



CTI OS Internationalization Toolkit

Version 7.0

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CTI OS Internationalization Toolkit
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1 Introduction

The CTI OS Internationalization Toolkit is a general purpose tool that provides the mechanisms and utilities necessary for creating localized versions of client applications such as the CTI OS Toolkit Agent and IPCC Supervisor Desktops. The toolkit uses a message file that is converted into a language library used by the application to retrieve the translated text that is to be shown to the user.

The CTI OS Internationalization Toolkit has the following features:

- Language selection automatically defaults to the operating system settings. No action is necessary by a user or administrator.
- An API is provided to access the localized string text from a language library. The API is exposed as an in-process COM server.
- A single application can be built with support for many different languages.
- The Toolkit supports double-byte and extended character languages, including Chinese, Japanese, Korean, Hebrew, Arabic, Cyrillic, and Latin.
- It provides a template project and a *.mc file that allows localization of the CTI OS Toolkit Agent and IPCC Supervisor Desktops

1.1 Localization Process

The localization process of an application starts with the creation of a message file that contains the language code and the localized text strings. The name of each message file must use the following convention: *CtiOsLanguage.<LANG>.mc* where <LANG> is standard language code, see Figure 1. For a complete list of language codes and language identifiers refer to “Language Identifiers and Locale” in the Microsoft MSDN Library CD or on-line at

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/wcelocal/htm/cerefLanguageIdentifiersLocales.asp>

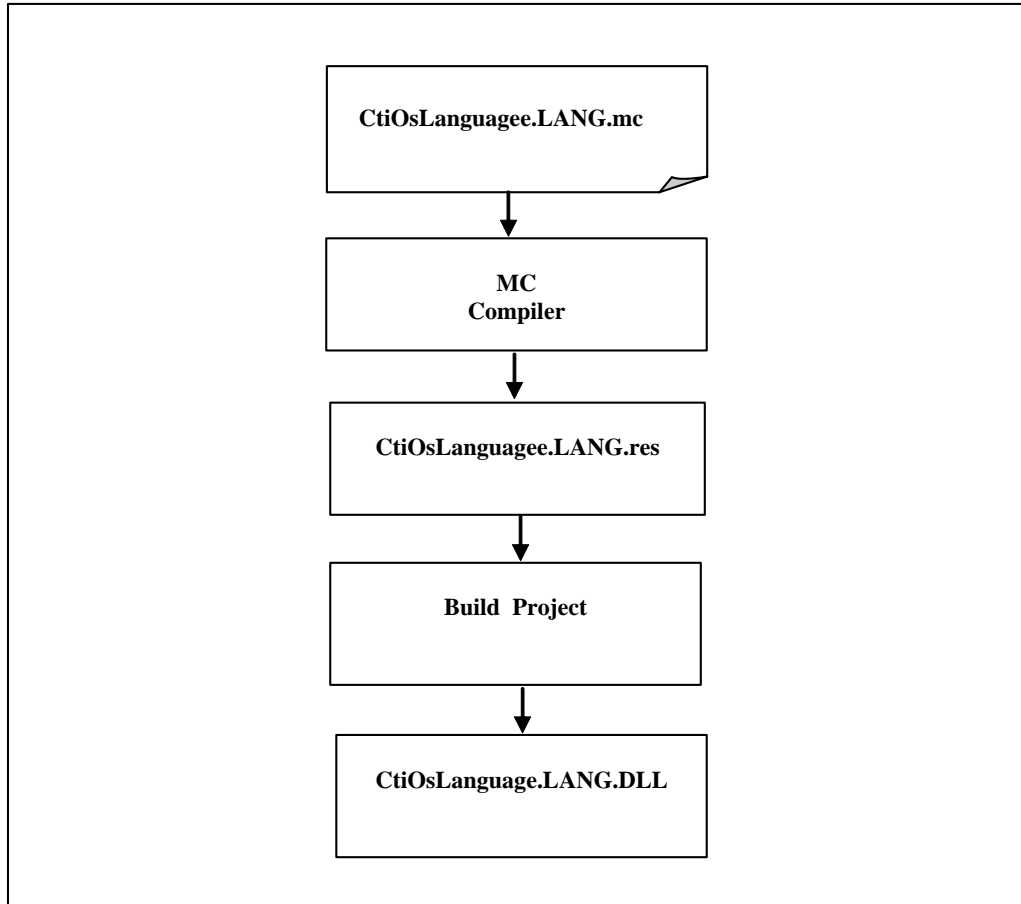


Figure 1. Localization workflow

This message file is compiled with Microsoft’s message compiler to produce a resource file that is then used to build the final language library. The language library name will be *CtiOsLanguage.<LANG>.dll*.

