66 with "IP Address of the HTTP(S) file server" and option 67 with "dummy non empty value".
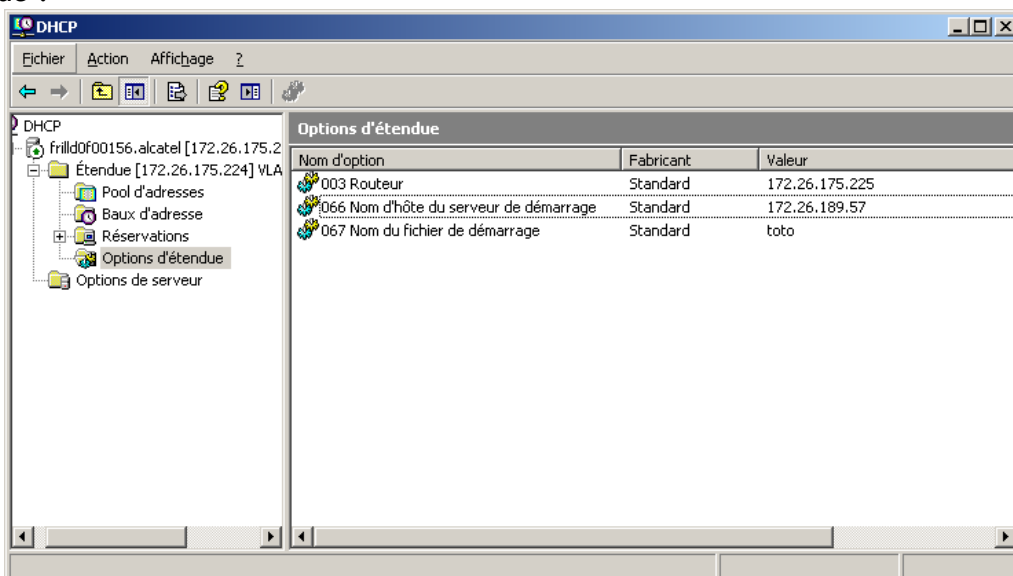
For Windows DHCP server, it is mandatory to activate option 67 with any name in it.

Http(s):
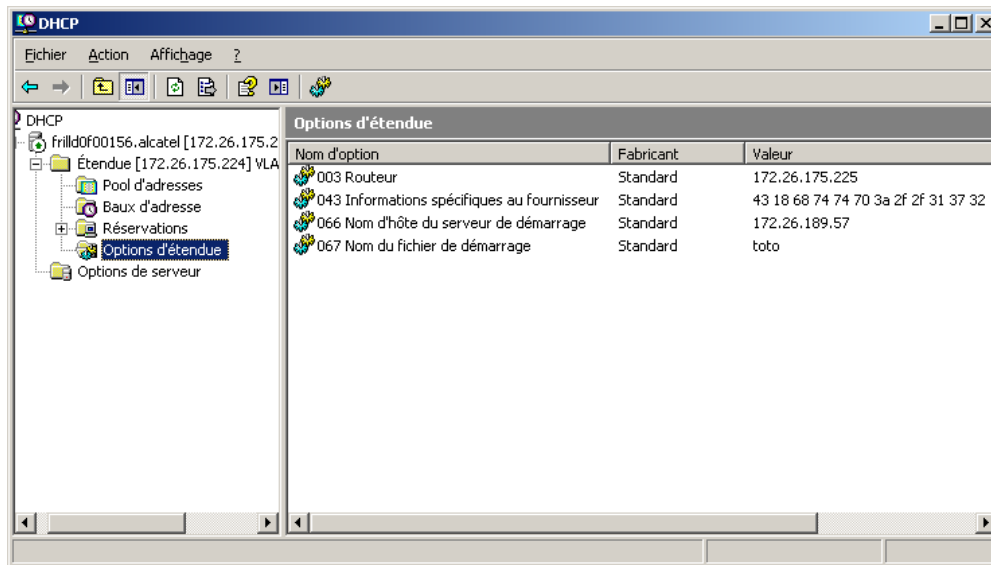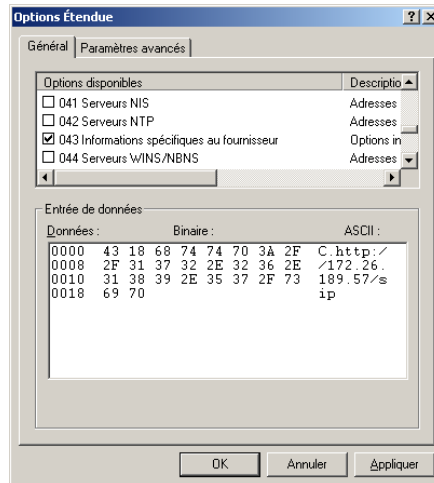
Please note that if a valid URL is found in option 43 then "Next server" is ignored.

