

CISCO IP PHONE MODELER USER GUIDE

Release 1.1

Corporate Headquarters
Cistera Networks
17304 Preston Road, Ste. 975
Dallas, Texas 75252-5631
www.cistera.com
Main number: 972-381-4699
Fax: 972-381-4635

Document Number
CN-UG (PM)-06-2005-0.4
Date: June 15, 2005

Copyright 2005[®], Cistera Networks

All rights reserved. All text and figures included in this publication are the exclusive property of Cistera Networks, and may not be copied, reproduced, or used in any way without the express permission in writing of Cistera Networks. Information in this document is subject to change without notice and does not represent a commitment on the part of Cistera Networks.

Cistera Networks may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give the right to any license to these patents except as expressly provided in any written license agreement from Cistera Networks.

This document also contains registered trademarks and service marks that are owned by their respective companies or organizations. Cistera Networks disclaims any responsibility for specifying which marks are owned by which companies or organizations.

DISCLAIMER

This product includes some software developed by open source communities. Open source software included within this product is available for download from the authors' websites as outlined in the software EULA.

While Cistera has designed its applications to preserve the reliability of Cisco CallManager[™], and while the CCS can be installed and modified while CallManager in use, Cistera does not accept responsibility for any losses incurred for inadvertent downtime, if customers choose to undertake changes while their phone system is in use. Cistera therefore recommends that initial installations be carried out in a way that does not impact IPT system reliability; preferably when phone users are not impacted by downtime. Customers are also urged to follow their normal change management procedures when embarking on an installation of the Cistera Convergence Server[™], and should take appropriate precautions to ensure that their actions do not cause unplanned downtime of their IPT system.

COPYRIGHT AND TRADEMARKS

Specifications are subject to change without notice. Copyright© 2005 Cistera, All Rights Reserved. Cistera Convergence Server[™], Virtual Directory[™], Quick Record[™], CallCenter Record[™], Rapid Broadcast[™], ContentStreamer[™], Cistera[™] and the Cistera logo are registered trademarks of Cistera Networks. Cisco, CallManager and the Cisco logo are registered trademarks of Cisco. All other trademarks and brand names are the property of their respective proprietors.

LIMITED WARRANTY

Cistera guarantees that every Cistera Convergence Server[™] is free from physical defects in material and workmanship for one year from the date of purchase, when used within the limits set forth in this and other pertinent documents.

This warranty is valid and may be processed only in the country of purchase.

If the product proves defective during this warranty period, contact technical assistance as outlined in the Installation Workbook, Administration Guide and Installation Guide.

IN NO EVENT SHALL CISTERA'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE, OR ITS DOCUMENTATION. CISTERA RESERVES THE RIGHT TO REFUSE ANY REFUND.

Cistera makes no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. Cistera reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.

Please direct all inquiries to:

Cistera Networks

17304 Preston Road Suite 975

Dallas, Texas 75252

Phone: 1-866-XML-TOGO (1-866-965-8646)

TABLE OF CONTENTS

<u>Phone Modeler User Guide</u>	2
<u>Preface</u>	2
<u>Purpose</u>	2
<u>Target Audience</u>	2
<u>Organization of this User Guide</u>	2
<u>Introduction</u>	3
<u>What is the Cisco IP Phone Modeler?</u>	3
<u>Why Use the Phone Modeler?</u>	3
<u>Hardware and Software Requirements</u>	4
<u>Interoperability with the Cisco IP Phone</u>	5
<u>Installation</u>	6
<u>Installing Java Webstart</u>	6
<u>Installing Cistera Networks Phone Modeler</u>	6
<u>Getting Started</u>	7
<u>Phone Modeler Fields and Utilities</u>	10
<u>All About Menus</u>	10
<u>All About Menus</u>	11
<u>What are they?</u>	11
<u>How do they work?</u>	11
<u>The File Menu</u>	11
<u>Exporting XML</u>	12
<u>Preferences</u>	14
<u>The Edit Menu</u>	15
<u>The Align Menu</u>	15
<u>The Attributes Menu</u>	15
<u>The Window Menu</u>	16
<u>The Emulator Menu</u>	16
<u>The About Menu</u>	16
<u>All About Phone Objects</u>	17
<u>What are they and why are they used?</u>	17
<u>Drag-Drop</u>	17
<u>CiscoIPPhoneText</u>	18
<u>CiscoIPPhoneMenu</u>	20
<u>CiscoIPPhoneInput</u>	21
<u>CiscoIPPhoneDirectory</u>	22
<u>CiscoIPPhoneImage</u>	22
<u>CiscoIPPhoneGraphicMenu</u>	23
<u>CiscoIPPhoneIconMenu</u>	24
<u>CiscoIPPhoneImageFile</u>	26
<u>CiscoIPPhoneGraphicFileMenu</u>	26
<u>CiscoIPPhoneIconFileMenu</u>	28
<u>How to Add and Delete SoftKeys</u>	29
<u>How to Add and Delete MenuItems</u>	31

<u>The Connector: How it Works</u>	33
<u>What is the Emulator?</u>	34
<u>What is it used for?</u>	34
<u>Frequently Asked Questions</u>	35
<u>Conclusion</u>	36
<u>Related Documentation</u>	37
<u>Appendix</u>	38
<u>Glossary</u>	39
<u>Index</u>	40

Phone Modeler User Guide

Preface

This preface includes the purpose of this User Guide, intended Target Audience and Organization.

Purpose

This guide will provide the user of the Cisco IP Phone Modeler with an overview of the product . It will also provide a detailed explanation on how to easily use the Phone Modeler and its varied features.

This application works in tandem with the Cisco IP Phone to deliver several high-end features. These are discussed in detail in later sections.

Target Audience

The Phone Modeler is for existing Cisco IP Telephony Customers who have in house expertise to develop and deploy XML Applications to the 79xx phones; for Cisco IP Telephony Partners who want to model Cisco IP Phone Services for sales and deployment purposes; for those who sell Cisco IP Telephony solutions and want to model and demonstrate the capabilities of the Cisco IP Phone, and finally for anyone who is simply interested in developing applications for the Cisco IP Telephony Environment.

You can make use of the Phone Modeler to program in XML, and customize your Cisco IP Phone to deliver various functionalities.

Organization of this User Guide

This guide has several sections. These are:

[Introduction](#)

[Hardware and Software Requirements](#)

[Interoperability with the Cisco IP Phone](#)

[Installation](#)

[Getting Started](#)

[Phone Modeler Fields and Utilities](#)

[All About Menus](#)

[All About Phone Objects](#)

[How to Add and Delete SoftKeys](#)

[How to Add and Delete MenuItems](#)

[The Connector: How it Works](#)

[What is the Emulator?](#)

[Frequently Asked Questions](#)

[Conclusion](#)

[Related Documentation](#)

[Appendix](#)

[Glossary](#)

[Index](#)

Introduction

This User Guide introduces the Cisco IP Phone Modeler and describes its features, how they work and how they add several valuable functionalities to your Cisco IP Phone. By using the Phone Modeler, you can customize your IP phone by creating an XML model that automatically displays as text or graphics. In effect, the Phone Modeler is a translator between you and your Cisco IP Phone.

What is the Cisco IP Phone Modeler?

The Cisco IP Phone Modeler is a software application developed by Cistera Networks that acts as an independent add-on tool for Cisco IP Phones. It is a GUI-based application that allows users to quickly model and publish phone services based on XML—delivering a wide range of functionalities, as well as several sophisticated features. Extensible Markup Language, or XML, is the programming language that creates text and graphics for the IP phone. Phone Modeler allows you to customize your phone without using complicated programming concepts.

This application gives users, customers and IPT administrators a means to easily build XML applications for the Cisco 79xx IP phones

The overall objective is to create a robust modeling tool for Cisco 79xx phones that anyone can use to build and deploy XML Applications on these Phones.

Why Use the Phone Modeler?

Your Cisco IP Phone Modeler allows you to add numerous customized functions to your phone, including:

- Adding contacts to your Company Directory and viewing the information on your Cisco IP Phone.
- Tracking personal stock information.
- Displaying your Company Logo.
- Tracking weather information.
- Streamlining phone navigation. For example, you can click on the Company Logo to go directly to the Company Directory.
- Displaying your to-do list.
- Displaying dynamic information, such as personal objectives.
- Tracking sales by displaying a sales graph.
- Displaying marketing statistics.

Hardware and Software Requirements

The Phone Modeler requires the following:

Hardware

- Desktop running Windows NT/95/98/2000/XP
- 128 MB available memory
- Cisco IP Phone 7960 or 7970

Software

- Java Runtime Environment version 1.4.2 or greater
- Windows NT/95/98/2000/XP
- Cisco Phone Services Simulator

Interoperability with the Cisco IP Phone

The Phone Modeler application is compatible with the 7960 and 7970 Cisco IP Phone models.

Installation

Follow these steps to confirm that the desktop does not already have Java Webstart installed:

1. Go to Control Programs
2. Add or Remove Programs
3. If Java files are present, version 1.4.1 or earlier, remove them
4. If supported Java files are present, skip the next section

Installing Java Webstart

1. Install the Java WebStart from <http://java.sun.com>.
<http://java.sun.com/j2se/1.4.2/download.html>

2. Click on the link that says: Download 1.4.2 JRE/SDK

3. Follow the prompts for installing Java Webstart after you have completed the download.

Installing Cistera Networks Phone Modeler

1. Click on the PhoneModelerSetup.exe file, which starts the installer and the standard installation process.
2. Follow the steps in sequence to install the Phone Modeler.
3. You will see two files in your directory after installation. Both will say 'PhoneModeler 1-1'. One will be a jar file and the other will be a batch file.
4. Doubleclick on either file to launch the application.