The Toolkit provides a Microsoft Visual Studio 6.0 project template that can be used to build a language library. The instructions for building a library are provided in the next section.

Examples of message files and language libraries are presented in Table 1:

Language	Message File	Language Library
Chinese Simplified	CtiosLanguage.CHS.mc	CtiosLanguage.CHS.dll
Spanish	CtiosLanguage.ESP.mc	CtiosLanguage.ESP.dll
French	CtiosLanguage.FRA.mc	CtiosLanguage.FRA.dll

Table 1. Message files and language libraries

After the language library is produced, the client application uses the toolkit's API to access the localized strings text in the language library as in Figure 2.

```
Dim objIntl As New INTLRESOURCELOADERLib.GetLanguage

Const CTIOS_AGENTPHONE_APPNAME = &H702A

Private Sub Form_Load()
    lstLaguages.ListIndex = 1
End Sub

Private Sub lstLaguages_Click()
Dim strTranslatedStr As String

objIntl.LanguageID = lstLaguages.ItemData(lstLaguages.ListIndex)

strTranslatedStr = objIntl.TextStringDefault(CTIOS_AGENTPHONE_APPNAME, _
                                             "CISCO CTI OS Agent Phone")

lblMessage.Caption = strTranslatedStr

End Sub
```

Figure 2. Localized application

1.2 What Is Provided on the CD

The CTI OS Internationalization Toolkit is included within the distribution CD of the CTI OS Toolkit and its components are located in the Win32 CIL subdirectory. The parts that constitute the toolkit are listed in Table 2.

Location	Part Name	Description
InternationalizationKit\	CtiOsLanguage.dsp	Microsoft Visual C++ 6.0 project template used to generate the new Language library. For details on how to migrate this project to Microsoft Visual Studio .NET 2003, please refer to Microsoft's Visual Studio.NET help on Visual C++ Porting and Upgrading (http://msdn.microsoft.com/library/default.asp?url=/library/en-us/vccore/html/_vc_porting_home.asp)
InternationalizationKit\	CtiOsLanguage.mc	Message file template, contains all the string text and symbols used by the CTI OS Toolkit Agent and IPCC Supervisor Desktops.
InternationalizationKit\	CtiOsLanguage.cpp	Standard DLL callbacks
InternationalizationKit\	CtiOsLanguage.h CtiOsLanguage.rc	Auto generated files at compilation of *.mc file
COM Servers and Activex Controls\	IntlResourceLoader.dll	CTI OS International Resource Loader, registered at installation time
.NETInterops\	Cisco.INTLRESOURC ELOADERLib.dll	Runtime Callable Wrapper (RCW) assembly used by .NET based application requiring to use the CTI OS Internationalization Kit
InternationalizationKit\ Languages	ctioslanguage.XXX.dll	Prebuilt language libraries for" the following languages: CHS .- Chinese Simple KOR.- Korean GER .- German FRA.- French ESN.- Spanish Neutral ENU.-English USA PTB .- Portuguese Brazilian

Location	Part Name	Description
InternationalizationKit\ Languages	ConfigLanguages.reg.txt	Registry file to configure language libraries for the CTI OS Agent and Supervisor phones
InternationalizationKit\ Languages	agentstatistics.XXX.reg.txt callappearance.XX.reg.txt skillgroupstatistics.XXX.reg.txt blendedagent_addecc.XX.reg.txt	Pre-translated standard grid column headers for the following languages: CHS .- Chinese Simple KOR.- Korean GER .- German FRA.- French ESN.- Spanish Neutral ENU.-English USA PTB .- Portuguese Brazilian

Table 2. CTIOS Internationalization Toolkit components

2 Editing Message Files

2.1 Suggestion

Before creating a message file on your own, make a copy of the template message file provided with the toolkit and rename it to conform to the country or language you will be localizing to, for example, *CtiOsLanguage.ESM.mc*.

2.2 Message File

A message file is used to build a language library.

The general format of a message file is a *LanguageNames* entry followed by several Message definition lines as shown in Figure 3.

```

; /* ////////////////////////////////////////////////////////////////////
;
; CTIOS Internationalization Toolkit
; ... (additional comments removed)
;
; LanguageNames=(afrikaans=0x0436:AFK_SouthAfrica)
; LanguageNames=(albanian=0x041c:SQI_Albania)
; LanguageNames=(arabic=0x0401:ARA_Arabic)
; ... (additional LanguageNames removed)
;
; //////////////////////////////////////////////////////////////////// */
;
LanguageNames=(english=0x0409:ENU_UnitedStates)
; /*LanguageNames=(french=0x040c:FRA_France)*/
;
;
; /* -----
; | Agent Phone Definitions |
; ----- */
;
; /* These keywords group buttons on the phone */
MessageId=0x7024
SymbolicName= CTIOS_AGENTPHONE_LOGINGROUP
Language=English
Login
.

MessageId=0x7025
SymbolicName= CTIOS_AGENTPHONE_AGENTSTATEGROUP
Language=English
Agent State
.

