



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' display can be managed by external applications.

This Developers' Guide shows you how to use XML API to control the 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.xx

The following sections are new:

- [Configuring the Push XML Server](#) on page 55

- [Configuring the Block XML In Calling](#) on page 60

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?

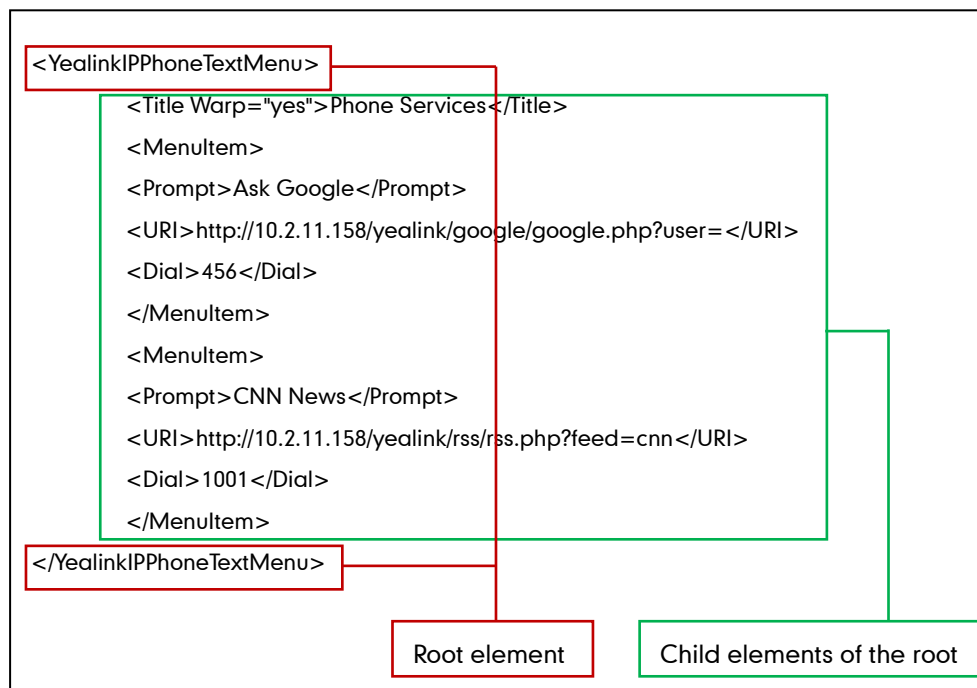
XML stands for eXtensible Markup Language. It is a markup language much like HTML. HTML was designed to display data and to focus on how data looks. XML was designed to describe data and to focus on what data is.

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 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 10 proprietary XML objects, which allow the creation of powerful XML applications.

There are 2 types of XML objects:

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

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

The supported objects are:

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

How does it work?

Depending on the IP infrastructure, Yealink has supported developing the XML browser capability on 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](#).

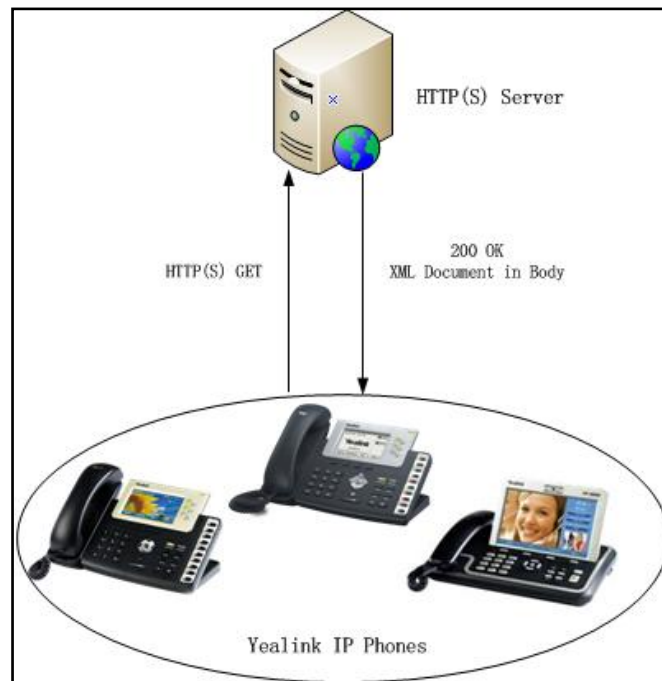


Figure1 Yealink IP phone acting as a client

Server initiated application

The other type of application would be more 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](#).

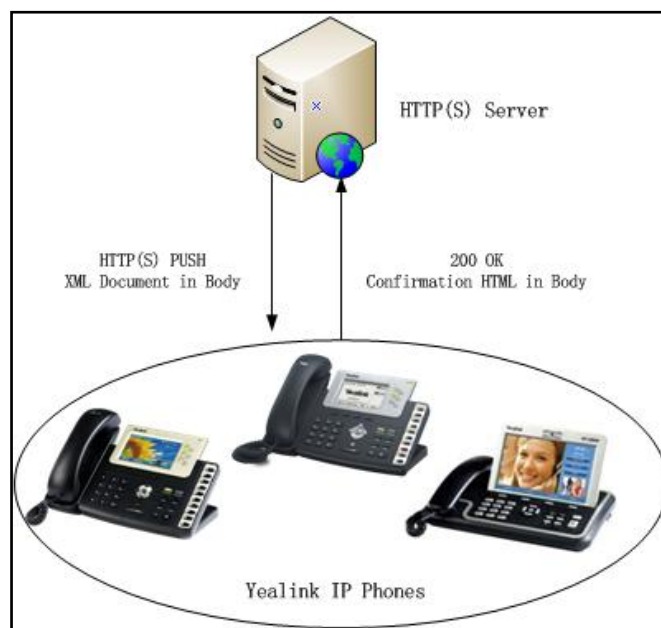


Figure2 Yealink IP phone acting as a server (HTTP(S) post)

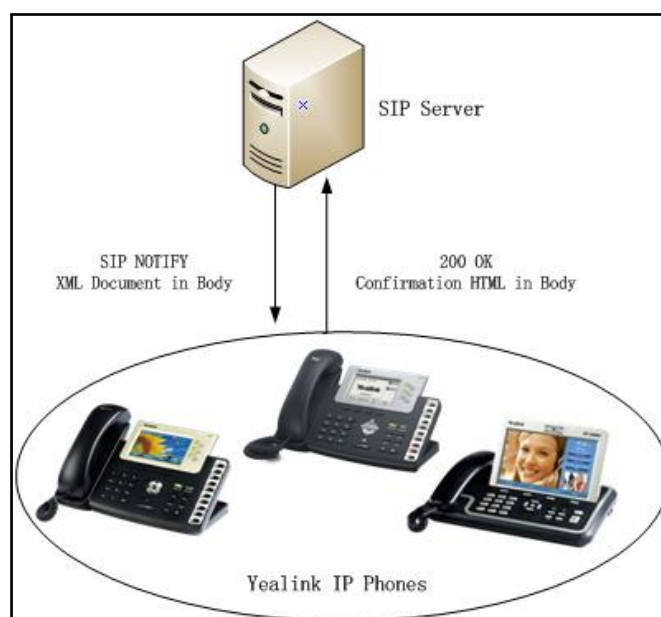


Figure3 Yealink IP phone acting as a server (SIP NOTIFY)

XML display control on Yealink IP phones

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

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

- 10 lines of 16 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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, the **OK** key can also be interpreted as a “confirm” key.

