IPFX Integrator: CTI Phone Control



Product version 4.3 SP4

About This Guide

The purpose of this document is to provide the user with information on how to use this IPFX product.

Typographical Conventions

Before you start using this guide, it is important to understand the terms and typographical conventions used in the documentation.

The following kinds of formatting in the text identify special information.

Formatting convention	Type of Information
Triangular Bullet(Ø)	Step-by-step procedures. You can follow these instructions to complete a specific task.
Special Bold	Items you must select, such as menu options, command buttons, or items in a list.
Emphasis	Use to emphasize the importance of a point or for variable expressions such as parameters.
CAPITALS	Names of keys on the keyboard. for example, SHIFT, CTRL, or ALT.
KEY+KEY	Key combinations for which the user must press and hold down one key and then press another, for example, CTRL+P, or ALT+F4.
	Information that applies to the IPFX Director platform only.
CCM	Information that applies to the IPFX for CallManager platform only.
NEC	Information that applies to the IPFX for NEC platform only.

See Also About This Guide

Introduction to CTIPhone Control

The CTIPhone Control Guide serves as a reference to developers that want to integrate to the functionality offered by the CT Server using the CTIPhone Control.

It allows developers to utilize the functionality of the CT Server to integrate with custom developed packages that may not include TAPI support.

The files included with the CTIPhone Control are:

- CTIPHONE.OCX, the COM component allowing an interface to the system.
- Sample project files.
- Help File

The CTIPhone Control is a COM object that can be added into your application to give you an interface to the CT Server.

You can increase the functionality of your existing application by adding the CTIPhone Control to the application which will give you access to information about calls. You will also be able to control your phone.

Note:

DIR

On the IPFX Directory platform only, transfers are *not* supported on the following devices:

Cisco 7905 and 7912 phones, ATA devices, and analog phones.

Contents

- How to Install the CTIPhone Control
- Features of the CTIPhone Control
- Elements of the CTIPhone Control

Sample Project Files

The examples in this manual are based on Visual Basic 5.0. Sample applications can be found in the /SAMPLES subdirectory of your

installation.

How to Install CTIPhone Control

CTIPhone is a simple installation process requiring a start up CD and Network Setting information.

It is recommended that you Exit all Windows applications before running the setup.

Installing CTIPhone

- 1. Load the CTIPhone CD into the CD-ROM Drive.
- 2. Click on the Windows Start Button and select Run.
- 3. Type: x:\CTIPhone Install (where x = CD-ROM Drive)
- 4. CTIPhone will now install.
- 5. The Welcome to the InstallShield Wizard for CTIPhone screen will display.



- 6. Click **Next** to continue.
- 7. The IPFX Limited Software License Agreement screen displays.

IPFX CTIPhone Control - InstallShield Wizard	×
IPFX Limited Software License Agreement	
Please read the following license agreement. Use the scroll bar to view the rest of this agreement.	I
IPFX LIMITED END USER LICENCE AGREEMENT Terms and Conditions By clicking on the "YES" button, installing, copying or otherwise using the Software, you agree to be bound by the terms of this Licence Agreement. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENCE AGREEMENT, CLICK ON THE "NO" BUTTON AND/OR DO NOT INSTALL THE SOFTWARE.	
InstallShield <u>Kack Y</u> es <u>N</u> o	

8. In order to install the software, you must have read, understood and accepted the terms and conditions of the EULA.

If you accept the EULA, Click **Yes** to continue.

9. The Choose Destination Location screen displays.

IPFX CTIPhone Control - InstallShield Wizard	×
Choose Destination Location Select folder where setup will install files.	Z
Setup will install IPFX CTIPhone Control in the following folder.	
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.	
Destination Folder C:\Program Files\Performance Solutions\ Browse.	
InstallShield <u>< B</u> ack <u>Next</u> > Ca	ncel

Click Next to continue.

10. The CT Server Connection screen appears:

IPFX CTIPhone Control - InstallShield Wizard	×
CT Server Connection	
CT Server Computer Name	
DEMOSERVER	
CT Server IP Address 192.168.11.1	
CT Server IP Port	
100	
InstallShield	Cancel

Enter the name, IP address and port of the IPFX Server Click **Next**.