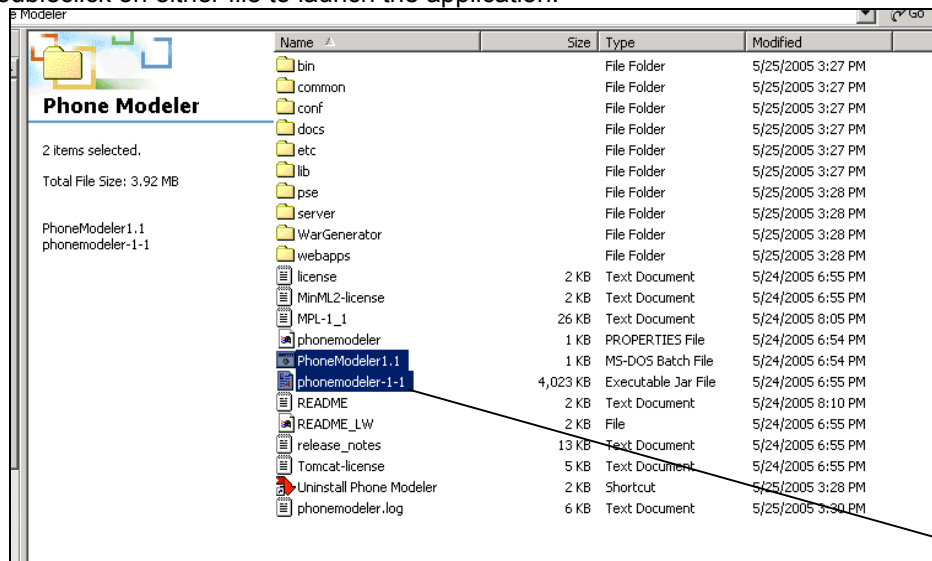


Figure 1: Double-click the jar or batch file to launch the Phone Modeler

The Phone Modeler 1-1 jar and batch files

Getting Started

1. This is how the initial interface of the Phone Modeler application looks like once it is launched. Click on the center icon to begin using the application:

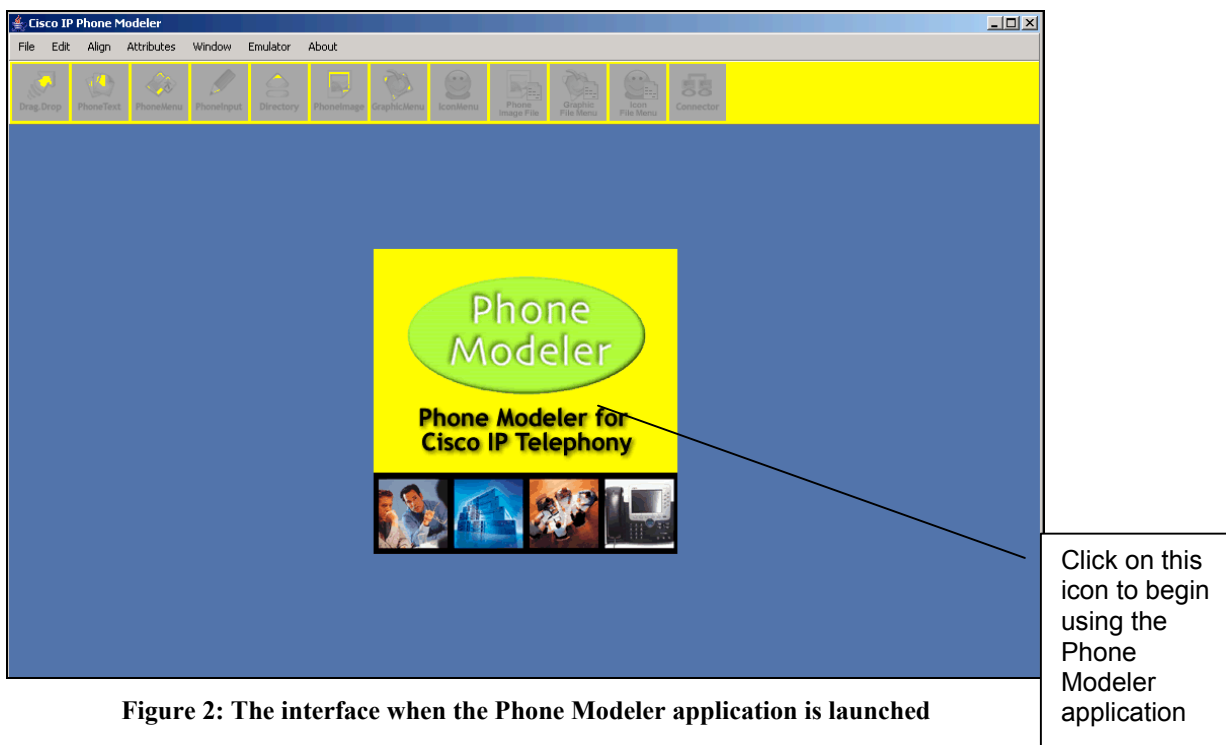


Figure 2: The interface when the Phone Modeler application is launched

2. Once the icon is clicked, it disappears. Now click on **File > New** to create a new application.

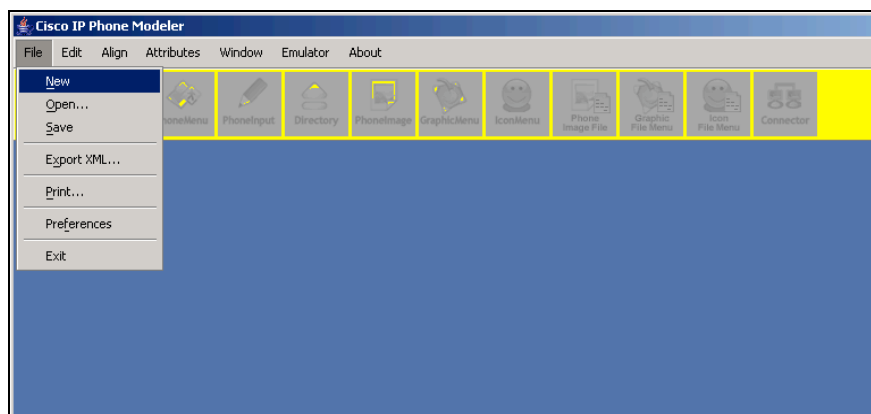


Figure 3: A New File being opened

3. Choose the model of the Cisco IP Phone that you wish to customize by clicking on the appropriate button. Click **OK**.

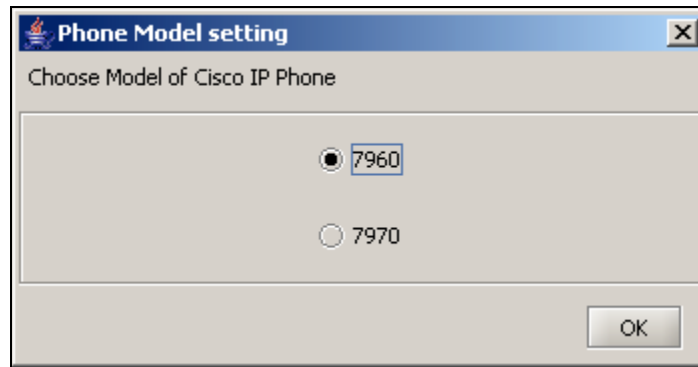


Figure 4: The Phone Model setting opens up

4. Upon clicking 7960, the following interface opens up.

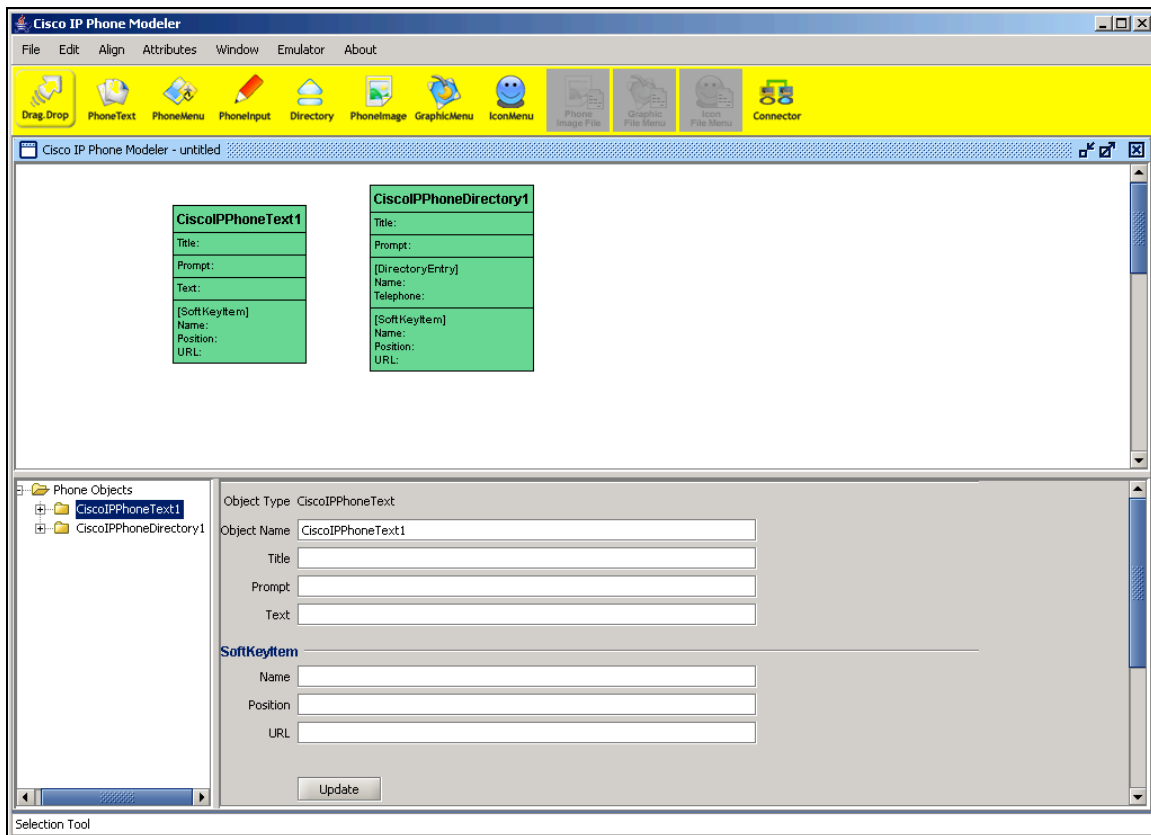


Figure 5: This interface opens up on clicking 7960

€ NOTE: Depending on phone model, certain objects will be disabled. Three objects are disabled with the 7960, but all are available with the 7970. . CiscoIPPhoneImageFile, CiscoIPGraphicFileMenu and CiscoIPPhoneIconFileMenu objects are not available on the 7960.