```

Figure 3. Message file

2.3 Comments

Comments must begin with a semi-colon, **and** must use the standard C++ comment syntax: either the `/* ... */` multiline syntax or `//` syntax, refer to Figure 4.

```
; // this is valid
; /* this is also valid */
// this is NOT valid (no semi-colon)
; this is NOT valid (no // for alternative syntax)
```

Figure 4. Comments

2.4 LanguageNames

The message file must contain only one LanguageNames entry, for example:

```
LanguageNames=(english=0x0409:ENU_UnitedStates)
```

If you use the message file provided in the Toolkit, you will find several predefined LanguageNames entries listed in the form of comments. To select a language, remove the comment symbol where appropriate.

Key points:

The text in the LanguageNames line is critical and should not be changed under any circumstances.

The values and language names match the values reported by the Microsoft Windows operating system. For a complete list refer to “Language Identifiers and Locale” in the MSDN Library CD or online.

Changing any value will prevent the Toolkit from loading the correct message files.

The language name for the selected language is the first term in the line. The remainder of the statement contains the language binary code, the language designator code, and the country code. The language name is used in the message definitions that follow.

2.5 Message Definitions

Each message consists of a minimum of five (5) lines: *MessageId*, *SymbolicName*, *Language*, language-specific translation, end-of-message line (consisting of a period).

```
;/* These keywords group buttons on the phone */  
  
MessageId=0x7024  
SymbolicName= CTIOS_AGENTPHONE_LOGINGROUP  
Language=English  
Login  
.
```

Figure 5. Message definition

Key points:

- For each message select a unique *MessageId*. This is what identifies the string text in the language library and is what you will use in the API to retrieve this string.
- For each message select a unique *SymbolicName*, this value will be used by the MC compiler to create an include file that is used by the resource compiler.
- The language entered in the *Language=* line must match the language name entered in the *LanguageNames=* line. Only the language name should be entered.
- The language-specific translation must follow the *Language=* line. The translation may consist of multiple lines.
- A line with a period defines the end of the translation for the entry.

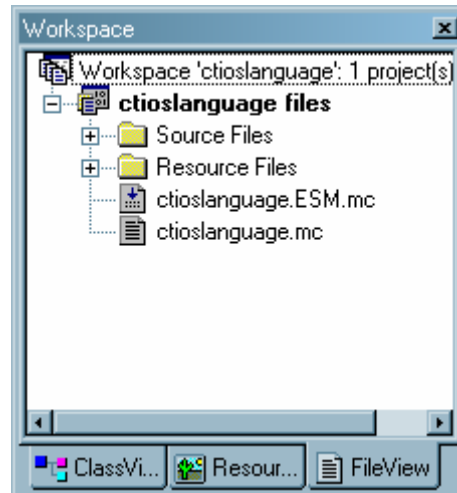
3 Building a Language Library

3.1 Using Microsoft Visual Studio 6.0

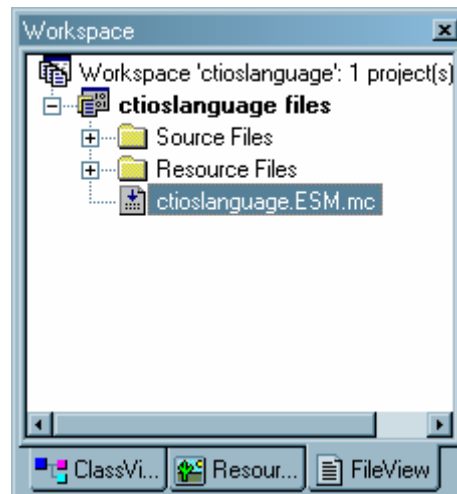
Copy the template project provided with the Toolkit and rename it to conform to the country or language for which you will be generating the library. For example, *CtiOsLanguage.ESM.dsp*.

1. Start Microsoft Visual C++ 6.0.
2. Select File + Open Workspace ... to open the Internationalization Toolkit Workspace.