Example with Linux DHCP ISC server (dhcpd.conf file):
option space ALU;
option ALU.https-server-address code 67 = text;
class "vendor-classes" {
  match option vendor-class-identifier;
}
subclass "vendor-classes" "alcatel.sip.0" {
  vendor-option-space ALU;
  option ALU.https-server-address "https://fileserver.mycompany.com/iptouch/";
}

3.4. *SIP registration*

In order to perform SIP registration, some parameters are mandatory in the sipconfig-mac@.txt file:

`authentication_realm=`
`authentication_name=`
`authentication_password=`
`proxy_addr=`
`registrar_addr=`

Refer to SIP configuration files description.

3.5. *Updating SIP binaries*

To update SIP binaries on an IP Touch 40x8EE phone, SIP binaries must be made available on the server as indicated in SIP binary files, and the set must reset. This can be done manually and automatically.

– **Manually:**
  by disconnecting the power cable of the set and plugging it in again.

– **Automatically:**
  the set will reset by itself after a polling timer defined in the configuration file (field Binary polling timer) registered in the set at first initialization. The set monitors the server to check if new binary files are available. When there are new binary files, the set automatically restarts and proceeds with a binary update.

After user changes any parameters in admin settings and exits, phone will reset automatically.

3.6. *SIP configuration files description*

The sipconfig.txt and sipconfig-*MacAddress*.txt files are built by the SIP Device Manager. These files are text files and can be modified with a text editor.

The sipconfig.txt and sipconfig-*MacAddress*.txt files have the same structure and contain the following items:

Parameter	Comment
###########################	
# Configuration of SIP R7.1 Terminal	
###########################	
[basic]	
[dns]	
dns_addr=	Enter the address of the DNS server
dns2_addr=	Enter the address of the DNS backup server
hostname=noe_sip	

[sip]	
domain_name=	Enter the IP address, FQDN or domain name

proxy_addr=	Enter the address of the proxy server or PCX address
proxy_port=	Enter the proxy port number
registrar_addr=	Enter the address of the registrar server and PCX adresse
registrar_port=	Enter the registrar port number
outbound_proxy_addr=	Enter the outbound proxy server address
outbound_proxy_port=	Enter the port used by the outbound proxy server

`proxy2_addr=`	Enter the backup proxy server address
`proxy2_port=`	Enter the port number used by the backup proxy server
`registrar2_addr=`	Enter the backup registrar server address
`registrar2_port=`	Enter the port number used by the backup registrar server
`outbound_proxy2_addr=`	Enter the outbound proxy server address
`outbound_proxy2_port=`	Enter the port used by the outbound proxy server
`pcs_addr=`	Enter the PCS server address
`pcs_port=`	Enter the port used by the PCS server
`sip_transport_mode_survi`	Enter the Transport mode in PCS mode : - 0 = UDP or TCP - 1 = UDP - 2 = TCP
`option_timer=120`	
`register_expire=3600`	Enter the lifetime (in seconds) of a registration
`register_retry=30`	Enter the number of retry to connect the registration server

`local_sip_port=`	Enter the port number used by the SIP set
`local_sips_port=`	Enter the port number used by the SIP set used in secured mode
`sip_transport_mode=0`	Enter level transport mode: - **0** for UDP or TCP - **1** for UDP only - **2** for TCP only

`local_rtp_port=6000`	Leave the default value
`local_rtcp_port=6001`	Leave the default value
`prack_type=0`	Enter PRACK type : - 0 = PRACK supported - 1 = PRACK required - 2 = PRACK disabled
`preferred_vocoder=0,4,8,18`	Enter the preferred voice coder: - **0** for PCMU - **8** for PCMA - **4** for G723.1 - **18** for G729A
`authentication_realm=`	If no authentication, leave empty
`authentication_name=`	If no authentication, PUT A VALUE LIKE none
`authentication_password=`	If no authentication, leave empty
`user_name=`	Enter the name of the user
`display_name=`	Enter the name to be displayed on the set
`voice_mail_uri=`	Enter the URI or the call number of the voice mail
`message_waiting_indication_uri=`	Complete SIP URI of the voice mail