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

- 5 lines of 16 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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, the **OK** key can also be interpreted as a “confirm” key.

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

- 5 lines of 16 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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, the **OK** key can also be interpreted as a “confirm” key.

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

- 8 lines of 43 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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, the **OK** key can also be interpreted as a “confirm” key.

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

- 6 lines of 34 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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, the **OK** key can also be interpreted as a "confirm" key.

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

- 18 lines of 70 characters for the display
- The left and right arrow navigation keys
- The up and down arrow navigation keys

The last line of the display 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 **OK** key can be interpreted 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 solely 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.

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:

```
<****TextMenu
  defaultIndex = "some integer"
  style = "numbered/none"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no"
  WrapList = "yes/no"
  cancelAction = "some 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 Softkey Items may be added (softkey phones) -->

</****TextMenu>

```

Note

The "****" in "****TextMenu" can be any string or null.

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

Parameter	Type	Value	Description
****TextMenu	mandatory	none	The root element of the TextMenu object.
defaultIndex	optional	Integer	Position of the cursor when the XML object is open. If not specified, the cursor is positioned on the first menu item. Default value is 1.
style	optional	"numbered" "none"	numbered (default): Use digits before the menu to indicate the menu order. none : No sign before the menu.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is open. Default value is "no".
wrapList	optional	"yes" "no"	Whether to display the title specified by the Prompt parameter in multi-lines, when the content of the title is longer than one line. Select "yes" to display in multi-lines, and "no" for one line. Default value is "no".
Timeout	optional	"integer" Unit: sec	If the user has no operation at a fixed interval, the phone will automatically exit the TextMenu interface. If set to be 0s, the phone will not exit the TextMenu interface until pressing the "Exit" soft key. Default value is 45s.

Parameter	Type	Value	Description
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".
cancelAction	optional	URI	Defines the URI to be called where the user cancels the XML object.
Title	mandatory	string	The content of the menu item.
wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is longer 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" softkey 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 Customizable Softkeys for more information.

If there is no softkey defined in the TextMenu object, the LCD screen displays the following default softkeys:

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

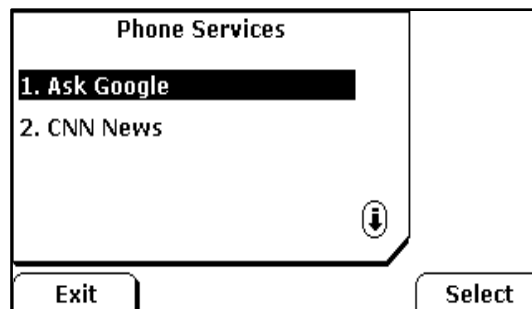
The function keys are listed in the following table:

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	Softkey, URI="SoftKey: Select"	Dial out the URI command in the menu item.
Exit	Softkey, 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 dial-up 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.

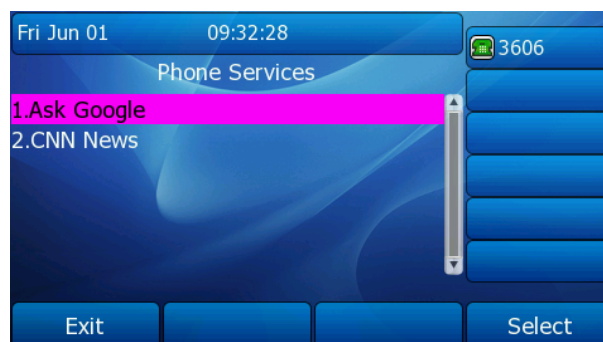
An example of the TextMenu object:

```
<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>
```

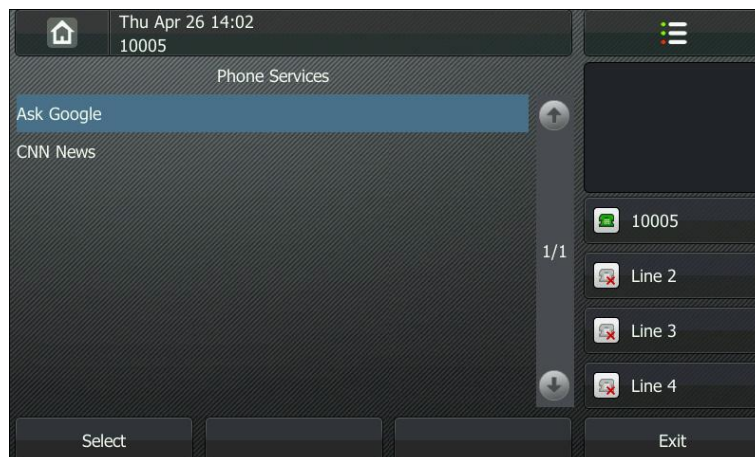
The screenshot of the T28P IP phone user interface for reference is shown as below:



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 text on the IP phones.

XML description of the TextScreen object:

```
<****TextScreen
  doneAction = "some URI"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no"
  >
  <Title wrap = "yes/no">Screen Title</Title >
  <Text>The screen text goes here</Text>
  <!--Additional Softkey Items may be added (softkey phones) -->
</****TextScreen >
```

Note

The "****" in "****TextScreen" can be any string or null.

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

Parameter	Type	Value	Description
****TextScreen	mandatory	none	The root element of the TextScreen object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is open. Default value is "no".

Parameter	Type	Value	Description
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer" Unit: sec	If the user has no operation at a fixed interval, the phone will automatically exit the TextScreen interface. If set to be 0s, the phone will not exit the TextScreen interface until pressing the "Exit" soft key. Default value is 45s.
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 label of the text.
wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is longer than one line. Select "yes" display in multi-lines, and "no" for one line. Default value is "no".
Text	mandatory	string	The content to be displayed. (Size ranges from 1~2000B)
SoftKey	optional	string	Refer to Customizable Softkeys for more information.

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

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

The function keys are listed in the following table:

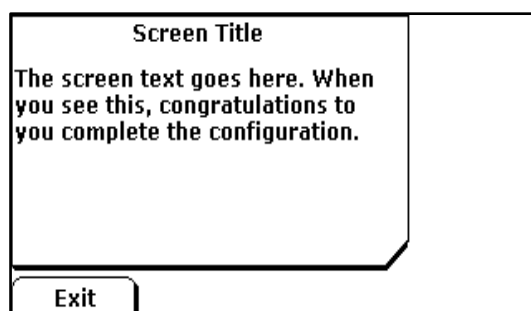
Key Name	Statement	Description
Up/Down	Up and down keys	To see the content of text tips by pressing up and down.
Digitkey	Digit keys 1~9	No response.
Exit	Softkey, URI="SoftKey: Exit"	Redisplays the previous XML interface, otherwise return to the idle interface.
Offhook/	Off hook/Line Key/	If there is a number contained in the Dial tag,

Key Name	Statement	Description
LineKey/ Handfree	Handfree Key	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 dial-up 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.

