



**XML Browser Developer's Guide**  
**SIP-T2xP/SIP-T3xG/VP530**  
**IP Phone Family**



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# About This Guide

XML browser simply means that the SIP phones' LCD screen display can be managed by external applications.

This Developers' Guide shows you how to use XML API to control the LCD screen display of the Yealink IP phones as well as its configuration. The XML API is intended to provide you with flexibility in developing applications on the phones while tightly integrating into the phone's telephony capabilities and functions.

Yealink IP phones with the firmware version 61.0 or higher support XML browser applications. This guide is intended for the Yealink IP phones with firmware version 71.

## Who should use this guide?

This guide is designed specifically to provide development engineers, system administrators, or network engineers with information for developing and deploying customized client services to Yealink IP phones via using the XML browser feature.

This guide is not intended for end users and does not provide user-level information on how to use any specific XML applications.

Before reading this guide, you should be familiar with the following:

- Basic text editors, or full IDE-like Eclipse or Microsoft Visual Studio for creating or writing code.
- General application and software development.
- Adequate planning, creating, and testing resources needed to produce a fully deployable Web-based application.
- Yealink IP phones and provisioning methods.
- How to use an XML editor.
- The XML-based schema and syntax.

## Summary of Changes

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

### Changes for Release 71.0, Guide Version 71.140

Major updates have occurred to the following sections:

- [Yealink IP Phone XML Objects](#) on page 7

- [Customizable Soft keys](#) on page [42](#)
- [XML Objects Pushed to the Phone](#) on page [46](#)

## Changes for Release 71.0, Guide Version 71.110

The following sections are new:

- [Configuring the Push XML Server](#) on page [51](#)
- [Configuring the Block XML In Calling](#) on page [56](#)

Major updates have occurred to the following sections:

- [Yealink IP Phone XML Objects](#) on page [7](#)

# XML and the Yealink IP Phones

## What is XML?

XML stands for eXtensible Markup Language. It is a markup language much like HTML. HTML was designed to display data and to focus on how data looks. XML was designed to describe data and to focus on what data is.

XML enables the SIP phones to serve as output devices for many exciting applications. The XML infrastructure allows the phones to interact with external applications in a flexible and programmable manner.

**The following are characteristics of XML:**

- XML tags are not predefined. You must define your own tags.
- XML uses an XML schema to describe the data.
- XML with an XML schema is designed to be self-descriptive.
- XML is a W3C Standard Recommendation.

**Sample of Basic XML document:**



## Functionality

The XML browser feature on Yealink IP phones allows users to develop and deploy custom services which meet user functional requirements on the server. Users can customize practical applications, such as weather report, stock information, Google search, news service, etc.

Phone service developers should take it into consideration that the phone is not a web browser so it cannot parse HTML. Although content is delivered to the phone through HTTP messages using a web server, keep in mind that the content is not HTML. All content comes either as plain text or packaged in XML objects.

Yealink IP phones support 9 proprietary XML objects, which allows the creation of powerful XML applications.

**There are 2 types of XML objects:**

**UI objects:** XML objects used to control the LCD screen display of the IP phone.

**Non UI objects:** XML objects which have no direct impact on the current LCD screen display.

**The supported objects are:**

- TextMenu object (UI)
- TextScreen object (UI)
- InputScreen object (UI)
- PhoneDirectory object (UI)
- ImageMenu object (UI)
- FormattedTextScreen object (UI)
- PhoneExecute object (Non UI)
- PhoneConfiguration object (Non UI)
- PhoneStatus object (Non UI)

### Note

UI objects are not applicable to the SIP-T20P IP phone.

## How does it work?

Depending on the IP infrastructure, Yealink has supported developing the XML browser capability of the phones using HTTP. The Yealink IP phones support two types of XML browser applications:

- **Phone-initiated**
- **Server-initiated**

## Phone initiated application

You can press the predefined XML Browser key to trigger the phone initiated application of XML browser. After you press the key, the IP phone issues an HTTP(s) GET command to the server, waits for the answer, decodes and displays this answer as any web browser, such as Microsoft Internet Explorer or Firefox would do as a web client. For more information on how to configure an XML Browser key, refer to [Configuring an XML Browser Key](#).

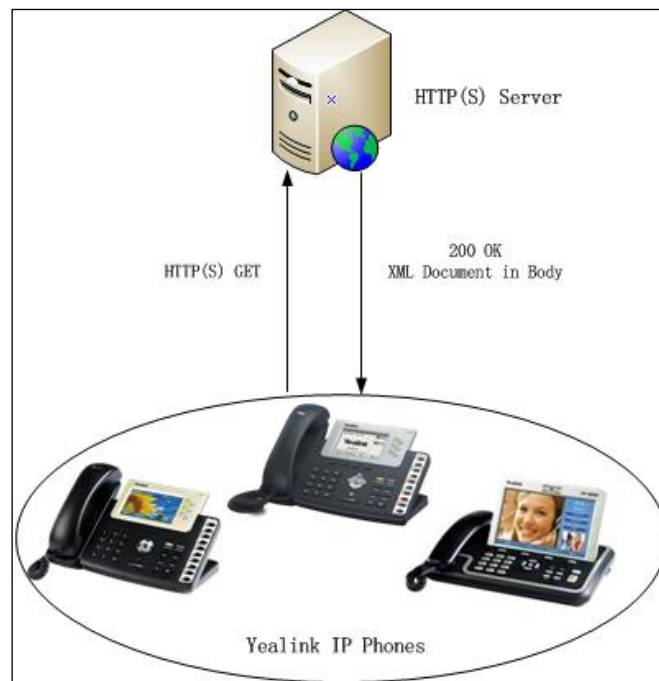


Figure1 Yealink IP phone acting as a client

## Server initiated application

Server initiated application would be more frequently used on the network. The end users do not need to operate.

The server can push an XML object to the phone via an HTTP POST. For more information, refer to [XML Objects Pushed to the Phone](#).

In addition, Yealink IP phones support accepting SIP NOTIFY messages from a SIP proxy server, and act as a limited web server. For more information on how to configure the XML SIP Notify, refer to [Configuring the XML SIP Notify](#).



Figure2 Yealink IP phone acting as a server (HTTP(S) post)

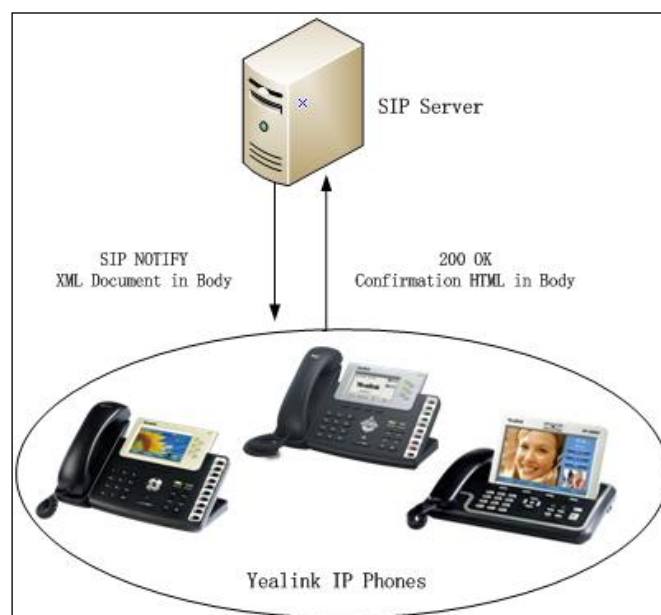


Figure3 Yealink IP phone acting as a server (SIP NOTIFY)

## XML display control on Yealink IP phones

This chapter describes the available part of the LCD screen for each phone model of Yealink IP phones as well as the keys that are controlled by the XML objects.

**The LCD screen and keys available for XML applications on a Yealink SIP-T28P IP phone are:**

- 10 lines for the LCD screen
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, the **X** key can also be interpreted as a “cancel” key, and the **OK** key as a “confirm” key.

**The LCD screen and keys available for XML applications on a Yealink SIP-T26P IP phone are:**

- 5 lines for the LCD screen
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, the **X** key can also be interpreted as a “cancel” key, and the **OK** key as a “confirm” key.

**The LCD screen and keys available for XML applications on a Yealink SIP-T22P IP phone are:**

- 5 lines for the LCD screen
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, the **X** key can also be interpreted as a “cancel” key, and the **OK** key as a “confirm” key.

**The LCD screen and keys available for XML applications on a Yealink SIP-T38G IP phone are:**

- 8 lines for the LCD screen
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, the **X** key can also be interpreted as a “cancel” key, and the **OK** key as a “confirm” key.

**The LCD screen and keys available for XML applications on a Yealink SIP-T32G IP phone are:**

- 6 lines for the LCD screen
- The left and right arrow navigation keys

- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, the **X** key can also be interpreted as a “cancel” key, and the **OK** key as a “confirm” key.

**The LCD screen and keys available for XML applications on a Yealink VP530 IP video phone are:**

- 18 lines for the LCD screen
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the LCD screen is a command line and will be used to display the labels of the available actions. Depending on the XML object displayed on the phone, and the **OK** key as a “confirm” key.

# Yealink IP Phone XML Objects

Creating interactive service applications is relatively easy when you understand the XML objects that are defined for the Yealink IP phones and the behavior that each XML object generates.

Regardless of what causes the phone to load an XML page, the phone always behaves appropriately after it loads a page. Appropriate behavior depends only on the type of data delivered in the page.

## XML Object Definitions

This section details each proprietary XML objects supported by the Yealink IP phones.

### Note

The size of an XML object cannot exceed 10000 bytes (10 kb).

Per XML specifications, only one XML object is supported in the XML document sent to the phone.

The texts within `<!-- -->` are considered as comments.

## TextMenu Object

The TextMenu object allows users to create a list of menu items on the IP phones. You can use the TextMenu object to customize some functions such as weather report, stock information, new services, etc. You can browse the menu items by linking HTTP requests.