`[qos]`	
`sip_diffserv=0`	
`rtp_diffserv=0`	
sip_qos_tickets_enable=0	- 0 : disable - 1 : enable
sip_qos_tickets_target=	Enter Domaine name

`[sntp]`	
`sntp_addr=`	Enter IP adresse of the SNTP server
`timezone=`	/name_of_zone/:<(unused)>:/time_in_minutes_from_UTC/:/daylight_saving_start/:/daylight_saving_end/
`telnet_password=111111`	telnet_password is also the switch to activate the telnet service

`[arp]`	
`arp_spoofing_enable=1`	- 0 : ARP spoofing disabled - 1 : ARP spoofing enabled
`arp_spoofing_timer=30`	

`[init]`	
`application_mode=1`	Enter the operating mode of the set: - **0** for NOE mode - **1** for SIP mode

`[audio]`	
`Tone_country=0`	Enter the country language of the user: - **0** for English - **1** for French - **2** for German - **3** for Italian - **4** for Spanish - **5** for Dutch - **6** for Portuguese

`Dtmf_type=0`	Enter the DTMF type: - **0** for DTMF according to RFC2833 - **1** for DTMF in band - **2** for SIP INFO
`Dtmf_level=0`	Enter the audio level for DTMF: - **0** for 0db - **1** or +3db - **2** for +6db - **3** for -3db - **4** for -6db
`Dtmf_avt_payload_type=`	Only 97-127 is allowed
`vad=1`	Voice Activity Detection: - **0** VAD out of service - **1** VAD in service
`dtmf_feedback_enable=1`	0 = disable 1 = enable
`rlr_handset=10`	
`slr_handset=10`	

`sidetone_handset=2`	
`hearing_aid_enable=1`	0 = disable 1 = enable

`[appl]`	
`admin_password=111111`	Enter the set password in SIP mode
`Bluetooth_parameters=`	
`remote_forward_code=`	Enter the forwarding activation code.
`remote_forward_deactive_code=`	Enter the forwarding deactivation code. This code must be identical with the forward cancellation prefix defined in the PCX.

`power_priority=3`	- **1** for critical - **2** for hight - **3** for low
`asset_id=`	asset_id by default is MAC address, it's used in LLDP inventory management
`time_format=0`	Enter the time format for set display: - **0** for 24 hours format - **1** for AM and PM format

`speed_dial_1_first_name=`	Enter the first name to display when key 3 is activated
`speed_dial_1_last_name=`	Enter the last name to display when key 3 is activated
`speed_dial_1_uri=`	Enter the URI or the call number locally dialed by the set when key 3 is activated
`speed_dial_2_first_name=`	Enter the first name to display when key 4 is activated
`speed_dial_2_last_name=`	Enter the last name to display when key 4 is activated
`speed_dial_2_uri=`	Enter the URI or the call number locally dialed by the set when key 4 is activated

`speed_dial_3_first_name=`	Enter the first name to display when key 5 is activated
`speed_dial_3_last_name=`	Enter the last name to display when key 5 is activated
`speed_dial_3_uri=`	Enter the URI or the call number locally dialed by the set when key 5 is activated
`speed_dial_4_first_name=`	Enter the first name to display when key 6 is activated
`speed_dial_4_last_name=`	Enter the last name to display when key 6 is activated
`speed_dial_4_uri=`	Enter the URI or the call number locally dialed by the set when key 6 is activated

`[admin]`	
`binary_polling_timer=10`	
`config_polling_timer=10`	
`disable_pc_port=`	
`activate_vlan_filter=`	

3.7. *Third-party certificate management*

Method

1- Scroll down to 'Certificate'.
2- Press OK.
3- View Certificate.
4- Scroll down to 'Get Certificate'.
5- Press OK. Fill up the fields as follow :
    HTTP: HTTP Server IP @
    Port: 80
    Path: path to your directory containing certificates
    Used MAC@file: Choose Yes if the name of the file is MAC @
    File: name of the file containing the certificate
    Type: Custom cert 1 or 2
6- Get: OK

If the Private Key of the certificate you download is protected by password or phrase, you'll be asked to enter the password or phrase.

The certificate is under PKCS#12 format (.pfx or .p12 extension).

3.8. *Phone features*

3.8.1. Direct key management

In SIP mode, the IP Touch 40x8EE phone keys have a specific meaning.