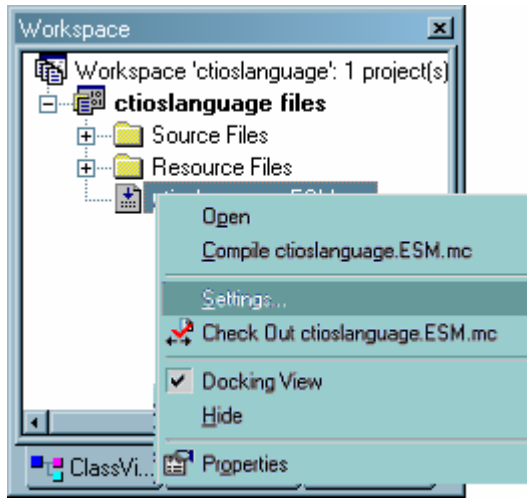
3. Double-click on the *CtiOsLanguage.mc* file, then select File Save As ... and save the message file with a language specific name, such as *CtiOsLanguage.ESM.mc*.
4. Add the new file to the project by selecting Project, Add to Project..., Files...:



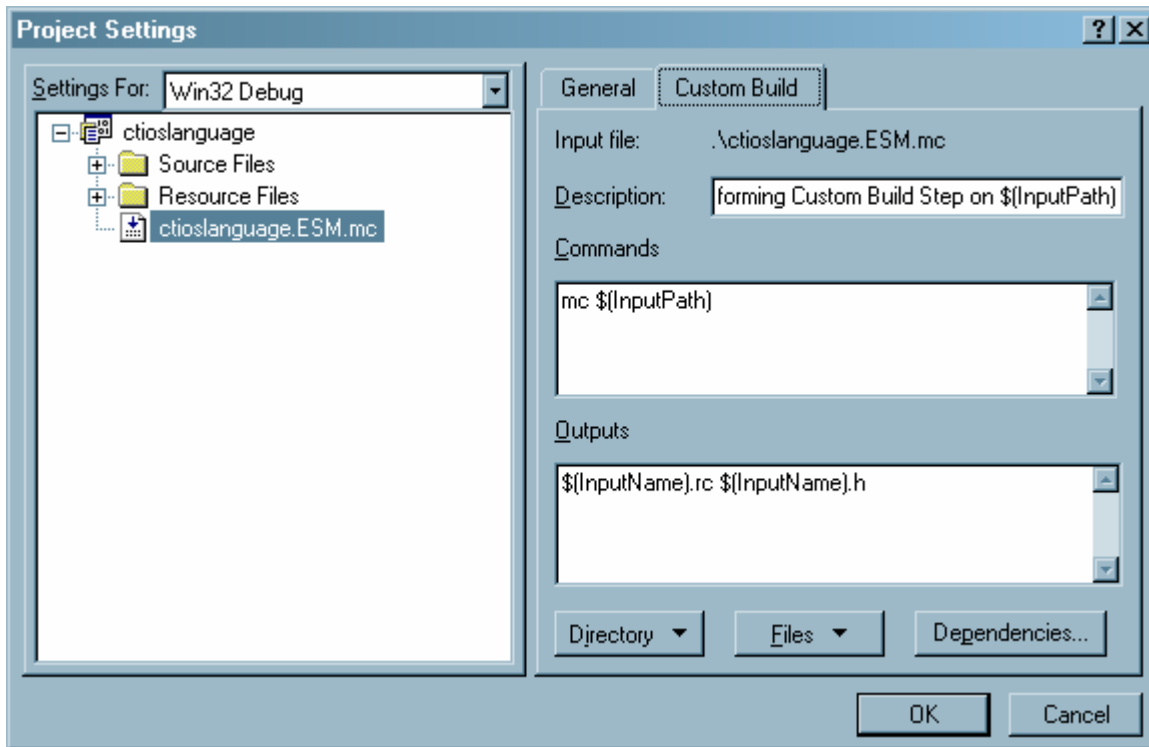
5. Remove *CtiOsLanguage.mc* from the project by deleting the entry from the project:



6. Select your new *CtiOsLanguage.ESM.mc* file. Do a right click over it with the mouse and from the pop up menu select Settings...:



Make sure that the Custom Build settings for this file are as shown in the following image:

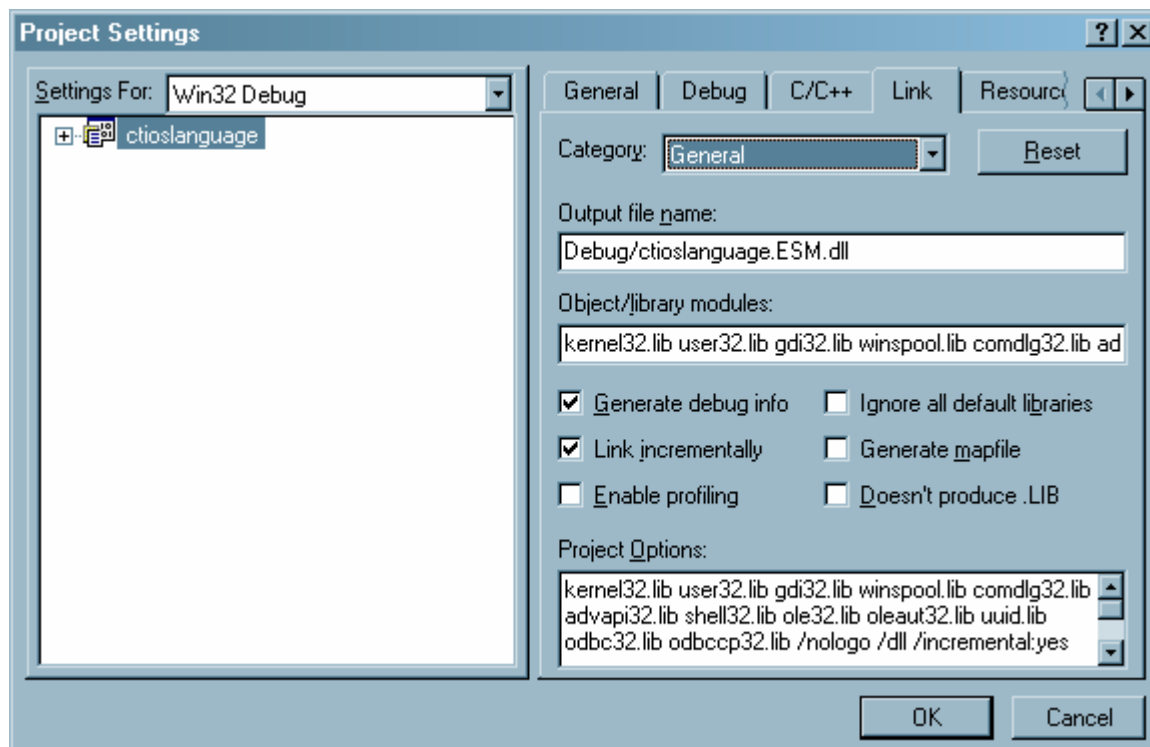


Once you have filled in the *Commands* and *Outputs* text boxes click OK.

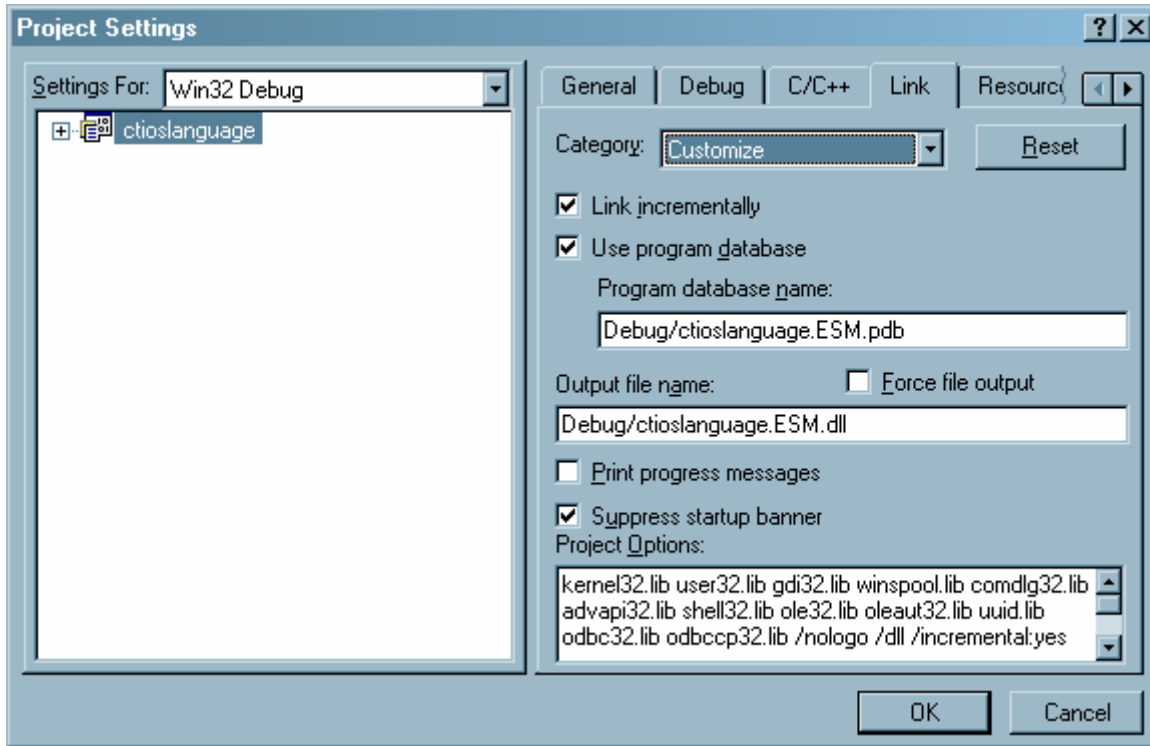
7. Now you need to configure the Linker and Resource compiler to produce your library using the appropriate settings. For this you need to select **Project + Settings ...** to bring up the project settings dialog. Note that all the settings you will make in the following steps need to be executed for both **Debug** and **Release** configurations. For the sake of convenience, from here on *Config* will be used to indicate both Debug and Release.