Once you've reached the above interface, you can begin utilizing the phone objects and menus as outlined in subsequent sections.

Phone Modeler Fields and Utilities

The Phone Modeler has several fields that can be used to add various phone objects and menus to the Cisco IP Phone.

The Menu toolbar includes:

- File
- Edit
- Align
- Attributes
- Window
- Emulator
- About

The Phone Objects toolbar has ten objects that can be dragged and dropped onto the Drawing Pane. Data about each phone object can be entered into the **Edit Pane**. A tab for a particular phone object appears in the **Tree Pane**.

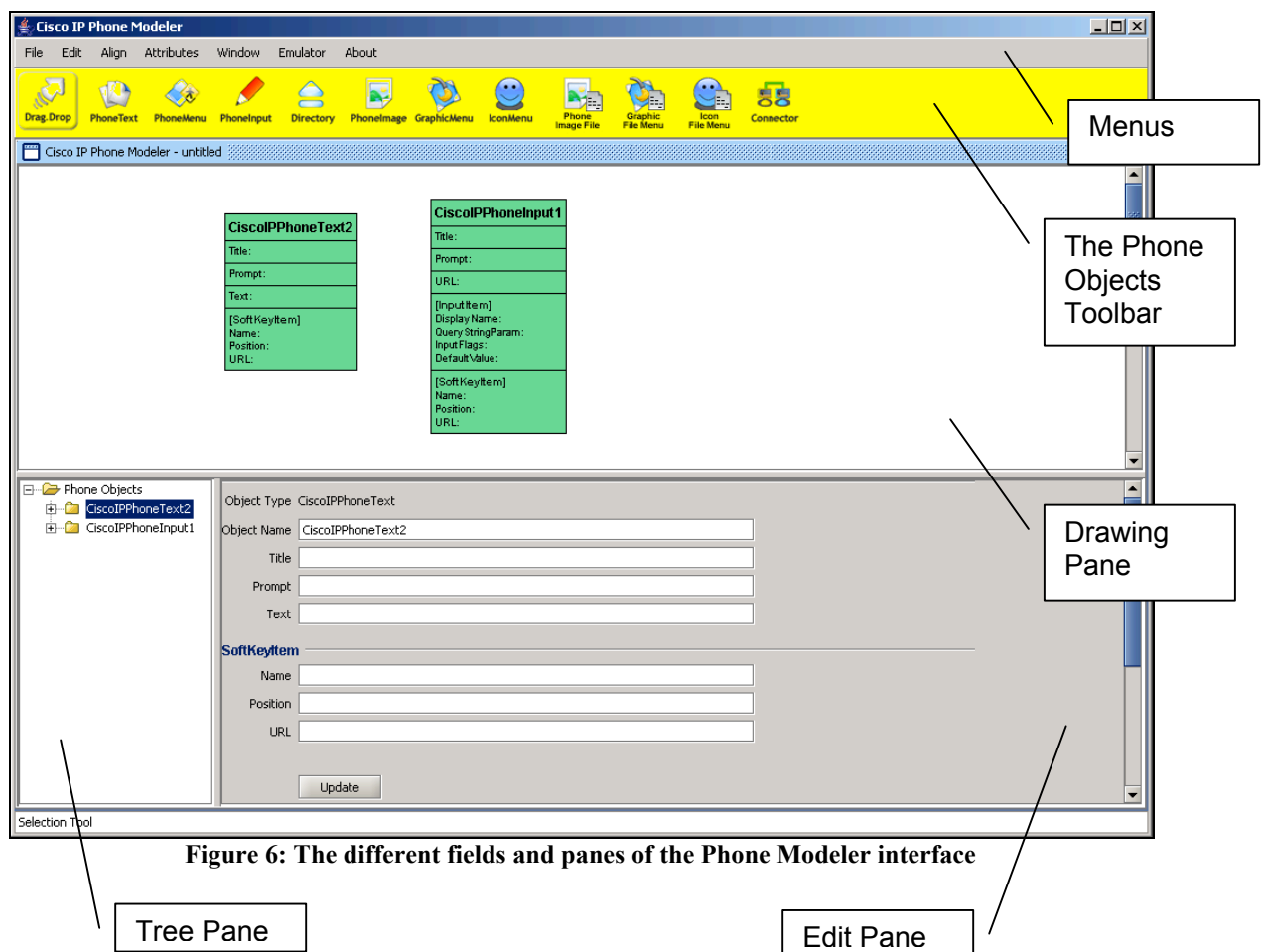


Figure 6: The different fields and panes of the Phone Modeler interface

All About Menus

The Phone Modeler has several menus that serve different functions. Using these menus you can open or save a file, export XML, group together objects, bring objects to the front or back, select and align objects, fill color, and launch the emulator.

What are they?

These menus are:

- **File**
- **Edit**
- **Align**
- **Attributes**
- **Window**
- **Emulator**
- **About**

How do they work?

1. Click on the phone object you want to select and drag and drop into the field below.
2. Now select the object(s) and alter its properties using the various menus. For example, click on Edit and then select 'Group'.
3. You can also click on Align and then select 'Lefts', 'Rights', 'Tops', 'Bottoms' or 'Centers'. This alignment is for visual purposes only and does not align the phone object(s) within the IP Phone.
4. You can also click on Window to open a new window.
5. Click on 'Attributes' to fill in either pen color or fill color.
6. Click on 'Emulator' to launch the Cisco Phone Services Emulator.
7. The 'About' menu offers standard software information.

The File Menu

The **File** Menu allows you to open a new or existing file, save, export XML, print, define preferences, and exit the application.

To use the File Menu:

- Click on **New** to open a new file.
- Click on **Open** to open an already existing file.
- Click **Save** to save a file.
- Click **Export XML** to convert objects into XML, which will then be displayed as text or graphics on your phone.
- Click **Print** to print the screen.
- Click **Preferences** to detail where the XML will be exported to on your machine.
- Click **Exit** to close the screen.

The **File** menu has an **Exporting XML** option, as well as a **Preferences** option.

Exporting XML

Why is this done?

You need to export XML in order to convert the graphical phone objects into text and graphics that are visible on your Cisco IP Phone. The phone objects are XML, but without exporting XML they are simply squares and arrows. Exporting XML allows you to convert these objects into varied applications for the Cisco IP Phone.

The phone objects used to create the drawing should be connected to each other using a URL, which is comprised of the server's Machine IP address, the server's Port Number and the Application Name. The initial data in the URL is based on the data in the PhoneModeler.Properties file. However, while exporting, these can be reset with the parameters entered during export.

How is this done?

1. Once you have entered information into one or several phone objects, click **Export XML** on the **File** menu.
2. Once you click **Export XML** the following screen opens up:

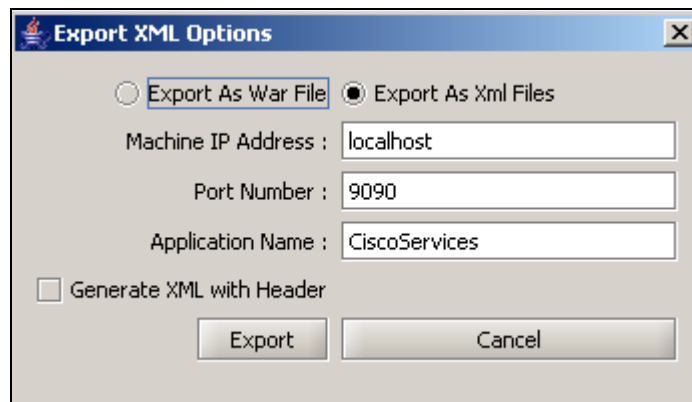


Figure 7: The Export XML screen opens up

The default values can be overridden with new values, if necessary.

3. Click **Export** to place the files in the appropriate folder:

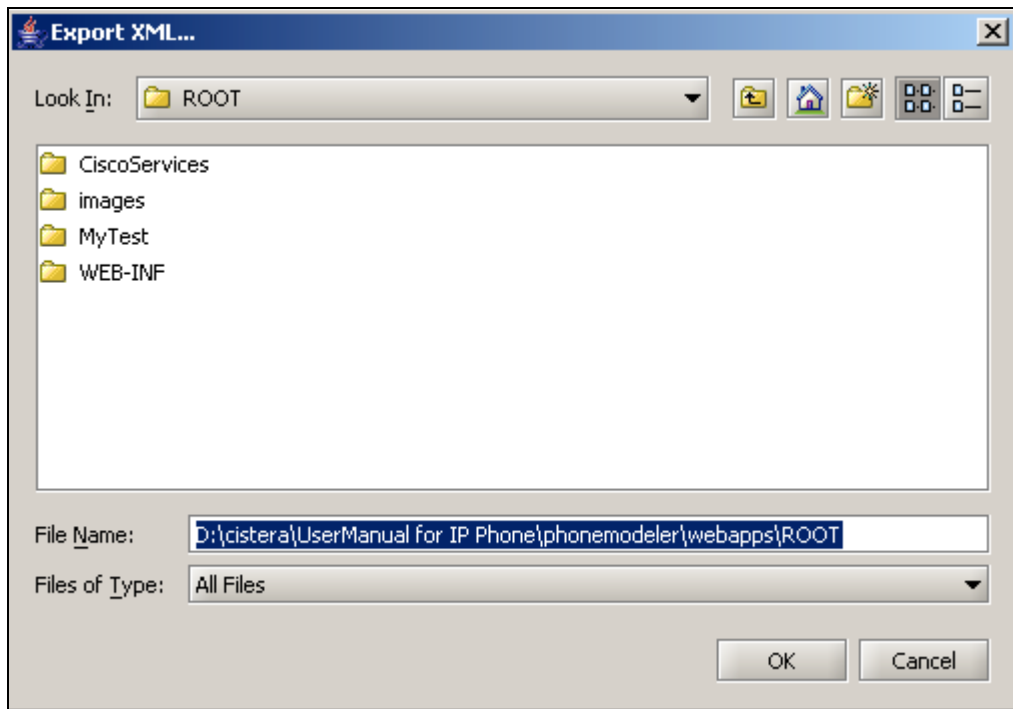


Figure 8: The Export XML dialog box opens up

What happens when this is done?