0	Line 1
1	Line 2
2	Speed dialing
3	Speed dialing
4	Speed dialing
5	Speed dialing

Table 1: Keys meaning in SIP standalone mode

3.8.2. Multiline

The IP Touch 40x8EE phone allows to set two calls simultaneously. The *Line 1* key and the *Line 2* key are used to speak with two parties alternatively.

3.8.3. Three-party conference

A three-party conference can be performed locally on IP Touch 40x8EE phone in SIP mode. When two lines are set, the conference is available. The word *Conference* is displayed on the set. Press the *OK* key to start the conference. Press the *OK* key (or hang up) to end the conference.

3.8.4.   Speed dialing keys

The user can make a call by pressing one of the speed dialing key. The set automatically dials the content of the key.

A speed dialing key is configured with:

−   The first name and the last name of remote party

−   The URI or the call number of the remote party

Speed dialing keys can be programmed:

−   Locally on the set

−   Via the set configuration file

If a speed dialing key is configured via the configuration file, it cannot be modified from the set.

3.8.5.   Voice mail

In SIP mode, the set can access voice mail via the voice mail key.

The voice mail key is configured with the voice mail URI or voice mail call number in the SIP configuration file.

To access voice mail, press the voice mail key. When connected, voice guides are played to help you select options from the set keypad. Digits are transmitted via DTMF coding.

When a new message has been received, the voice mail LED is on. LCD will indicate one more new message after pressing voice mail key.

Note:

In conversation, a SIP set switches automatically to DTMF mode.

4. Troubleshooting

4.1. *Overview*

This module describes:

– The error and information messages that appear during the starting phase on the phone
– The Ethernet link table.
– The system logs through network (Net Log).

4.2. *Error and information messages*

The table below lists the error and information messages. It has the following format:

Short text = text displayed on the screen, in case of real error or for information.

Description = status/error description

Table 2: Starting phase information and error messages

Short text	Description
END	Starting phase is terminated (successful or unsuccessful)
STARTED	Step started
SUCCESS	Step successful
FAIL	Step failed
RETRYING	Retrying step
NO MAC ADDRESS	No Ethernet MAC address stored in flash
DHCP NOT RESPONDING	Server is not responding
BAD IP ADDRESS	IP address is incorrect
BAD ROUTER ADDRESS	Router address is incorrect
ROUTER PING FAILED	Router not responding to ping
BAD TFTP ADDRESS	TFTP server address is incorrect

ADDRESSES MISMATCH	Address, mask and router do not match
TFTP NOT RESPONDING	TFTP server is not responding
TFTP SERVER ERROR	TFTP server error
BAD FILE CONTENT	Error found in downloaded file
FILE TOO LARGE	File is too large (cannot be downloaded)
SAME VERSION FOUND	The version retrieved is the same as the version running
NEW VERSION FOUND	New IP Touch software version found (download)
FLASHING SUCCESS	Flashing successful
FLASHING FAILED	Failed to flash downloaded binary
TRYING ANOTHER CPU	Trying next address from configuration file
NO ETHERNET LINK	Ethernet link not connected (LAN port only)
RESOURCES NOT FOUND	Resources file not found in flash
DOWNLOAD FORCED	Download was forced because resources are missing
NOT COMPATIBLE	Downloaded version not compatible with the terminal hardware
initializing	First text message after hardware reset and copyright information
1/5 network start	phase 1 is running: the set is starting its network interface
2/5 network setup	Phase 2 is running: the set is looking for IP addresses
3/5 config download	Phase 3 is running: the set is trying to get a lanpbx file

4/5 binary download	Phase 4 is running: the set is downloading a new binary
5/5 connecting	Phase 5 is running: the set is trying to set up the signaling link with the system
802.1x Auth Failed	802.1x authentication has failed: RADIUS server is unreachable, access is refused to the terminal on the RADIUS server or the terminal has an incorrect identity (bad login and/or password).
802.1x Auth Success	802.1x authentication process is complete. The RADIUS server grants access to the terminal, the authenticator opens its port.

4.3. *Ethernet link*

By default, the IP Touch 4018EE phone is configured to perform auto-negotiation on both ports (LAN and PC). Provided that the PC and the LAN switch are also configured to perform auto-negotiation, this is the best configuration for QoS improvement.