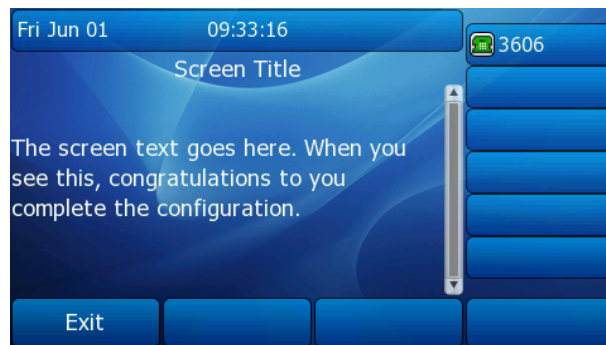
An example of the TextScreen object:

```
<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>
```

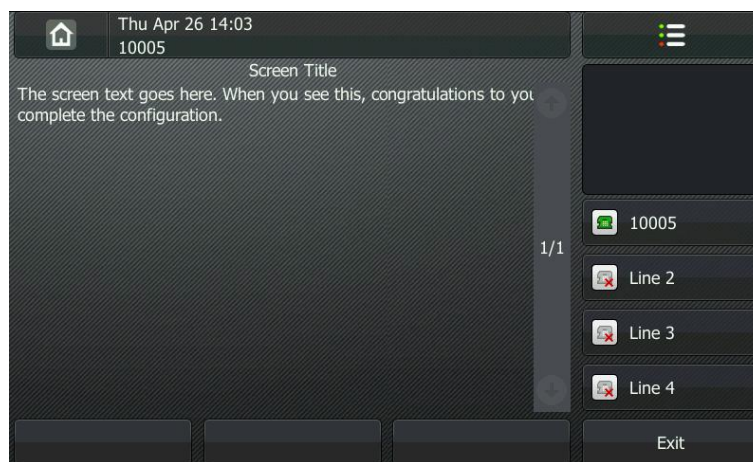
The screenshot of the T28P IP phone user interface for reference is shown as below:



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 on server. You can define the content and format of input content.

XML description of the InputScreen object:

```
<****InputScreen
  type = "IP/string/number/timeUS/timeInt/dateUS/dateInt"
  password = "yes/no"
  editable = "yes/no"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no"
  defaultIndex = "some integer 1 to 6"
```

```

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 Softkey Items may be added (softkey phones) -->
</InputField>
<!--Additional input field Items may be added -->
<!--Additional Softkey Items may be added (softkey phones) -->
</****InputScreen >

```

Note

The "****" in "****InputScreen" can be any string or null.

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

Parameter	Type	Value	Description
****InputScreen	mandatory	none	The root element of the InputScreen object.
Type	mandatory	"IP" "string" "number" "timeUS" "timeInt" "dateUS"	Data input options: 1. IP 2. String(default) 3. number 4. timeUS, 12hour format Format:

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

Parameter	Type	Value	Description
			InputScreen interface. If set to be 0s, the phone will not exit the InputScreen interface until pressing the "Exit" soft key. Default value is 45s.
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"	normal (default): Display the prompt and input box in two lines. condensed : Display the prompt and input box in one line
defaultIndex	optional	integer	Position of the cursor when the XML object is open. If not specified, the cursor is positioned on the first input box. Default value is 1.
Title	mandatory	string	The title of input object.
Wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is longer 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 input.
Parameter	mandatory	string	Name of parameter to be added after the URL. (e.g., http://10.1.0.105/menu1.xml ? parameter)
Default	optional	string	Default value to be displayed in

Parameter	Type	Value	Description
			input field.
InputField	optional	none	Set several input boxes. (Value ranges from 1~6.)
editable	optional	"yes" "no"	Whether to allow users input something. Default value is "yes". Users can not input anything if it is set to "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 softkeys displayed will change accordingly. (e.g., add the input mode.) Refer to Customizable Softkeys for more information.

Note

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

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

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

4	Exit	SoftKey: Exit
---	------	---------------

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

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

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

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

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

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 "yes", then input character; otherwise no response.

Key Name	Statement	Description
Backspace	Softkey, URI= "SoftKey: Backspace"	Delete the character before the cursor in the input box.
Dot	Softkey, URI= "SoftKey: Dot"	Inserts a "." in the input box at the cursor position.
Submit	Softkey, URI= "SoftKey: Submit"	Execute the command comprised of the URI and input content.
Exit	Softkey, URI="SoftKey: Exit"	Return to the last XML interface, otherwise return to the idle interface.
2aB	Softkey, URI= "SoftKey: ChangeMode"	Input mode switch, i.e. switch the input mode among "2aB", "ABC", "abc" or "123".
NextSpace	Softkey, 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 dial-up 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>

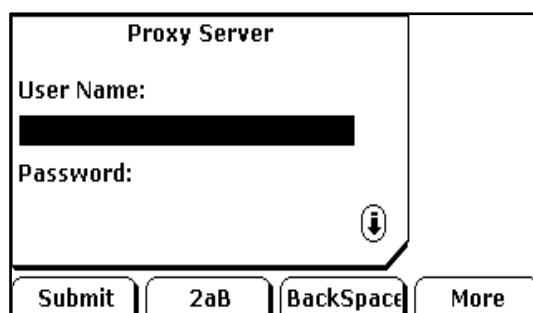
<Default> </Default>

</InputField>

</YealinkIPPhoneInputScreen>

```

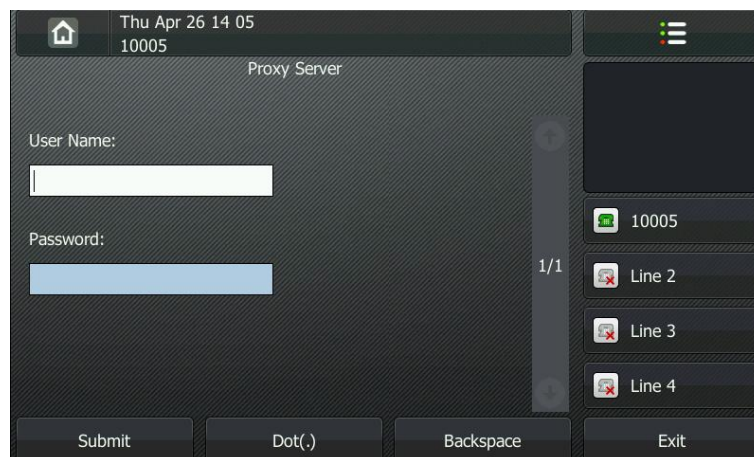
The screenshot of the T28P IP phone user interface for reference is shown as below:



The screenshot 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" softkey, picking up the handset or pressing line key.

XML description of the PhoneDirectory object:

```
<****Directory
  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 Softkey Items may be added -->
</****Directory>
```

Note

The "****" in "****Directory" can be any string or null.

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

Parameter	Type	Value	Description
****Directory	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 open. Default value is "no".
cancelAction	optional	URI	Defines the URI to be called where the user cancels the XML object.
Timeout	optional	"integer" Unit: sec	If the user has no operation at a fixed interval, the phone will automatically exit the PhoneDirectory interface. If set to be 0s, the phone will not exit the PhoneDirectory interface until pressing the "Exit" soft key. Default value is 45s.
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 content of the address book title.
wrap	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is longer than one line. Select "yes" display in multi-lines, and "no" for one line. Default value is "no".
MenuItem	mandatory	none	Address item. (Value ranges from 1~15.)
Prompt	mandatory	string	The title of address item.
URI	mandatory	URI	The operation of address item, such as the telephone number.
SoftKey	optional	string	Refer to Customizable Softkeys for more information.

If there is no softkey defined in the PhoneDirectory object, the LCD screen displays the following default softkeys:

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:

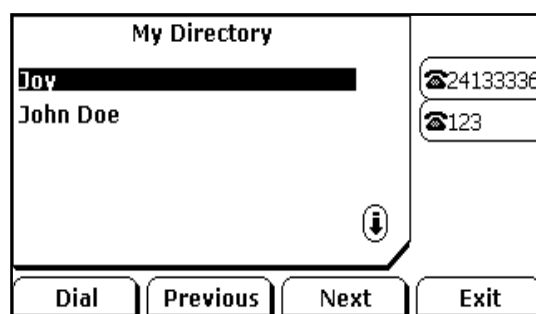
Key Name	Statement	Description
Up/Down	Up and down keys	To move the cursor up and down.
Digitkey	Digit keys 1~9	No response.
Dial	Softkey, URI="SoftKey: Dial"	Dial out the number of the focus address.
Previous	Softkey, URI="SoftKey: Previous"	Dial out the URI of "Previous" command, such as "http".
Next	Softkey, URI="SoftKey: Next"	Dial out the URI of "Next" command, such as "http".
Exit	Softkey, URI="SoftKey: Exit"	Redisplay the previous XML interface, otherwise return to the idle interface.
Offhook/ LineKey/ Handfree	Off hook/Line Key/ Handfree Key	Dial out the number of the focus 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	If the value of the LockIn is "no", it will execute

Key Name	Statement	Description
	the Expansion keys)	the operation of DSS key. If the value of the LockIn is "yes", there will be no response.

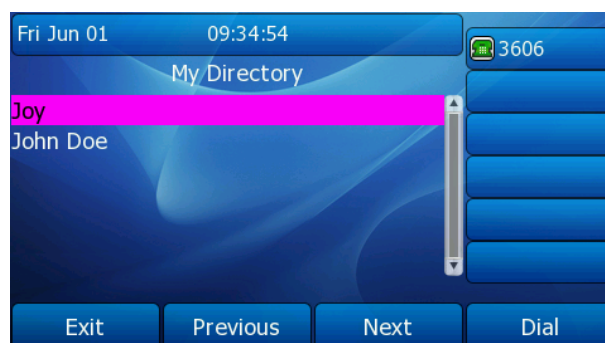
An example of the PhoneDirectory object:

```
<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>
```

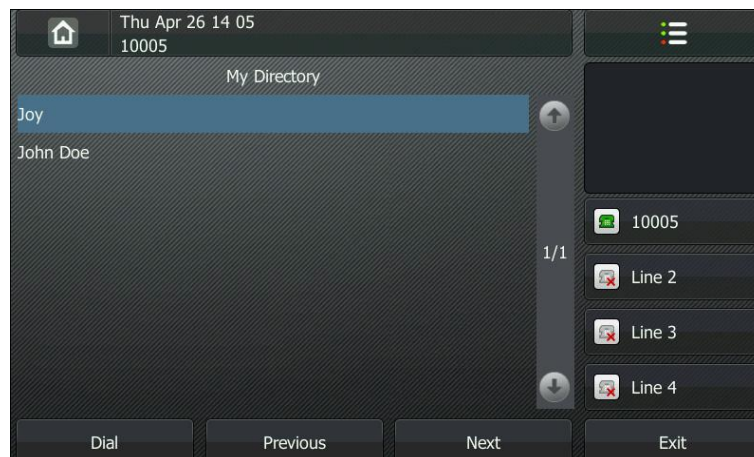
The screenshot of the T28P IP phone user interface for reference is shown as below:



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 prompt user about received messages, missed calls, news, notify, etc.

XML description of the PhoneStatus object:

```
<****PhoneStatus
  Beep = "yes/no"
  >
    <Session>Session ID</Session>
    <Message
      Index = "index"
      Type = "alert"
      Timeout = "timeout"
      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 -->
  </****PhoneStatus>
```

Note

The "****" in "****PhoneStatus" can be any string or null.

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

Parameter	Type	Value	Description
****Phone Status	mandatory	none	The root element of the PhoneStatus object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is open. Default value is "no".
wrapList	optional	"yes" "no"	Whether to display the title in multi-lines when the content of the title is longer than one line. Select "yes" display in multi-lines, and "no" for one line. Default value is "no".
Timeout	optional	"integer" Unit: sec	The time for status information displaying. The phone will automatically exit the status interface at a fixed interval. Default value is 45s.
SessionID	optional	string	Session ID, it is used to mark different Status Object. (Minimum is 0)
Message	optional	string	Message to be displayed or empty to reset the message. (Up to 10 instance.)
Index	optional	Integer	The status information index in the Session. Default value is 1. (Value ranges from 1~10)
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 received messages out of interface; the messages will be displayed instead. Default value is "alert".
Timeout	optional	"integer" Unit: sec	The time for message displaying. The cursor before the message will automatically move to the next message at a fixed interval.

Parameter	Type	Value	Description
			Default value is 3s.
Size	optional	"normal" "small" "double" "large"	Size of the font for the line, "normal" for the regular font, "double" for a double height font. "normal" is the default value if not specified.
Align	optional	"center" "left" "right"	Alignment of the line. 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 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 Customizable Softkeys for more information.

An example of the PhoneStatus object:

```

<YealinkIPPhoneStatus
  Beep="yes"
  wrapList="no">
  <Session>2</Session>

```

```

<Message
  Size="large"
  Align="center"
  Color="white"
  Icon="Forward"
  >Forward to 321</Message>

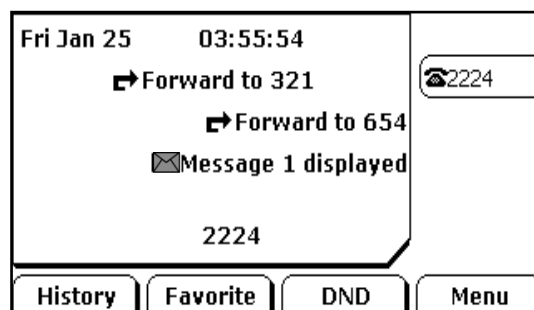
<Message
  Size="normal"
  Align="right"
  Color="black"
  Icon="Forward">Forward to 654</Message>

<Message
  Size="small"
  Align="right"
  Color="green"
  Icon="Message">Message 1 displayed</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:

```

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

```

```
</****PhoneExecute>
```

Note

The “****” in “****PhoneExecute” can be any string or null.

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

Parameter	Type	Value	Description
****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 “no”.
ExecuteItem	mandatory	none	Command item. (Value ranges from 0~30.)
URI	optional	URI	The operation of command item, such as call user, download the data from server according to the URL, etc.

