Deploying Yealink IP Phones for Using with Skype for Business® Server

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Warranty

Declaration of Conformity

Hereby, Yealink(Xiamen) Network Technology CO., LTD. declares that this phone is in conformity with the essential requirements and other relevant provisions of the CE, FCC. Statements of compliance can be obtained by contacting support@yealink.com.

CE Mark Warning

These devices are marked with the CE mark in compliance with EC Directives 2014/35/EU and 2014/30/EU.

Part 15 FCC Rules

This device is compliant with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada (IC)

This Class [B] digital apparatus complies with Canadian ICES-003 Rules.

Class B Digital Device or Peripheral

Note: This device is tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.

2. Increase the separation between the equipment and receiver.

3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

4. Consult the dealer or an experience radio/TV technician for help.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Customer Feedback

We are striving to improve our documentation quality and we appreciate your feedback. Email your opinions and comments to DocsFeedback@yealink.com.

GNU GPL INFORMATION

Yealink phone firmware contains third-party software under the GNU General Public License (GPL). Yealink uses software under the specific terms of the GPL. Please refer to the GPL for the exact terms and conditions of the license.

The original GPL license, source code of components licensed under GPL and used in Yealink products can be downloaded from Yealink web site:

http://www.yealink.com/GPLOpenSource.aspx?BaseInfoCateId=293&NewsCateId=293&CateId=293.

About This Guide

Yealink Skype for Business phones can work with Microsoft® Skype for Business Server. They are designed for today's busy executives and professionals. This deployment guide provides system administrators information on how to deploy Yealink Skype for Business phones with Microsoft® Skype for Business Server™.

Deploying and registering phones with Skype for Business Server enables users to communicate with HD voice using familiar Microsoft solutions.

In This Guide

The information detailed in this guide is applicable to T58A/T56A/T48S/T46S/T42S/T41S Skype for Business phones running firmware version 9 or later. The firmware format is like x.x.x.x.rom. The second x from left must be greater than or equal to 9 (e.g., the firmware version of T46S Skype for Business phone: 66.9.0.42.rom). This deployment guide includes the following chapters:

- Chapter 1, "Getting Started" describes introductory information on available phone features.

- Chapter 2, "Deploying Phones with Skype for Business Server" describes information on setting up network and provisioning methods.

- Chapter 3, "Configuring Phones with Skype for Business Server" describes how to configure and use the phone features.

- Chapter 4, "Configuring Security Features" describes security-related features.

- Chapter 5, "Device and Firmware Support" describes updating firmware and maintaining your devices.

Documentations

The following related documents are available. You can get them from *Yealink Website*:

- Quick Start Guides, which describe how to assemble phones and configure the most basic features available on Skype for Business phones.

- User Guides, which describe the basic and advanced features available on Skype for Business phones.

- Auto Provisioning Guide, which describes how to configure Skype for Business phones using the configuration files.

- Description of Configuration Parameters in CFG Files, which describes all configuration parameters in the configuration files.

- <y0000000000xx>.cfg and <MAC>.cfg template configuration files.

- Updating Phone Firmware from Microsoft Skype for Business Server Guide, which describes how to upgrade firmware via Skype for Business Server.

For support or service, please contact your Yealink reseller or go to Yealink Technical Support online: *http://support.yealink.com/*.

Conventions Used in Yealink Documentations

Yealink documentations contain a few typographic conventions.

You need to know the following basic typographic conventions to distinguish types of in-text information:

Convention	Description
Bold	Highlights the web/phone user interface items such as menus, menu selections, soft keys, or directory names when they are involved in a procedure or user action (e.g., Click on **Security**->**License**). Also used to emphasize text (e.g., **Configuration File**).
Italics	Used to show the format of examples (e.g., *http(s)://[IPv6 address]*), or to show the title of a section in the reference documentations available on the Yealink Technical Support Website (e.g., *Triggering the IP phone to Perform the Auto Provisioning*).
Blue Text	Used for cross references to other sections within this documentation (e.g., refer to Installing a Skype for Business Server Feature License).
Blue Text in Italics	Used for hyperlinks to Yealink resources outside of this documentation such as the Yealink documentations (e.g., *Yealink_Skype_for_Business_HD_IP_Phones_Auto_Provisioning_Guide*).

Summary of Changes

This section describes the changes to this guide for each release and guide version.

Changes for Release 9, Guide Version 9.5

New version of T58A and T56A Skype for Business phone is released.

Changes for Release 9, Guide Version 9.46

This edition adds T58A and T56A Skype for Business phone.

Changes for Release 9, Guide Version 9.45

Major updates have occurred to the following sections:

●   Signing into Skype for Business on page 15

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Getting Started

This chapter describes the available phone features, and something you need to know before deploying your phone with Skype for Business Server. Topics include:

- Available Phone Features
- Before You Begin

Available Phone Features

Phone features available on all Yealink phones registered to Skype for Business Server are listed in the following table:

Feature	Function
Auto root certificate fetch	Available using DHCP option 43
Auto root certificate retrieval	Lightweight Directory Access Protocol (LDAP) Domain Name System (DNS) query
Sign in	- PIN Authentication - User Sign-in - Web Sign-in - Sign in via PC
Audio Codec	G722, PCMA, PCMU, G729, G726-16, G726-24, G726-32, G726-40, iLBC, G723_53, G723_63, SILK_NB, SILK_WB
Call forward, transfer, hold, mute	Phone functions
Full-duplex echo cancellation(FDX)	
Media encryption	SRTP
Direct SIP registration to Skype for Business Server	Microsoft SIP, TLS for SIP Signaling
Peer-to-peer audio calling	Initiate and receive two-party call
Message Waiting Indicator (MWI)	Illumination of MWI lamp indicates new messages
Voice mail retrieval	Connect to voice mail center
Presence publication	Indicates the status of your contacts
Presence state control	Choose from a menu of presence states

Feature	Function
Calls logs	Local call history for missed, placed, received, placed and forwarded calls
Log access	Local phone access to diagnostic logging
Device updates	Centralized phone updates from an out-of-band server
VLAN assignment	LLDP-MED VLAN assignment
Remote worker scenarios	Edge Server registration for off-location users
Firewall traversal	A/V Edge Server support using the ICE, STUN, and TURN protocols
Federation	Connect people across organizations and domains
Provisioning	Support for in-band provisioning from Skype for Business Server
Media bypass	Bypass the Skype for Business Server mediation server to send media directly to a PSTN gateway
Dial now	When the dialed number matches the dial-now rules, the number will be dialed out automatically.
Call forwarding to contacts	Forward incoming calls to another contact
Call forwarding to voicemail	Forward incoming calls directly to voicemail
Group Call Pickup	Pick up incoming calls within a pre-defined group
Call Queue	When someone calls in to a phone number that is setup up with a call queue, they will be put in the queue and wait for the available call agent.
Shared Line Appearance (SLA)	Enables user to share a single line with other contacts as a member of a group (not applicable to T58A/T56A).
Response Groups	
Team-Call	
Delegates	
Private Lines	Alternate call-forwarding identity for a Skype for Business Server user's secondary line.
Common Area Phone(CAP)	Common aera phones are Skype for Business phones that are not associated with an individual user.
Branch Office Survivability	Ensures basic call functions during a shutdown or outage.
E911	Supports in-band provisioning information for Emergency 911
Location Services	LLDP-MED location based information support
Centralized Conference Control Protocol (CCCP)	Manage conference calls

Feature	Function
Skype for Business Server Exchange Integration	Skype for Business Server directory search, Outlook contact search, visual voicemail, call log synchronization between phone, Outlook and Skype for Business Server client.
Boss-Admin	Assign administrative delegates to answer, hold, and transfer calls and make calls on behalf of boss lines
Directory	View detailed contact information for local or Skype for Business contacts and make direct calls from the Local directory and Skype for Business directory
Contact Groups	Display and expand groups in the Skype for Business Server user's contact list
Contacts List	Display Skype for Business Server contacts and their current presence status
TCP Media	RTP Media and ICE negotiation supported over TCP when UDP is unavailable
Better Together over Ethernet (BToE)	Connect your computer to your phone and use your computer to control calls on your phone and Skype for Business client
Link Layer Discovery Protocol (LLDP)	Support for LLDP
Automatic Firmware Update	Receive firmware updates automatically when registered with Skype for Business Server
Call Park	Place a call on a separate call orbit where anyone can retrieve the call
Music on Hold	Enable music for calls on hold

Before You Begin

Before registering your phones with Skype for Business Server, you need to know the following points:

- If you are provisioning your phones, we strongly recommend using Auto Provisioning when deploying multiple phones. In this method, you need to set up a provisioning server and use configuration files to configure phone features.

- If user purchases a phone with Skype for Business Server firmware (also called Skype for Business phone), the phone has a built-in Skype for Business Server feature license which allows user to use the phone in a Skype for Business Server environment.

    If users purchase Yealink phones that aren't running Skype for Business firmware, but upgrade it to the Skype for Business firmware, the phone will be reset to factory automatically. Users must purchase a Skype for Business Server feature license to use Yealink phones in a Skype for Business Server environment. Contact Yealink resellers for more information. User can also use Yealink phones in a Skype for Business Server environment for trial purposes, without purchasing a license, for a maximum of 180 days.

A

- Yealink releases firmware in two file formats:

  Cabinet (CAB) file: CAB file format is a Microsoft Windows archive file that supports lossless data compression and embedded digital certificates that maintain archive integrity. Yealink offers firmware in CAB file format so that user can update firmware from Skype for Business Server and enable the automatic firmware update feature.

  Rom file: Yealink also offers Skype for Business Server firmware in ROM file format. And the file is compressed in zip file format on *Yealink Website*, you need to download the compressed file, and then extract it into local directory.

Deploying Phones with Skype for Business Server

This chapter provides the information about deploying your phone in Skype for Business Server environment. Provisioning methods are also introduced. Topics include:

- Setting up the Network

- Provisioning Methods

- Installing a Skype for Business Server Feature License

After your phone is powered on and connected to the network, the phone performs a boot-up sequence, as shown next.
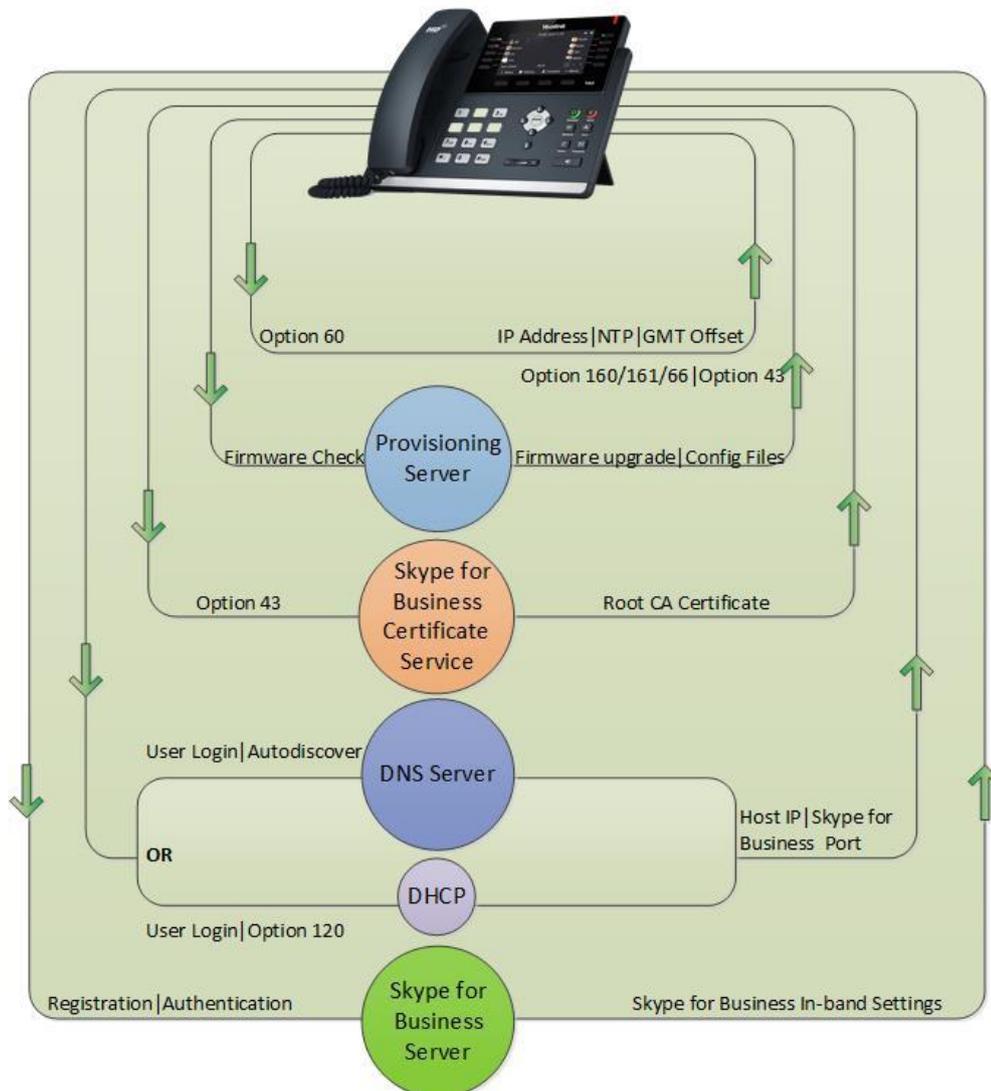
Setting up the Network

1. The Skype for Business phone can discover Skype for Business Server automatically via Lyncdiscover or Domain Name System (DNS) service (SRV) records. The priority is in this order: Lyncdiscover >Domain Name System (DNS) service (SRV) records.