Once XML is exported, Phone Objects are transformed into text and graphics for your Cisco IP Phone. You can view the changes using the Emulator.

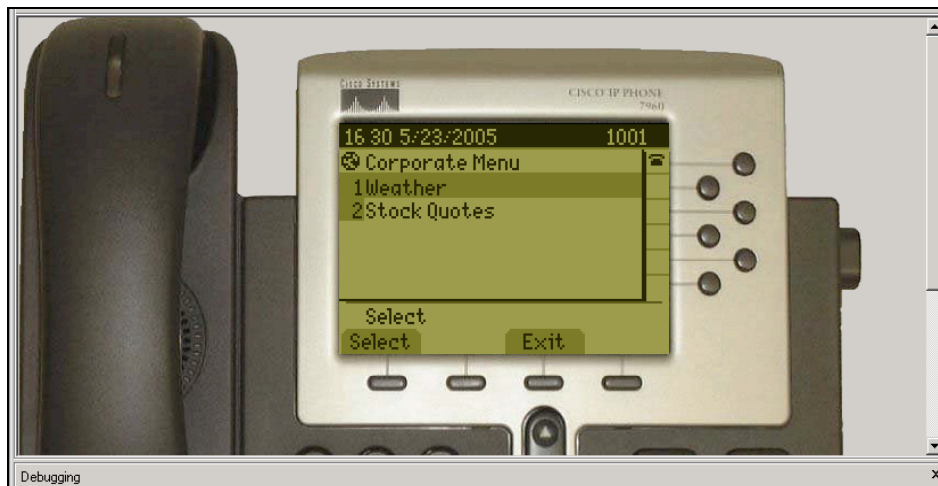


Figure 9: The Emulator with information displayed after exporting XML

Preferences

Preferences define a Properties file that is used at the time of Exporting XML. It determines where the XML will be exported. Once the XML is exported you can view it on your Emulator. [See Emulator section.](#)

It also determines the Machine IP and Port on which the server is running. Upon clicking **Preferences** on the **File** menu, the following screen opens up:

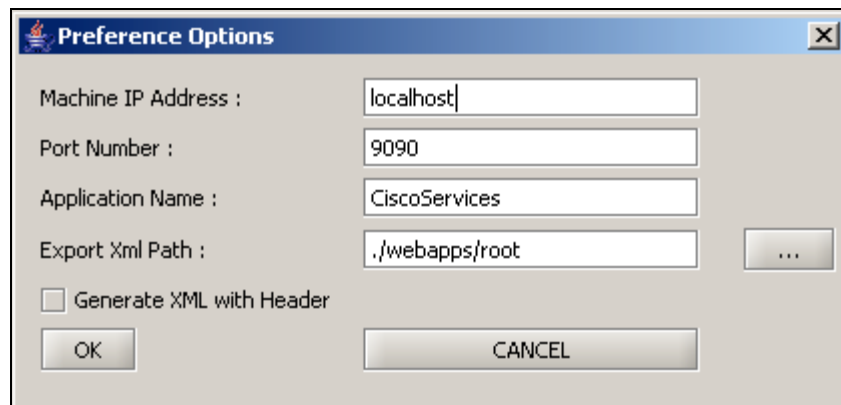


Figure 10: The Preferences Options Dialog Box

- The Machine IP Address is the IP address of the computer on which the server is running.
- The Port Number is the port at which the server is running. This field can be left blank.
- The Application Name is the route context name for your application, which the server will use to recognize your application.
- The Export XML path is the path at which you are storing your XMLs generated by the Phone Modeler, which are then used by the Emulator. The File Chooser button on the right side of the Export XML path field allows the user to choose the output location to export the XMLs.
- Generate XML with Header when selected will generate the output XML with standard XML header.

The Edit Menu

Once you select either one or more phone objects, the **Edit** menu allows you to select or delete objects; group and ungroup objects; align objects from front to back; and undo or redo command. Using the Group option you can group multiple objects.

To use the Edit Menu:

- Click **Select All** to select all phone objects on the drawing pane.
- Click **Cut** to cut one or more objects.
- Click **Copy** to copy one or more objects to the clipboard.
- Click **Paste** to paste one or more objects from the clipboard.
- Click **Duplicate** to create the direct duplicate of a particular object.
- Click **Delete** to delete one or more objects.
- Click **Group** to group either two or more objects. You can group multiple objects.
- Click **Ungroup** to ungroup the grouped objects.
- Click **Send to Back** to send selected object(s) to the back.
- Click **Bring to Front** to bring the selected object(s) to the front.
- Click **Undo Command** to undo the previous command.
- Click **Redo Command** to repeat the prior command.

The Align Menu

The **Align** menu allows you to align the objects left, center, right, top, middle or bottom; or to group two or more objects.

To use the Align Menu:

- Click **Lefts** to align the objects on their left edge.
- Click **Centers** to align the objects centrally.
- Click **Rights** to align the objects on their right edge.
- Click **Tops** to align the top edge of all objects.
- Click **Middles** to align the objects to the middle.
- Click **Bottoms** to align the bottom edge of all objects with each other.

The Attributes Menu

The **Attributes** menu enables you to select Pen Color, Fill Color and Arrow.

To use the Attributes Menu:

- Click **Fill Color** to color an object.
- Click on **Pen Color** to color the outline of an object.
- Click on **Arrow** to choose the direction of the Connector – either none, at start, at end or at both.

The Window Menu

The **Window** Menu can open up a **New** window, or it can give you a choice of **Cascade** and **Tile** on clicking the Window List.

Click **New Window** to open multiple new windows. Phone Objects can be copied from one window to the other using the Copy and Paste menu options.

The Windows List tab shows all the open windows.

The Emulator Menu

Click on the **Emulator** menu to launch the Cisco Phone Services Emulator.

The About Menu

The **About** Menu gives you version information about the Phone Modeler.

All About Phone Objects

The Phone Modeler Phone Objects include:

- CiscoIPPhoneText
- CiscoIPPhoneMenu
- CiscoIPPhoneInput
- CiscoIPPhoneDirectory
- CiscoIPPhoneImage
- CiscoIPPhoneGraphicMenu
- CiscoIPPhoneIconMenu
- CiscoIPPhoneImageFile*
- CiscoIPPhoneGraphicFileMenu*
- CiscoIPPhoneIconFileMenu*

* Not available on the 7960 model.

What are they and why are they used?

XML-based phone objects enable IP phone customization by adding icons, graphs, directories, organizational charts and other sophisticated features directly to your IP phone display. Some displayable information includes:

- Weather
- Stock Information
- Contact Information
- Company News
- To-do lists
- Daily schedule

Cisco IP Phones allow navigation to different text and graphics delivered by the phone objects by simply utilizing the DTMF keys.

To customize the IP phone interface, objects need to be dragged and dropped into the Cisco IP Phone Modeler drawing pane. After this is done, the Edit pane presents fields where information can be entered about individual phone objects. Some of the information entered includes Title, Prompt, Text, as well as SoftKey Items.

To confirm the changes, you must click **Update**, which will add the same information on the corresponding phone.

Drag-Drop

This is a default selection. When none of the Phone Objects are selected, the Drag-Drop option, when enabled, is highlighted:

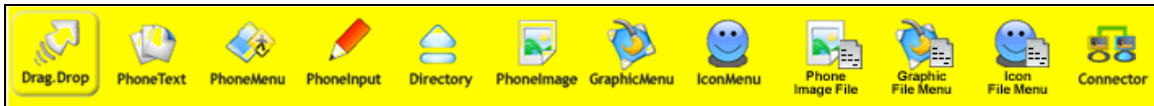


Figure 11: The default Drag-Drop button on the Phone Objects toolbar

CiscoIPPhoneText

The CiscoIPPhoneText XML object displays ordinary 8-bit ASCII text on the phone display. ASCII text includes alphabets and numbers. The <text> message must not contain any control characters, except for carriage returns, line feeds and tabs.

Definition

```

<CiscoIPPhoneText>
  <Title>Title text goes here</Title>
  <Prompt>The prompt text goes here</Prompt>
  <Text>The text to be displayed as the message body goes here</Text>
<SoftKeyItem>
  <Name>Name of soft key</Name>
  <URL>URL or URI of soft key</URL>
  <Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhoneText>

```

The procedure for using the CiscoIPPhoneText object is:

1. Click on the CiscoIPPhoneText tool button on the Phone Objects toolbar.

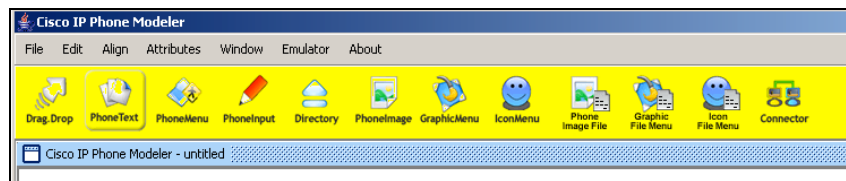


Figure 12: The CiscoIPPhoneText tool button selected

2. Click the CiscoIPPhoneText button and then click onto the Drawing Pane.

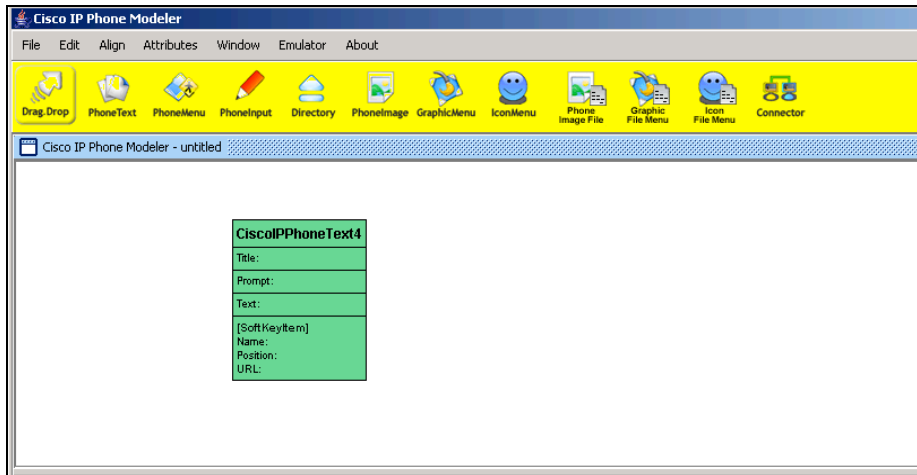


Figure 13: The CiscoIPPhoneText object displayed on the Drawing Pane

3. Enter relevant data into the Edit pane and click the **Update** button. This information will be visible on the CiscoIPPhoneText object icon.