XML description of the TextMenu object:

```
<YealinkIPPhoneTextMenu
  defaultIndex = "integer"
  style = "numbered/none"
  Beep = "yes/no"
  Timeout = "integer"
  LockIn = "yes/no"
  WrapList = "yes/no"
  cancelAction = "URI"
>

<Title wrap = "yes/no">Menu Title</Title>

<MenuItem>

  <Prompt>First Choice</Prompt>
```

```

<URI>http://somepage.xml</URI>

<Dial>Number to dial</ Dial >

<Selection>Selection</ Selection >

</MenuItem>

<!--Additional menu items may be added (up to 30) -->

<!--Additional soft key items may be added -->

</YealinkIPPhoneTextMenu>

```

The parameters of the TextMenu object are listed in the following table:

Parameter	Type	Value	Description
YealinkIPPhoneTextMenu	mandatory	none	The root element of the TextMenu object.
defaultIndex	optional	Integer	Position of the cursor before a specified menu item index. If not specified, the cursor is positioned on the first menu item. Default value is 1.
style	optional	"numbered" "none"	<b>numbered</b> (default): Add a digit before each menu item for index. <b>none</b> : No sign before the menu.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
wrapList	optional	"yes" "no"	Whether to display the title of the menu item specified by the Prompt parameter in multi-lines, when the content of the title is more than one line. Select "yes" to display the title in multi-lines, and "no" for one line. Default value is "yes".
Timeout	optional	"integer" Unit: second	If there is no operation at a fixed interval on the phone, the phone will automatically exit the TextMenu interface. If set to be 0, the phone will not exit the TextMenu interface until pressing the "Exit" soft key. Default value is 45.
LockIn	optional	"yes"	If set to be "yes", the phone

Parameter	Type	Value	Description
		"no"	ignores all events that would cause the screen to exit, except the soft key events defined by the XML object. Default value is "no".
cancelAction	optional	URI	Defines the URI to be called when the user cancels the XML object.
Title	mandatory	string	The title of the text menu.
wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is more than one line. Select "yes" to display in multi-lines, and "no" for one line. Default value is "no".
MenuItem	mandatory	none	The element of menu item. (Up to 30 instances, minimum is 1)
Prompt	mandatory	string	The label of menu item, its display is controlled by "wrapList".
URI	mandatory	URI	URI to be used if the user presses "Select" with the cursor on this menu item.
Dial	optional	Phone number	Defines what number will be dialed when an off-hook action is performed or if the "Dial" soft key is pressed.
Selection	optional	string	If the URI is a HTTP server address, the phone will send a request with the "selection= the parameter". (e.g., URI: http://10.1.0.105/menu1.xml?selection=0&menu_pos=1 The phone will send a request "http://10.1.0.105/menu1.xml?selection=0&menu_pos=1" when the user presses "Select".)
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

If there is no soft key defined in the TextMenu object, the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit
4	Select	SoftKey: Select

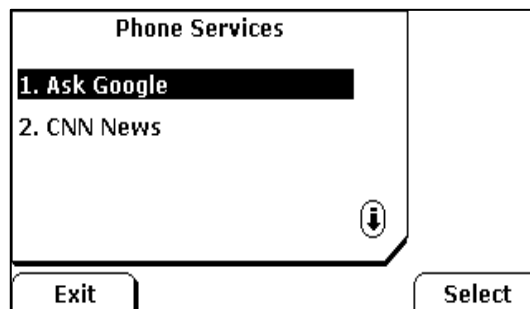
The function keys are listed in the following table:

Key Name	Statement	Description
Up/Down	Up and down keys	To move the cursor up and down.
Digitkey	Digit keys 1~9	To move the cursor to a menu item. If you press the digit that exceeds maximum of the menu items, the phone will be no response.
Select	Soft key, URI="SoftKey: Select"	Dial out the URI in the menu item.
Exit	Soft key, URI="SoftKey: Exit"	Redisplay the previous XML interface, otherwise return to the idle interface.
Offhook/ LineKey/ Handfree	Off hook/Line Key/ Handfree Key	If there is a number contained in the Dial tag, the phone will dial out the number. If no number contained in the Dial tag and the value of the LockIn is "yes", there will be no responses to any operation. The phone will enter into pre-dial interface when the value of the LockIn is "no".
Cancel	The "X" key of the phone	If the value of the LockIn is "no", the function of "X" key returns to the idle interface, if the value of the LockIn is "yes", there will be no response.
OK	The "OK" key of the phone	If the value of the LockIn is "no", the function of "OK" key is the same as that of "Select", if the value of the LockIn is "yes", there will be no response.
DSS key	DSS keys (include the Expansion keys)	If the value of the LockIn is "no", it will execute the operation of DSS key. If the value of the LockIn is "yes", there will be no response.

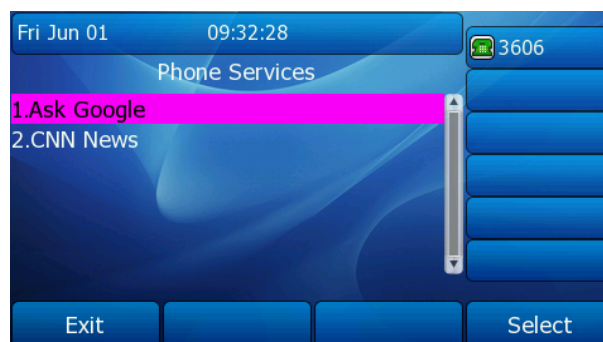
An example of the TextMenu object:

```
<YealinkIPPhoneTextMenu
  style="numbered"
  Beep="no"
  WrapList="yes"
  Timeout="30"
  LockIn="yes">
  <Title Warp="yes">Phone Services</Title>
  <MenuItem>
    <Prompt>Ask Google</Prompt>
    <URI>http://10.2.11.158/yealink/google/google.php?user=</URI>
    <Dial>456</Dial>
  </MenuItem>
  <MenuItem>
    <Prompt>CNN News</Prompt>
    <URI>http://10.2.11.158/yealink/rss/rss.php?feed=cnn</URI>
    <Dial>1001</Dial>
  </MenuItem>
</YealinkIPPhoneTextMenu>
```

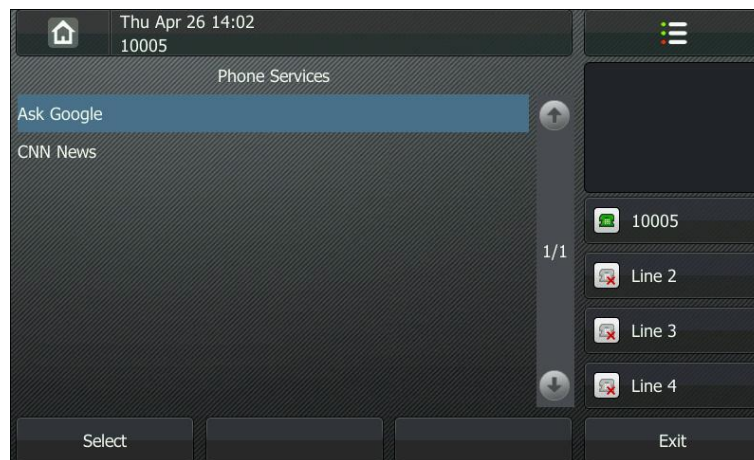
The screenshot of the T28P IP phone user interface for reference is shown as below:



The screenshot of the SIP-T38G IP phone user interface for reference is shown as below:



The screenshot of the VP530 IP video phone user interface for reference is shown as below:



## TextScreen Object

The TextScreen object allows users to display some texts on the IP phones.

XML description of the TextScreen object:

```
<YealinkIPPhoneTextScreen
  doneAction = "URI"
  Beep = "yes/no"
  Timeout = "integer"
  LockIn = "yes/no"
>
<Title wrap = "yes/no">Screen Title</Title >
<Text>The screen text goes here</Text>
<!--Additional soft key items may be added -->
</YealinkIPPhoneTextScreen >
```

The parameters of the TextScreen object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneTextScreen	mandatory	none	The root element of the TextScreen object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.

Parameter	Type	Value	Description
Timeout	optional	“integer” Unit: second	If there is no operation at a fixed interval on the phone, the phone will automatically exit the TextScreen interface. If set to be 0, the phone will not exit the TextScreen interface until pressing the “Exit” soft key. Default value is 45.
LockIn	optional	“yes” “no”	If set to be “yes”, the phone ignores all events that would cause the screen to exit without using the keys defined by the XML object. Default value is “no”.
Title	mandatory	string	The title of the screen text.
wrap	optional	“yes” “no”	Whether to display the title in multi-lines when the content of the title is more than one line. Select “yes” display in multi-lines, and “no” for one line. Default value is “no”.
Text	mandatory	string	The content of the screen text. (Text length must be within 2000B)
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

If there is no soft key defined in the TextScreen object, the LCD screen displays the following default soft key:

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

The function keys are listed in the following table:

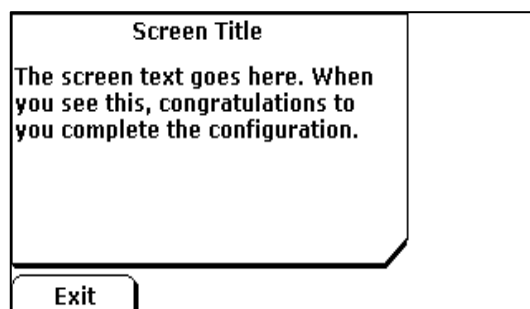
Key Name	Statement	Description
Up/Down	Up and down keys	To see the content of text tips by pressing up and down.
Digitkey	Digit keys 1~9	No response.
Exit	Soft key, URI=“SoftKey: Exit”	Redisplays the previous XML interface, otherwise returns to the idle interface.
Offhook/ LineKey/	Off hook/Line Key/ Handfree Key	If there is a number contained in the Dial tag, the phone will dial out the number. If no number

Key Name	Statement	Description
Handfree		contained in the Dial tag and the value of the LockIn is "yes", there will be no responses to any operation. The phone will enter into pre-dial interface when the value of the LockIn is "no".
Cancel	The "X" key of the phone	If the value of the LockIn is "no", the function of "X" key returns to the idle interface, if the value of the LockIn is "yes", there will be no response.
OK	The "OK" key of the phone	If the value of the LockIn is "no", the function of "OK" key is the same as that of "doneAction", if the value of the LockIn is "yes", there will be no response.

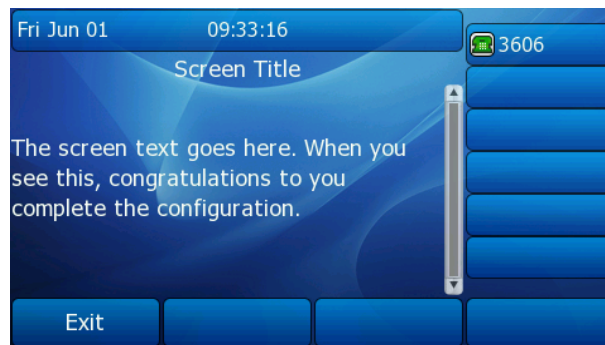
An example of the TextScreen object:

```
<YealinkIPPhoneTextScreen
  doneAction="http://10.2.11.158/ cancel.php"
  Timeout="15"
  LockIn="no"
  Beep="no"
  >
  <Title wrap="yes">Screen Title </Title>
  <Text>The screen text goes here. When you see this, congratulations to you complete
the configuration.</Text>
</YealinkIPPhoneTextScreen>
```

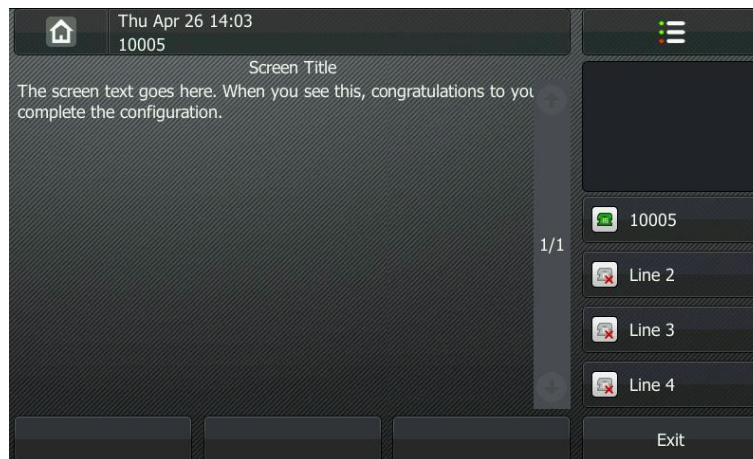
The screenshot of the T28P IP phone user interface for reference is shown as below:



The screenshot of the SIP-T38G IP phone user interface for reference is shown as below:



The screenshot of the VP530 IP video phone user interface for reference is shown as below:



## InputScreen Object

The InputScreen object allows users to create a screen capable of gathering user input. It constructs and displays an input form, which prompts the users to input content, then sends the input content to the target URL. You can use InputScreen object for user login or saving something to server. You can define the content and format of the input content.