   For information on creating, refer to *DNS requirements for Skype for Business* on Microsoft TechNet.

2. Obtain a root certificate authority (CA) security certificate in one of the following three ways:

   - Yealink Skype for Business phones automatically fetch the root certificate using a Lightweight Directory Access Protocol (LDAP) Domain Name System (DNS) query. This feature is disabled by default. To enable this feature, add and set the value of the configuration parameter "sip.ldap_download_rootca.enable" to 1 (Enabled), and then perform Auto Provisioning.

   - You can use Dynamic Host Configuration Protocol (DHCP) Option 43 to download a private CA root security certificate used by Skype for Business Server. The security certificate is required to support secure HTTPS and TLS. In conjunction with DHCP Option 43, ensure that your devices can access Skype for Business Server Certificate Provisioning Web service over HTTP (TCP 80) and HTTPS (TCP 443). For information on configuring DHCP Option 43, see *Set Up DHCP for Devices* on Microsoft TechNet.

   - You can manually install certificates on the phones. The phone will verify the certificate sent by the server to decide whether it is trusted based on the trusted certificates list. For more information, refer to Uploading a Trusted Certificate.

3. (Optional) If you are using auto provisioning to deploy your phones, place the configuration files on the provisioning server, and use DHCP option 66 (If DHCP option 66 is not available, use Option 160/161 with the address (URL or IP address) of the provisioning server) or use other methods to make the phones obtain the provisioning server address.

4. System administrator should set up accounts on the Skype for Business Server that can be used on the phones to sign in.

Provisioning Methods

Yealink provides three provisioning methods to configure phones.

The following sections describe how to configure Skype for Business phones using each method.

- Manual Provisioning Methods

- Centralized Provisioning Methods

Manual Provisioning Methods

Phone User Interface

An administrator or a user can configure and use Skype for Business phones via phone user interface. Access to specific features is restricted to the administrator. The default password is "admin"(case-sensitive). Not all features are available on phone user interface. For more information, refer to *Yealink Skype for Business phone-specific user guide*.

Web User Interface

An administrator or a user can configure Skype for Business phones via web user interface. The default user name and password for the administrator to log into the web user interface are both "admin" (case-sensitive). Most features are available for configuring via web user interface. Skype for Business phones support both HTTP and HTTPS protocols for accessing the web user interface.

To access the web user interface from your PC:

1. Press the **OK** key on the phone when the phone is idle to obtain its IP address.
2. Open a web browser on your computer, and enter the IP address in the address bar (e.g., http://192.168.0.10 or 192.168.0.10).

3. Press the **Enter** key on your keyboard.
4. Enter the user name (default: admin) and password (default: admin) in the login page and click **Confirm**.

Centralized Provisioning Methods

Use one of the following methods to centrally deploy multiple devices:

- **Auto Provisioning Server**: Set up your own provisioning server and customize feature settings using the template configuration files (download it from *Yealink Website*).
- **In-band Provisioning** via Skype for Business server: Provision multiple phones with firmware from Skype for Business Server and apply default feature settings.

The next figure illustrates how your phone interoperates with provisioning server and Skype for Business Server.

Auto Provisioning

Before beginning provisioning, you need to obtain template configuration files. There are two configuration files both of which are CFG-formatted. We call these two files Common CFG file and MAC-Oriented CFG file. The Skype for Business phone tries to download these CFG files from the provisioning server during auto provisioning.

You can ask Yealink reseller or Yealink FAE for Common CFG and MAC-Oriented files. You can also obtain the Common CFG file and MAC-Oriented file online:

http://support.yealink.com/documentFront/forwardToDocumentFrontDisplayPage.

The Common CFG file is effectual for all phones of the same model. It uses a fixed name "y0000000000XX.cfg" as the file name, where "XX" equals to the first two digits of the hardware version of the Skype for Business phone model.

The names of the Common CFG file requirements for the phone model are:

Phone Model	Common CFG file
T58A	y000000000058.cfg
T56A	y000000000056.cfg
T48S	y000000000065.cfg
T46S	y000000000066.cfg
T42S	y000000000067.cfg
T41S	y000000000068.cfg

The MAC-Oriented CFG files are only effectual for the specific phone. They use the 12-digit MAC address of the Skype for Business phone as the file name. For example, if the MAC address of the Skype for Business phone is 0015651130F9, the MAC-Oriented CFG file has to be named as 0015651130f9.cfg (case-sensitive) respectively.

After you edit the configuration files, place them in the provisioning server directory. Yealink Skype for Business phones support using FTP, TFTP, HTTP and HTTPS protocols to download configuration files to the phone. You can use one of these protocols for provisioning.

The following figure shows how the Skype for Business phone interoperates with the provisioning server:
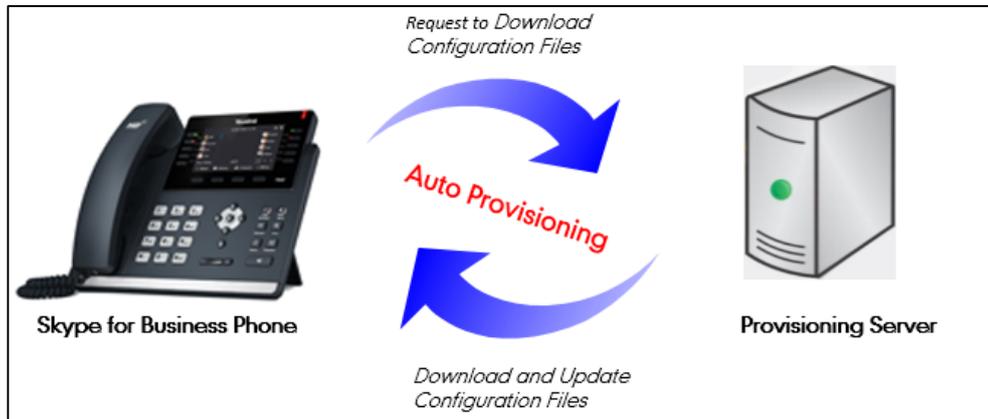
Major Tasks for Auto Provisioning

You need to complete four major tasks to provision Yealink Skype for Business phones via auto provisioning.

1. Editing the configuration files (Common CFG files or MAC-Oriented files).

2. Configure a provisioning server supporting FTP, TFTP, HTTP or HTTPS protocols. And store configuration files in a location on the provisioning server.

3. Make the phones obtain the provisioning server address.

4. Trigger the phones to download and update the configuration files from the provisioning server.

The following figure shows an overview of these tasks:
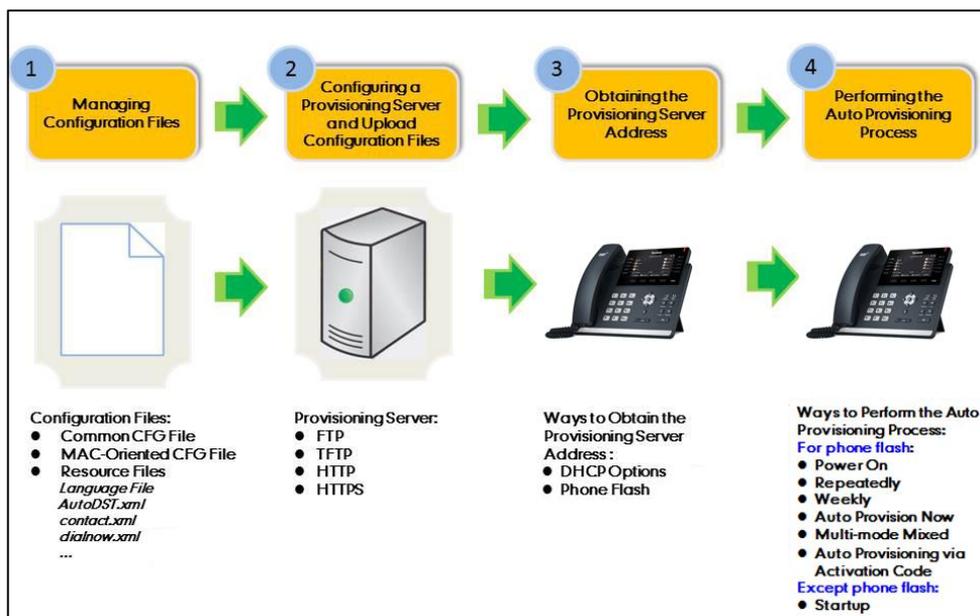
For more information on how to perform these four provisioning tasks, refer to
Yealink_Microsoft_Skype_for_Business_Edition_IP_Phones_Auto_Provisioning_Guide.

In-Band Provisioning

After the phone is signed in, the phone receives settings from the Skype for Business server pool through in-band provisioning.

Skype for Business in-band provisioning device settings take precedence over the same settings configured via auto provisioning. To avoid configuration conflicts, ensure that the settings applied to phones are from one source or the other. If you are provisioning in-band, remove the parameters from the configuration files before using auto provisioning method. If you are using auto provisioning, it is best practice to disable in-band provisioning device settings.

Procedure

In-band provisioning device settings can be configured using the configuration files only.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configures in-band provisioning device settings sent from Skype for Business. **Parameter:** static.phone_setting.receive_inband.enable

Details of Configuration Parameters:

Parameters	Permitted Values	Default
static.phone_setting.receive_inband.enable	**0 or 1**	**1**

Description:

Enables or disables in-band provisioning device settings sent from Skype for Business.

0-Disabled, the phone blocks in-band provisioning device settings sent from Skype for Business.

1-Enabled, the phone accepts in-band provisioning device settings sent from Skype for Business.

Note: If you change this parameter, the phone will reboot to make the change take effect.

Web User Interface:

None

Phone User Interface:

None

Installing a Skype for Business Server Feature License

Skype for Business phone has a built-in Skype for Business Server feature license, which allows user to use Skype for Business features on the phone.

If users purchase phones which aren't running Skype for Business firmware, while the users want to upgrade it to a Skype for Business firmware, then a Skype for Business Server feature license is needed to be uploaded to the phone after the upgrade. Contact Yealink resellers to purchase the license. The following introduces how to install the licence.

Procedure

Skype for Business feature license can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Specify the access URL of Skype for Business feature license. **Parameter:** lync_license_dat.url
Local	Web User Interface	Specify the access URL of Skype for Business feature license. **Navigate to:** http://<phoneIPAddress>/servlet?p=security-license&q=load

Details of the Configuration Parameter:

Parameter	Permitted Values	Default
lync_license_dat.url	**String within 99 characters**	**Blank**

Description:

Configures the access URL of the Skype for Business feature license.

Example:

lync_license_dat.url = http://192.168.1.20/License_$MAC.dat

Example:

The phones will replace the characters "$MAC" with its MAC addresses during auto provisioning. For example, the MAC address of one T46S Skype for Business phone is 00156543EC97. When performing auto provisioning, the phone will request to download the License_00156543ec97.dat file from the provisioning server address "http://192.168.1.20".

Web User Interface:

Security->License

Phone User Interface:

None

Note: If you change this parameter, the phone will reboot to make the change take effect.

To upload the Skype for Business feature license via web user interface:

1. Click on **Security**->**License**.

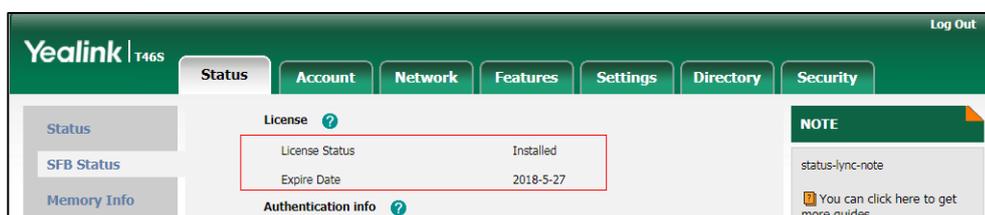2. Click **Browse** to select the license from your local system.