However, depending on the network configuration, it may not always be possible to leave the terminal in auto-negotiation: link speed and duplex of both ports can be forced to determined values using the supervisor menu:

1- Plug in the set

2- Once the set displays *initialization*, press the "*i*" key, then the "*#*" key or enter the admin settings during phone idle status

3- Use the navigation key to select *Ethernet Links*

4- Modify data as requested

A configuration mismatch between the terminal and PC/LAN switch can lead to nasty effects on the voice quality:

– No link (or speed mismatch): 8, 9, 11 and 12

– Packet loss (or duplex mismatch): 2, 4, 7 and 14

Note 1: collisions are not detected by the device operating in full-duplex mode: packets from this device are never re-transmitted if a collision occurs on them.

The following table lists all possible Ethernet port configuration combinations when connecting an IP Touch set to an external device (switch on LAN side, PC on PC side). For each combination, the table shows the link status: valid or invalid (duplex or speed mismatch), as described above.

Table 3: Ethernet link combinations

	Terminal Port	External Device Port	Link Status
1	auto-negotiation	auto-negotiation	Valid
2	auto-negotiation	100-FULL	Invalid (packet loss)
3	auto-negotiation	100-HALF	Valid
4	auto-negotiation	10-FULL	Invalid (packet loss)
5	auto-negotiation	10-HALF	Valid
6	100-FULL	100-FULL	Valid
7	100-FULL	100-HALF	Invalid (packet loss)
8	100-FULL	10-FULL	Invalid (no link)
9	100-FULL	10-HALF	Invalid (no link)
10	100-HALF	100-HALF	Valid
11	100-HALF	10-FULL	Invalid (no link)
12	100-HALF	10-HALF	Invalid (no link)
13	10-FULL	10-FULL	Valid
14	10-FULL	10-HALF	Invalid (packet loss)
15	10-HALF	10-HALF	Valid

Note 2: to prevent slowness problem on PC when the two ports of the IP Touch 4018EE phone are configured in auto-negotiation mode, if the negotiation has led to a 10 Mbps rate on the PC port and a 100 Mbps rate on the LAN port, the IP Touch set automatically tries to renegotiate a 10 Mbps rate on the LAN port.

4.4. *Net log*

The 'netlog' function allows configuring a network syslog server on which the debug flux will be sent. It also allows setting the debug flux level and enabling or disabling the debug link.
In order to activate this net log function, telnet service must be available.

On administrator console, type telnet SIP phone IP @
Telnet window appears. Enter telnet password (password stored in sipconfig.txt or sipconfig-mac@.txt).
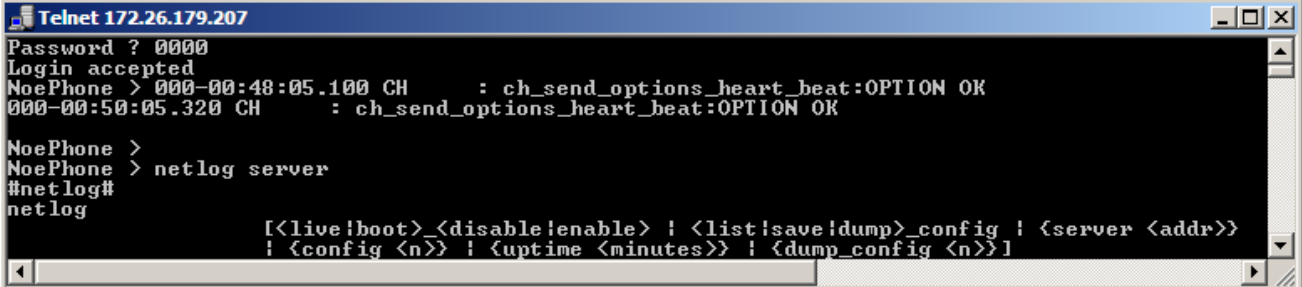
Type the following command
netlog [<live|boot>_<disable|enable> | <list|save|dump>_config |
{server <addr>} | {config <n>} | {uptime <minutes>} |
{dump_config <n>}]

Example:
telnet 172.26.179.207
Enter the password defined in the sipconfig.txt or sipconfig-mac@.txt file.

```
Telnet 172.26.179.207                                              _ □ ×
Password ? 0000
Login accepted
NoePhone > 000-00:48:05.100 CH      : ch_send_options_heart_beat:OPTION OK
000-00:50:05.320 CH      : ch_send_options_heart_beat:OPTION OK

NoePhone >
NoePhone > netlog server
#netlog#
netlog
                [<live|boot>_<disable|enable> | <list|save|dump>_config | <server <addr>>
                | <config <n>> | <uptime <minutes>> | <dump_config <n>>]
```

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