XML description of the InputScreen object:

```
<YealinkIPPhoneInputScreen
  type = "IP/string/number/timeUS/timeInt/dateUS/dateInt"
  password = "yes/no"
  editable = "yes/no"
  Beep = "yes/no"
  Timeout = "integer"
  LockIn = "yes/no"
```

```

defaultIndex = "integer"

displayMode = "normal/condensed"

inputLanguage = "English"

>

<Title wrap = "yes/no">Title string</Title>

<Prompt>Guidance for the input</Prompt>

<URL>Target receiving the input</URL>

<Parameter>name of the parameter add to URL</Parameter>

<Default>Default Value (1) </Default>

<InputField

type = "IP/string/number/timeUS/timeInt/dateUS/dateInt/empty"

password = "yes/no"

editable = "yes/no"

>

<Prompt>Guidance for the input</Prompt>

<URL>Target receiving the input</URL>

<Parameter> parameter name add to URL</Parameter>

<Default>Default Value</Default>

<Selection>Selection</Selection>

<!--Additional soft key Items may be added-->

</InputField>

<!--Additional input field Items may be added-->

<!--Additional soft key items may be added-->

</YealinkIPPhoneInputScreen >

```

The parameters of the InputScreen object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneInputScreen	mandatory	none	The root element of the InputScreen object.
Type	mandatory	"IP" "string" "number" "timeUS" "timeInt" "dateUS" "dateInt" "empty"	Data input options: 1. IP 2. String(default) 3. number 4. timeUS, 12hour format <b>Format:</b> HH:MM:SS AM/PM HH:1-12, MM:0-59, SS:0-59

Parameter	Type	Value	Description
			<p>AM/PM stand for the forenoon/afternoon.</p> <p><b>Example:</b></p> <p>02:00:23 AM</p> <p>12:59:00 PM</p> <p>5.timeInt, 24 hour format</p> <p><b>Format:</b></p> <p>HH:MM:SS</p> <p>HH:0-23, MM:0-59, SS:0-59</p> <p><b>Example:</b></p> <p>23:25:00</p> <p>6.dateUS</p> <p><b>Format:</b></p> <p>MM/DD/YYYY</p> <p>MM:1-12,DD:1-31,YYYY:0000-9999</p> <p><b>Example:</b></p> <p>12/31/2009</p> <p>7.dateInt</p> <p><b>Format:</b></p> <p>DD/MM/YYYY</p> <p>DD:1-31,MM:1-12,YYYY:0000-9999</p> <p><b>Example:</b></p> <p>31/01/2010</p> <p>8.empty, null string, the line number is determined by "displayMode".</p>
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
Password	optional	"yes" "no"	Whether to mask the input by "*" characters. Default value is "no".
Timeout	optional	"integer" Unit: second	If there is no operation at a fixed interval on the phone, the phone will automatically

Parameter	Type	Value	Description
			exit the InputScreen interface. If set to be 0, the phone will not exit the InputScreen interface until pressing the "Exit" soft key. Default value is 45.
LockIn	optional	"yes" "no"	If set to be "yes", the phone ignores all events that would cause the screen to exit without using the keys defined by the XML object. Default value is "no".
InputLanguage	optional	"English"	The language of user input. Default value is English.
displayMode	optional	"normal" "condensed"	<b>normal</b> (default): Display the prompt and input box in two lines <b>condensed</b> : Display the prompt and input box in one line
defaultIndex	optional	integer	Position of the cursor. If not specified, the cursor is positioned on the first input box. Default value is 1.
Title	mandatory	string	The title of the screen text.
Wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is more than one line. Select "yes" display in multi-lines, and "no" for one line. Default value is "no".
Prompt	optional	string	The prompt of user input.
URL	mandatory	URL	Send the content to the URL after user completed his/her input.
Parameter	mandatory	string	Name of parameter to be added after the URL. (e.g., http://10.1.0.105/menu1.xml ?

Parameter	Type	Value	Description
			parameter)
Default	optional	string	Default value to be displayed in input field.
InputField	optional	none	Set several input boxes. (Value ranges from 1~6.)
editable	optional	"yes" "no"	Whether to allow users to input something. Default value is "yes". Users can not input anything if it is set to be "no".  Applicable scenario: only allow some users to login.
Selection	optional	string	If the URI is a HTTP server address, the phone will send a request with the "selection= the parameter". (e.g., URI: http://10.1.0.105/menu1.xml? selection= 0&menu_pos=1 The phone will send a request "http://10.1.0.105/menu1.xml?selection=0&menu_pos=1" when the user presses "Select".)
SoftKey	optional	string	When the cursor moves to the input box, the soft keys displayed will change accordingly. (e.g., add the input mode.) Refer to <a href="#">Customizable Soft keys</a> for more information.

**Note**

The InputField parameter in the XML file is optional. You can use this parameter to customize more input fields on the IP phone.

If there is no soft key defined in the InputScreen object, and the Type for input box is "IP", the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Submit	SoftKey: Submit
2	Dot	SoftKey: Dot
3	BackSpace	SoftKey: BackSpace
4	Exit	SoftKey: Exit

If there is no soft key defined in the InputScreen object, and the Type for input box is "timeUS", "timeInt", "dateUS" or "dateInt", the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Submit	SoftKey: Submit
2	2aB	SoftKey: ChangeMode
3	BackSpace	SoftKey: BackSpace
4	Exit	SoftKey: Exit

If there is no soft key defined in the InputScreen object, and the Type for input box is "number", the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Submit	SoftKey: Submit
2	BackSpace	SoftKey: BackSpace
4	Exit	SoftKey: Exit

If there is no soft key defined in the InputScreen object, and the Type for input box is "string", the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Submit	SoftKey: Submit
2	2aB	SoftKey: ChangeMode
3	BackSpace	SoftKey: BackSpace
4	Dot	SoftKey: Dot
5	NextSpace	SoftKey: NextSpace
6	Exit	SoftKey: Exit

The function keys are listed in the following table:

Key Name	Statement	Description
Up/Down	Up and down keys	To move the cursor up and down.
Left/Right	Left and right keys	To move the cursor left and right.
Keypad	Digit keys 0~9, * and #	If "editable" of the cursor input item is set to be "yes", then input character; otherwise no response.
Backspace	Soft key, URI="SoftKey: Backspace"	Delete the character before the cursor in the input box.
Dot	Soft key, URI="SoftKey: Dot"	Inserts a "." in the input box at the cursor position.
Submit	Soft key, URI="SoftKey: Submit"	Execute the command comprised of the URI and input content.
Exit	Soft key, URI="SoftKey: Exit"	Return to the last XML interface, otherwise return to the idle interface.
2aB	Soft key, URI="SoftKey: ChangeMode"	Input mode switch, i.e. switch the input mode among "2aB", "ABC", "abc" or "123".
NextSpace	Soft key, URI="SoftKey: NextSpace"	Inserts a space in the input box at the cursor position.
Offhook/ LineKey/ Handfree	Off hook/Line Key/ Handfree Key	If the value of the LockIn is "yes", there will be no responses to any operation. The phone will enter into pre-dial interface when the value of the LockIn is "no".
Cancel	The "X" key of the phone	If the value of the LockIn is "no", the function of "X" key returns to the idle interface, if the value of the LockIn is "yes", there will be no response.
OK	The "OK" key of the phone	If the value of the LockIn is "no", the function of "OK" key is the same as that of "Submit", if the value of the LockIn is "yes", there will be no response.
DSS key	DSS keys (include the Expansion keys)	If the value of the LockIn is "no", it will execute the operation of DSS key. If the value of the LockIn is "yes", there will be no response.

An example of the InputScreen object:

```
<YealinkIPPhoneInputScreen
  type="string"
  Timeout="15"
  Beep="yes"
  LockIn="yes">
  <Title wrap="yes">Proxy Server</Title>
  <Prompt>Server IP:</Prompt>
  <URL>http://10.1.0.105/menu.php</URL>
  <Parameter>proxy</Parameter>
  <Selection>1</Selection>
  <Default>10.1.0.105</Default>
  <InputField>
    <Prompt>User Name:</Prompt>
    <URL>http://10.2.11.158/ menu.php </URL>
    <Parameter>proxy</Parameter>
    <Default></Default>
  </InputField>
  <InputField>
    <Prompt>Password:</Prompt>
    <URL>http://10.2.11.158/XML/ menu.php</URL>
    <Parameter>proxy</Parameter>
    <Default></Default>
  </InputField>
</YealinkIPPhoneInputScreen>
```

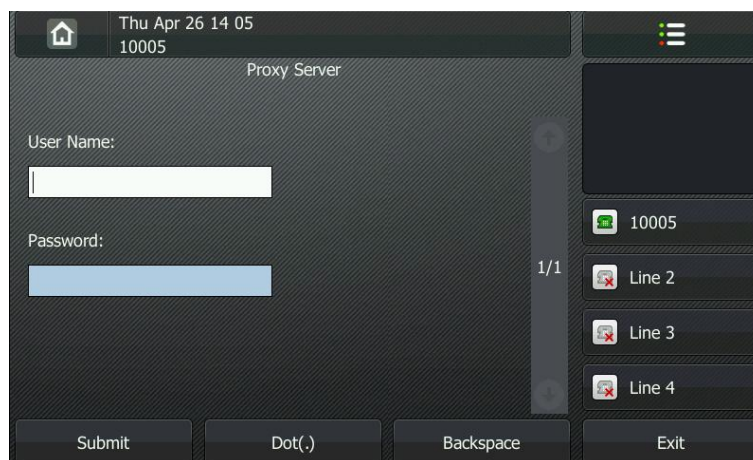
The screenshot of the T28P IP phone user interface for reference is shown as below:

The screenshot shows a user interface on a phone screen. At the top, it says "Proxy Server". Below that, there are two input fields: "User Name:" followed by a blacked-out text box, and "Password:" followed by another blacked-out text box. To the right of the password field is a small circular icon with a downward arrow. At the bottom of the screen, there are four buttons: "Submit", "2aB", "BackSpace", and "More".