3. Click **Upload** to upload the certificate.

Checking License Status

You can check Skype for Business Server feature license status and validity via web user interface or phone user interface.
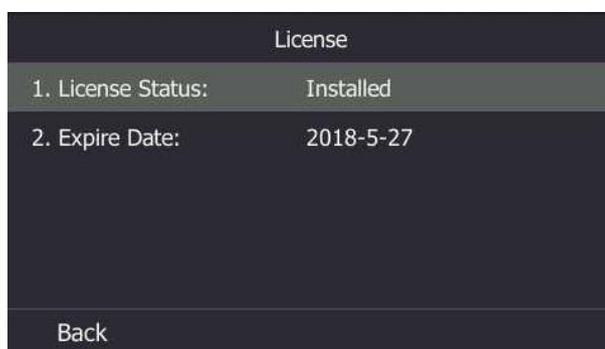
To check license status via web user interface:

1. Click on **Status**->**SFB Status**.

To check license status via phone user interface:

1. Press **Menu**->**Status**->**License**.

Note   Resetting the phone to factory configurations will not clear the Skype for Business feature license.

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Configuring Phones with Skype for Business Server

This chapter provides basic operating instructions for the Skype for Business Server phones. Topics include:

- Microsoft Exchange Integration
- Signing into Skype for Business
- Signing Out of Skype for Business
- Configuring Boss-Admin Feature

Microsoft Exchange Integration

The Skype for Business phone can obtain Microsoft Exchange Server address automatically via Auto discover request. This feature enables set up of visual voicemail, call log synchronization, Outlook contact search, and calendar retrieval.

If your phone fails to obtain the Microsoft Exchange Server address automatically, you can manually configure the address.

Procedure

Microsoft Exchange Server can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configures the way to obtain Microsoft Exchange Server address. **Parameter:** phone_setting.ews_autodiscover.enable
		Specify the Microsoft Exchange Server address manually. **Parameter:** phone_setting.ews_url
Local	Web User Interface	Configures the way to obtain Microsoft Exchange Server address. Specify the Microsoft Exchange Server address**.** **Navigate to**: http://<phoneIPAddress>/servlet?p=features-general&q=load

Details of Configuration Parameters:

Parameters	Permitted Values	Default
phone_setting.ews_autodiscover.enable	0 or 1	1

Description:

Enables or disables the phone to obtain the Microsoft Exchange Server address automatically via Auto discover request.

0-Disabled, the phone does not obtain Microsoft Exchange Server address automatically via Auto discover request. You need to configure the Microsoft Exchange Server address manually.

1-Enabled, the phone will obtain Microsoft Exchange Server address automatically via Auto discover request.

Web User Interface:

Features->General Information->Auto Discover

Phone User Interface:

None

phone_setting.ews_url	String	Blank

Specify the Microsoft Exchange Server address manually**.**

Note: It works only if the value of the parameter "phone_setting.ews_autodiscover.enable" is set to 0 (Disabled).

Web User Interface:

Features->General Information->Exchange Server Url

Phone User Interface:

None

To configure the Microsoft Exchange Server via web user interface:

1. Click on **Features**->**General Information**.

2. Do one of the following:

   - If you select **Enabled** from the pull-down list of **Auto Discover**, the phone can obtain Microsoft Exchange Server address automatically.

- If you select **Disabled** in the pull-down list of **Auto Discover**, you should enter the Microsoft Exchange Server address in the **Exchange Server Url** field.

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

Signing into Skype for Business

Skype for Business users are authenticated against Microsoft Active Directory Domain Service. The following four sign-in methods are available.

- **PIN Authentication**: This method uses the user's phone number (or extension) and personal identification number (PIN) to sign into Skype for Business server. This sign-in method is only applicable to On-Premises account.

- **User Sign-in**: This method uses the user's credentials (sign-in address, user name, and password) to sign into Skype for Business server. This sign-in method is applicable to On-Premises account and Online account.

- **Web Sign-in**: This method uses the unique website shown on the phone to sign in. This sign-in method is only applicable to Online account.

- **Sign in via PC**: when your phone is paired to your computer using Better Together over Ethernet (BToE), use the Skype for Business client to sign in. This sign-in method is applicable to On-Premises account and Online account.

<table>
<tr><td>Note</td><td>If the phone reboots after successful login, the login credentials from the previous Sign-In will be cached. User can sign in successfully without reentering the credentials.

If Active Directory Federation Services (ADFS) or Single Sign-On (SSO) authentication method is used in your environment, you can still use the user sign-in/sign in via pc/web sign-in method to sign into Skype for Business successfully.</td></tr>
</table>

PIN Authentication

During startup, the phone will broadcast DHCP request with DHCP options 43 to download a private CA root security certificate used by Skype for Business and obtain the Skype for Business server address. The CA root security certificate and Skype for Business server address will be found in the received DHCP response message. As a result, you can sign into Skype for Business on your phone with your PIN Authentication credentials. If the DHCP Option 43 is not configured in your network, your phone will not display PIN Authentication sign-in method.

Procedure

PIN Authentication can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configure PIN Authentication method. **Parameter:** features.pin_authentication.enable
	<MAC>.cfg	Configure PIN Authentication method. **Parameter:** static.account.sfb.1.pin_number
		Configures the PIN for the PIN Authentication. **Parameter:** static.account.sfb.1.pin_password
Local	Web User Interface	Configure PIN Authentication method. **Navigate to:** http://<phoneIPAddress>/servlet?p=account-register-lync&q=load&acc=0
	Phone User Interface	Configure PIN Authentication.

Details of Configuration Parameters:

Parameters	Permitted Values	Default
features.pin_authentication.enable	**0 or 1**	**1**
Description: Enables or disables the user to sign into the phone using PIN Authentication method. **0**-Disabled **1**-Enabled **Web User Interface:** None **Phone User Interface:** None		
static.account.sfb.1.pin_number	**String within 128 characters**	**Blank**
Description: Configures the phone's extension for the PIN Authentication method. **Web User Interface:** Account->Register->Extension **Phone User Interface:** Sign in->PIN Authentication->Extension		
static.account.sfb.1.pin_password	**String within 99 characters**	**Blank**
Description: Configures the PIN for the PIN Authentication method. **Web User Interface:** Account->Register->Pin **Phone User Interface:** Sign in->PIN Authentication->PIN		

To sign into the Skype for Business Server using PIN Authentication method via web user interface:

1. Click on **Account**->**Register**.

2. Select **Pin Authentication** from the pull-down list of **Mode**.

3. Enter your Skype for Business user's phone number or extension (e.g., 4040) in the **Extension** field.

4. Enter your personal identification number in the **Pin** field.
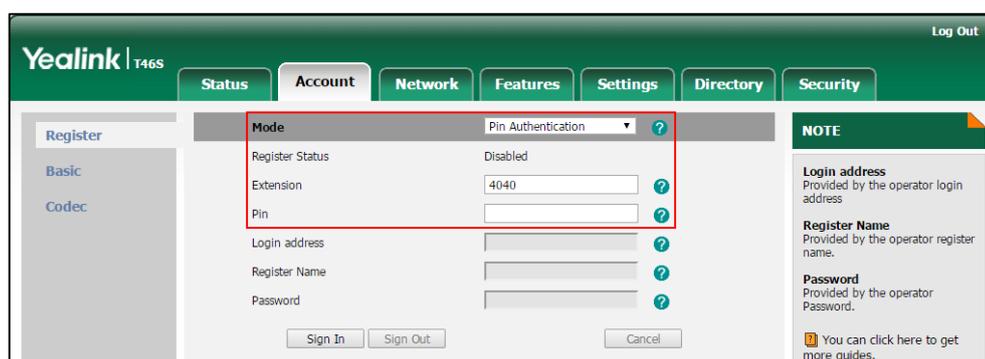
5. Click **Sign In** to accept the change.

To sign into Skype for Business server using PIN Authentication method via phone user interface:

1. Press the **Sign In** soft key.

2. Select **PIN Authentication**.

3. Enter your phone number or extension (e.g., 4040) in the **Extension** field.

4. Enter your personal identification number in the **PIN** field.
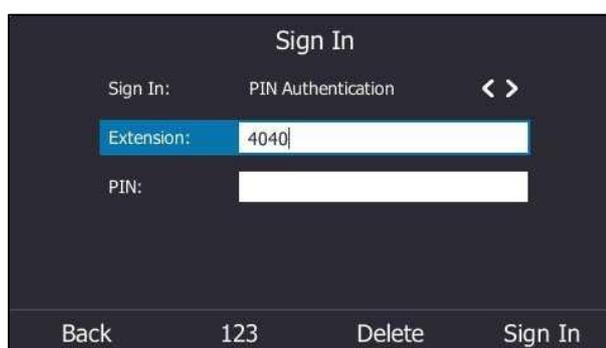
5. Press the **Sign In** soft key.

User Sign-in

You can sign into Microsoft Skype for Business on your phone with your login credentials, which includes your address, username, and password.

Procedure

User sign-in method can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<MAC>.cfg	Configure user sign-in method. **Parameters:** features.user_sign_in.enable static.account.sfb.1.server

		static.account.sfb.1.user_name
		static.account.sfb.1.password
Local	Web User Interface	Configure user sign-in method. **Navigate to**: http://<phoneIPAddress>/servlet?p=account-register-lync&q=load&acc=0
	Phone User Interface	Configure user sign-in method.

Details of Configuration Parameters:

Parameters	Permitted Values	Default
features.user_sign_in.enable	**0 or 1**	**1**
Description: Enables or disables the user to sign into the phone using User Sign-in method. **0**-Disabled **1**-Enabled **Web User Interface:** None **Phone User Interface:** None		
static.account.sfb.1.server	**SIP URI**	**Blank**
Description: Configures the sign-in address for the user sign-in method. The value format is username@domain.com. **Example:** static.account.sfb.1.server= 4040@yealinksfb.com **Web User Interface:** Account->Register->Login address **Phone User Interface:** Sign in->User Sign-in->Address		
static.account.sfb.1.user_name	**String within 128 characters**	**Blank**
Description:		

Parameters	Permitted Values	Default
Configures the user name for the user sign-in method. The value format is username@domain.com or username@domain, domain.com\username or domain\username. **Example:** static.account.sfb.1.user_name= 4040@yealinksfb.com **Web User Interface:** Account->Register->Register Name **Phone User Interface:** Sign in->User Sign-in->UserName		
static.account.sfb.1.password	**String within 99 characters**	**Blank**
Description: Configures the password for the user sign-in method. **Web User Interface:** Account->Register->Password **Phone User Interface:** Sign in->User Sign-in->Password		

To sign into the Skype for Business server using User Sign-in method via web user interface:

1. Click on **Account**->**Register**.

2. Select **User Sign in** from the pull-down list of **Mode**.

3. Enter your Skype for Business user's sign-in address (e.g., 4040@yealinksfb.com) in the **Login address** field.

4. Enter your Skype for Business user name (e.g., 4040@yealinksfb.com) in the **Register Name** field.

5. Enter the sign-in password in the **Password** field.
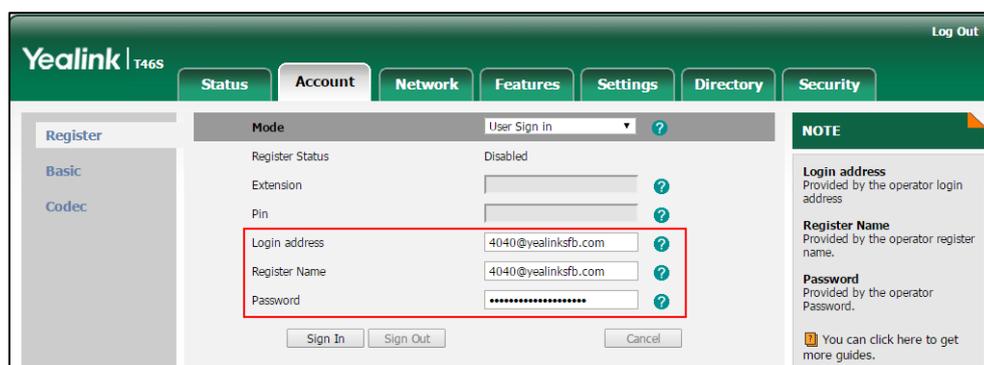
6. Click **Sign In** to accept the change.