11. The Setup Type screen displays.

IPFX CTIPhone Control - InstallShield Wizard	×
Setup Type Select the setup type that best suits your needs.	
Click the type of setup you prefer.	Description CTIPhone control only
InstallShield < <u>B</u> ack	< <u>N</u> ext > Cancel

Select the setup type you require:

- 'Developer' type installs the CTI Phone Control and Sample projects.
- 'User' type installs the CTI Phone Control only. Click Next to continue.
- 12. The Setup Status screen displays:



13. When Setup has completed the installation, the InstallShield Wizard Complete screen displays.



14. Click **Finish** to exit the Wizard.

Features of the CTIPhone Control

With the CTIPhone Control you can create applications which can react to different events which are received at your phone. You can also control your phone by sending various commands to the server with the ease. The CTIPhone Control provides:

- Notification of an Outgoing call.
- Notification of a Ringing call.
- Notification of an Answered call.
- Notification of a Released call.
- Ability to change which phone is being controlled.
- Dial a phone number. (internal and external numbers)
- Transfer a call. (internal and external numbers)
- Answer a call. (internal and external calls)
- Release a call.

With these various features you will be able to take advantage of the facilities offered by the CT Server.

Uses of the CTIPhone Control

The CTIPhone Control can be used to enhance the functionality of your current system. It can be incorporated in applications such as:

- Telemarketing
- Order Entry
- Help Desk

The events that the CTIPhone Control give can be used for a variety of functions. One common use is screen pops. Screen pops are windows which popup and show information relevant to the person handling the call. If your phone system has Caller Identification enabled this would mean you would be able to match this number to the customer in your database and then popup the relevant details.

Take for example an Order Entry program. You could match up the customer based on the Caller Identification passed through and then automatically popup the customers contact details and all recent orders that the customer has placed before they even answer the call. This will mean no effort at all is required by the person answering the call to find these details which will save time for both the caller and the person answering the call.

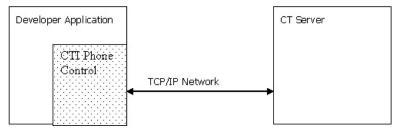
Another feature of the CTIPhone Control is it allows you to make outbound calls. Now take an outbound telemarketing company. All day a person will be making outbound calls. The CTIPhone Control will automate this task. By simply placing a button next to the number to dial, the person can simply click on the button to place the call. This once again will save time when dialling the number and it will eliminate the chance of dialling the wrong number.

These are just a couple of examples of how the CTIPhone Control can save you time and effort in handling calls with minimal programming complication.

See Also
Features of the CTIPhone Control
How the CTIPhone Control Works

How the CTIPhone Control Works

The CTIPhone Control allows the developer to easily integrate their application to the power of the CT Server. Figure 1.0 below shows how the CTIPhone Control fits in.



The CTIPhone Control is added to the developers application.

The CTIPhone Control handles all the communication to and from the server. The developer simply interacts with the CTIPhone Control and the control handles all the network messaging.

The CTIPhone Control uses the network protocol TCP/IP to communicate to and receive events from the CT Server.



Properties, Methods and Events

This section lists the methods and properties available with the CTIPhone Control

Methods

Connect	Connects the CT Server
Disconnect	Disconnects from the CT Server
Dial	Dial a number from MyLine
Answer	Answer a call ringing on MyLine
Hangup	Hangup a call on MyLine
Transfer	Transfer a call from MyLine to another number.
Properties	

MyLine	The phone extension associated with the application
State	Return the current connection state of the OCX to the server

Events

Outgoing	Notifies of an outbound call from MyLine
Ringing	Notifies of a call ringing at MyLine
Answered	Notifies of an answered call at MyLine
Released	Notifies of a released call at MyLine

Methods

In This Section	
Connect Method	See Also
Disconnect Method	Properties, Methods and
Dial Method	<u>Events</u>
Answer Method	Properties
Hangup Method	<u>Events</u>
Transfer Method	

Connect Method

This method attempts to establish a connection to the CT Server. This must be done before any of the other methods will work. This function picks up two values, which are needed for the connection. The TCP/IP address of the CT Server and the Port number.

These two values are read from the HKLM\Software\Performance Solutions\Settings\ as outlined below:

[Network]

Address=192.168.0.0

Name=CTSERVER

Port=100

Syntax

object.Connect

The object placeholder represents the CTIPhone Control OCX.

Remarks

Connect attempts to connect to a remote computer using the TCP/IP network protocol using the information stored in the HKLM\Software\Performance Solutions\Settings\. You must Connect to the server before you will be notified of any telephony events or before any other methods will function correctly.