Commonly used command:

Name	URI Value	Function
Any Supported URI	http(s)://myserver.com/myscript.pl	Dial out the URL
	Dial:XXXXX	Dial out the number
	Led:XXXX=on/off/slowflash/fastflash	To control the LEDs according to the commands
	Key:XXXX	Execute XXXX key operation
	Wav.Play:[tftp http://[username[:password]@]<host>[:port]]/<Path>]/<file> Wav.Stop:	Play or close the wav file
Phone Reboot	Command: Reset	Reset to the factory
Phone Fast Reboot	Command: Reboot	Phone reboot
Phone Lock	Command: Lock	Lock the keypad of the phone
Phone	Command: Unlock	Unlock the keypad

Name	URI Value	Function
Unlock		of the phone
Clear	Command: ClearCallersList	Clear local call record list
	Command: ClearDirectory	Clear contact list
	Command: ClearRedialList	Clear redial list(call 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>%d: the "%d"th expansion module, value range: 1~6;</p> <p>%d2: the "%d"th button of expansion module, value range: 1~40;</p> <p>%s: the light color, values: "RED", "GREEN".</p>	"Led: EXP-2-3-RED=on": Lighten the indicator of the third button of the second expansion module to be red.
LINE%d	<p>%d: It represents the serial number of corresponding line key LED, value range: 1~6.</p>	"Led:LINE3=on": Lighten the line key3 LED.
MEMO%d_%s	<p>%d: It represents the memory key's serial number, value range: 1~10</p> <p>%s: 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>%d: the "%d"th expansion module, value range: 1~6</p> <p>%d2: the "%d"th button 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	

Setting Method	Indicator	Example
ON_HOOK	On hook	
OK	Ok key	
CANCEL	X key	
UP	Up key	
DOWN	Down key	
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	
FWD	Forward key	
PHONEBOOK	Remote phone book key	
SWITCH	Switch key	
HEADSET	Headset switch key	
HANDFREE	Handfree key	
LINE%d	Line key, value 1~6	
HOTKEY%d	Hot 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>
```

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 User Guide](#).

XML description of the PhoneConfiguration object:

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

Note

The "****" in "****PhoneConfiguration" can be any string or null.

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

Parameter	Type	Value	Description
****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".
setType	optional	"config" "boot"	config: Configuration changes will take effect without reboot. boot: Configuration changes will take effect after reboot.
Item	mandatory	none	Configuration item.

An example of the PhoneConfiguration object:

```
<YealinkIPPhoneConfiguration
  Beep="yes"
  setType="config"
  >
  <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>

```

FormattedTextScreen Object

The FormattedTextScreen object allows the IP phones to display formatted (alignment, size, color and scrolling) text 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 display and contains static text. One or two lines can be displayed in this block.
- The Scroll block, displayed below the first block, displays scrolling text and takes up as many lines as the designer specifies up to the size of the screen.
- The Footer block is displayed at the bottom of the display and contains static text. Only one line can be displayed in this block.

XML description of the FormattedTextScreen object:

```

<****FormattedTextScreen
  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) -->

</****FormattedTextScreen >

```

Note

The "****" in "****FormattedTextScreen" can be any string or null.

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

Parameter	Type	Value	Description
****FormattedTextScreen	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 "no".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer" Unit: sec	If the user has no operation at a fixed interval, the phone will automatically exit the FormattedTextScreen interface. If set to be 0s, the phone will not exit the FormattedTextScreen interface until pressing the "Exit" soft key. Default value is 45s.

Parameter	Type	Value	Description
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 text is larger than the display, line is cropped to the last word. The Header block can display two lines at most, and the Footer block can display only one line.
Size	optional	"normal" "small" "double" "large"	Size of the font for the line, "normal" for the regular font, "double" for a double height font. Default value is "normal".
Align	optional	"center" "left" "right"	Alignment of the line. 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 line. For T2xP: This parameter will be ignored and the text displayed is always black. For T3xG and VP530: Default value is "white".

Parameter	Type	Value	Description
Scroll	optional	none	Defines the scrolling section of the display. The Line above the Scroll is as header, under the Scroll is as Footer.
SoftKey	optional	string	Refer to Customizable Softkeys for more information.

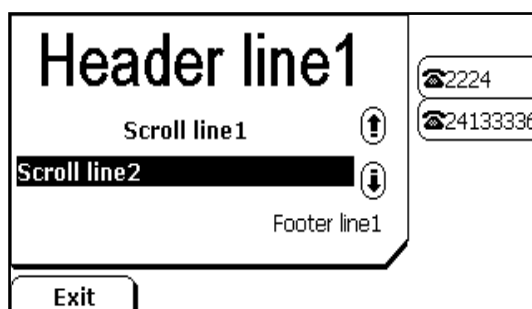
If there is no softkey defined in the FormattedTextScreen object, the LCD screen displays the following default softkey:

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>
```

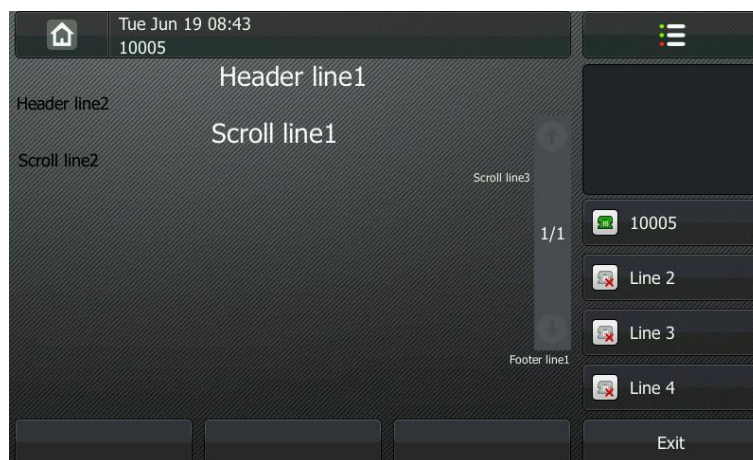
The screenshot of the SIP-T28P IP phone user interface for reference is shown as below:



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:



ImageScreen Object

The ImageScreen object allows users to display simple image on the IP phones. The user can specify where the image should be placed by setting horizontal and vertical alignment of the upper left hand corner, along with the height and width of the image.

Note

For T2xP IP phones, the image is a “dob” file, which is specified as a series of 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 ImageScreen 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 ImageScreen 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 ImageScreen 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 ImageScreen object:

```
<****ImageMenu
    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>
</**** ImageMenu >
```

Note

The "****" in "****ImageMenu" can be any string or null.

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

Parameter	Type	Value	Description
****ImageMenu	mandatory	none	The root element of the ImageScreen object.
Beep	optional	"yes" "no"	Whether to play a tone when entering into the ImageScreen. Default value is "no".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer"	If the user has no operation at a

Parameter	Type	Value	Description
		Unit: sec	fixed interval, the phone will automatically exit the ImageScreen interface. If set to be 0s, the phone will not exit the ImageScreen interface until pressing the "Exit" soft key. Default value is 45s.
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. Default value is "regular".
Image	mandatory	string	Image as hexadecimal characters or URL.
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.
SoftKey	optional	string	Refer to Customizable Softkeys for more information.