8. In the settings dialog select the tab folder marked “Link” and make sure that:

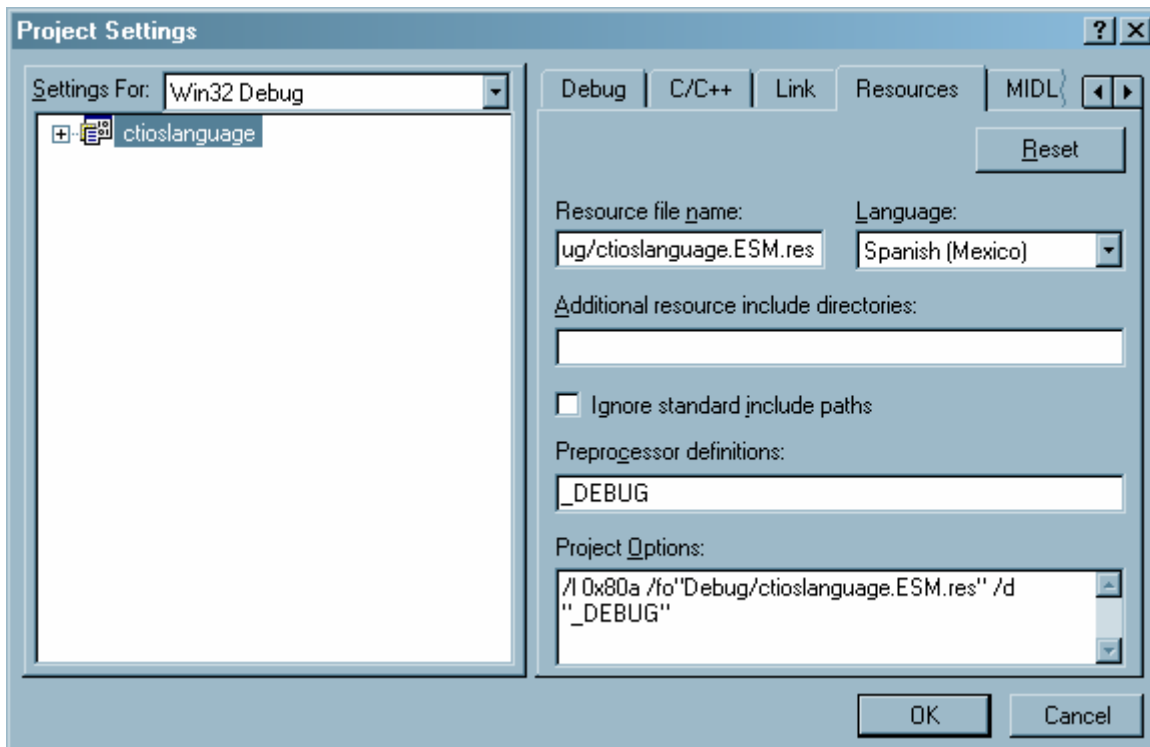
The output file name is *Config/ctioslanguage.EMS.dll*



The Program database name is *Config/ctioslanguage.EMS.pdb*



9. Select the tab folder marked “Resources”, and make sure that the Resource file name is *Config/ctioslanguage.EMS.res* and also make sure the Language selected corresponds.