See Also
<u>Methods</u>
Disconnect Method
Dial Method
Answer Method
Hangup Method
Transfer Method

Disconnect Method

This method disconnects the OCX from the CT Server. This will mean all events and other action methods will not be available.

Syntax

object.Disconnect

The object placeholder represents the CTIPhone Control OCX.

Remarks

If the CTIPhone Control is unload without calling the disconnect method the CTIPhone Control will issue a disconnect itself.

See Also	
<u>1ethods</u>	
Connect Method	
Dial Method	
nswer Method	
langup Method	
ransfer Method	

Dial Method

This method sends a request to the CT Server to Dial a number from myline.

Syntax

Object.Dial Number

The Dial method syntax includes the following parts:

Part Description

object The object placeholder represents the CTIPhone Control OCX

Number The number to be dialled

Remarks

Sends a TCP/IP message to the CT Server to ask it to Dial a number.

When the request is sent it sends the myline information so that the server knows which extension to dial from and it sends the number to Dial (either an external or internal number).

If it is an external number no prefix is required, this will automatically be inserted by the server.

See Also
<u>Methods</u>
Connect Method
Disconnect Method
Answer Method
Hangup Method
Transfer Method

Answer Method

This method sends a request to the CT Server to Answer myline.

Syntax

Object.Answer

Remarks

Sends a TCP/IP message to the CT Server to ask it to Answer MyLine.

When the request is sent it sends the MyLine information so that the server knows which extension to answer.

This method is only available for digital phones, because it is not possible to take an analog phone offhook.

See Also
Methods
Connect Method
Disconnect Method
Dial Method
Hangup Method
Transfer Method

Hangup Method

This method sends a request to the CT Server to Hangup myline.

Syntax

Object.Hangup

Remarks

Sends a TCP/IP message to the CT Server to ask it to Hangup myline.

When the request is sent it sends the myline information so that the server knows which extension to hangup.

See Also	
<u>Methods</u>	
Connect Method	
Disconnect Method	
Dial Method	
Answer Method	
Transfer Method	

Transfer Method

This method sends a request to the CT Server to Transfer a call from myline.

Syntax

Object.Transfer Number

The Transfer method syntax includes the following parts

Part	Description
object	The object placeholder represents the CTIPhone Control OCX
number	The number to transfer the call to

Remarks

Sends a TCP/IP message to the CT Server to ask it to Transfer the call on myline to another number.

When the request is sent it sends the myline information so that the server knows which extension to transfer from and it sends the number to dial, either an external or internal number (external transfers will not succeed if external transfers are not enabled on the PABX).

If it is an external number no prefix is required, this will automatically be inserted by the server.

See Also
Methods
Connect Method
Disconnect Method
Dial Method
Answer Method
Hangup Method

Properties

In This Section

MyLine Property

State Property

See Also

Properties, Methods and Events Methods

Events

MyLine Property

This property set or gets the extension that we want to control and receive events for.

Syntax

Object.MyLine

The object placeholder represents the CTIPhone Control OCX.

Remarks

This property allows you to set and retrieve the extension which is being control by the CTIPhone Control.

This is the extension which you will receive events for and will be actioned when sending requests. This extension must be setup correctly on the CT Server for events and methods to function correctly.

See Also	
Properties	

State Property

State Property

This read only property returns the current connection status to the CT Server.

Syntax

Object.State

The object placeholder represents the CTIPhone Control OCX.

Constant	Value	Description
ctiPhoneClosed	0	Default. Closed
ctiPhoneOpen	1	Open
ctiPhoneListening	2	Listening
ctiPhoneConnectionPending	3	Connection pending
ctiPhoneResolvingHost	4	Resolving host
ctiPhoneHostResolved	5	Host Resolved
ctiPhoneConnecting	6	Connecting
ctiPhoneConnected	7	Connected
ctiPhoneClosing	8	Peer is closing the connection
ctiPhoneError	9	Error

Remarks

This read only property returns the current connection state to the server.

Typically if a connection is not established the state will be ctiPhoneClosed, if a connection is established the the state will be ctiPhoneConnected.

See Also
Properties
MyLine Property

Events

In This Section	See Also
Ringing Event	Properties, Methods and
Answered Event	<u>Events</u>
Outgoing Event	<u>Methods</u>
Released Event	Properties

Ringing Event

Occurs when a call is ringing at MyLine.