To sign into the Skype for Business server using User Sign-in method via phone user interface:

1. Press the **Sign In** soft key.

2. Select **User Sign-in**.

3. Enter your Skype for Business user's sign-in address (e.g., 4040@yealinksfb.com) in the **Address** field.

4. Enter your Skype for Business user name (e.g., 4040@yealinksfb.com) in the **UserName** field.

5. Enter the sign-in password in the **Password** field.

6. Press the **Sign in** soft key.

Web Sign-in

You can sign into your Skype for Business Online account using the Web Sign-In method, which allows you to sign into the phone with your Skype for Business Online account using a web browser.

Procedure

Web sign-in can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configure the web sign-in method. **Parameter:** features.web_sign_in.enable
		Configure the Server URL for device pairing. **Parameter:** features.device_pairing.url
Local	Web User Interface	Configure web sign-in method. **Navigate to**: http://<phoneIPAddress>/servlet?p=a

		ccount-register-lync&q=load&acc=0
	Phone User Interface	Configure web sign-in method.

Details of Configuration Parameters:

Parameters	Permitted Values	Default
features.web_sign_in.enable	**0 or 1**	**1**

Description:
Enables or disables the user to sign into the phone using web sign-in method.
0-Disabled
1-Enabled
Web User Interface:
Features->General Information->Web Sign in
Phone User Interface:
None

features.device_pairing.url	**URL within 512characters**	**https://bootstrap.pinauth.services.skypeforbusiness.com/**
Configures the Server URL for device pairing, so that you can sign into the phone using web sign-in method.		
Example:		
features.device_pairing.url= https://bootstrap.pinauth.services.skypeforbusiness.com/		

To enable the web sign-in via web user interface:

1. Click on **Features**->**General Information**.

2. Select the desired value from the pull-down list of **Web Sign in**.

   - If it is enabled, you can sign into the Skype for Business Server using web sign-in method.

- If it is disabled, you cannot sign into the Skype for Business Server using web sign-in method.
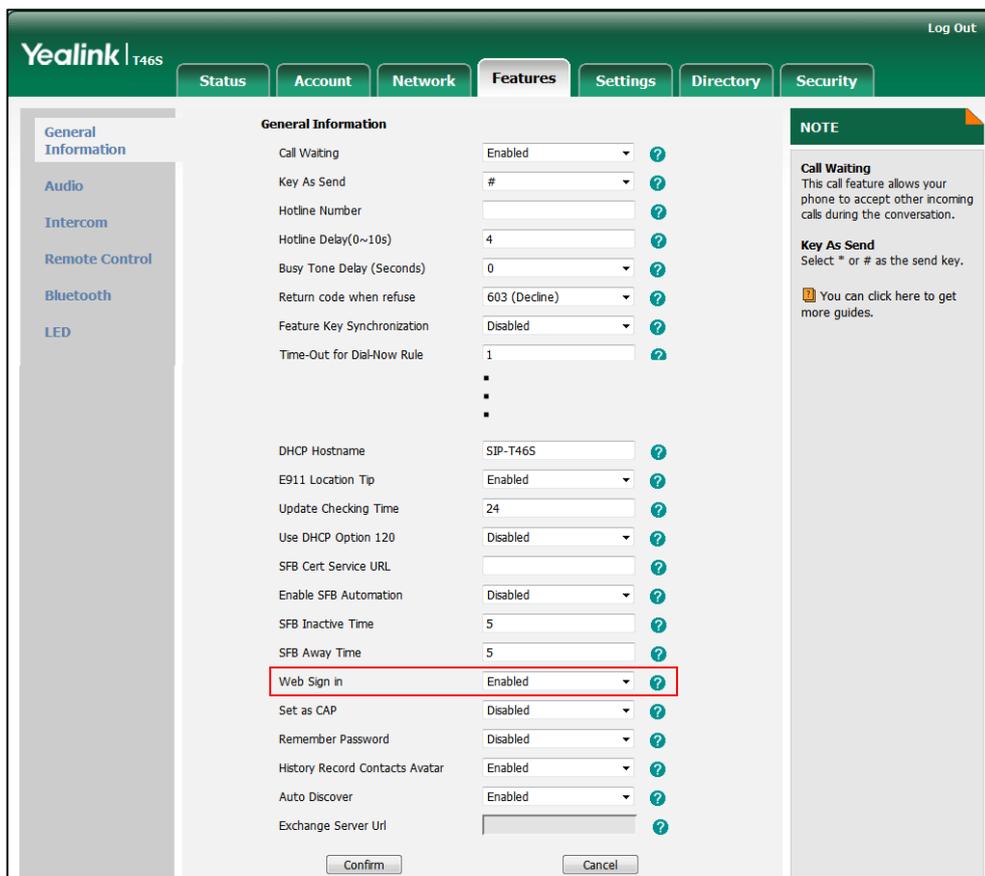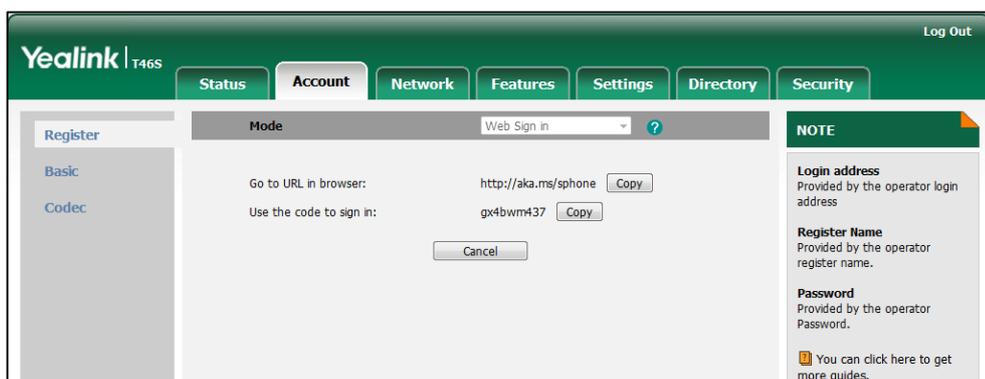

3. Click **Confirm** to accept the change.

To sign into the Skype for Business server using Web Sign-In method via web user interface:

1. Click **Account**->**Register**.

2. Select **Web Sign in** from the pull-down list of **Mode**.

3. Click **Sign in**.

   The web user interface will show the pairing code and URL.

4. Enter the URL into the web browser.

5. On the Skype for Business Authentication website, enter your email address (e.g., zhaops04@example.onmicrosoft.com) and then click **Verify email**.
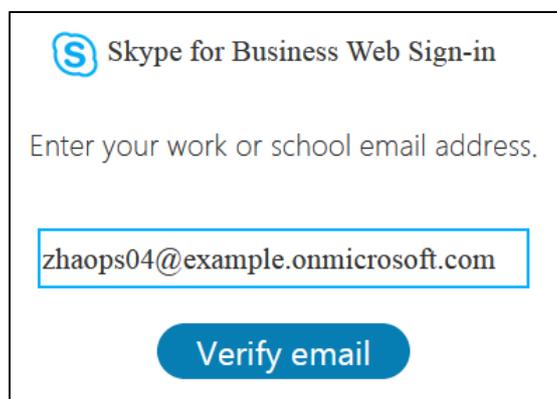
6. Enter your Online account and password.

7. (Optional) If you want to reduce the number of times you are asked to sign in, you can select to stay signed in.

8. Click **Sign in**.

9. Enter the pairing code into your web browser.

10. Click **Continue**.

11. Click the account to sign in.

A confirmation message is displayed when your phone successfully signs into Skype for Business.

To sign into Skype for Business server using Web Sign-In method via phone user interface:

1. Press the **Sign In** soft key.

2. Select **Web Sign-in**.

3. Press the **Sign In** soft key.

The screen will show the pairing code and URL.

4. On your computer, enter the URL into your web browser.

5. On the Skype for Business Authentication website, enter your email address (e.g., zhaops04@example.onmicrosoft.com) and then click **Verify email**.

6. Enter your Online account and password.

7. Click **Sign in**.

8. Enter the pairing code generated on the phone (e.g., gstnvjmpr) into the web browser.

9. Click **Continue**.

10. Click the account to sign in.

    A confirmation message is displayed when your phone successfully signs into Skype for Business.
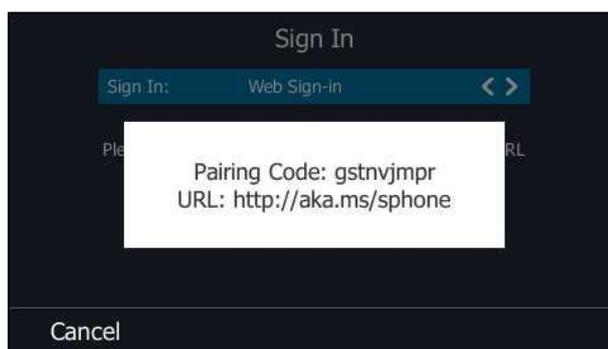
Signing in via PC

When your phone and your computer are paired using Better Together over Ethernet (BToE), you can sign into your phone using the Skype for Business client on your computer.

Procedure

BToE can be configured using the configuration files.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configure BToE feature. **Parameters:** sip.btoe.enable features.sign_in_via_btoe.enable
		Configures the BToE pairing mode. **Parameters:** sip.btoe.pairing_mode
Local	Web User Interface	Configure BToE feature. Configures the BToE pairing mode. **Navigate to**:

|		
		http://\<phoneIPAddress\>/servlet?p=settings-btoe&q=load
	Phone User Interface	Configure BToE feature. Configures the BToE pairing mode.

Details of Configuration Parameters:

Parameters	Permitted Values	Default
sip.btoe.enable	**0 or 1**	**1**

Description:

Enables or disables the BToE (Better Together over Ethernet) feature.

0-Disabled, BToE is disabled on the phone. Your phone cannot pair with Skype for Business Client.

1-Enabled), BToE is enabled on the phone. Your phone can pair with Skype for Business Client.

Web User Interface:

Settings->BToE->BToE

Phone User Interface:

Menu->Setting->Features->BToE->BToE

features.sign_in_via_btoe.enable	**0 or 1**	**1**

Description:

Enables or disables the user to sign into the phone via PC.

0-Disabled

1-Enabled

Note: It works only if the value of the parameter "sip.btoe.enable" is set to 1 (Enabled).

If it is set to 1 (Enabled), make sure your phone has paired with the Skype for Business client using BToE software, so that you can sign into the phone via PC.

Web User Interface:

None

Phone User Interface:

None

sip.btoe.pairing_mode	**0 or 1**	**0**

Description:

Configures the BToE pairing mode.

Parameters	Permitted Values	Default
0-Auto, you can pair your phone and PC automatically without a pairing code. **1**-Maunal, your phone will generate a pairing code when pairing with Skype for Business client. You need to enter the pairing code on your BToE software to manually to pair your phone and Skype for Business client. **Note:** It works only if the value of the parameter "sip.btoe.enable" is set to 1 (Enabled). **Web User Interface:** Settings->BToE->BToE paring Mode **Phone User Interface:** Menu->Setting->Features->BToE->BToE Pairing Mode		

To configure BToE feature via web user interface:

1. Click on **Settings**->**BToE**.

2. Select the desired value from the pull-down list of **BToE**.

3. Select the desired generation from the pull-down list of **BToE Pairing Mode**.
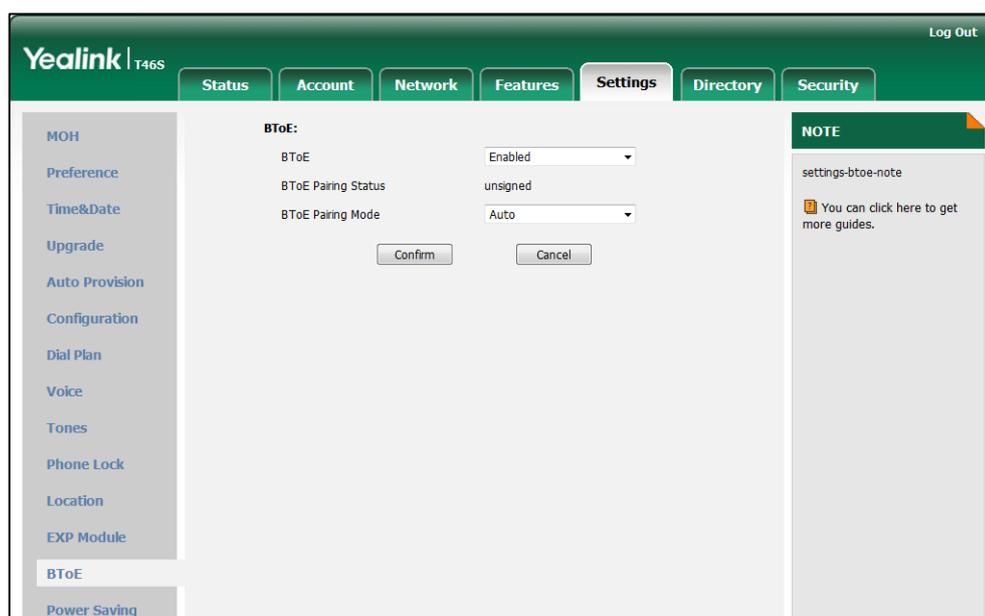
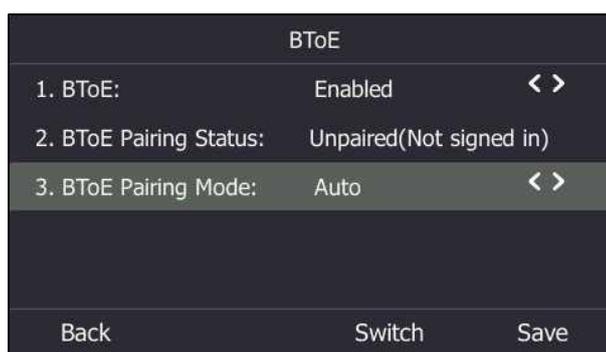4. Click **Confirm** to accept the change.