10. Save the project, by selecting File, Save Workspace
11. Edit the message file by selecting the proper *LanguageNames=* and entering translations for each message
12. Compile and test

Using Visual Studio .NET 2003

Start Microsoft Visual Studio .NET 2003

Port the Microsoft Visual C++ 6.0 *.dsp project template to the new Microsoft Visual C++ 7.0 *.vcproj format, open the *.dsp project selecting Open\ Project from the File command menu in Microsoft Visual Studio .NET. For details refer to Microsoft's Visual Studio.NET help on Visual C++ Porting and Upgrading (http://msdn.microsoft.com/library/default.asp?url=/library/en-us/vccore/html/vc_porting_home.asp)

Follow steps 3 to 12 as described in the previous section

4 Localizing your Application

After building your language library, you need to modify your application in a way such that all the string text that will be shown to an end user is read from the language library.

To be able to use the CTI OS Internationalization API, an application must:

1. Create an instance of the CTI OS International Resource Loader COM object
2. Set the language that will be used
3. Retrieve the string text using the *MessageId* associated with the string to be displayed
4. Display the retrieved string

For more details see Chapter 6, Programmer's Guide.

5 Installing Localized Libraries

To install your libraries on the client workstations where your application is located, you need to make sure the following are done:

1. Copy your *CtiosLanguage.ZZZ.dll* and *IntlResourceLoader.dll* into the directory of your client application
2. In the registry add the information about the language and path to the library that you installed. For example:

```
HKCU\SOFTWARE\Cisco Systems\CTIOS\Shared\Languages\ESM
  Language Code = dword:0x080a
  DLL           = string:"c:\ Program Files\Cisco Systems\CTIOS Client\CTIOS Desktop Phones\
                  CtiOsLanguage.ESM.dll"
```

3. To select a language, enter the language code (for example, 0x0409 for ENU (United States English)):

```
HKCU\SOFTWARE\Cisco Systems\CTIOS\Shared\ Languages\Last Language
  Language Code = dword:0x080a
```

NOTE: If you omit *Language Code* and *Last Language*, the CTI OS Internationalization Resource Loader will use the system language locale.

6 Programmer's Guide

In order to make use of the language libraries the CTI OS internationalization Toolkit provides the International Resource Loader. This is a COM object that exports the *IGetLanguage* public interface to enable programmers to access translated string text from a Language library built with the Toolkit.

6.1 IGetLanguage Interface

The interface consists of the following properties:

Property	Access Type	Description
LanguageID	Read/Write	Contains the binary code corresponding to the current language library loaded. Setting a new code causes the International Resource Loader to unload the current language library and load the library specified with the new code.
LanguageText	Read-Only	Returns the name of the language that corresponds to the Language ID.

It publishes two methods:

Method	Description
TextString	Retrieves a translated string from the current loaded language library. If there is no such string, this method returns a null string.
TextStringDefault	Retrieves a translated string from the current loaded language library. If there is no translation available, this method returns a default string passed in the parameter list.

TextString

Retrieves a translated string from the current loaded language library. If there is no such string, this method returns a null string.

Syntax

VB 6.0: TextString (ResourceID As Long) As String

COM: HRESULT TextString (int nResourceID , BSTR * bsrStringTxt)

Parameter	Description
ResourceID	Numeric ID that corresponds to the translated string text in the current language library

TextStringDefault

Retrieves a translated string from the current loaded language library. If there is no translation available, this method returns a default string passed in the parameter list

Syntax

VB 6.0: TextString (ResourceID As Long, bstrDefaultTxt As String) As

String

COM: HRESULT TextString (int nResourceID , BSTR bstrDefaultTxt,
 BSTR * bsrStringTxt)

Parameter	Description
ResourceID	Numeric ID that corresponds to the translated string text in the current language library
bstrDefaultTxt	Text that will be used as default if no translation is found for the string specified by Resource ID

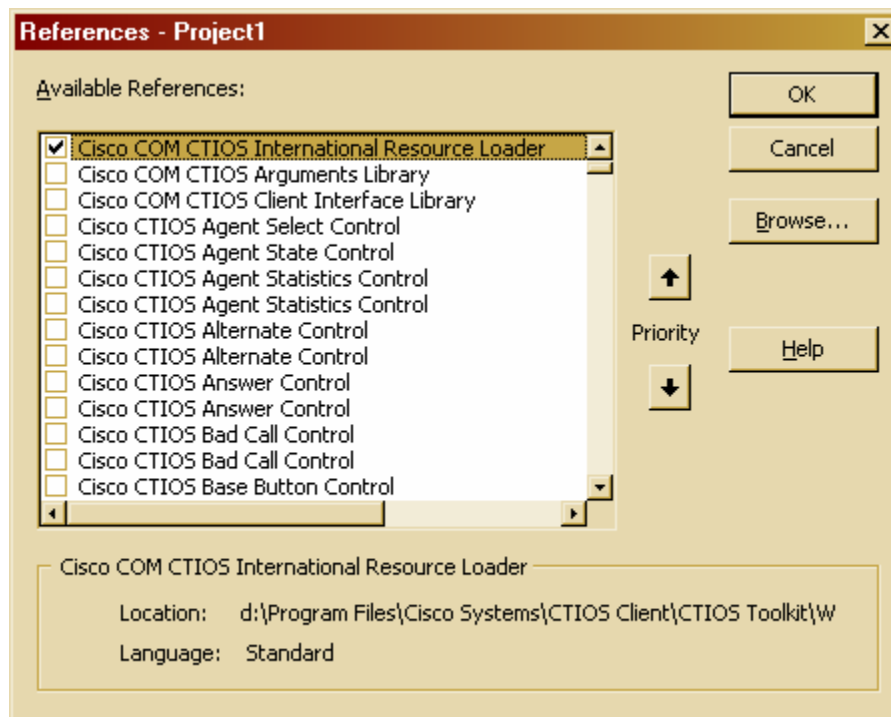
6.2 Using the International Resource Loader in an Application