If there is no softkey defined in the ImageScreen object, the LCD screen displays the following default softkey:

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

An example of the ImageScreen object (for T2xP):

```
<YealinkIPPhoneImageMenu
```

```

doneAction="http://10.1.0.105/menu.php"

Beep="yes"

Timeout="120"

LockIn="yes"

mode="regular">

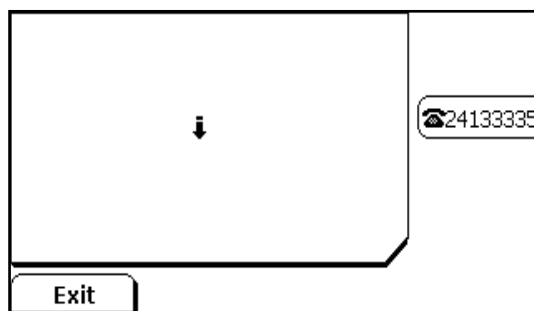
<Image
verticalAlign="middle"
horizontalAlign=" middle "
height="12"
width="8">

0055550000555500000000000000aaaa0000aaaa0000ffff0000ffff0000ffff00ffffff0ffff0f00ffff000
0f00f00</Image>

</YealinkIPPhoneImageMenu>

```

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



An example of the ImageScreen object (for T3xG and VP530):

```

<YealinkIPPhoneImageMenu

doneAction="http://10.1.0.105/menu.php"

Beep="yes"

Timeout="60"

LockIn="yes"

mode="regular">

<Image

horizontalAlign="right"

verticalAlign="top"

>http://10.2.6.3:8080/xmlroot/bg2.jpg</Image>

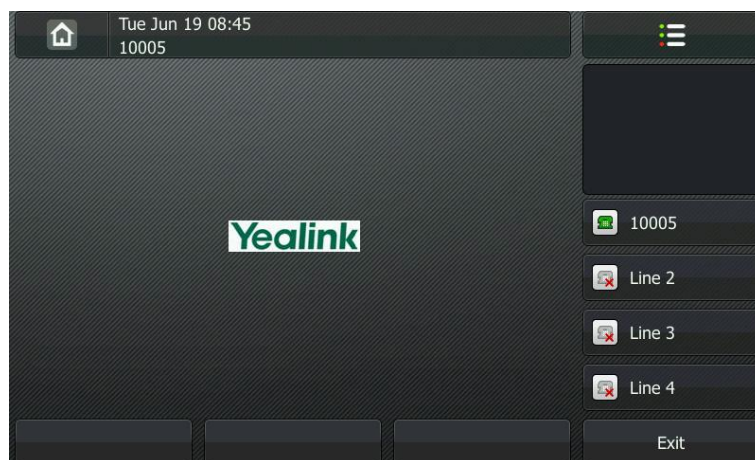
</YealinkIPPhoneImageMenu>

```


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:



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.

XML description of the ImageMenu object:

```
<****ImageMenu
  doneAction = "some URI"
  Beep = "yes/no"
  Timeout = "some integer"
  LockIn = "yes/no"
  mode="regular/fullscreen"
>
<Image
  horizontalAlign="right"
  verticalAlign="top"
  height="some integer "
```

```

width="some integer "
> Image as hexadecimal characters or URL </Image>
<URList base="some URL">
  <URI key=" 0-9,* or #">some URL</URI>
  <!--Additional URI entries may be added (0-9,* and #)-->
</URList>
<!--Additional Softkey Items may be added -->
</**** ImageMenu>

```

Note

The "****" in "****ImageMenu" can be any string or null.

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

Parameter	Type	Value	Description
****ImageMenu	mandatory	none	The root element of the ImageMenu object.
Beep	optional	"yes" "no"	Whether to play a tone when the XML object is open. Default value is "no".
doneAction	optional	URI	Defines the URI to be called when the user presses the "OK" key.
Timeout	optional	"integer" Unit: sec	If the user has no operation at a fixed interval, the phone will automatically exit the ImageMenu interface. If set to be 0s, the phone will not exit the ImageMenu interface until pressing the "Exit" soft key. Default value is 45s.
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".

Parameter	Type	Value	Description
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 #)
Base	optional	string	The value of Base is parent directory to the value in the URI.
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 Customizable Softkeys for more information.

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

SoftKey Index	Label	URI
1	Exit	SoftKey: Exit

An example of the ImageScreen object:

```
<YealinkIPPhoneImageMenu
  Beep = "yes"
  Timeout = "120"
  LockIn = "no"
  mode="regular ">
<Image
  verticalAlign="top"
  horizontalAlign="left"
  height="12"
  width="8">
  0055550000555500000000000000aaaa0000aaaa0000ffff0000ffff0000ffff00ffff00ffff0000
  0f00f00</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 Softkeys

Yealink IP phones allow users to create softkeys with a customizable label, position and the action to be taken when the softkey is pressed. The customizable softkeys can override the default softkeys in each XML objects.

XML descriptions of customizable softkeys:

```

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

```

Note

Customizable softkeys are only available for the UI XML objects.

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

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

The parameters of the softkey are listed in the following table:

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

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

Name	Action	Function
TextMenu Object		
Select	SoftKey: Select	Dial out the URI command in the menu

Name	Action	Function
		item.
Dial	SoftKey: Dial	Dial out the number of the focus 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".
TextScreen Object		
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".
InputScreen Object		
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 focus 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
PhoneDirectory Object		
Dial	SoftKey: Dial	Dial out the number of the focus 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, otherwise return to the idle interface.
ImageScreen Object		
Roll	SoftKey: Roll	Scroll the image.
Exit	SoftKey: Exit	Redisplay the previous XML interface, otherwise return to the idle interface.

An example of the customizable softkeys 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>
```

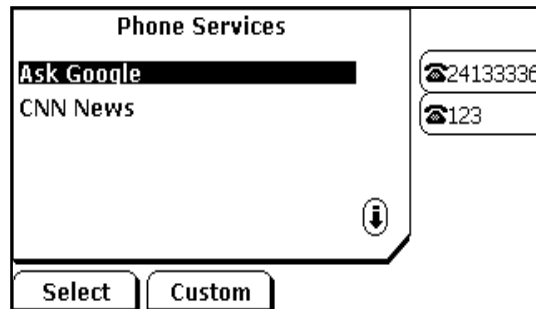
```

<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 to the screen.

The HTTP POST packet must contain an "xml=" line in the message body. The string to parse 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 their data. Any applications that construct HTTP packets on the fly must also specify this line.

To accept a pushed page, the "PushXML_ServerIP" parameter on the phone must be configured with the IP address of the server allowed pushing a page. For more information, refer to [Configuring the Block XML In Calling](#)

You can configure the Block XML In Calling via web user interface. It will enable or disable the phone to trigger the XML applications when pressing a XML browser key during a call.

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

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

The screenshot displays the Yealink T28 web interface. The top navigation bar includes tabs for Status, Account, Network, DSSKey, Features, Settings, Directory, and Security. The left sidebar lists various settings categories: Forward&DND, General Information, Audio, Intercom, Transfer, Call Pickup, Remote Control (highlighted), Phone Lock, ACD, SMS, and Action URL. The main content area is titled 'Remote Control' and contains three settings: 'Push XML Server IP Address' (text input), 'SIP Notify' (dropdown menu set to 'Disabled'), and 'Block XML In Calling' (dropdown menu set to 'Enabled', highlighted with a red box). Below these settings are 'Confirm' and 'Cancel' buttons. A right-hand panel contains a 'NOTE' section with the text: 'Remote Control The remote control parameters for administrator.'

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

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);
}
}

#####
#There is no need to make changes to the code above, simply edit the following code
#according to your 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("192.168.0.112","192.168.0.150",$xml);
#replace 192.168.0.112 with your push XML server IP address
#replace 192.168.0.150 with your phone IP address
?>
```