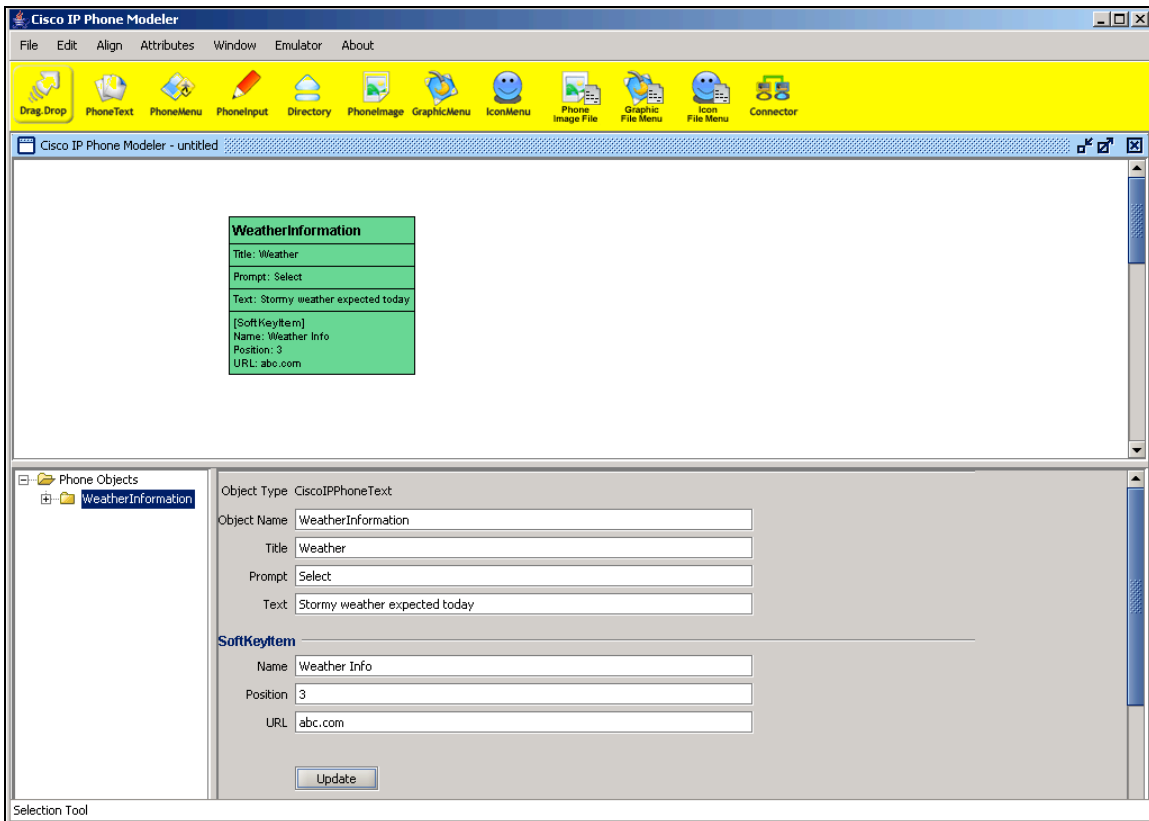


Figure 14: Relevant data entered into the Edit Pane

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneText object:

Properties	Valid Values
PhoneText Object Name	Alphanumeric Characters without spaces
Title	Text
Prompt	Text
Text	Text
Name	Text
Position	Integers from 0 to 16
URL	No restrictions

You can add multiple SoftKey items, as well as delete SoftKey items for this phone object. See **How to Add and Delete SoftKeys**.

CiscoIPPhoneMenu

A menu on the phone comprises of a list of text items, one per line. Users choose and load individual menu items, which behave the same as built-in phone menus. The user navigates and chooses the menu item using either the Select SoftKey or the DTMF keys.

Definition

```
<CiscoIPPhoneMenu>
  <Title>Title text goes here</Title>
  <Prompt>Prompt text goes here</Prompt>
  <MenuItem>
    <Name>The name of each menu item</Name>
    <URL>The URL associated with the menu item</URL>
  </MenuItem>
  <SoftKeyItem>
    <Name>Name of soft key</Name>
    <URL>URL or URI of soft key</URL>
    <Position>Position information of the soft key</Position>
  </SoftKeyItem>
</CiscoIPPhoneMenu>
```

The procedure for using the CiscoIPPhoneMenu object is:

1. Click the CiscoIPPhoneMenu toolbar button on the Phone Objects toolbar.
2. Click the CiscoIPPhoneMenu button and then click onto the Drawing pane.
3. Enter the relevant information for this phone object into the Edit pane and click the **Update** button. This information will be visible on the CiscoIPPhoneMenu object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneMenu object:

Properties	Valid Values
PhoneMenu Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
Name	Text
URL	No restrictions
Position	Integers from 0 to 16

After the user chooses a menu option, the phone generates an HTTP request for the page with the URL or executes the uniform resource identified (URIs) that are associated with the menu item.

You can add multiple menu items and soft key items, as well as delete menu items and SoftKey items for this phone object. See **How to Add and Delete SoftKeys** and **How to Add and Delete MenuItems**.

CiscoIPPhoneInput

When a Cisco IP Phone receives an XML object of type CiscoIPPhoneInput, it constructs an input form and displays it. As a user, you can then enter data into each input item and send the parameters to the target URL.

Definition

```
<CiscoIPPhoneInput>
  <Title>Directory title goes here</Title>
  <Prompt>Prompt text goes here</Prompt>
  <URL>The target URL for the completed input goes here</URL>
  <InputItem>
    <DisplayName>Name of the input field to display</DisplayName>
    <QueryStringParam>The parameter to be added to the target URL</QueryStringParam>
    <DefaultValue>The default display name</DefaultValue>
    <InputFlags>The flag specifying the type of allowable input</InputFlags>
  </InputItem>
  <SoftKeyItem>
    <Name>Name of soft key</Name>
    <URL>URL or URI of soft key</URL>
    <Position>Position information of the soft key</Position>
  </SoftKeyItem>
</CiscoIPPhoneInput>
```

The procedure for using the CiscoIPPhoneInput object is:

1. Click the CiscoIPPhoneInput button on the Phone Objects toolbar.
2. Click the CiscoIPPhoneInput button and then click onto the Drawing Pane.
3. Enter the relevant information into the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhoneInput object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneInput object:

Properties	Valid Values
PhoneInput Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
URL	No restrictions
DisplayName	Text
QueryStringParam	Text
DefaultValue	Text
Position	Integers from 0 to 16

You can add soft key items, as well as delete SoftKey items for this phone object. See **How to Add and Delete SoftKeys**.

CiscoIPPhoneDirectory

For the directory listing, the Cisco IP Phone displays the appropriate SoftKeys that are needed to dial the numbers listed on the display.

Definition

```
<CiscoIPPhoneDirectory>
<Title>Directory title goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<DirectoryEntry>
<Name>The name of the directory entry</Name>
<Telephone>The telephone number for the entry</Telephone>
</DirectoryEntry>
<SoftKeyItem>
  <Name>Name of soft key</Name>
  <URL>URL or URI of soft key</URL>
  <Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhoneDirectory>
```

The procedure for using the CiscoIPPhoneDirectory object is:

1. Click the CiscoIPPhoneDirectory button on the Phone Objects toolbar.
2. Click the CiscoIPPhoneDirectory button and then click on the Drawing Pane.
3. Enter the relevant information into the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhoneDirectory object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneDirectory object:

Properties	Valid Values
PhoneDirectory Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
Name	Text
Telephone	Valid telephone characters
URL	No restrictions
Position	Integers from 0 to 16

You can add multiple soft key items, as well as delete SoftKey items for this phone object. See **How to Add and Delete SoftKeys**.

CiscoIPPhoneImage

The CiscoIPPhoneImage provides a bitmap display that can be used to access services.. This object has the location in the X and Y parameters specified. The phone uses an LCD display, which inverts the palette. This object lets you use the Cisco IP Phone display to present graphics to the user.

Definition

```
<CiscolPPhoneImage>
<Title>Image title goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<LocationX>Position information of graphic</LocationX>
<LocationY>Position information of graphic</LocationY>
<Width>Size information for the graphic</Width>
<Height>Size information for the graphic</Height>
<Depth>Number of bits per pixel</Depth>
<Data>Packed Pixel Data</Data>
<SoftKeyItem>
<Name>Name of the soft key</Name>
<URL>URL of soft key</Name>
<Position>Numerical position of the soft key</Position>
</SoftKeyItem>
</CiscolPPhoneImage>
```

The procedure for using the CiscolPPhoneImage object is:

1. Click the CiscolPPhoneImage button on the phone objects toolbar.
2. Click the CiscolPPhoneImage button and then click onto the Drawing Pane.
3. Enter the relevant data into the Edit Pane and click the **Update** button. This information will be visible on the CiscolPPhoneImage object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscolPPhoneImage object:

Properties	Valid Values
PhoneImage Object Name	Alphanumeric characters without spaces
Name	Text
Title	Text
Prompt	Text
LocationX	Numbers
LocationY	Numbers
Width	Numbers
Height	Numbers
Depth	Number between 0 to 2 including both
Data	Hexadecimal data
URL	No restrictions
Position	Integers from 0 to 16

You can add multiple SoftKey items, as well as delete SoftKey items for this phone object. See **How to Add and Delete SoftKeys**.