The screenshot of the SIP-T38G IP phone user interface for reference is shown as below:



The screenshot of the VP530 IP video phone user interface for reference is shown as below:



## PhoneDirectory Object

The PhoneDirectory object allows users to browse an online directory in real time. The PhoneDirectory object is just like a remote phonebook. It displays an automatically numbered list of contacts. By selecting a contact with the cursor, the contact can be dialed directly by pressing the “Dial” soft key, picking up the handset or pressing line key.

XML description of the PhoneDirectory object:

```
<YealinkIPPhoneDirectory
  Next = "some URI"
  Previous = "some URI"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no">
  <Title wrap = "yes/no">Directory Title</Title>
```

```

<MenuItem>
    <Prompt>Contact Name</Prompt>
    <URI>number</URI>
</MenuItem>
<!--Additional Menu Items may be added -->
<!--Additional soft key items may be added -->
</YealinkIPPhoneDirectory>

```

The parameters of the PhoneDirectory object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneDirectory	mandatory	none	The root element of the PhoneDirectory object.
Next	optional	URI	The URI corresponding to "Next" soft key.
Previous	optional	URI	The URI corresponding to "Previous" soft key.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
cancelAction	optional	URI	Defines the URI to be called when the user cancels the XML object.
Timeout	optional	"integer" Unit: second	If there is no operation at a fixed interval on the phone, the phone will automatically exit the PhoneDirectory interface. If set to be 0, the phone will not exit the PhoneDirectory interface until pressing the "Exit" soft key. Default value is 45.
LockIn	optional	"yes" "no"	If set to be "yes", the phone ignores all events that would cause the screen to exit without using the keys defined by the XML object. Default value is "no".
Title	mandatory	string	The title of the address book.
wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is more than one line. Select "yes" display in multi-lines, and "no"

Parameter	Type	Value	Description
			for one line. Default value is "no".
Menuitem	mandatory	none	Address item. (Value ranges from 1~15.)
Prompt	mandatory	string	The prompt of address item.
URI	mandatory	URI	The operation of address item, such as the telephone number.
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

If there is no soft key defined in the PhoneDirectory object, the LCD screen displays the following default soft keys:

SoftKey Index	Label	URI
1	Dial	SoftKey: Dial
2	Previous	The URI specified by "Previous" of the PhoneDirectory Object, "SoftKey: Previous"
3	Next	The URI specified by "Next" of the PhoneDirectory Object, "SoftKey: Next"
4	Exit	SoftKey: Exit

The function keys are listed in the following table:

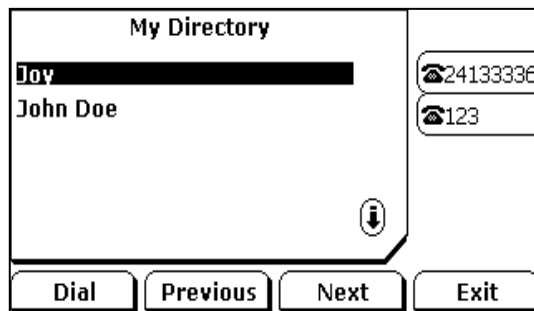
Key Name	Statement	Description
Up/Down	Up and down keys	To move the cursor up and down.
Digitkey	Digit keys 1~9	No response.
Dial	Soft key, URI="SoftKey: Dial"	Dial out the number of the highlighted address.
Previous	Soft key, URI="SoftKey: Previous"	Dial out the URI of "Previous" command, such as "http".
Next	Soft key, URI="SoftKey: Next"	Dial out the URI of "Next" command, such as "http".
Exit	Soft key, URI="SoftKey: Exit"	Redisplay the previous XML interface, otherwise return to the idle interface.

Key Name	Statement	Description
Offhook/ LineKey/ Handfree	Off hook/Line Key/ Handfree Key	Dial out the number of the highlighted address.
Cancel	The "X" key of the phone	If the value of the LockIn is "no", the function of "X" key returns to the idle interface, if the value of the LockIn is "yes", there will be no response.
OK	The "OK" key of the phone	If the value of the LockIn is "no", the function of "OK" key is the same as that of "Dial", if the value of the LockIn is "no", there will be no response.
DSS key	DSS keys (include the Expansion keys)	If the value of the LockIn is "no", it will execute the operation of DSS key. If the value of the LockIn is "yes", there will be no response.

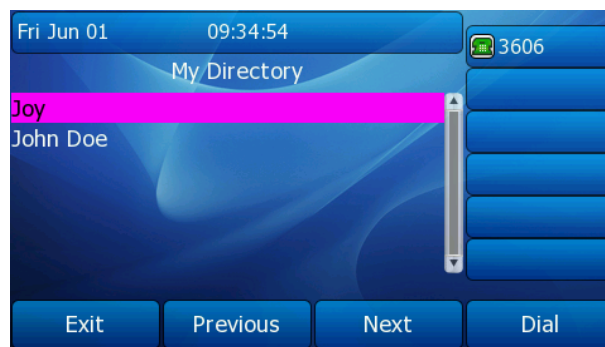
An example of the PhoneDirectory object:

```
<YealinkIPPhoneDirectory
  Next="http://myserver.com/more.php"
  Previous="http://myserver.com/back.xml"
  LockIn="yes"
>
<Title>My Directory</Title>
<MenuItem>
<Prompt>Joy</Prompt>
<URI>10.2.11.163</URI>
</MenuItem>
<MenuItem>
<Prompt>John Doe</Prompt>
<URI>1003</URI>
</MenuItem>
</YealinkIPPhoneDirectory>
```

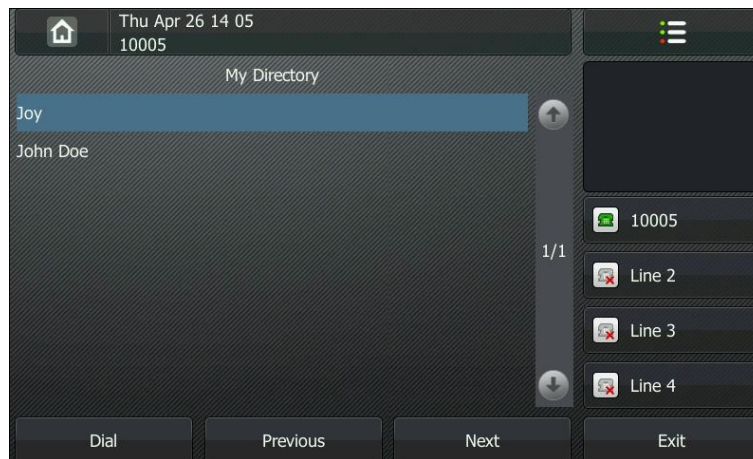
The screenshot of the T28P IP phone user interface for reference is shown as below:



The screenshot of the SIP-T38G IP phone user interface for reference is shown as below:



The screenshot of the VP530 IP video phone user interface for reference is shown as below:



## PhoneStatus Object

The PhoneStatus object allows users to display a status message on a single designated line on the phone's idle screen when XML information is pushed from the servers. The PhoneStatus object can remind users of received messages, missed calls, news, notify, etc.

XML description of the PhoneStatus object:

```
<YealinkIPPhoneStatus
  Beep = "yes/no"
  SessionID="String"
  Timeout = "timeout"
  wrapList="yes/no">
  <Message
    Index = "index"
    Type = "alert"
    Account = "user@server URI"
    Icon = "icon index"
    Size="normal/small/double/large"
    Align="center/left/right"
    Color="white/black/red/green/brown/blue/magenta/cyan/lightgray
    /darkgray/lightred/lightgreen/yellow/lightblue/lightmagenta/lightcyan"
  >Message</Message>
  <!--Additional Message Items may be added -->
</YealinkIPPhoneStatus>
```

The parameters of the PhoneStatus object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneStatus	mandatory	none	The root element of the PhoneStatus object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
wrapList	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is more than one line. Select "yes" display in multi-lines, and "no" for one line. Default value is "yes".
Timeout	optional	"integer" Unit: second	The time for status information displaying. The phone will automatically exit the status interface at a fixed interval on the phone. Default value is 30s. If set to 0, the phone will not exit

Parameter	Type	Value	Description
			the status interface until the server sends cancel request or the phone reboots.
SessionID	optional	string	Session ID, it is used to mark different Status Objects.
Message	optional	string	Message to be displayed or empty to reset the message. (Up to 10 instances.)
Index	optional	Integer	The index of message. Default value is 1. (Value ranges from 1 to 10)
Type	optional	"alert"	Type of message, only supports "alert". If not specified, the status information will be displayed all time until there are some key operations or the phone receives new messages, and the messages will be displayed instead. Default value is "alert".
Account	optional	string	Specify the default account on the IP phone.
Timeout	optional	"integer" Unit: second	The time for message displaying. The cursor before the message will automatically move to the next message at a fixed interval. Default value is 3s.
Size	optional	"normal" "small" "double" "large"	Font size of the text. "small": 12 pt "normal": 18 pt "double": 24 pt "large": 28 pt Default value is "normal". For SIP-T2xP: This parameter will be ignored.
Align	optional	"center"	Alignment of the message display. Default value is "left".

Parameter	Type	Value	Description
		"left" "right"	
Color	optional	"white" "black" "red" "green" "brown" "blue" "magenta" "cyan" "lightgray" "darkgray" "lightred" "lightgreen" "yellow" "lightblue" "lightmagenta" "lightcyan"	Color of the line.  For T2xP: This parameter will be ignored and the text displayed is always black.  For T3xG and VP530: Default value is "white".
Icon	optional	Forward DND Message	Index of the icon to be used for this message.
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

An example of the PhoneStatus object:

```
<YealinkIPPhoneStatus
  Beep="yes"
  wrapList="no">
  SessionID="2"
  <Message
    Size="large"
    Align="left"
    Account = "10005@10.2.1.199"
    Color="white"
    Icon="Forward"
    >Forward to 321</Message>
```

```

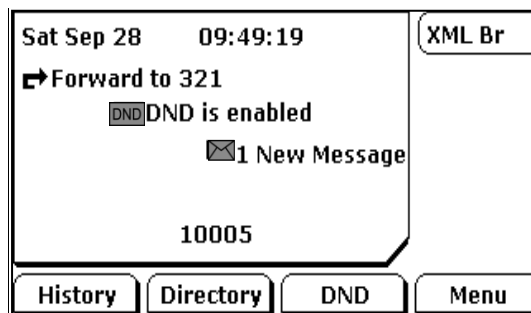
<Message
  Size="normal"
  Align="center"
  Account = "10005@10.2.1.199"
  Color="black"
  Icon="DND">DND is enabled</Message >

<Message
  Size="small"
  Align="right"
  Account = "10005@10.2.1.199"
  Color="green"
  Icon="Message">1 New Message </Message>

</YealinkIPPhoneStatus>

```

The screenshot of the T28P IP phone user interface for reference is shown as below:



## PhoneExecute Object

The PhoneExecute object allows an external application to ask the phone to execute a sequence of local commands using URIs. The phone will execute each specified command in order.