Sample php source code:

Below is a sample php source code that pushes an XML object to a Yealink IP phone. In this example, the phone is located at 192.168.0.150 and the server pushing the XML

object at 192.168.0.112.

```
<?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

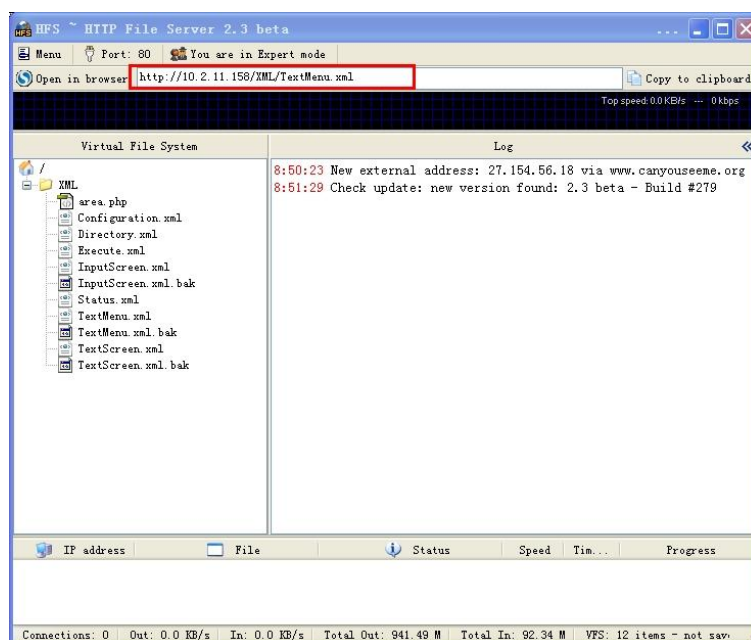
Yealink IP phones only support downloading using the HTTP (HTTPS) protocol. You can set up the HTTP(s) server, and place some XML files on the server for downloading.

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.

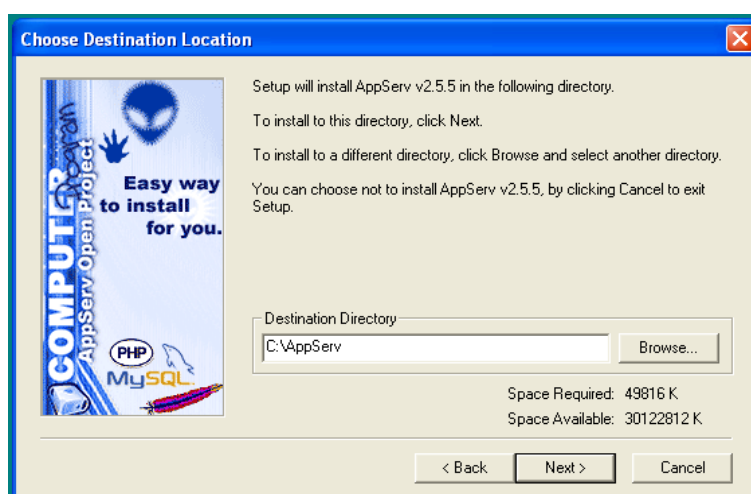
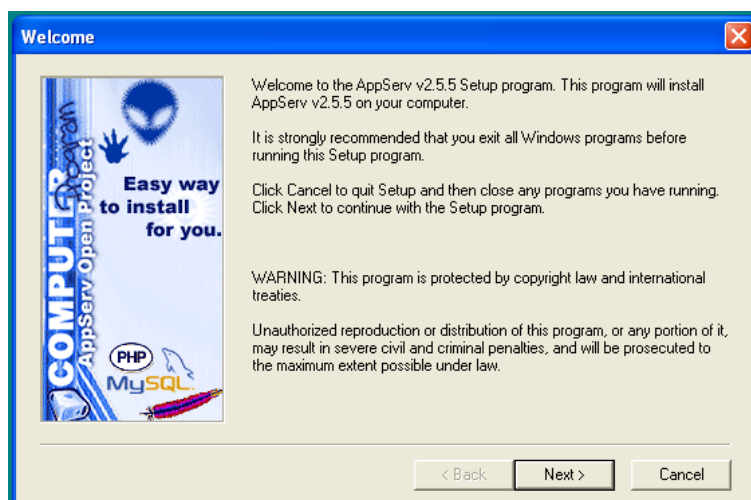
You can download the Apache installation application from:

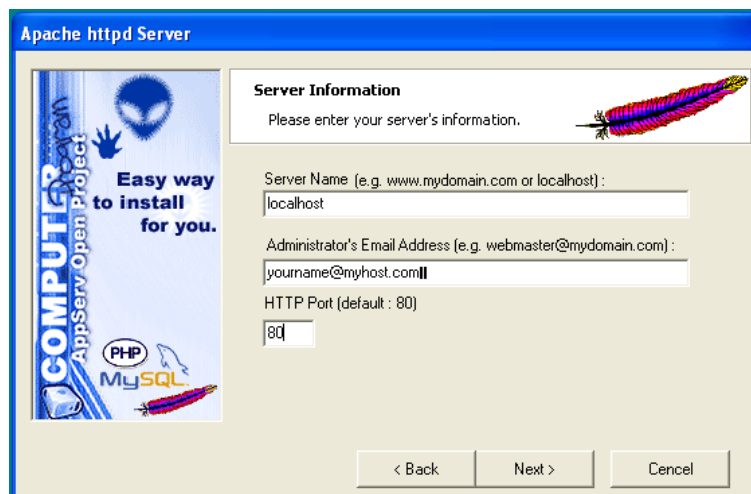
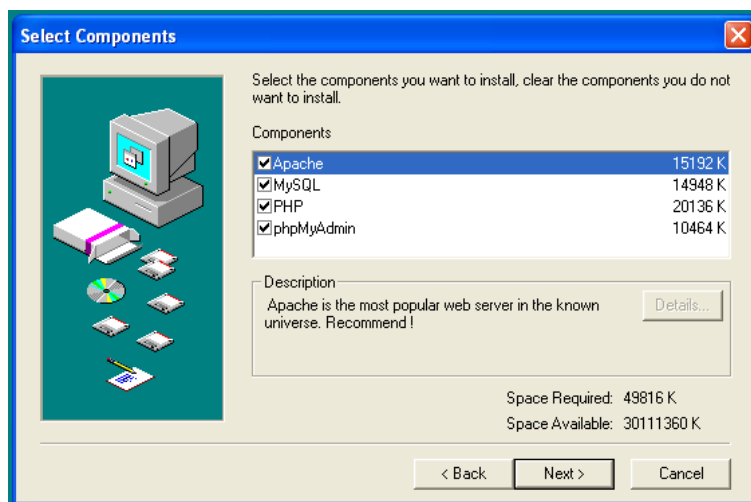
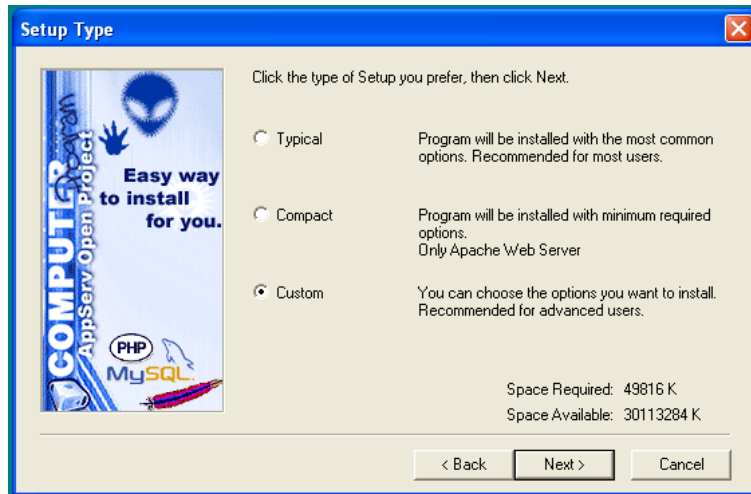
<http://prdownloads.sourceforge.net/appserv/appserv-win32-2.5.5.exe?download>, and then follow the instructions to install it.

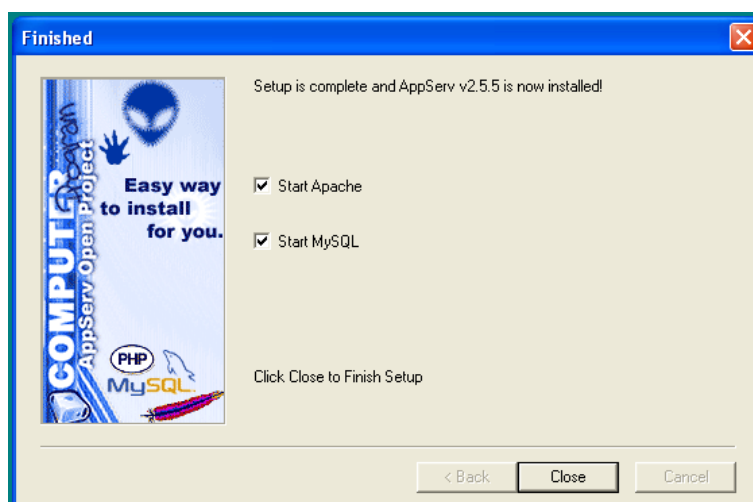
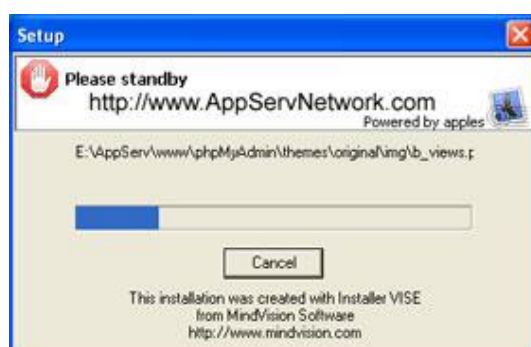
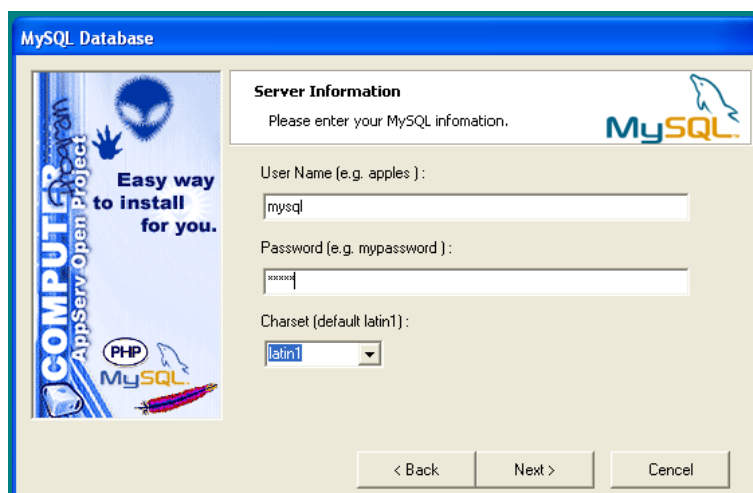
To configure the Apache server:

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 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.

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** softkey to select **XML Browser** from the **Type** field.

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

- Press the **Save** softkey to accept the change.

Configuring the Block XML In Calling

You can configure the Block XML In Calling via web user interface. It will enable or disable the phone to trigger the XML applications when pressing a XML browser key during a call.

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

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

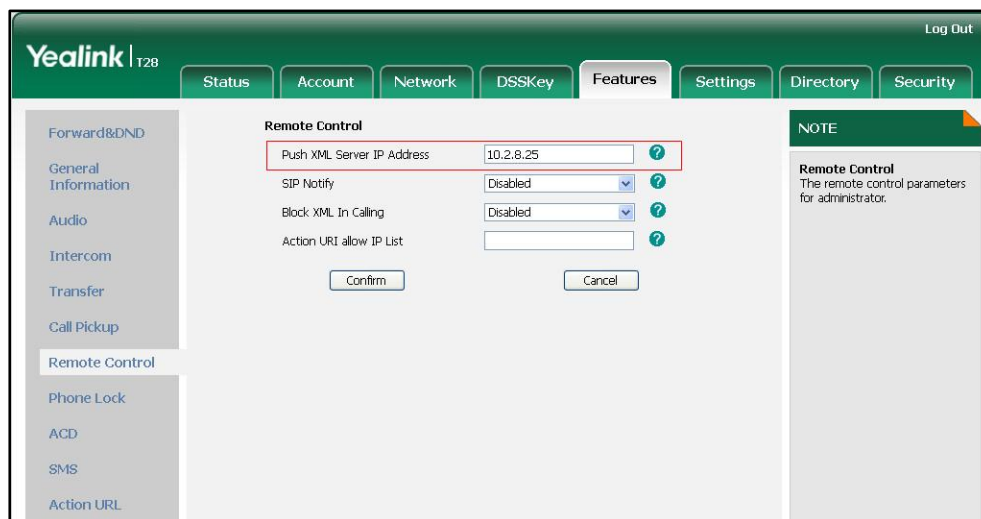
- Click **Confirm** to accept the change.

Configuring the Push XML Server Address

The IP phone will accept the HTTP(s) POST from the server, the IP address or domain name of which is specified in the **Push XML Server IP Address** field.

To configure the Push XML Server via web user interface:

1. Access the web 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 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>
  
```