CiscolPPhoneGraphicMenu

Graphic menus serve the same purpose as text menus; they allow the user to select a URL from a list. You can use graphic menus in situations when the items may not be easy to display in a text list. In such cases, the system presents the information as a bitmap graphic. You can then enter a number from the DTMF keypad to make a menu selection.

Definition

```
<CiscoIPPhoneGraphicMenu>
<Title>Menu title goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<LocationX>Position information of graphic</LocationX>
<LocationY>Position information of graphic</LocationY>
<Width>Size information for the graphic</Width>
<Height>Size information for the graphic</Height>
<Depth>Number of bits per pixel</Depth>
<Data>Packed Pixel Data</Data>
<MenuItem>
<Name>The name of each menu item</Name>
<URL>The URL associated with the menu item</URL>
</MenuItem>
<SoftKeyItem>
  <Name>Name of soft key</Name>
  <URL>URL or URI of soft key</URL>
  <Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhoneGraphicMenu>
```

The procedure for using the CiscoIPPhoneGraphicMenu object is:

1. Click the CiscoIPPhoneGraphicMenu button on the phone objects toolbar.
2. Click the CiscoIPPhoneGraphicMenu button and then click onto the Drawing Pane.
3. Enter the relevant data into the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhoneGraphicMenu object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneGraphicMenu object:

Properties	Valid Values
PhoneGraphicMenu Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
Location X	Numbers
Location Y	Numbers
Width	Numbers
Height	Numbers
Depth	Numbers between 0 to 2 including both
Data	Hexadecimal data
Name	Text
URL	No restrictions
Position	Integers from 0 to 16

You can add multiple menu items and soft key items, as well as delete menu items and SoftKey items for this phone object. See **How to Add and Delete SoftKeys** and **How to Add and Delete Menultems**.

CiscoIPPhoneIconMenu

Icon menus serve the same purpose as text menus. They allow you as a user, to select a URL from a list. You can use icon menus in situations when you want to provide additional visual information to the user to show the state or category of an item. For example, you can include a

read and unread icon in a mail viewer. Icons in the CiscoIPPhonelconMenu object have a maximum width of 16 pixels and a maximum height of 10 pixels. You can use icons to convey the message state.

Definition

```
<CiscoIPPhonelconMenu>
<Title>Title text goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<Menuitem>
<IconIndex>Indicates what IconItem to display</IconIndex>
<Name>The name of each menu item</Name>
<URL>The URL associated with the menu item</URL>
</Menuitem>
<IconItem>
<Index>A unique index from 0 to 9</Index>
<Height>Size information for the icon</Height>
<Width>Size information for the icon</Width>
<Depth>Number of bits per pixel</Depth>
<Data>Packed Pixel Data</Data>
</IconItem>
<SoftKeyItem>
<Name>Name of soft key</Name>
<URL>URL or URI of soft key</URL>
<Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhonelconMenu>
```

The procedure for using the CiscoIPPhonelconMenu object is:

1. Click the CiscoIPPhonelconMenu button on the phone objects toolbar.
2. Click the CiscoIPPhonelconMenu button and then click onto the Drawing Pane.
3. Enter the relevant information into the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhonelconMenu object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhonelconMenu object:

Properties	Valid Values
PhonelconMenu Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
Name	Text
URL	No restrictions
IconIndex	Integers between 0 to 9
Index	Integers between 0 to 9
Width	Numbers
Height	Numbers
Depth	Numbers between 0 to 2 including both
Data	Hexadecimal data
Position	Integers from 0 to 16

You can add multiple menu items and soft key items, as well as delete menu items and SoftKey items for this phone object. See **How to Add and Delete SoftKeys** and **How to Add and Delete MenuItems**.

CiscoIPPhonelImageFile

The latest generation of Cisco IP Phones has higher resolution displays with more color depth. For example, the Cisco IP Phone 7970 has a display area of 298 x 168 pixels available to the Services pane and renders images in 12-bit color.

The CiscoIPPhonelImageFile behaves like the CiscoIPPhonelImage object, except for the image data. Instead of using the <Data> tag to embed the image data, the <url> points to the PNG file.

Definition

```
<CiscoIPPhonelImageFile>
<Title>Image Title goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<LocationX>Horizontal position of graphic</LocationX>
<LocationY>Vertical position of graphic</LocationY>
<URL>Points to the PNG image</URL>
<SoftKeyItem>
<Name>Name of soft key</Name>
<URL>URL or URI of soft key</URL>
<Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhonelImageFile>
```

The procedure for using the CiscoIPPhonelImageFile object is:

1. Click on the CiscoIPPhonelImageFile button on the phone objects toolbar.
2. Click the CiscoIPPhonelImageFile button and then click onto the Drawing Pane.
3. Enter the relevant information into the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhonelImageFile object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhonelImageFile object:

Properties	Valid Values
PhonelImageFile Object Name	Alphanumeric characters without spaces
Name	Text
Title	Text
Prompt	Text
LocationX	Numbers
LocationY	Numbers
URL	No restrictions
Position	Integers from 0 to 16

You can add multiple soft key items, as well as delete SoftKey items for this phone object. See **How to Add and Delete SoftKeys**.

CiscoIPPhoneGraphicFileMenu

Some of the latest Cisco IP Phone models, such as the Cisco IP Phone 7970 have pointer devices. The Cisco IP Phone 7970 uses a touchscreen overlay on the display. Because these phones can receive and process “pointer” events, a CiscoIPPhoneGraphicFileMenu object exposes the capability to application developers. The CiscoIPPhoneGraphicFile Menu behaves

similar to the CiscoIPPhoneGraphicMenu, in that a group of options are presented by an image. When one of those objects is selected, a URL action initiates.

However, the CiscoIPPhoneGraphicFileMenu does not use the keypad, but uses rectangular touch areas. Coordinates relative to the upper-left corner of the Services display define these rectangular touch areas.

Definition

```
<CiscoIPPhoneGraphicFileMenu>
<Title>Image Title goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<LocationX>Horizontal position of graphic</LocationX>
<LocationY>Vertical position of graphic</LocationY>
<URL>Points to the PNG background image</URL>
<MenuItem>
<Name>Same as CiscoIPPhoneGraphicMenu</Name>
<URL>Invoked when the TouchArea is touched</URL>
<TouchArea X1="left edge" Y1="top edge" X2="right edge" Y2="bottom
edge"/>
</MenuItem>
<SoftKeyItem>
<Name>Name of soft key</Name>
<URL>URL or URI of soft key</URL>
<Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhoneGraphicFileMenu>
```

The procedure for using the CiscoIPPhoneGraphicFileMenu object is:

1. Click the CiscoIPPhoneGraphicFileMenu button on the phone objects toolbar.
2. Click the CiscoIPPhoneGraphicFileMenu button and then click onto the Drawing Pane.
3. Enter the relevant information in the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhoneGraphicFileMenu object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhoneGraphicFileMenu object:

Properties	Valid Values
PhoneGraphicFileMenu Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
LocationX	Numbers
LocationY	Numbers
URL	No restrictions
Name	Text
Position	Integers from 0 to 16
TouchAreaX1	Numbers
TouchAreaX2	Numbers
TouchAreaY1	Numbers
TouchAreaY2	Numbers

You can add multiple menu items and soft key items, as well as delete menu items and SoftKey items for this phone object. See **How to Add and Delete SoftKeys** and **How to Add and Delete Menultems**.

CiscoIPPhonelconFileMenu

This icon menu is similar to the CiscoIPPhoneMenu but it uses color PNG icons rather than grayscale CIP icons. Use icon menus in situations when you want to provide additional visual information to the user to show the state or category of an item. For example, you can use icons to indicate priority.

Icons in the CiscoIPPhonelconFileMenu object have a maximum width of 18 pixels and a maximum height of 18 pixels. Instead of using the <Data> tag to embed the image data into the <IconItem> tag, this object uses a <URL> tag to point to the PNG image file to be used for that icon.

Definition

```
<CiscoIPPhonelconFileMenu>
<Title>Title text goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<Menuitem>
<IconIndex>Indicates what IconItem to display</IconIndex>
<Name>The name of each menu item</Name>
<URL>The URL associated with the menu item</URL>
</Menuitem>
<IconItem>
<Index>A unique index from 0 to 9</Index>
<URL>location of the PNG icon image</URL>
</IconItem>
<SoftKeyItem>
<Name>Name of soft key</Name>
<URL>URL or URI of soft key</URL>
<Position>Position information of the soft key</Position>
</SoftKeyItem>
</CiscoIPPhonelconFileMenu>
```

The procedure for using the CiscoIPPhonelconFileMenu object is:

1. Click the CiscoIPPhonelconFileMenu button on the phone objects toolbar.
2. Click the CiscoIPPhonelconFileMenu button and then click onto the Drawing Pane.
3. Enter the relevant information in the Edit Pane and click the **Update** button. This information will be visible on the CiscoIPPhonelconFileMenu object icon.

The following are the properties and valid values for the menu items and SoftKey items for the CiscoIPPhonelconFileMenu object:

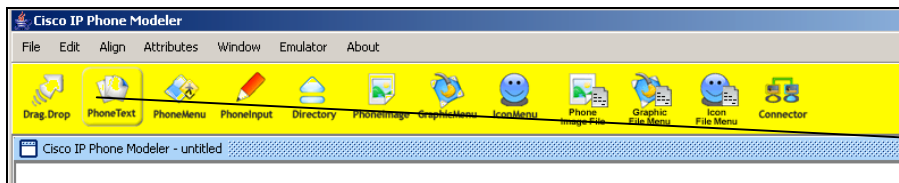
Properties	Valid Values
PhonelconFileMenu Object Name	Alphanumeric characters without spaces
Title	Text
Prompt	Text
Name	Text
URL	No restrictions
IconIndex	Integers between 0 to 9
Index	Integers between 0 to 9
Position	Integers from 0 to 16

You can add multiple menu items and soft key items, as well as delete menu items and SoftKey items for this phone object. See **How to Add and Delete SoftKeys** and **How to Add and Delete MenuItems**.