XML description of the PhoneExecute object:

```

<YealinkIPPhoneExecute
  Beep = "yes/no">
  <ExecuteItem URI = "URI"/>
  <!--Additional Execute Items may be added -->
</YealinkIPPhoneExecute>

```

The parameters of the PhoneExecute object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneExecute	mandatory	none	The root element of the PhoneExecute object.
Beep	optional	"yes" "no"	Whether to play a tone when beginning to execute the commands. Default value is "yes".
ExecuteItem URI	mandatory	URI	The operation of command item, such as call user, data download from server according to the URL, etc. (Value ranges from 0 to 30.)

Commonly used command:

Name	URI Value	Function
Supported URI	http(s)://myserver.com/myscript.pl	Dial out the URL
	Dial:XXXXX	Dial out the number
	Led:XXXX=on/off/slowflash/fastflash	Control the LEDs according to the commands
	Key:XXXX	Execute XXXX key operation
	Wav.Play:[tftp http://[username[:password]@]<host>[:port]/<Path>]/<file>	Play the wav file
	Wav.Stop:[tftp http://[username[:password]@]<host>[:port]/<Path>]/<file>	Stop playing the .wav file
Phone Reset	Command: Reset	Reset to the factory
Phone Fast Reboot	Command: Reboot	Phone reboot
Phone Lock	Command: Lock	Lock the keypad of the phone
Phone Unlock	Command: Unlock	Unlock the keypad of the phone
Clear	Command: ClearCallersList	Clear local call record list
	Command: ClearDirectory	Clear contact list
	Command: ClearRedialList	Clear redial list(call

Name	URI Value	Function
		out record)
Do nothing	none	none

Specification of "XXXX" in "Led: XXXX=on/off/slowflash/fastflash":

Setting Method	Indicator	Example
EXP-%d-%d2-%s	<p><b>%d</b>: the "%d"th expansion module, value range: 1~6;</p> <p><b>%d2</b>: the "%d"th key of expansion module, value range: 1~40;</p> <p><b>%s</b>: the light color, values: "RED", "GREEN".</p>	"Led: EXP-2-3-RED=on": Lighten the indicator of the third key of the second expansion module to be red.
LINE%d	<b>%d</b> : It represents the serial number of corresponding line key, value range: 1~6.	"Led:LINE3=on": Lighten the line key3 LED.
MEMO%d_%s	<p><b>%d</b>: It represents the memory key's serial number, value range: 1~10</p> <p><b>%s</b>: The light color, values : "RED", "GREEN"</p>	"Led: MEMO5_GREEN= on": Lighten the memory key5 LED to be green.
SMS	Message indicator LED	
HEADSET	Headset switch indicator LED	
POWER	Power indicator LED	

Specification of "XXXX" in "Key: XXXX":

Setting Method	Indicator	Example
EXP-%d-%d2	<p><b>%d</b>: the "%d"th expansion module, value range: 1~6</p> <p><b>%d2</b>: the "%d"th key of expansion module, value range: 1~40</p>	"Key: EXP-2-3": It means the third key of the second expansion module.
OFF_HOOK	Off hook	
ON_HOOK	On hook	
OK	Ok key	
CANCEL	X key	
UP	Up key	
DOWN	Down key	

Setting Method	Indicator	Example
LEFT	Left key	
RIGHT	Right key	
INCREASE	Increase volume	
DECREASE	Decrease volume	
REDIAL	Redial key	
HOLD	Hold the line	
MUTE	Mute	
CONFERENCE	Conference	
TRANSFER	Transfer	
SMS	Message key	
SWITCH	Switch key	
HEADSET	Headset switch key	
HANDFREE	Handfree key	
LINE%d	Line key, value 1~6	
HOTKEY%d	Soft key, value 1~4	
MEMORY%d	Memory key, value 1~10	
KEY_%d	Number key, value 0~9	
STAR	'*' key	
POUND	'#' key	

An example of the PhoneExecute object:

```
<YealinkIPPhoneExecute Beep="yes">
  <ExecuteItem URI="Key:STAR"/>
</YealinkIPPhoneExecute>
```

The IP phone enters into the phone status interface.

## PhoneConfiguration Object

The PhoneConfiguration object allows an external application to modify configuration of the IP phones dynamically. The configuration parameters are the ones that are used in the configuration files (Common.cfg and Mac.cfg) detailed in the [Auto Provisioning Guide](#).

XML description of the PhoneConfiguration object:

```
<YealinkIPPhoneConfiguration
  Beep = "yes/no"
  >
  <Item>parameter= value</Item>
  <!--Additional Configuration Items may be added (up to 1300)-->
</YealinkIPPhoneConfiguration>
```

The parameters of the PhoneConfiguration object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneConfiguration	mandatory	none	The root element of the PhoneConfiguration object.
Beep	optional	"yes" "no"	Whether to play a tone when applying the configuration. Default value is "yes".
Item	mandatory	none	Configuration item.

An example of the PhoneConfiguration object:

```
<YealinkIPPhoneConfiguration
  Beep="yes"
  >
  <Item>account.2.enable = 1</Item>
  <Item>account.2.label = 7002</Item>
  <Item>account.2.display_name = 7002 </Item>
  <Item>account.2.user_name = 7002</Item>
  <Item>account.2.auth_name = 7002</Item>
  <Item>account.2.sip_server_host = 10.2.1.199</Item>
</YealinkIPPhoneConfiguration>
```

The IP phone registers account 7002 on line 2.

## FormattedTextScreen Object

The FormattedTextScreen object allows IP phones to display formatted (alignment, size, color and scrolling) texts on the LCD screen.

This text is divided into the following 3 distinct blocks, any of which can be empty:

- The Header block is displayed at the top of the LCD screen and contains static text. This block can display 2-line texts at most.

- The Scroll block is displayed under the Header block. How many lines of text can be displayed on this block depends on the size of the LCD screen.
- The Footer block is displayed at the bottom of the LCD screen with static text. This block can display one line only.

XML description of the FormattedTextScreen object:

```
<YealinkIPPhoneFormattedTextScreen
  doneAction = "some URI"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no" >
  <Line
    Size="normal/small/double/large"
    Align="center/left/right"
    Color="white/black/red/green/brown/blue/magenta/cyan/lightgray/darkgray
    /lightred/lightgreen/yellow/lightblue/lightmagenta/lightcyan"
    >Header Line</Line>
  <!--Additional Line may be added- -->
  <Scroll>
  <Line
    Size="normal/small/double/large"
    Align="center/left/right"
    Color="white/black/red/green/brown/blue/magenta/cyan/lightgray
    /darkgray/lightred/lightgreen/yellow/lightblue/lightmagenta/lightcyan"
    >Scroll Line</Line>
  <!--Additional Line may be added- -->
  </Scroll>
  <Line
    Size="normal/small/double/large"
    Align="center/left/right"
    Color="white/black/red/green/brown/blue/magenta/cyan/lightgray/darkgray
    /lightred/lightgreen/yellow/lightblue/lightmagenta/lightcyan"
    >Footer Line</Line>
  <!--Additional Line may be added-->
  <!--Additional Softkey Items may be added (softkey phones) -->
</YealinkIPPhoneFormattedTextScreen >
```

The parameters of the FormattedTextScreen object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneFormatted TextScreen	mandatory	none	The root element of the FormattedTextScreen object.
Beep	optional	"yes" "no"	Whether to play a tone when entering into the FormattedTextScreen object. Default value is "yes".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer" Unit: sec	If there is no operation at a fixed interval on the phone, the phone will automatically exit the FormattedTextScreen interface. If set to be 0, the phone will not exit the FormattedTextScreen interface until pressing the "Exit" soft key. Default value is 45.
LockIn	optional	"yes" "no"	If set to be "yes", the phone ignores all events that would cause the screen to exit without using the keys defined by the XML object. Default value is "no".
Line	mandatory	string	Text to be displayed on the line. If the length of the text is too long to be displayed on the LCD screen, the line will be cropped to the last word.  The Header block can display two lines at most, and the Footer block can display only one line.

Parameter	Type	Value	Description
Size	optional	"normal" "small" "double" "large"	Font size of the text. "small": 12 pt "normal": 18 pt "double": 24 pt "large": 28 pt Default value is "normal". For SIP-T2xP: This parameter will be ignored.
Align	optional	"center" "left" "right"	Alignment of the text. Default value is "left".
Color	optional	"white" "black" "red" "green" "brown" "blue" "magenta" "cyan" "lightgray" "darkgray" "lightred" "lightgreen" "yellow" "lightblue" "lightmagenta" "lightcyan"	Color of the text. For T2xP: This parameter will be ignored and the text displayed is always black. For T3xG and VP530: Default value is "white".
Scroll	optional	none	Defines the scrolling content for display. The Line above the Scroll is as header, under the Scroll is as Footer.
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

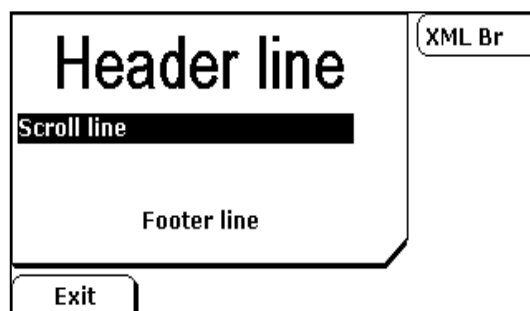
If there is no soft key defined in the FormattedTextScreen object, the LCD screen displays the following default soft key:

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

An example of the FormattedTextScreen object:

```
<YealinkIPPhoneFormattedTextScreen
  doneAction="http://10.1.0.105/menu.php"
  Beep="yes"
  Timeout="60"
  LockIn="no">
  <Line Size="large" Align="center">Header line1</Line>
  <Scroll>
    <Line Size="large" Align="center">Scroll line1</Line>
    <Line Align="left" Color="black">Scroll line2</Line>
    <Line Size="small" Align="right" Color="white">Scroll line3</Line>
  </Scroll>
  <Line Size="small" Align="right" Color="white">Footer line1</Line>
</YealinkIPPhoneFormattedTextScreen>
```

The screenshot of the SIP-T28P IP phone user interface for reference is shown as below:



## ImageMenu Object

The ImageMenu object allows users to create an image list of menu items on the IP phones. The user can specify the image menu items to link HTTP requests.

### Note

For T2xP IP phones, the image is a “dob” file, which is specified as hexadecimal characters.

For T3xG and VP530 IP phones, the image is a “jpg”, “bmp” or “png” file located on a server, which can be downloaded by the phone.

Yealink provides a tool called "Dob2Text.exe" to convert a "dob" file to the hexadecimal string to be used with the ImageMenu object.