Syntax

object_Ringing (ID As String, Extension As String, DNIS As String, _DNISDescription As String, CLID As String, CLIDDescription As String, _ByVal CLIDAccountCode As String, Queue As Long, _QueueTime As Long, RingTime As Long, TalkTime As Long)

The Ringing event syntax has these parts:

Part	Description
object	An object expression that evaluates to an object in the applies to list
ID	String. A unique identifier for the call
Extension	String. The extension the call is ringing at.
DNIS	String. Dialled Number Identification Service. The number that was dialled to gain access to the PABX.
DNIS Description	String. Name matched to the dialled number.
CLIDDescription	String. A description matched on the CLID.
CLIDAccountCode	String. An account code matched on the CLID.
Queue	Long. The queue number that the call has come in on
QueueTime	Long. How many seconds the call has waiting in queue
RingTime	Long. How many seconds the call has been ringing at MyLine
TalkTime	Long. How many seconds the person has been talking for.

Remarks

This event will occur when there is a call ringing at the extension specified by MyLine.

See Also	
<u>Events</u>	
Answered Event	

Outgoing Event Released Event

Answered Event

Occurs when a call is answer at MyLine.

Syntax

object_Answered(ID As String, Extension As String, DNIS As String, _DNISDescription As String, CLID As String, CLIDDescription As String, _ByVal CLIDAccountCode As String, Queue As Long, _QueueTime As Long, RingTime As Long, TalkTime As Long)

The Answered event syntax has these parts:

Part	Description
object	An object expression that evaluates to an object in the Applies To list.
ID	String. A unique identifier for the call.
Extension	String. The extension the call is answered at.
DNIS	String. Dialled Number Identification Service. The number that was dialled to gain access to the PABX.
DNISDescription	String. Name matched to the dialled number.
CLID	String. Calling Line Identification. The phone number of the caller.
CLIDDescription	String. A description matched on the CLID.
CLIDAccountCode	String. An account code matched on the CLID.
Queue Long.	The queue number that the call has come in on.
QueueTime	Long. How many seconds the call has waiting in queue.
RingTime	Long. How many seconds the call has been ringing at MyLine.
TalkTime	Long. How many seconds the person has been talking for.
Deveevilye	

Remarks

This event will occur when there is a call answered at the extension specified by MyLine.

See Also	
<u>Events</u>	
Ringing Event	

Outgoing Event Released Event

Outgoing Event

Occurs when MyLine is taken offhook.

Syntax

object_Offhook(ID As String, Extension As String, DNIS As String, _DNISDescription As String, CLID As String, CLIDDescription As String, _ByVal CLIDAccountCode As String, Queue As Long, _QueueTime As Long, RingTime As Long, TalkTime As Long)

The Outgoing event syntax has these parts:

Part	Description
object	An object expression that evaluates to an object in the Applies To list.
ID	String. A unique identifier for the call.
Extension	String. The extension the call is made from.
DNIS	String. Dialled Number Identification Service. The number that was dialled to gain access to the PABX.
DNISDescription	String. Name matched to the dialled number.
CLID	String. Calling Line Identification. The phone number of the caller.
CLIDDescription	String. A description matched on the CLID.
CLIDAccountCode	String. An account code matched on the CLID.
Queue Long.	The queue number that the call has come in on.
QueueTime	Long. How many seconds the call has waiting in queue.
RingTime	Long. How many seconds the call has been ringing at MyLine.
TalkTime	Long. How many seconds the person has been talking for.

Remarks

This event will occur when MyLine is taken offhook to make an outbound call.

See Also
<u>Events</u>
Ringing Event
Answered Event
Released Event

Released Event

Occurs when MyLine is hung up.

Syntax

object_Released(ID As String)

The Released event syntax has these parts:

Part	Description
object	An object expression that evaluates to an object in the Applies To list.
ID	String. A unique identifier for the call.
Extension	String. The extension the call is released at.
DNIS	String. Dialled Number Identification Service. The number that was dialled to gain access to the PABX.
DNISDescription	String. Name matched to the dialled number.
CLID	String. Calling Line Identification. The phone number of the caller.
CLIDDescription	String. A description matched on the CLID.
CLIDAccountCode	String. An account code matched on the CLID.
Queue	Long. The queue number that the call has come in on.
QueueTime	Long. How many seconds the call has waiting in queue.
RingTime	Long. How many seconds the call has been ringing at MyLine.
TalkTime	Long. How many seconds the person has been talking for.

Remarks

This event will occur when MyLine is hung up.

See Also <u>Events</u>

Ringing Event

Answered Event

Outgoing Event