How to Add and Delete SoftKeys

SoftKey items have context-sensitive functionalities. The functionality of these SoftKeys keeps changing all the time. For example, the same key may display 'End Call' as well as 'Redial'. This is unlike the Number 9 key, which always means Number 9. You can add or delete SoftKeys as follows:

1. Click the object button on the Phone Objects toolbar.



The CiscoIP PhoneText toolbar button selected

Figure 15: The CiscoIPPhoneText toolbar button selected

2. Click onto the Drawing Pane and the object will appear on the pane.

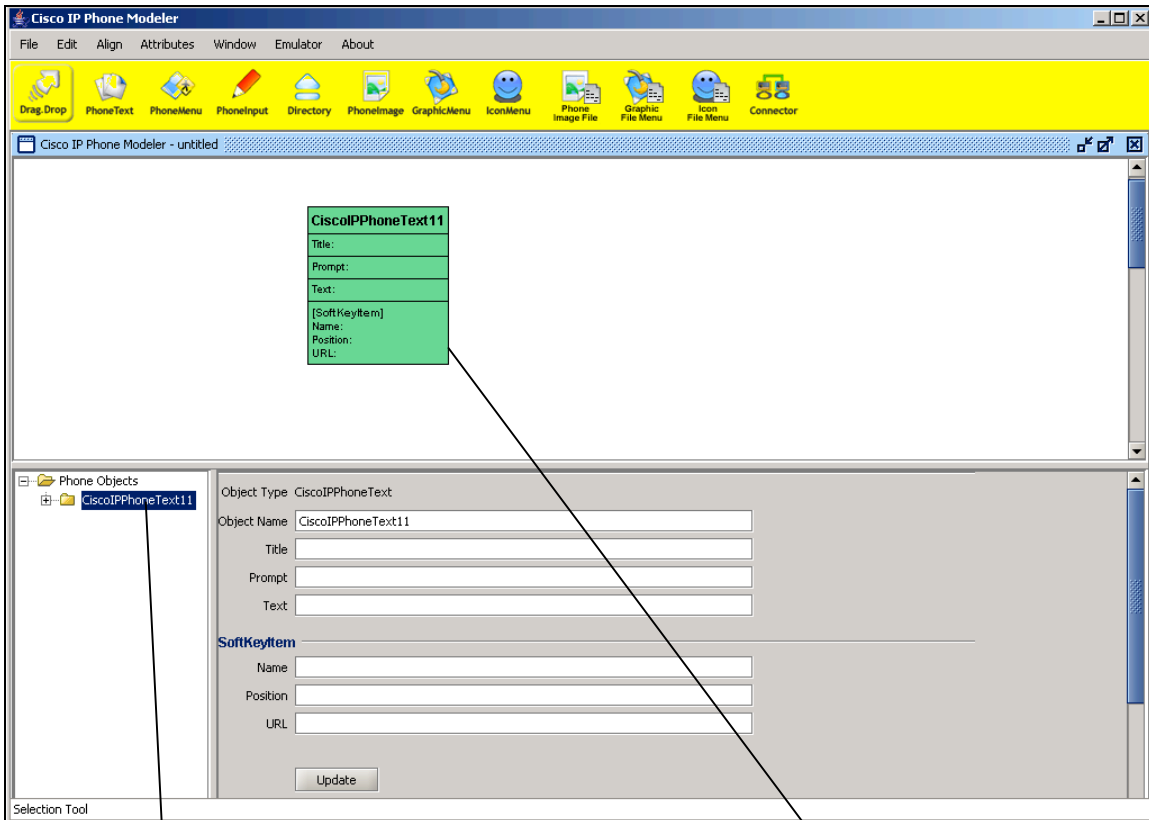
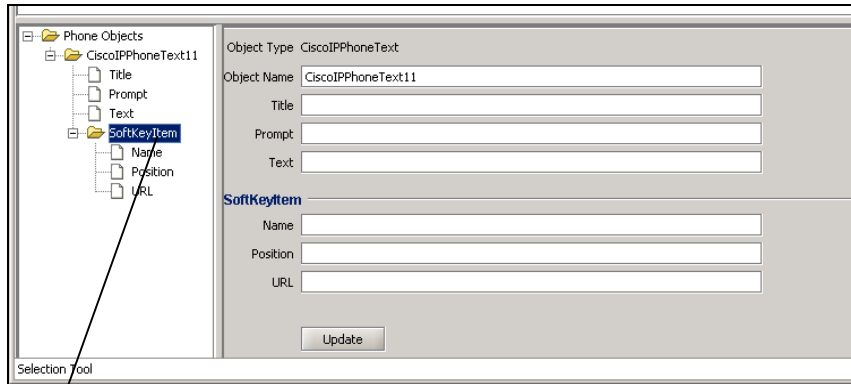


Figure 16: The CiscoIPPhoneText object displayed on the Drawing Pane

The CiscoIP PhoneText tab in the Tree Pane

CiscoIP PhoneText object on the Drawing Pane

3. A tab for that particular phone object will appear in the Tree Pane.
4. Double click on the tab to reveal the Title, Prompt, Text and SoftKey Item. The latter contains the Name, Position and URL.



SoftKey item

Figure 17: Double clicking on the tab reveals the SoftKey item

5. Right click on the SoftKey Item to reveal a menu that says 'Add More Soft Keys' and 'Delete Soft Key'. Choose the option you want to either add more SoftKeys or delete SoftKeys.

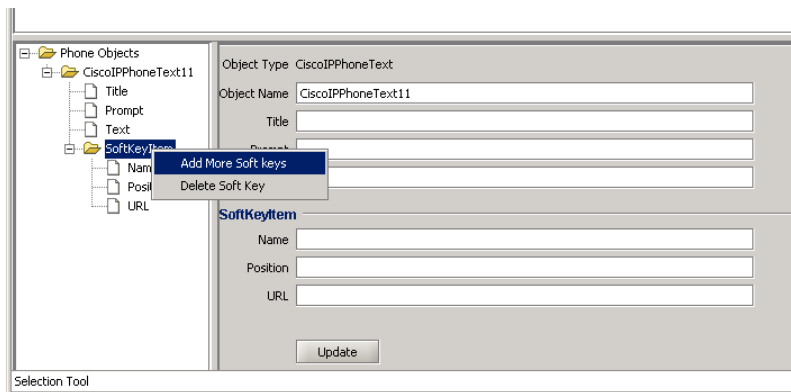


Figure 18: Right click reveals menu to add or delete SoftKeys

6. This option is available for all phone objects.

How to Add and Delete MenuItems

You can add or delete menu items for certain phone objects. These are CiscoIPPhoneMenu, CiscoIPPhoneGraphicMenu, CiscoIPPhoneIconMenu, CiscoIPPhoneGraphicFileMenu and the CiscoIPPhoneIconFileMenu objects.

1. Click the object button on the Phone Objects toolbar.

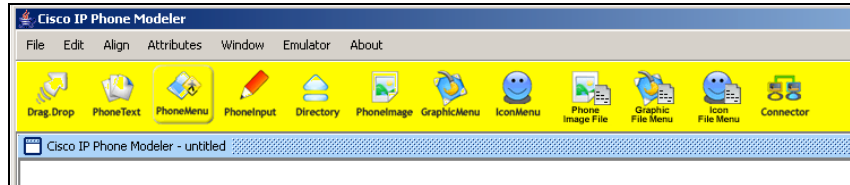


Figure 19: The CiscoIPPhoneMenu toolbar button selected

2. Click onto the Drawing Pane and the object will appear on the pane.
3. A tab for that particular phone object will appear in the Tree Pane.
4. Double click on the tab to reveal the MenuItem.

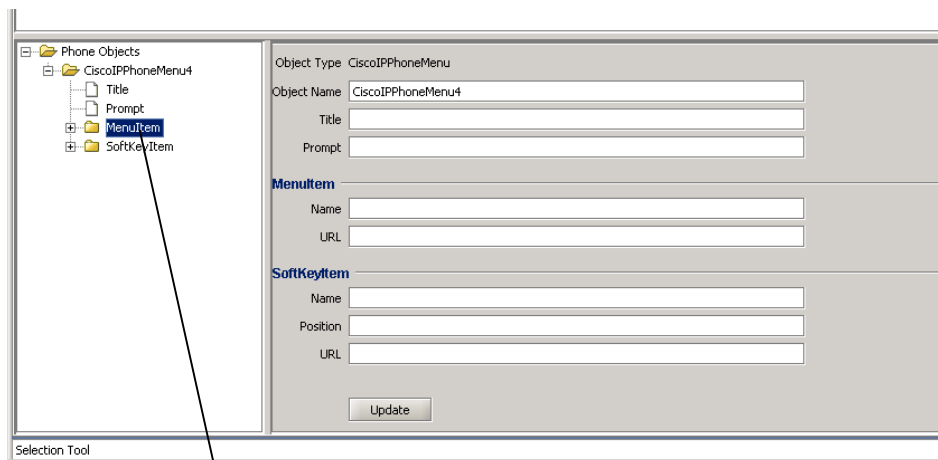


Figure 20: Doubleclicking on the tab reveals the MenuItem

MenuItem

5. Right click on the MenuItem to reveal a menu that says 'Add More Menu Items' and 'Delete Menu Items'. Choose the option you want to either add more MenuItems or delete MenuItems.

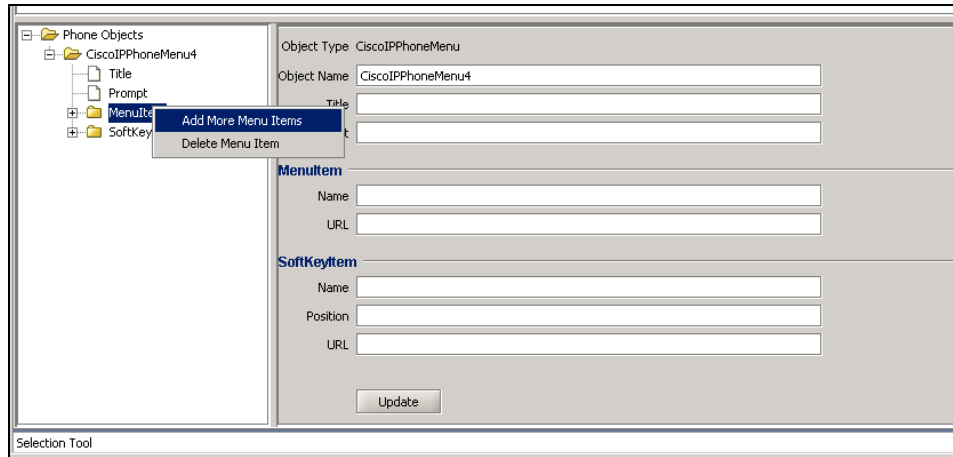


Figure 21: Right click reveals a menu to add or delete MenuItem

The Connector: How it Works

The Connector is a tool on the Phone Object toolbar that enables you to connect two phone objects and all their information so that they are interconnected by URLs.