**To convert a "dob" file to the hexadecimal string:**

1. Place the tool "Dob2Text.exe" and the "dob" file to be converted in the same directory of your local system.
2. Double click "Dob2Text.exe" to launch the application.
3. Enter the name of the "dob" file (e.g., Yealink.dob), and press the **Enter** key.

If the conversion is successful, a file will be generated in the same directory, whose content is the hexadecimal string to be used to specify the image in the ImageMenu object. In addition, you can obtain the width and height of the image from the name of the generated file, for example, yealink.dob\_206\_80.out, where 206 represents the width of the image and 80 represents the height of the image. As well, specify the width and height of the image in the ImageMenu object with these two values obtained from the name of the generated file (e.g., 206 and 80), otherwise the image will not display correctly.

XML description of the ImageMenu object:

```
<YealinkIPPhoneImageMenu
  doneAction = "some URI"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no"
  mode="regular/fullscreen"
>

<Image
  horizontalAlign="right/middle/left"
  verticalAlign="top/middle/bottom"
  height="some integer "
  width="some integer "
> Image as hexadecimal characters or URL </Image>

<URIList base="some URL">
  <URI key=" 0-9,* or #" >some URL</URI>
  <!--Additional URI entries may be added (0-9,* and #)-->
</URIList>

<!--Additional Softkey Items may be added -->
</YealinkIPPhoneImageMenu>
```

The parameters of the ImageMenu object are listed in the following table:

Parameter	Type	Value	Description
YealinkIP PhoneImage Menu	mandatory	none	The root element of the ImageMenu object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is opened. Default value is "yes".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer" Unit: sec	If there is no operation at a fixed interval on the phone, the phone will automatically exit the ImageMenu interface. If set to be 0, the phone will not exit the ImageMenu interface until pressing the "Exit" soft key. Default value is 45.
LockIn	optional	"yes" "no"	If set to be "yes", the phone ignores all events that would cause the screen to exit without using the keys defined by the XML object. Default value is "no".
mode	optional	"regular" "fullscreen"	The display mode of the image. If not specified the default value is "regular".
Image	mandatory	string	The URL of image menu item.
horizontalAlign	optional	"left" "middle" "right"	Vertical position of the image. Default value is "middle".
verticalAlign	optional	"top" "middle" "bottom"	Horizontal position of the image. Default value is "middle".
height	mandatory (For T2xP)	integer	Height in pixels. Must match the image height.
width	mandatory (For T2xP)	integer	Width in pixels. Must match the image width.
URIList	mandatory	none	Master tag of the URI list linked to a keypad key (0-9, * and #)

Parameter	Type	Value	Description
Base	optional	string	The Base value is the parent directory of the URI value.
URI	mandatory	string	URI to be used if the user presses the value of Key.
Key	mandatory	0-9,* and #	Defines the key to trigger the URI.
SoftKey	optional	string	Refer to <a href="#">Customizable Soft keys</a> for more information.

If there is no soft key defined in the ImageMenu object, the LCD screen displays the following default soft key:

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

An example of the ImageMenu object:

```
<YealinkIPPhoneImageMenu
  Beep = "yes"
  Timeout = "120"
  LockIn = "no"
  mode="regular ">
<Image
  verticalAlign="top"
  horizontalAlign="left"
  height="12"
  width="8">
  http://10.3.6.153/grab.dob </Image>
<URIList base="http://10.3.6.129:8080/XML/new/">
  <URI key="#">TextMenu.xml</URI>
  <URI key="0">Directory.xml</URI>
  <URI key="1">InputScreen.xml</URI>
</URIList>
</YealinkIPPhoneImageMenu>
```

## Customizable Soft keys

Yealink IP phones allow users to create soft keys with customizable labels, positions and actions to be taken when the soft keys is pressed. The customizable soft keys can

override the default soft keys in each XML objects.

XML descriptions of customizable soft keys:

```
<SoftKey index = "1-6">
  <Label>Text</Label>
  <URI>http://someserver/somepage OR SoftKey: someaction</URI>
</SoftKey>
```

### Note

Customizable soft keys are only available for the UI XML objects.

If you use the customizable soft keys, the default soft keys of the XML object are not displayed anymore. This means they have to be recreated as customizable soft keys.

When the customizable soft keys are used with InputScreen Object, the definitions of the soft keys should be placed in the InputField element to take effect.

The parameters of the soft key are listed in the following table:

Parameter	Type	Value	Description
SoftKey	mandatory	none	The soft key.
Index	mandatory	Integer	Indicates the soft key number. (Value ranges from 1~6.)
Label	mandatory	String	The label of the soft key.
URI	mandatory	String	The action of soft key.

The supported actions for each UI XML object are described in the following table:

Name	Action	Function
<b>TextMenu Object</b>		
Select	SoftKey: Select	Dial out the URI command in the menu item.
Dial	SoftKey: Dial	Dial out the number of the highlighted address.
Exit	SoftKey: Exit	Redisplay the previous XML interface, otherwise return to the idle interface.
Previous	SoftKey: Previous	Dial out the URI of "Previous" command, such as "http".
Next	SoftKey: Next	Dial out the URI of "Next" command, such as "http".

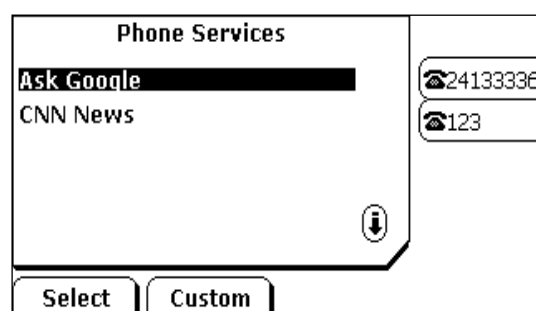
Name	Action	Function
<b>TextScreen Object</b>		
Exit	SoftKey: Exit	Redisplay the previous XML interface, otherwise return to the idle interface.
Previous	SoftKey: Previous	Dial out the URI of "Previous" command, such as "http".
Next	SoftKey: Next	Dial out the URI of "Next" command, such as "http".
<b>InputScreen Object</b>		
BackSpace	SoftKey: BackSpace	Delete the character before the cursor in the input box.
Submit	SoftKey: Submit	Execute the command comprised of the URI and input content.
NextSpace	SoftKey: NextSpace	Inserts a space in the input box at the cursor position.
Dot	SoftKey: Dot	Inserts a "." in the input box at the cursor position.
2aB	SoftKey: ChangeMode	Input mode switch, i.e. switch the input mode among "2aB", "ABC", "abc" or "123".
Dial	SoftKey: Dial	Dial out the number of the highlighted address.
Exit	SoftKey: Exit	Redisplay the previous XML interface, otherwise return to the idle interface.
Previous	SoftKey: Previous	Dial out the URI of "Previous" command, such as "http".
Next	SoftKey: Next	Dial out the URI of "Next" command, such as "http".
<b>PhoneDirectory Object</b>		
Dial	SoftKey: Dial	Dial out the number of the highlighted address.
Previous	SoftKey: Previous	Dial out the URI of "Previous" command, such as "http".
Next	SoftKey: Next	Dial out the URI of "Next" command, such as "http".
Exit	SoftKey: Exit	Redisplay the previous XML interface,

Name	Action	Function
		otherwise return to the idle interface.

An example of the customizable soft keys used with the TextMenu object:

```
<YealinkIPPhoneTextMenu
  style="none"
  Beep="no"
  WrapList="yes"
  Timeout="30"
  LockIn="yes">
  <Title Warp="yes">Phone Services</Title>
  <MenuItem>
    <Prompt>Ask Google</Prompt>
    <URI>http://10.2.11.158/yealink/google/google.php?user=</URI>
    <Dial>456</Dial>
  </MenuItem>
  <MenuItem>
    <Prompt>CNN News</Prompt>
    <URI>http://10.2.11.158/yealink/rss/rss.php?feed=cnn</URI>
    <Dial>1001</Dial>
  </MenuItem>
  <SoftKey index="1">
    <Label>Select</Label>
    <URI>SoftKey: Submit</URI>
  </SoftKey>
  <SoftKey index="2">
    <Label>Custom</Label>
    <URI>http://10.1.0.105/8.8.8.54.rom</URI>
  </SoftKey>
</YealinkIPPhoneTextMenu>
```

The screenshot of the IP phone user interface for reference is shown as below:



## XML Objects Pushed to the Phone

The phone can request an XML object via HTTP GET, or an object can be pushed to the phone via a POST. The phone parses this object immediately upon receipt and displays the information on the screen.

The HTTP POST packet must contain an "xml=" line in the message body. XML data is located after the equals sign in the message. HTML forms that post objects to the phone must use a field named "xml" to send data. Any applications that construct HTTP packets on the fly must also specify this line.

To accept a pushed message, the "PushXML\_ServerIP" parameter on the phone must be configured as the IP address of the push XML server. For more information, refer to [Configuring the Push XML Server Address](#).

Description of the object oriented php class:

```
<?php
#
function push2phone($server,$phone,$data)
{
$xml = "xml=".$data;
$post = "POST / HTTP/1.1\r\n";
$post .= "Host: $phone\r\n";
$post .= "Referer: $server\r\n";
$post .= "Connection: Keep-Alive\r\n";
$post .= "Content-Type: text/xml\r\n";
$post .= "Content-Length: ".strlen($xml)."\r\n\r\n";
$fp = @fsockopen ( $phone, 80, $errno, $errstr, 5);
if($fp)
{
fputs($fp, $post.$xml);
```

```

flush();

fclose($fp);

}

}

#####

# The above codes are fixed, please just edit the following codes according to requirement.

$xml = "XML item\n";
$xml = "XML item\n";

<!--Additional XML Items may be added -->

<!--All XML Items added here construct an XML object -->

push2phone("Server IP Address, Phone IP Address ", $xml);

# replace IP address of the push XML server with "Server IP Address"

# replace IP address of the phone with "Phone IP Address"

?>

```

Sample php source code:

In this example, the IP address of the push XML server is 192.168.0.112, and the server is defined to send a XML message to the IP phone with IP address 192.168.0.150.

```

<?php

#

function push2phone($server,$phone,$data)
{
$xml = "xml=".$data;
$post = "POST / HTTP/1.1\r\n";
$post .= "Host: $phone\r\n";
$post .= "Referer: $server\r\n";
$post .= "Connection: Keep-Alive\r\n";
$post .= "Content-Type: text/xml\r\n";
$post .= "Content-Length: ".strlen($xml)."\r\n\r\n";
$fp = @fsockopen ( $phone, 80, $errno, $errstr, 5);
if($fp)
{
fputs($fp, $post.$xml);
flush();
fclose($fp);
}
}