To configure BToE feature via phone user interface:

1. Press **Menu**->**Setting**->**Features**->**BToE**.

2. Press ◀ or ▶ , or the **Switch** soft key to select **Enabled** from the **BToE** field.

3. Press ◀ or ▶ , or the **Switch** soft key to select the desired pairing mode from the **BToE Pairing Mode** field.

The default value is **Auto**.

```
                              BToE
    1. BToE:                Enabled              < >

    2. BToE Pairing Status:   Unpaired(Not signed in)

    3. BToE Pairing Mode:    Auto                < >



        Back                 Switch            Save
```

4.   Press the **Save** soft key to accept the change or the **Back** soft key to cancel.

To use the BToE feature and sign in:

1.   Download and install the Yealink BToE Connector application to your computer.

2.   Sign into the Skype for Business client on your computer.

3.   Enable BToE and pair your phone with your computer. For more information on how to pair, refer to *Better Together over Ethernet* chapter in *Yealink Skype for Business phone-specific user guide*.

4.   When no user signs into the phone, a logon dialog will pop up on the Skype for Business client on your computer to prompt you to enter the password.

5.   Enter your password and sign in.

Now that the same account is signed into your phone and the Skype for Business client, your computer and phone are paired, and BToE is activated. You can manage calls on your phone using the Skype for Business client.

If the Skype for Business Server is configured to forcibly lock the phone. You need to configure an unlock PIN at the initial sign-in.

Signing Out of Skype for Business

Procedure

Sign-out can be configured locally.

Local	Web User Interface	Sign out of Skype for Business Server. **Navigate to**: http://<phoneIPAddress>/servlet?p=account-register-lync&q=load&acc=0
	Phone User Interface	Sign out of Skype for Business Server.

To sign out of Skype for Business Server via web user interface:

1. Click on **Account**->**Register**.

2. Click **Sign Out** to accept the change.

To sign out of Skype for Business Server:

1. Press the **Status** soft key.

2. Press (▲) or (▼) to select **Sign Out**.

   The LCD screen prompts "Are you sure to sign out?".

3. Press the **OK** soft key.

   The phone signs out of Skype for Business server. After you sign out of Skype for Business, the account-related features (calling, viewing Skype for Business contacts, calendar, etc.) are not available. However, you can still use other phone features.

Configuring Boss-Admin Feature

The boss-admin feature, which is also called boss-delegate feature, enables a "boss" phone and delegates' phones to ring simultaneously when a user calls the boss. When one party answers the call, the other phone will stop ringing. A boss can assign delegates and delegates can manage calls on behalf of the boss's line. For more information, refer to *Yealink Skype for Business phone-specific user guide*.

To assign delegates using Skype for Business client:

1. Open Skype for Business client.

2. Sign into Skype for Business client as the person who wants to assign a delegate.

3. Click the [ ] button, and then click **Call Forwarding Settings**.

4. Mark the radio box in **Simultaneously ring** field.

5. Select **My Delegates** from the pull-down list of **Simultaneously ring**.
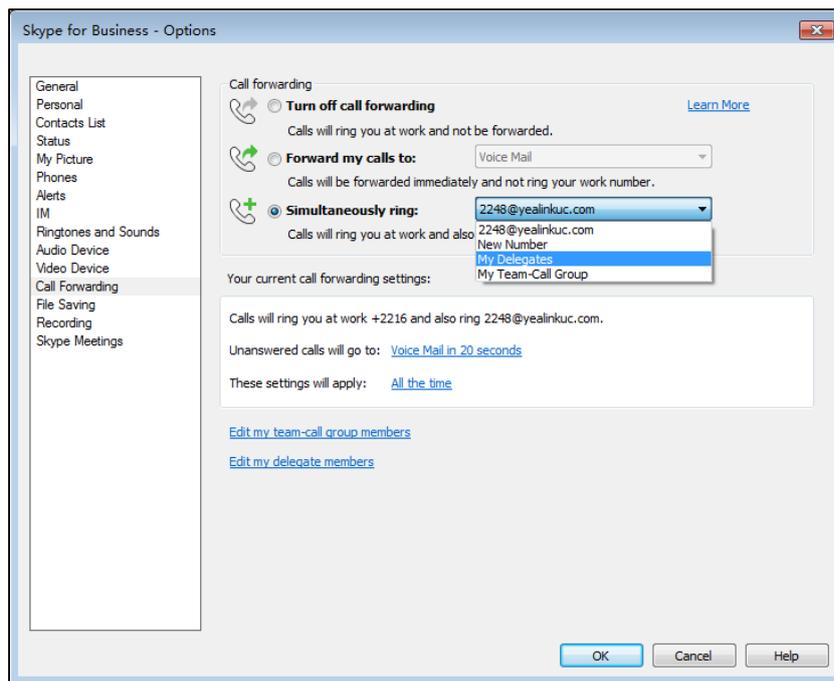
6. In the **Delegate**s dialog box, click **Add**. Each delegate must be a Skype for Business contact.

7. Select the desired delegates from the **Choose a Delegate** dialog box.
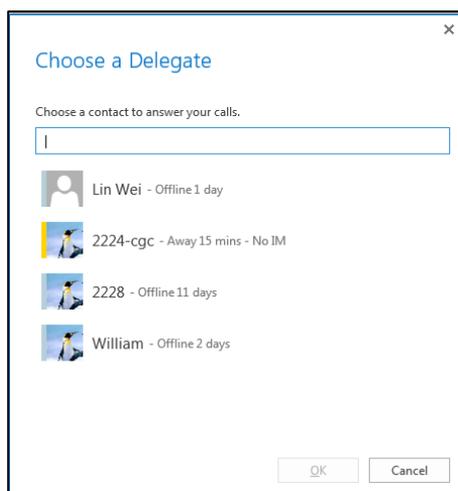
8. Click **OK**.

9. Click **OK** in the **Delegates** dialog box.

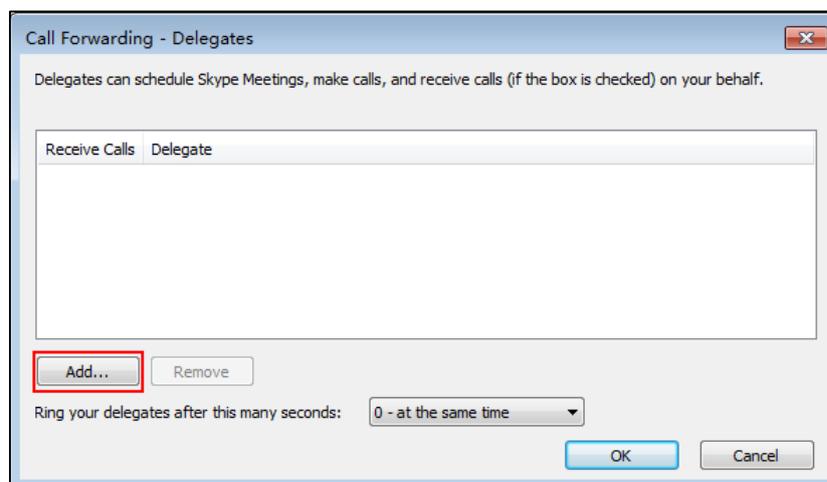**10.** Click **OK** in the **Options** dialog box.

To remove a delegate from Skype for Business client:

1. Open Skype for Business client.

2. Sign into Skype for Business client as the person who wants to remove a delegate.

   Make sure **My Delegates** option is not selected in either the **Simultaneously ring** or **Forward my calls to** list.

3. Click Edit my delegate members.
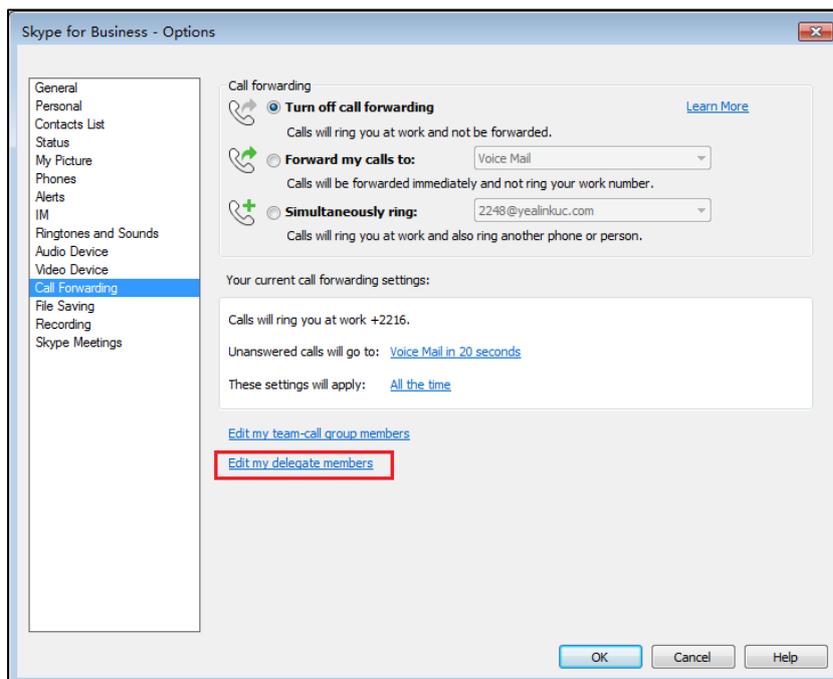
4. Check the checkbox of the delegate you want to remove.
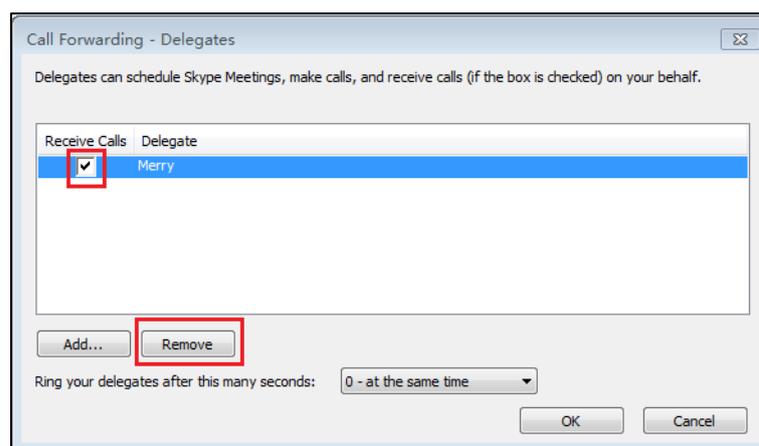
5. Click **Remove**.

6. Click **OK** in the **Delegates** dialog box.

7. Click **OK** in the **Option**s dialog box.

Configuring Security Features

This chapter provides information for making configuration changes for the following security-related features:

- Web Server Type

- Phone Lock

- User and Administrator Passwords

- Uploading a Trusted Certificate

Web Server Type

Web server type determines access protocol of the phone's web user interface. Skype for Business phones support both HTTP and HTTPS protocols for accessing the web user interface. This can be disabled when it is not needed or when it poses a security threat. For more information on accessing the web user interface, refer to Web User Interface on page 7.

HTTP is an application protocol that runs on top of the TCP/IP suite of protocols. HTTPS is a web protocol that encrypts and decrypts user page requests as well as pages returned by the web server. Both HTTP and HTTPS port numbers are configurable.