To use the connector, click on the first phone object you wish to connect. Then, click on the Drawing Pane. The phone object will appear on the pane. Repeat this process for the second phone object. Now click the Connector button on the Phone Objects toolbar. Then, click on the object from which you wish the Connector to begin and drag and drop the connector onto the second object you wish to connect to.

Connectors allow you to navigate amongst different functionalities on your Cisco IP Phone. For example, the CiscoIPPhoneGraphicMenu may display the logo of your company on the phone display. On selecting this, you can go to company directory information using the CiscoIPPhoneDirectory object. Connectors allow you to go from one object to another.

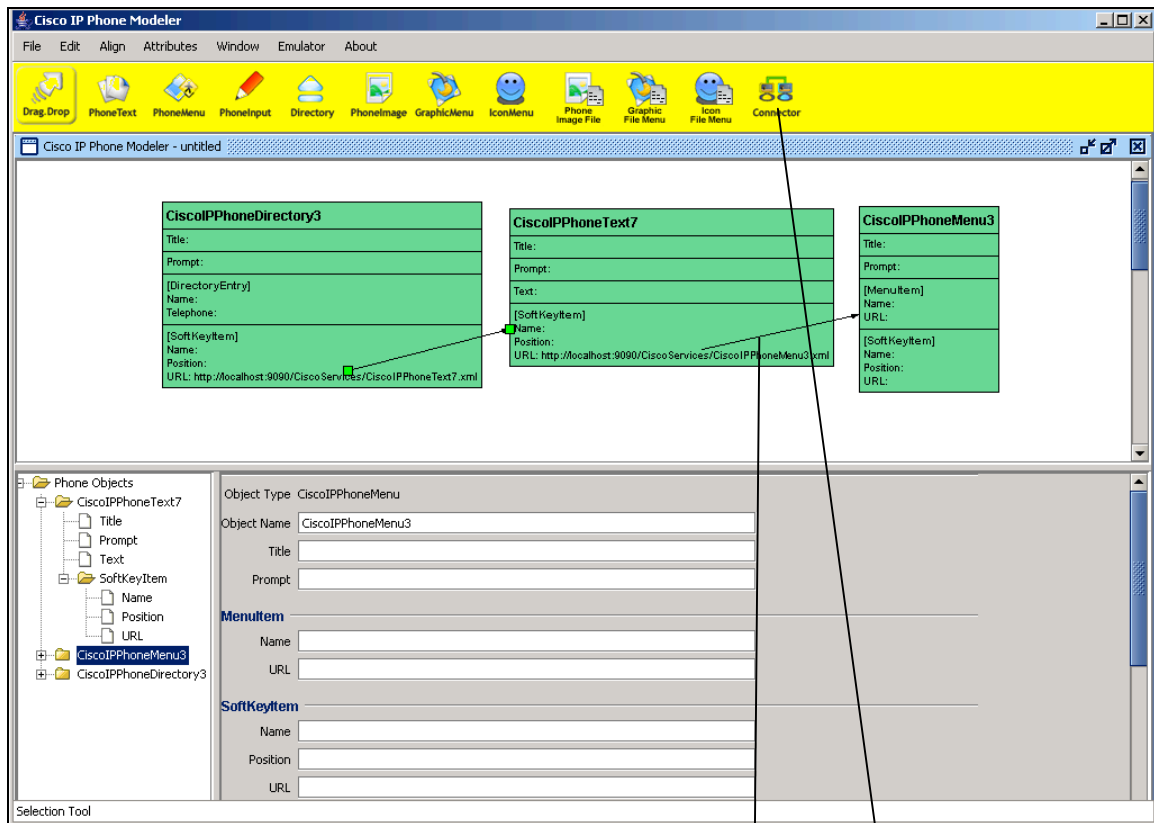


Figure 22: The Phone Modeller application with connectors connecting two phone objects

A
Connector

The
Connector
icon on the
Phone
Objects
toolbar

What is the Emulator?

This is just like a simulator of the Cisco IP Phone, which allows you to view the information you have entered onto the phone display. Currently, the Emulator supports only the 7960 phone model, but will soon be available for the 7970 model. Also, the Emulator needs a Windows environment for it to work.

After dragging and dropping phone objects onto the Drawing Pane, enter information for each phone object into its respective Edit Pane. Once this is done, you should click on the File Menu and select Export XML. Now, click the Emulator Menu. Then click the Cisco Phone Services Emulator option to run the application. You can now view the text or graphics that you have entered onto the Emulator's display screen.

The Emulator works in tandem with the Phone Modeler to display the text and graphics that you have generated in XML. You can view these text and graphics prior to them actually being transported into your actual Cisco IP Phone model.

What is it used for?

It is used for simulating changes and designs made in Phone Modeler. The Emulator gives users the opportunity to visualize changes prior to them taking effect on their IP phone.

Be sure to use phone objects first and create a phone model drawing. These will be converted into XML data during exporting the XML. This actually translates them into real text and graphics that can be displayed on your Emulator. For the Emulator to work, XML must be exported to the location where your server is. [See Exporting XML](#).

Frequently Asked Questions

Q. What should I do if I am unable to start the Phone Modeler?

A: Check that the Java Runtime Environment is installed on your computer. Also, set the environment variables to Java path.

Q. What should I do if I am unable to start the Emulator?

A: You may not have correctly installed the Emulator. Please check 'What is the Emulator?' section.

Q. What should I do if the Emulator shows a 'Host Not Found' message on typing the URL and clicking Enter?

A: This could be due to any one of the following reasons:

- The XML has not been exported before starting the Emulator.
- The IP Address in the Emulator URL is not correct.
- The port number at which your server is running is not the same as the one you have entered in the Emulator.
- The application name is incorrect.
- The object name you want to see in the Emulator is case sensitive. So, an improper case can result in a 'Host Not Found' message.
- While exporting XMLs the IP address, Port number and Application Name are incorrect.

Conclusion

The Phone Modeler application is a software application that can be used to customize your Cisco IP Phone without your knowing complicated programming concepts. Sophisticated functionalities are easily accessed on your IP phone with an easy-to-use application.

The Phone Modeler makes use of XML-based Phone Objects, as well as menu items that help add universal appeal. Once information is entered into the Edit Pane for the phone objects you wish to transport, you then Export XML and these objects now become “live” and are displayed as text and graphics on your Cisco IP Phone 7960 or 7970.

Related Documentation

The following documents provide further information:

- 1) Cistera Phone Modeler Quick Start Guide (Appendix B)
- 2) Cisco IP Phone Services Application Development Notes (Appendix A)
- 3) Cisco CallManager Administration Guide
- 4) Cisco CallManager System Guide
- 5) Cisco IP Phone 7960/7940 Quick Start Guide
- 6) Cisco IP Phone Administration Guide for Cisco CallManager
- 7) CiscoURLProxy Active X Component
- 8) LDAP Search COM Server Programming Guide
- 9) CiplImage Release Notes

Appendix

Click here to access the Cisco IP Phone Services Application Development Notes to know more about the Cisco Phone Objects and relevant programming information for the Cisco IP Phone:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_programming_reference_guide_book09186a00804042de.html

Glossary

Cisco IP Phone – This is a phone that uses Internet Protocol and XML to display and also offer the user various functionalities. The user can program this phone to suit their needs. Phone models 7960 and 7970 are compatible with the Cisco IP Phone Modeler.

Cisco IP Phone Modeler – This is a software application that allows the user to program their Cisco IP Phone without using or understanding complicated programming concepts. It is compatible with Cisco IP Phone Models 7960 and 7970.

Cisco Systems Phone Services Emulator – This is like a simulator. It allows you to view the text and graphics you have exported onto the emulator display screen, so that you can check the content before it goes live on your Cisco IP Phone.

Connector -- This is a tool in the Phone Modeler, which allows you to connect two or more objects, so that their properties are linked.

DTMF keys -- Dual-tone multi-frequency (DTMF) is also known as Touch Tone. It is used for telephone signaling over the line in the voice frequency band to the call switching center. DTMF is an example of a multi-frequency shift keying (MFSK) system.

Menus – These are drop down menus that offer you various functionalities and options. For example you can Export XML by clicking an option in the 'File' menu or you can change the color of the phone object by choosing a fill color from the Attributes menu.

Phone Objects – These are XML programs that enable the user to program their Cisco IP Phone without dealing with complicated programming concepts. Once these phone objects are exported, they are visible on your Cisco IP Phone as content.

SoftKey Items – These are items (or keys) on the Cisco IP Phone that have no fixed functionality unlike DTMF keys. The functionality of these SoftKeys keeps changing all the time. For example, the same keypad button, which is a SoftKey may display 'End Call' as well as 'Redial'.

XML – This stands for Xtensible Markup Language. It is a programming language and it is the language used in the Phone Modeler that enables you to program your Cisco IP Phone.

Index

A

About Menu, 16
Align menu, 15
Attributes menu, 15

C

Cisco IP Phone Modeler. *See* Phone
Modeler
Connector, 33

E

Edit menu, 15
Emulator menu, 16
Exporting XML, 12

F

File Menu, 11

G

Graphic menus, 23
GraphicFile Menu, 26

I

Icon menus, 24

P

PhoneImage, 22
PhoneImage File, 26
PhoneText, 18

S

simulator. *See* Emulator
SoftKey items, 29

W

Window Menu, 16