```


```
}  
}  
  
#####  
  
$xml = "<YealinkIPPhoneTextScreen Beep=\"yes\">\n";  
$xml .= "<Title>Push test</Title>\n";  
$xml .= "<Text>This is a test for pushing text to a phone.</Text>\n";  
$xml .= "</YealinkIPPhoneTextScreen>\n";  
  
#The above 4 lines prefixed with "$xml =" constructs a TextScreen object to be pushed to the  
#phone.  
  
#You can construct your own XML object using the same method.  
  
push2phone("192.168.0.112","192.168.0.150",$xml);  
  
?>
```

## Configuring the HTTP Server

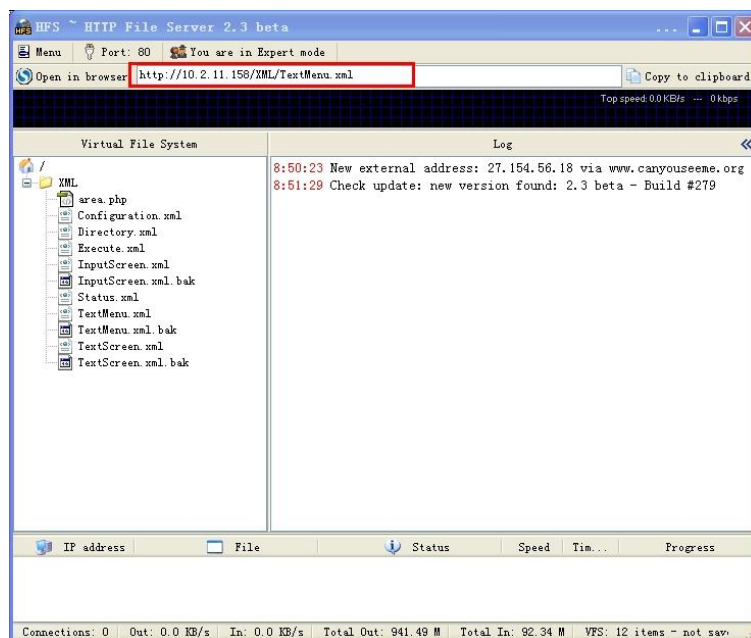
Yealink IP phones only support downloading using the HTTP (HTTPS) protocol. You can set up the HTTP(s) server, and place some XML files on the server for downloading.

This section provides you with some instructions to configure the HTTP server and how to obtain the access URL of the XML files to be downloaded by the IP phones.

**To configure the HTTP server using HFS application:**

1. Double click the HFS.exe.
2. Click **Menu** in the main page and select the IP address of the PC from **IP address**.  
The default HTTP port is 80. You can also reset the HTTP port (make sure the port isn't in use before reset).
3. Right click the  icon on the left of the main page, select **Add folder from disk** to add the HTTP Server root directory.
4. Locate the root directory from your local computer. Select your desired folder.
5. Select one of the XML files, then the access URL of the selected XML file displays in the address bar.

The screenshot for reference is shown as below:





## Configuring the Push XML Server

We recommend that you configure the Apache server acting as the push XML server.

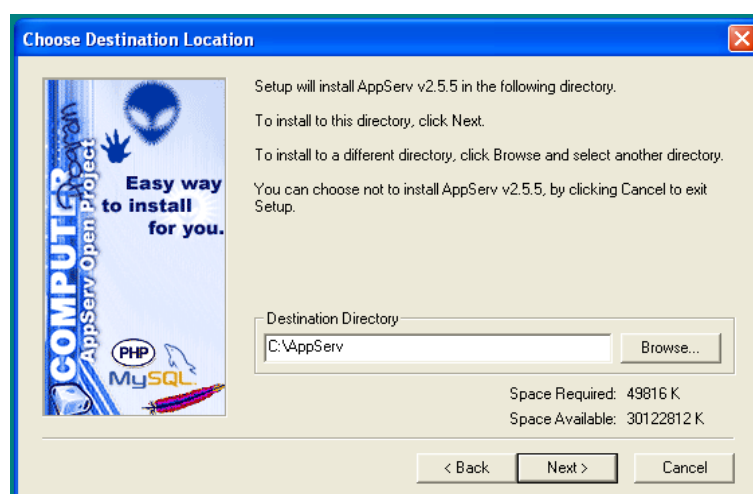
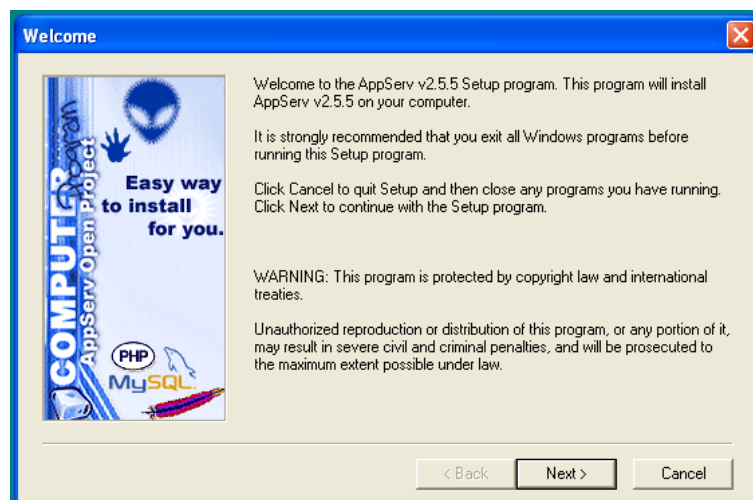
You can download the Apache installation application from:

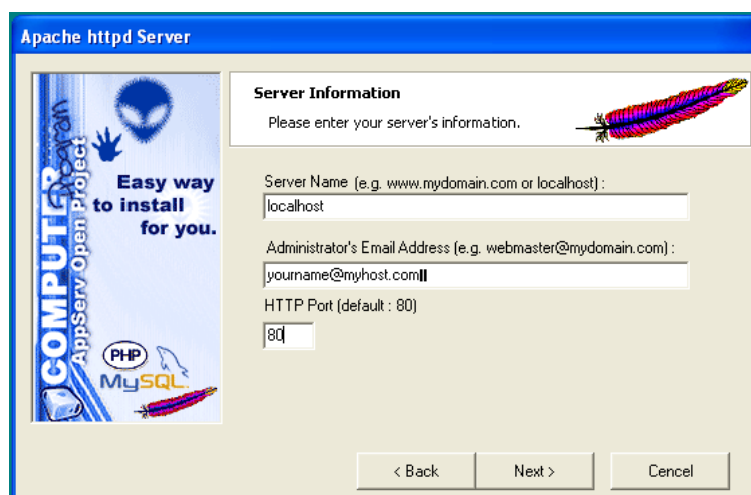
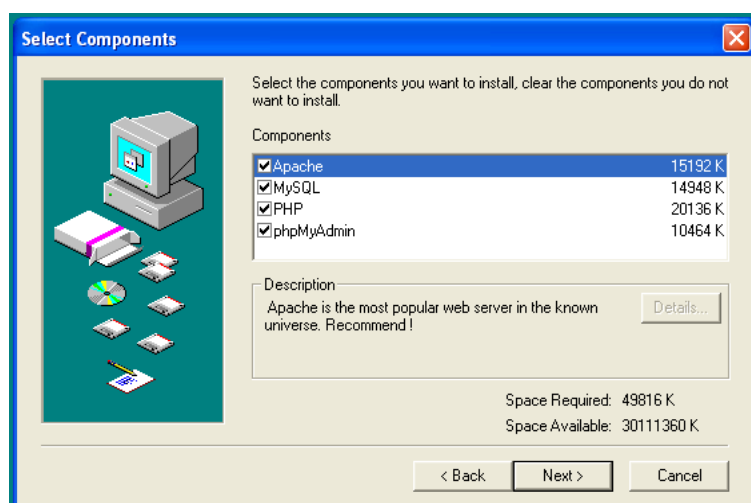
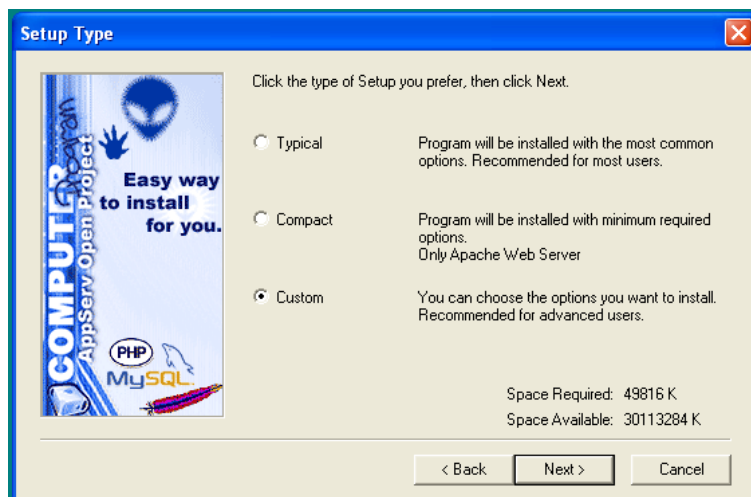
<http://prdownloads.sourceforge.net/appserv/appserv-win32-2.5.5.exe?download>, and then follow the instructions to install it.

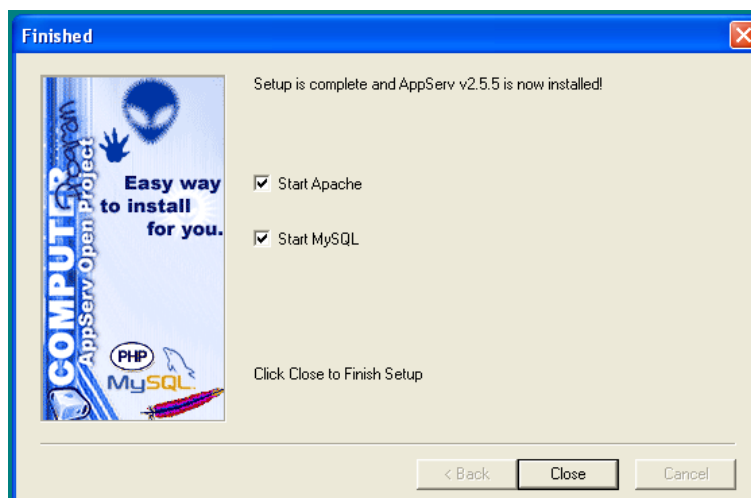
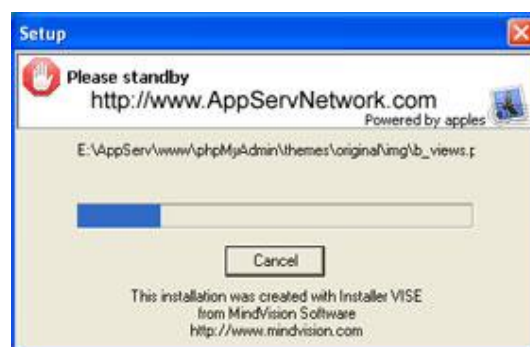
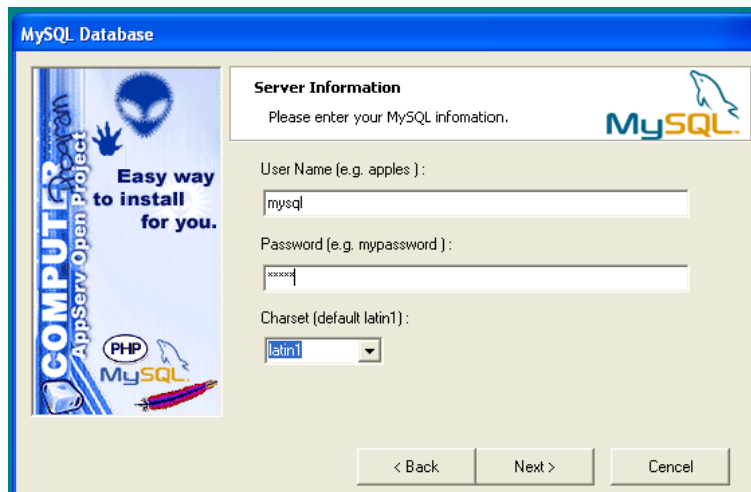
**To configure the Apache server:**

1. Double click appserv-win32-2.5.5.exe to run the application.
2. Follow the setup wizard shown as below:

Remember the installation path of the Apache server. In this example, the installation path is C:\AppServ.