When you enable user to access web user interface of the phone using the HTTP/HTTPS protocol (take HTTPS protocol for example):
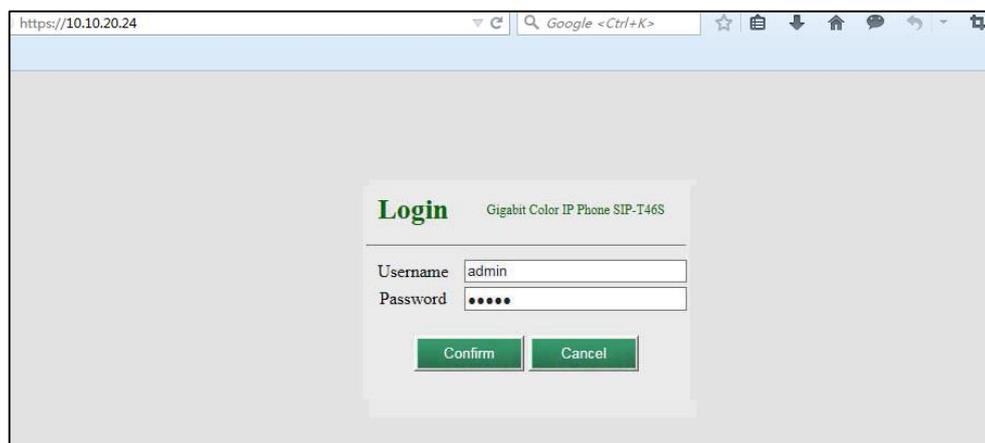
When you disable user to access web user interface of the phone using the HTTP/HTTPS protocol (take HTTPS protocol for example):
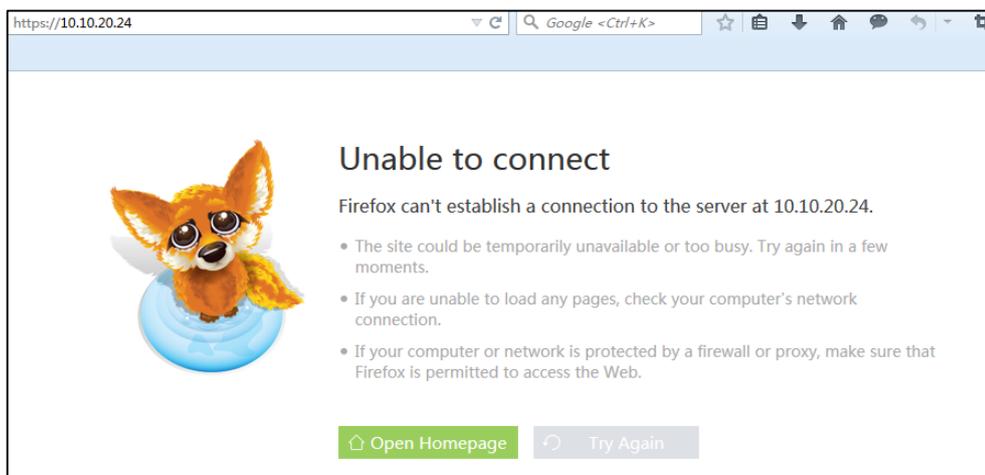
Procedure

Web server type can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configure the web access type, HTTP port and HTTPS port. **Parameters:** static.wui.http_enable static.network.port.http static.wui.https_enable static.network.port.https
Local	Web User Interface	Configure the web access type, HTTP port and HTTPS port. **Navigate to**: http://<phoneIPAddress>/servlet?p=network-adv&q=load
	Phone User Interface	Configure the web access type, HTTP port and HTTPS port.

Details of Configuration Parameters:

| Parameters	Permitted Values	Default
static.wui.http_enable	**0 or 1**	**1**

Parameters	Permitted Values	Default
Description: Enables or disables the user to access web user interface of the phone using the HTTP protocol. **0**-Disabled **1**-Enabled **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Network->Advanced->Web Server->HTTP **Phone User Interface:** Menu->Setting->Advanced (default password: admin)->Network->Webserver Type->HTTP Status		
static.network.port.http	**Integer from 1 to 65535**	**80**
Description: Configures the HTTP port for the user to access web user interface of the phone using the HTTP protocol. **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Network->Advanced->Web Server->HTTP Port(1~65535) **Phone User Interface:** Menu->Setting->Advanced (default password: admin) ->Network->Webserver Type->HTTP Port		
static.wui.https_enable	**0 or 1**	**1**
Description: Enables or disables the user to access web user interface of the phone using the HTTPS protocol. **0**-Disabled **1**-Enabled **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Network->Advanced->Web Server->HTTPS **Phone User Interface:** Menu->Setting->Advanced (default password: admin) ->Network->Webserver Type->HTTPS Status		

Parameters	Permitted Values	Default
static.network.port.https	**Integer from 1 to 65535**	**443**
Description: Configures the HTTPS port for the user to access web user interface of the phone using the HTTPS protocol. **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Network->Advanced->Web Server->HTTPS Port(1~65535) **Phone User Interface:** Menu->Setting->Advanced (default password: admin)->Network->Webserver Type->HTTPS Port		

To configure web server type via web user interface:

1. Click on **Network**->**Advanced**.

2. Select the desired value from the pull-down list of **HTTP**.

3. Enter the desired HTTP port number in the **HTTP Port(1~65535)** field.

   The default HTTP port number is 80.

4. Select the desired value from the pull-down list of **HTTPS**.

5. Enter the desired HTTPS port number in the **HTTPS Port(1~65535)** field.

The default HTTPS port number is 443.
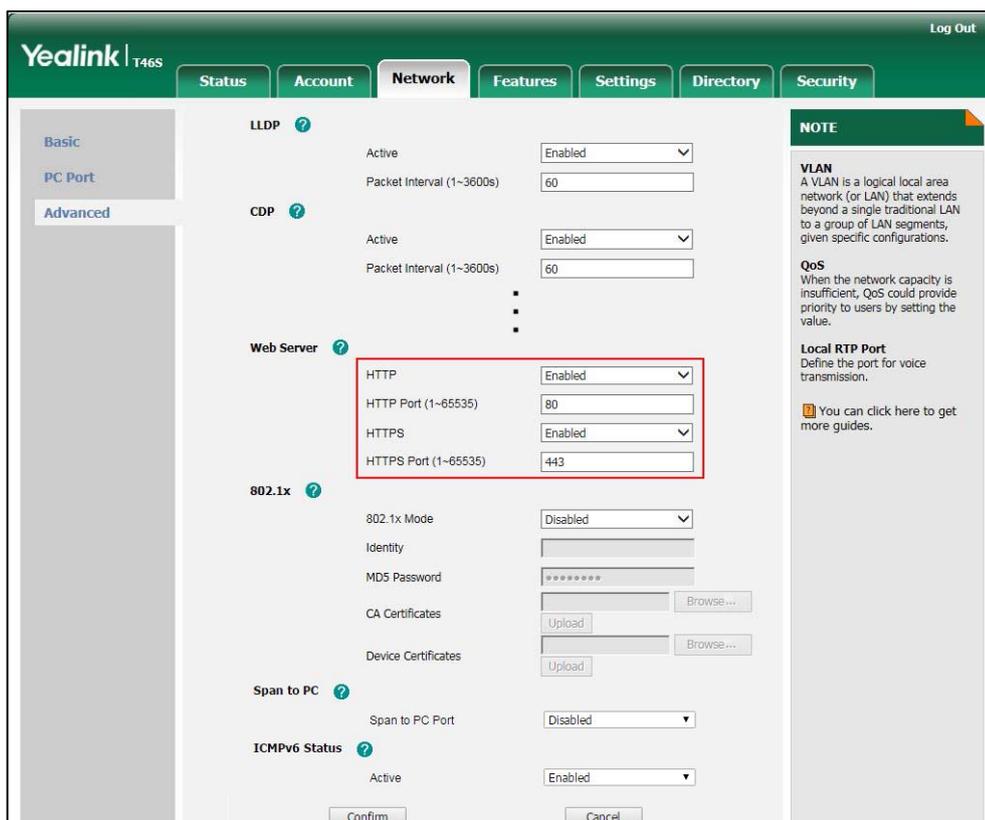
6. Click **Confirm** to accept the change.

   A dialog box pops up to prompt that settings will take effect after a reboot.

7. Click **OK** to reboot the phone.

To configure web server type via phone user interface:

1. Press **Menu**->**Setting**->**Advanced** (default password: admin)->**Network**->**Webserver Type**.

2. Press (◄) or (►), or the **Switch** soft key to select the desired value from the **HTTP Status** field.

3. Enter the desired HTTP port number in the **HTTP Port** field.

4. Press (◄) or (►), or the **Switch** soft key to select the desired value from the **HTTP Status** field.

5. Enter the desired HTTPS port number in the **HTTPS Port** field.

6. Press the **Save** soft key to accept the change.

   A dialog box pops up to prompt that the settings will take effect after a reboot.

7. Press **OK** to reboot the phone.

Phone Lock

If system administrator sets the policy "ucEnforcePinLock" = true on the Skype for Business Fronted Server, user can use phone lock feature to lock the phone to prevent it from

unauthorized use. And the phone will prompt the user to configure an n-digit lock PIN at the initial sign-in.

Procedure

Phone lock configured using the configuration files or locally.

|		
Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configures the time (in minutes) the phone can be idle before it automatically locks. **Parameter**: phone_setting.phone_lock.lock_time_out
		Configures the unlock attempts. **Parameter**: sfb.phone_lock.max_attempts
		Configures the phone to be locked and unlocked automatically with the paired PC. sfb.phone_lock_with_pc.enable
Local	Web User Interface	Configures the time (in minutes) the phone can be idle before it automatically locks. Configures the unlock attempts. Configures the phone to be locked and unlocked automatically with the paired PC. **Navigate to**: http://<phoneIPAddress>/servlet?p=settings-phonelock&q=load
	Phone User Interface	Configures the time (in minutes) the phone can be idle before it automatically locks. Configures the unlock attempts. Configures the phone to be locked and unlocked automatically with the paired PC.

Details of Configuration Parameter:

Parameters	Permitted Values	Default
phone_setting.phone_lock.lock_time_out	**1 to 1440**	**10**
Configures the time (in minutes) the phone can be idle before it automatically locks. **Web User Interface:** Settings->Phone Lock->Idle time-out(1~1440mins) **Phone User Interface:** Menu->Setting->Basic->Phone Lock->Idle time-out		
sfb.phone_lock.max_attempts	**3 to 10**	**5**
Configures the maximum number of unsuccessful unlock attempts for a locked phone that is not during a call. **Web User Interface:** Settings->Phone Lock->Max attempts of unlock **Phone User Interface:** Menu->Setting->Basic->Phone Lock->Unlock attempts		
sfb.phone_lock_with_pc.enable	**0 or 1**	**1**
Enables or disables your phone to be locked and unlocked automatically when you lock or unlock your computer. **0**-Enabled **1**-Disabled **Note**: It works only when your phone is paired with your computer using the BToE (Better Together over Ethernet) application and the BToE status is Paired (Sign In). **Web User Interface:** Settings->Phone Lock->Phone Lock with PC **Phone User Interface:** Menu->Setting->Basic->Phone Lock->Phone Lock with PC		

To configure phone lock via web user interface:

1. Click on **Settings**->**Phone Lock**.

2. Select the **Enabled** from the pull-down list of **Phone Lock**.

3. Enter the lock PIN in the **Phone Unlock PIN(6~15 Digit)** field.

4. Enter the desired time in the **Idle time-out(1~1440mins)** field.

5. Select the desired value from the pull-down list of **Max attempts of unlock**.

6. Select the desired value from the pull-down list of **Phone Lock with PC**.
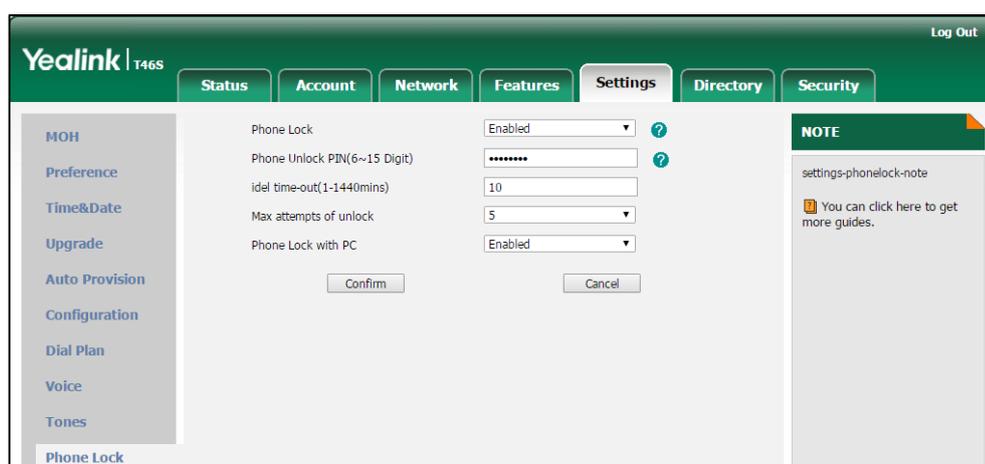
7. Click **Confirm** to accept the change.