3. Click **Close** to finish the installation.

The screen pops up the following window:



```

C:\WINDOWS\system32\cmd.exe

##### Apache Service Fixed #####

The Apache2 service is not started.
Removing the Apache2 service
The Apache2 service has been removed successfully.

##### Now Starting Apache... #####

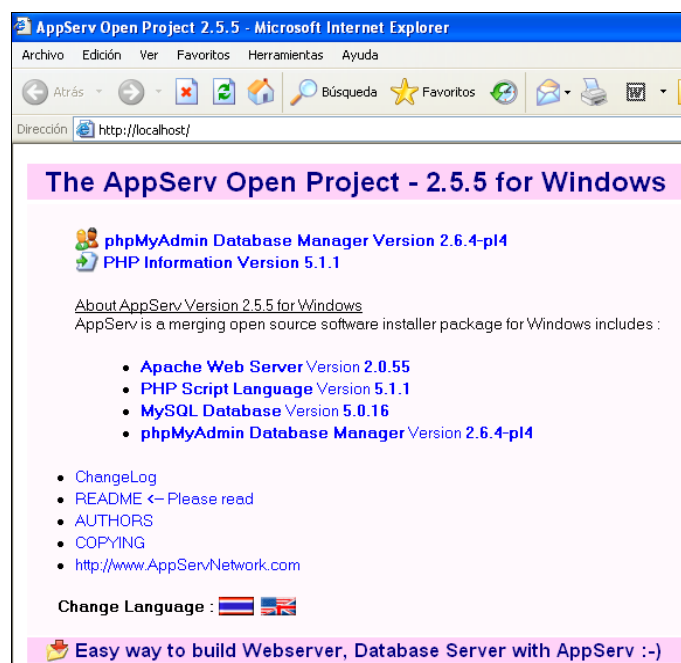
El servicio de Apache2 está iniciándose..
El servicio de Apache2 se ha iniciado con éxito.

Presione una tecla para continuar . . . _

```

4. You can validate that the installation is successful. Enter "Http://localhost/" in the address bar of the web browser and press the **Enter** key.

The web page should be shown as below:



#### To push an XML object to the phone:

After the Apache server is installed in your local system, you can find the www directory in the installation path (For example, C:\AppServ.) of the Apache server.

1. Place the php file used to send an XML object to the phone (For example, TextScreen.php) in the www directory.
2. Enter the access URL (For example, http://localhost/TextScreen.php. Replace "TextScreen.php" with the name of the XML object to be pushed.) of the php file in the address bar of the web browser, and press the **Enter** key to push an XML object to the phone.

# Yealink IP Phone XML Configurations

## Configuring an XML Browser Key

To use the XML browser feature, you must configure an XML key in advance. You can configure an XML Browser key via web user interface or phone user interface.

To configure an XML Browser key via web user interface:

1. Access the web user interface of the phone.
2. Click on **DSSKey->Memory Key (or Line Key)**.
3. In the desired memory key (or line key) field, select **XML Browser** from the pull-down list of **Type**.
4. Fill in the available access URL in the **Value** field.

Key	Type	Value	Line	Extension
Memory 1	XML Browser	http://10.3.6.166:8080/XML/n	N/A	
Memory 2	N/A		N/A	
Memory 3	N/A		N/A	
Memory 4	N/A		N/A	
Memory 5	N/A		N/A	
Memory 6	N/A		N/A	
Memory 7	N/A		N/A	
Memory 8	N/A		N/A	
Memory 9	N/A		N/A	
Memory 10	N/A		N/A	

**NOTE**

**Key Type**  
The free function key "Types" Speed Dial, Key Event, Intercom.

**Key Event**  
Key events are predefined shortcuts to phone and call functions.

**Intercom**  
Enable the "Intercom" mode and it is useful in an office environment as a quick access to connect to the operator or the secretary.

Confirm Cancel

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

To configure an XML Browser key via phone user interface:

1. Press **Menu->Features->DSS Keys->Memory Keys (Line Keys)**.
2. Select the desired DSS Key.
3. Press **◀** or **▶** , or the **Switch** soft key to select **XML Browser** from the **Type** field.

4. Enter the available access URL in the **Value** field.

Dss Key 1	
1. Type:	XML Browser
2. Value:	http://10.3.6.166:8

Back Switch Save

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

## Configuring the Block XML In Calling

You can configure the Block XML In Calling via web user interface. It enables or disables the phone to block XML applications during a call. For example, If it is enabled, press a XML browser key when there is an active call on the phone, the XML application will be blocked.

To configure the Block XML In Calling via web user interface:

1. Access the web user interface of the phone.
2. Click on **Features->Remote Control**.
3. Select **Enabled** from the pull-down list of **Block XML In Calling** field.

Yealink T28 Log Out

Status Account Network DSSKey Features Settings Directory Security

Forward&DND  
General Information  
Audio  
Intercom  
Transfer  
Call Pickup  
Remote Control  
Phone Lock  
ACD  
SMS  
Action URL

**Remote Control**

Push XML Server IP Address

SIP Notify Disabled

**Block XML In Calling** Enabled

Action URI allow IP List

Confirm Cancel

**NOTE**

**Remote Control**  
The remote control parameters for administrator.

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

## Configuring the Push XML Server Address

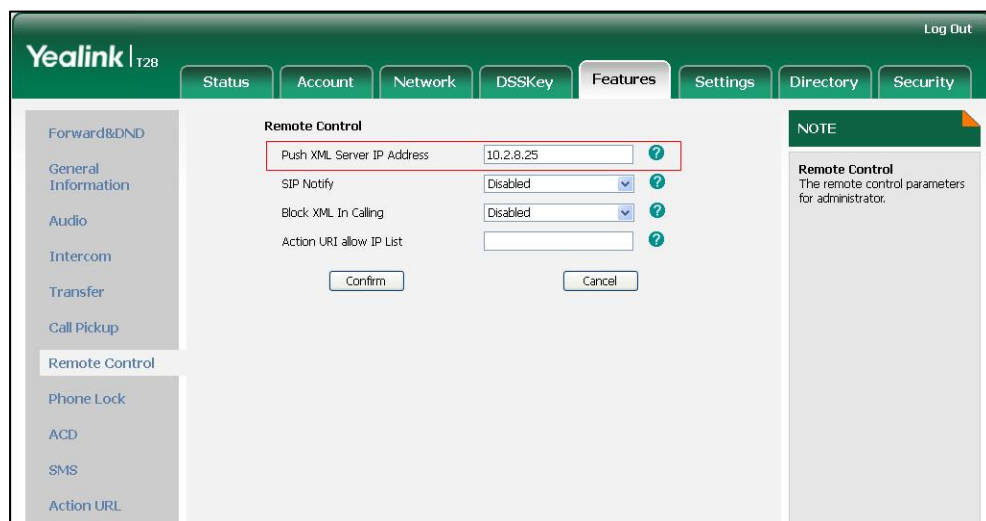
The IP address or domain name of the push XML server is specified in the **Push XML Server IP Address** field. After configuration, the IP phone will be able to accept the

HTTP(s) POST from the server.

To configure the Push XML Server via web user interface:

1. Access the web user interface of the phone.
2. Click on **Features->Remote Control**.
3. Enter IP addresses or domain names in the **Push XML Server IP Address** field.

The valid values must be within 512 characters. Each IP address or domain name is separated by a comma. If leaving this field blank, the phone will reject HTTP POST messages from any server.



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

## Configuring the XML SIP Notify

You can configure the XML SIP Notify via web user interface. It will enable or disable SIP NOTIFY messages to be processed by the phone.

To configure the XML SIP Notify via web user interface:

1. Access the web user interface of the phone.
2. Click on **Features->Remote Control**.

3. Select **Enabled** from the pull-down list of **SIP Notify** field.

The screenshot shows the Yealink T28 web interface. The 'Features' tab is selected. Under the 'Remote Control' section, the 'SIP Notify' field is set to 'Enabled'. Other fields include 'Push XML Server IP Address' (10.2.8.25), 'Block XML In Calling' (Disabled), and 'Action URI allow IP List' (empty). There are 'Confirm' and 'Cancel' buttons at the bottom. A 'NOTE' box on the right states: 'Remote Control: The remote control parameters for administrator.'

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

Upon receiving the XML SIP NOTIFY message, the phone will display the information or execute the command contained in the NOTIFY message.

Example of a SIP Notify with XML content:

```

Session Initiation Protocol
  Request-Line: NOTIFY sip:202@10.2.11.185:5062 SIP/2.0
    Method: NOTIFY
    Request-URI: sip:202@10.2.11.185:5062
    [Resent Packet: False]
  Message Header
    Via: SIP/2.0/UDP 10.2.6.183:5060;branch=z9hg4bk7fdb2f49;rport
    Max-Forwards: 70
    From: <sip:201@10.2.1.100>;tag=as312b4b13
    To: "202" <sip:202@10.2.1.100>;tag=274335798
    Contact: <sip:201@10.2.1.100>
    Call-ID: 2146521383@10.2.11.185
    CSeq: 102 NOTIFY
    User-Agent: Yealink-T28P 2.71.0.80
    Event: aastra-xml
    Content-Type: application/xml
    Subscription-State: active
    Content-Length: 140
  Message Body
    extensible Markup Language
      <?xml
        version="1.0"
        encoding="ISO-8859-1"
        ?>
      <YealinkIPPhoneExecute
        Beep="yes">
        <ExecuteItem
          URI=" Key:OK"/>
        </YealinkIPPhoneExecute>
  
```

## Customer Feedback

We are striving to improve our documentation quality and we appreciate your feedback. Email your opinions and comments to [DocsFeedback@yealink.com](mailto:DocsFeedback@yealink.com).