To configure phone lock via phone user interface:

1. Press **Menu**->**Setting**->**Basic**->**Phone Lock**->**Phone Lock**.

2. Configures the desired fields.

3. Press the **Save** soft key to accept the change.

User and Administrator Passwords

Some menu options are protected by two privilege levels, user and administrator, each with its own password. When logging into the web user interface, you need to enter the user name and password to access various menu options. The default user password is "user" and the default administrator password is "admin"

For security reasons, the user or administrator should change the default user or administrator password as soon as possible. A user or an administrator can change the user password. The administrator password can only be changed by an administrator.

Advanced menu options are strictly used by administrators. Users can configure them only if they have administrator privileges.

Procedure

User or administrator password can be changed using the following methods.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Change the user or administrator password of the phone. **Parameter:** static.security.user_password
Local	Web User Interface	Change the user or administrator password of the phone.

		Navigate to: http://<phoneIPAddress>/servlet? p=security&q=load
	Phone User Interface	Change the administrator password of the phone.

Details of the Configuration Parameter:

Parameter	Permitted Values	Default
static.security.user_password	**String within 32 characters**	**user**

Description:

Configures the password of the user or administrator for phone's web user interface access.

The phone uses "user" as the default user password and "admin" as the default administrator password.

The valid value format is username:new password.

Example:

static.security.user_password = user:123 means setting the password of user (current user name is "user") to password 123.

static.security.user_password = admin:456 means setting the password of administrator (current user name is "admin") to password 456.

Note: Phones support ASCII characters 32-126(0x20-0x7E) in passwords. You can set the password to be empty via web user interface only.

Web User Interface:

Security->Password

Phone User Interface:

Menu->Setting->Advanced (default password: admin)->Set Password

Note: You cannot change the user password via phone user interface.

To change the user or administrator password via web user interface:

1. Click on **Security**->**Password**.

2. Select the desired value (**user** or **admin**) from the pull-down list of **User Type**.

3. Enter new password in the **New Password** and **Confirm Password** fields.

Valid characters are ASCII characters 32-126(0x20-0x7E) except 58(3A).

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

Note   If logging into the web user interface of the phone with the user credential, you need to enter the old user password in the **Old Password** field.

To change the administrator password via phone user interface:

1. Press **Menu**->**Setting**->**Advanced** (default password: admin)->**Set Password**.

2. Enter the current administrator password in the **Current PWD** field.

3. Enter new password in the **New PWD** field and **Confirm PWD** field.

    Valid characters are ASCII characters 32-126(0x20-0x7E).

4. Press the **Save** soft key to accept the change.

Uploading a Trusted Certificate

When the Skype for Business phone requests a TLS connection with a server, the Skype for Business phone should verify the certificate sent by the server to decide whether it is trusted based on the trusted certificates list.

The Skype for Business phone has 51 built-in trusted certificates. You can upload 10 custom certificates at most. The format of the trusted certificate files must be *.pem,*.cer,*.crt and *.der and the maximum file size is 5MB.

Yealink Skype for Business phones trust the following CAs by default:

*   DigiCert High Assurance EV Root CA

*   Deutsche Telekom AG Root CA-2

*   Equifax Secure Certificate Authority

*   Equifax Secure eBusiness CA-1

*   Equifax Secure Global eBusiness CA-1

*   GeoTrust Global CA

*   GeoTrust Global CA2

*   GeoTrust Primary CA

*   GeoTrust Primary CA G2 ECC

- GeoTrust Universal CA

- GeoTrust Universal CA2

- Thawte Personal Freemail CA

- Thawte Premium Server CA

- Thawte Primary Root CA - G1 (EV)

- Thawte Primary Root CA - G2 (ECC)

- Thawte Primary Root CA - G3 (SHA256)

- Thawte Server CA

- VeriSign Class 1 Public Primary Certification Authority

- VeriSign Class 1 Public Primary Certification Authority - G2

- VeriSign Class 1 Public Primary Certification Authority - G3

- VeriSign Class 2 Public Primary Certification Authority - G2

- VeriSign Class 2 Public Primary Certification Authority - G3

- VeriSign Class 3 Public Primary Certification Authority

- VeriSign Class 3 Public Primary Certification Authority - G2

- VeriSign Class 3 Public Primary Certification Authority - G3

- VeriSign Class 3 Public Primary Certification Authority - G4

- VeriSign Class 3 Public Primary Certification Authority - G5

- VeriSign Class 4 Public Primary Certification Authority - G2

- VeriSign Class 4 Public Primary Certification Authority - G3

- VeriSign Universal Root Certification Authority

- Microsoft_IT_SSL_SHA2.cer

- CNNIC_Root.cer

- baltimoreCyberTrust.cer

- UserTrust.cer

- AAA Certificate Services.cer

- DigiCert Assured ID Root CA.cer

- Entrust.net Certification Authority (2048).cer

- Entrust Root Certification Authority

- Entrust.net Secure Server Certification Authority

- GTE CyberTrust Global Root.cer

- Starfield Class 2 Certification Authority.cer

- AddTrust External CA Root

- Go Daddy Class 2 Certification Authority

- StartCom Certification Authority

- DST Root CA X3

- ISRG Root X1 (intermediate certificates: Let's Encrypt Authority X1 and Let's Encrypt

Authority X2 are signed by the root certificate ISRG Root X1.)

- Baltimore CyberTrust Root

- DigiCert Cloud Services CA-1

- D-Trust Root Class 3 CA 2 2009

- AddTrust External CA Root

- Starfield Root Certificate Authority - G2

Note Yealink endeavors to maintain a built-in list of the most commonly used CA Certificates. Due to memory constraints, we cannot ensure a complete set of certificates. If you are using a certificate from a commercial Certificate Authority not in the list above, you can send a request to your local distributor. At this point, you can upload your particular CA certificate into your phone.

Uploading a Trusted Certificate from the Provisioning Server

Procedure

Configuration changes can be performed using the configuration files or locally.

Configuration File	<y0000000000xx>.cfg	Upload the trusted certificates. **Parameter:** static.trusted_certificates.url
Local	Web User Interface	Upload the trusted certificates. **Navigate to**: http://<phoneIPAddress>/servlet?p=server-cert&q=load

### Details of Configuration Parameters:

Parameters	Permitted Values	Default
static.trusted_certificates.url	**URL within 511 characters**	**Blank**
Description: Configures the access URL of the custom trusted certificate used to authenticate the connecting server. **Example:** static.trusted_certificates.url = http://192.168.1.20/tc.crt **Note**: The certificate you want to upload must be in *.pem, *.crt, *.cer or *.der format.		

Parameters	Permitted Values	Default
Web User Interface: Security->Trusted Certificates->Load trusted certificates file **Phone User Interface:** None		

Uploading a Trusted Certificate via Web User Interface

To upload a trusted certificate via web user interface:

1. Click on **Security->Trusted Certificates**.

2. Click **Browse** to select the certificate (*.pem, *.crt, *.cer or *.der) from your local system.
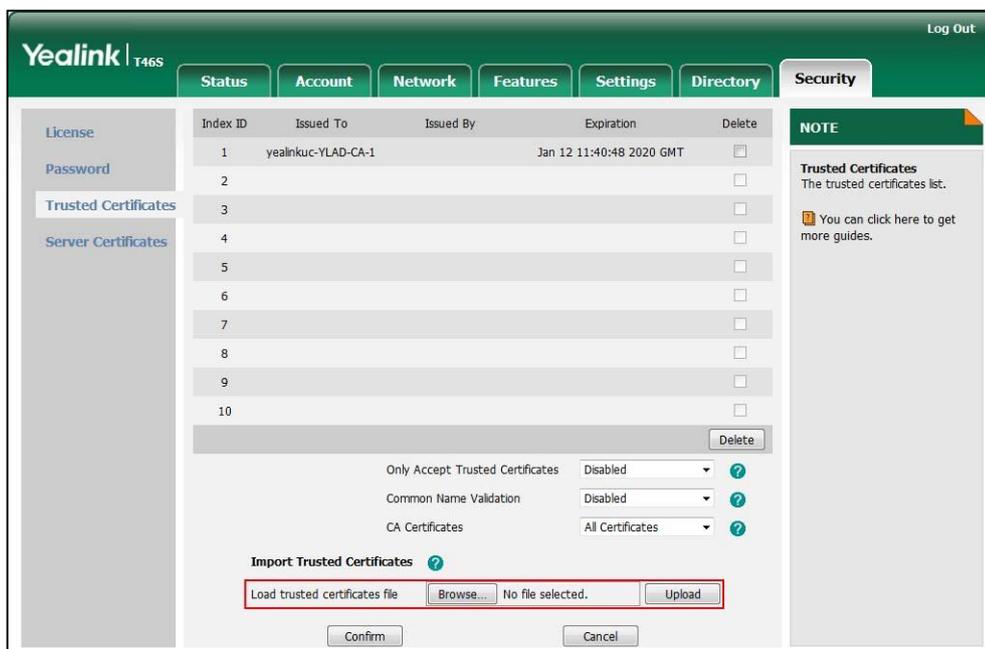
3. Click **Upload** to upload the certificate.

Device and Firmware Support

This section provides information on updating and maintaining your devices and the firmware:

- Upgrading Firmware
- Resetting the Phone to Factory Default Settings
- Branch Office Resiliency

Upgrading Firmware

Yealink supports three methods to upgrade phone firmware:

- **Upgrade firmware via web user interface**: Download firmware in ROM format, and upload it to the phone via web user interface. This method can deploy a single phone.
- **Upgrade firmware from provisioning server**: Download firmware in ROM format, and use centralized provisioning method to upgrade the firmware. This method requires setting up a provisioning server, and uses configuration files to provision the phone.
- **Upgrade firmware from Skype for Business Server**: Download firmware in CAB file format, and place the firmware on Skype for Business Server to provision the phone.

The following table lists the associated and latest firmware name for Skype for Business phone model.

Phone Model	Associated Firmware Name	Firmware Name(.rom)	Firmware Name(.cab)
T48S/T46S/T42S/T41S	66.x.x.x.rom	66.9.0.42.rom	Yealink_ver_66.9.0.42.cab
T58A/T56A	55.x.x.x.rom	55.9.0.5.rom	Yealink_ver_55.9.0.5.cab

Note You can download the latest firmware online:
http://support.yealink.com/documentFront/forwardToDocumentFrontDisplayPage.

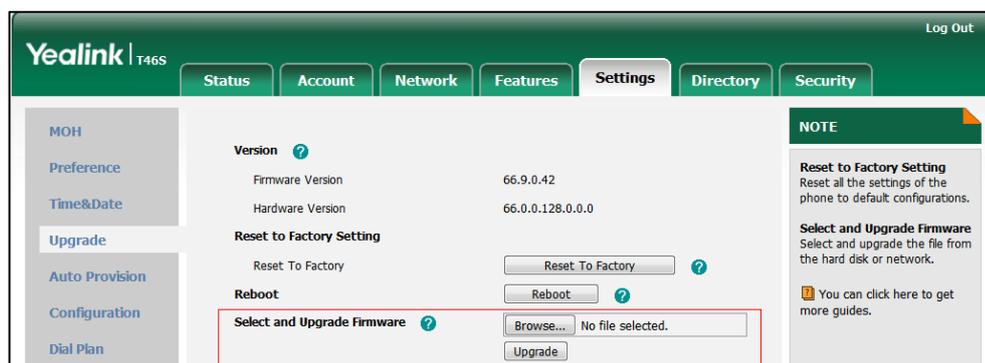Do not unplug the network and power cables when the Skype for Business phone is upgrading firmware.

Upgrading Firmware via Web User Interface

To manually upgrade firmware via web user interface, you need to store firmware to your local system in advance.

To upgrade firmware manually via web user interface:

1. Click on **Settings**->**Upgrade**.

2. Click **Browse** to locate the required firmware from your local system.

3. Click **Upgrade**.

A dialog box pops up to prompt "Firmware of the Sphone will be updated. It will take 5 minutes to complete. Please don't power off!".

4. Click **OK** to confirm the upgrade.

Note	Do not close and refresh the browser when the Skype for Business phone is upgrading firmware via web user interface.

Upgrading Firmware from the Provisioning Server

Phones support using FTP, TFTP, HTTP and HTTPS protocols to download configuration files and firmware from the provisioning server, and then upgrade firmware automatically.

Phones can download firmware stored on the provisioning server in one of two ways:

- Check for configuration files and then download firmware during startup.
- Automatically check for configuration files and then download firmware at a fixed interval or specific time.

Method of checking for configuration files is configurable.

Procedure

Configuration changes can be performed using the configuration files or locally.

		Configure the way for the phone to check for configuration files.
Central Provisioning (Configuration File)	<y0000000000xx>.cfg	**Parameters:** static.auto_provision.power_on static.auto_provision.repeat.enable static.auto_provision.repeat.minutes static.auto_provision.weekly.enable static.auto_provision.weekly.begin_time static.auto_provision.weekly.end_time

		static.auto_provision.weekly.dayofweek
		Specify the access URL of firmware. **Parameter:** static.firmware.url
		Configure the phone to be reset to factory after an upgrade. **Parameter:** static.auto_provision.reset_factory.enable
Local	Web User Interface	Configure the way for the phone to check for configuration files. **Navigate to**: http://<phoneIPAddress>/servlet?p=settings-autop&q=load

Details of Configuration Parameters:

| Parameters	Permitted Values	Default
static.auto_provision.power_on	**0 or 1**	**1**
Description: Triggers the power on feature to on or off. **0**-Off **1**-On, the phone will perform an auto provisioning process when powered on. **Web User Interface:** Settings->Auto Provision->Power On **Phone User Interface:** None		
static.auto_provision.repeat.enable	**0 or 1**	**0**
Description: Triggers the repeatedly feature to on or off. **0**-Off **1**-On, the phone will perform an auto provisioning process repeatedly. **Web User Interface:** Settings->Auto Provision->Repeatedly **Phone User Interface:**		

Parameters	Permitted Values	Default
None		
static.auto_provision.repeat.minutes	**Integer from 1 to 43200**	**1440**

Description:

Configures the interval (in minutes) for the phone to perform an auto provisioning process repeatedly.

Note: It works only if the value of the parameter "static.auto_provision.repeat.enable" is set to 1 (On).

Web User Interface:

Settings->Auto Provision->Interval(Minutes)

Phone User Interface:

None

static.auto_provision.weekly.enable	**0 or 1**	**0**

Description:

Triggers the weekly feature to on or off.

0-Off

1-On, the phone will perform an auto provisioning process weekly.

Web User Interface:

Settings->Auto Provision->Weekly

Phone User Interface:

None

static.auto_provision.weekly.begin_time	**Time from 00:00 to 23:59**	**00:00**

Description:

Configures the begin time of the day for the phone to perform an auto provisioning process weekly.

Note: It works only if the value of the parameter "static.auto_provision.weekly.enable" is set to 1 (On).

Web User Interface:

Settings->Auto Provision->Time

Phone User Interface:

None

Parameters	Permitted Values	Default
static.auto_provision.weekly.end_time	**Time from 00:00 to 23:59**	**00:00**

Description:

Configures the end time of the day for the phone to perform an auto provisioning process weekly.

Note: It works only if the value of the parameter "static.auto_provision.weekly.enable" is set to 1 (On).

Web User Interface:

Settings->Auto Provision->Time

Phone User Interface:

None

Parameters	Permitted Values	Default
static.auto_provision.weekly.dayofweek	**0, 1, 2, 3, 4, 5, 6 or a combination of these digits**	**0123456**

Description:

Configures the days of the week for the phone to perform an auto provisioning process weekly.

0-Sunday

1-Monday

2-Tuesday

3-Wednesday

4-Thursday

5-Friday

6-Saturday

Example:

static.auto_provision.weekly.dayofweek = 01

It means the phone will perform an auto provisioning process every Sunday and Monday.

Note: It works only if the value of the parameter "static.auto_provision.weekly.enable" is set to 1 (On).

Web User Interface:

Settings->Auto Provision->Day of Week

Phone User Interface:

None

Parameters	Permitted Values	Default
static.firmware.url	**URL within 511 characters**	**Blank**

Parameters	Permitted Values	Default
Description: Configures the access URL of the firmware file. **Example:** static.firmware.url = http://192.168.1.20/66.9.0.42.rom **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Settings->Upgrade->Select and Upgrade Firmware **Phone User Interface:** None		
static.auto_provision.reset_factory.enable	**0 or 1**	**0**
Description: Enables or disables the phone to be reset to factory. **0**-Disabled **1**-Enabled **Note**: You can reset your phone to factory using this parameter once only.		

To configure the way for the Skype for Business phone to check for configuration files via web user interface:

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

2. Make the desired change.
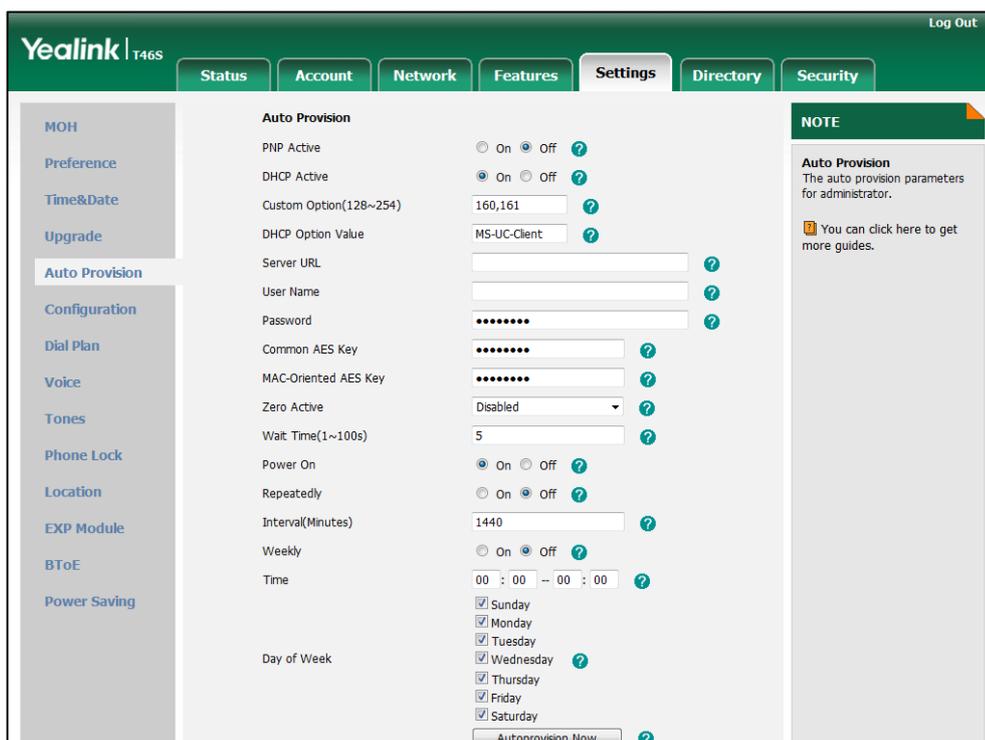
3. Click **Confirm** to accept the change.

When the "Power On" is set to **On**, the phone will check configuration files stored on the provisioning server during startup and then will download firmware from the server.

Updating Phone Firmware from Skype for Business Server

You can update firmware from Skype for Business Server. Before updating firmware from Skype for Business Server, you must upload the update package (*.CAB) to your Skype for Business Update Server in advance. For more information, refer to *Updating Phone Firmware from Microsoft Skype for Business Server*.

Automatic Update

Update checking time defines a period of time for the phone to automatically check a firmware update on Skype for Business Server.

Procedure

Update checking time can be configured using the configuration files or locally.

Central Provisioning (Configuration File)	<y0000000000xx>.cfg	Configure update checking time. **Parameters**: sfb.update_time
Local	Web User Interface	Configure update checking time. **Navigate to**:

		http://<phoneIPAddress>/servlet?p=featur es-general&q=load

Details of Configuration Parameters:

Parameters	Permitted Values	Default
sfb.update_time	**Integer from 1 to 48**	**24**
Description: Configures the auto timer (in hours) for the phone to automatically check if there is a firmware update available on Skype for Business Server. If it is set to 24, the phone will check if a firmware update is available on the Skype for Business Server every 24 hours. **Note:** If you change this parameter, the phone will reboot to make the change take effect. **Web User Interface:** Features->General Information->Update Checking Time **Phone User Interface:** None		

To configure update checking time via web user interface:

1. Click on **Features**->**General Information**.

2. Enter the desired value in the **Update Checking Time** field.

A dialog box pops up to prompt that settings will take effect after a reboot.

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

Manual Update

You can initiate an update immediately, just power off the phone and power on it again. The phone will boot up, check for updates and apply the updates. You can also trigger an update manually via phone user interface.

To trigger an update manually via phone user interface:

1. Press **Menu**->**Setting**->**Advanced** (default password: admin)->**Firmware Update**.

2. Press the **Update** soft key.

3. Press the **OK** soft key to confirm the update.

If there is no update available on Skype for Business Server, the LCD screen prompts "The firmware is the latest".

Resetting the Phone to Factory Default Settings

Reset the phone to factory configurations after you have tried all appropriate troubleshooting suggestions but still have not solved your problems.

When factory resetting the phone, the following happens:

- The call logs will be deleted.

- Passwords will be reset to default.

- All configuration parameters will be reset to default values.

- All custom files will be deleted. Such as, local contacts and registered accounts.

To reset the phone via phone user interface:

1. Press **Menu**->**Setting**->**Advanced** (default password: admin)->**Reset Config**.

2. Press the **Save** soft key.

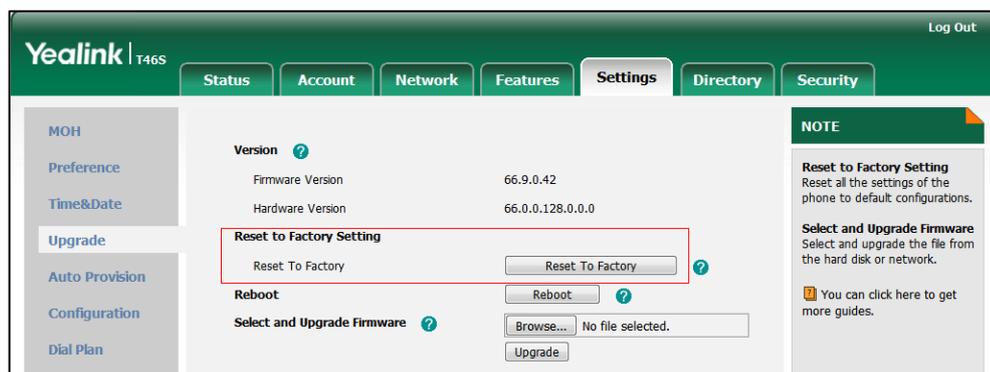The LCD screen prompts the following warning:

3. Press the **OK** soft key.

The LCD screen prompts "Resetting to factory,please wait...". The phone will be reset to factory settings sucessfully after startup.

To reset the phone via web user interface:

1. Click on **Settings**->**Upgrade**->**Reset to Factory Setting**.

2. Click **Reset to Factory**.

The web user interface prompts the message "Do you want to reset to factory?".

3. Click **OK** to confirm the resetting.

The Skype for Business phone will be reset to factory sucessfully after startup.

Note	Reset of your phone may take a few minutes. Do not power off until the phone has started up successfully.

Branch Office Resiliency

Branch office resiliency is critical for multi-site deployments of Microsoft Skype for Business Server where the control servers are located at a central site or data center. It allows branch site users to continue to have Enterprise Voice service and voice mail (if voice mail rerouting settings are configured) when the branch site loses the connection to the central site.

When the WAN connection between the branch site and central site is unavailable, the phone goes into resiliency mode:

● Branch site user on the phone stays signed in with an indication of "Limited service due to outage".

● Presence icon on the phone LCD screen is displayed as Unknown icon (T58A/T56A)/ (T46S/T48S)/ (T42S/T41S).

● Call between branch site users is established successfully with 2-way audio.

● Conference between branch site users can be established successfully.

● The call history cannot get modified. (Already downloaded call log entries will not be deleted)

● Calls can be placed from the call history on the Skype for Business phone.

● Contact list is unavailable but you can search for a contact on the Skype for Business phone.

● User is not able to change his presence state manually.

● User is not able to use calendar feature.

● User is not able to receive the voice mail as exchange is unreachable and when Skype for Business phone comes out of resiliency mode, it downloads the yet undownloaded voice mail items and updates the voice mail screen.

● Calls between the branch office phones can be transferred to another branch site user.

● Call forward settings cannot be changed.

When the WAN connection between the branch site and central site becomes available, the phone comes out of resiliency mode automatically. You can use phone features as normal.