Using the International Resource Loader API is straightforward. This section shows how to use the object in VB 6.0, and in C++ with COM written using ATL.

For these examples it is assumed that two language libraries exist and were successfully installed. One library is for English United States (ENU,code=0x409) and the other language library for Spanish Mexican (ESM,code 0x80a). For installation details, see Chapter 5.

6.2.1 Localizing a VB 6.0 Application

1. In your VB 6.0 Project, add a reference to the “*Cisco COM CTIOS Inernational Resource Loader*”:



2. Create an instance of a CTI OS Internationalization Resource Loader:

```
'CTI OS Internationalization Resource Loader
Dim m_Intl As new INTLRESOURCELOADERLib.GetLanguage

'Resource Ids for the text strings in Language Library
Const CTIOS_AGENTPHONE_APPNAME As Long = &H702A
Const CTIOS_AGENTPHONE_PHONELOADING As Long = &H702B
```

3. Set the language code for the language library to load:

```
Private Sub Form_Load()  
  
'Sets the code for Mexican Spanish and Loads the Library  
m_Intl.LanguageID = &H80A
```

4. Retrieve translated text strings and display them:

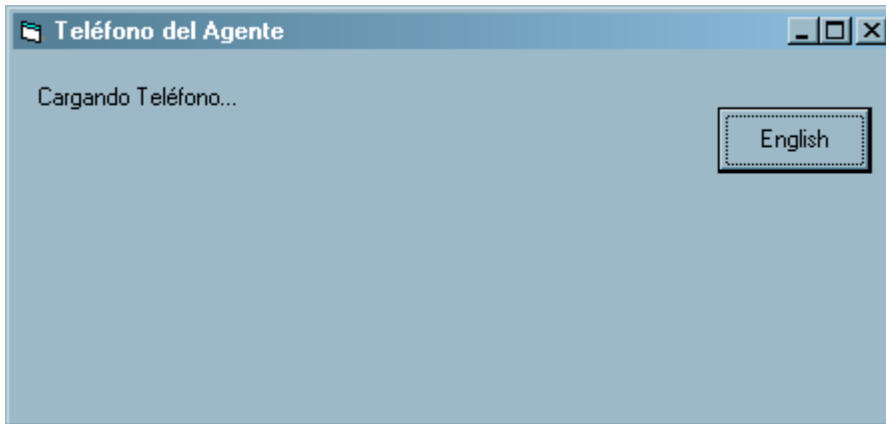
```
Private Sub Form_Load()  
  
Dim strTextStr As String  
  
'Sets the title of the form  
strTextStr = m_Intl.TextStringDefault(CTIOS_AGENTPHONE_APPNAME, _  
                                     "CISCO CTI OS Agent Phone")  
  
Me.Caption = strTextStr  
  
'Sets the title of the form  
strTextStr = m_Intl.TextStringDefault(CTIOS_AGENTPHONE_PHONELOADING, _  
                                     "Phone is Loading...")  
  
lblMessage = strTextStr  
  
End Sub
```

5. Changing language:

```
Private Sub btnEnglish_Click()  
  
Dim strTextStr As String  
  
'Sets the code for English USA and Loads the Library  
m_Intl.LanguageID = &H409  
  
'Sets the title of the form  
strTextStr = m_Intl.TextString(CTIOS_AGENTPHONE_APPNAME)  
  
Me.Caption = strTextStr  
  
'Sets the title of the form  
strTextStr = m_Intl.TextString(CTIOS_AGENTPHONE_PHONELOADING)  
  
lblMessage = strTextStr
```

6. Application running:

Program at startup appears in Mexican Spanish:



After clicking the "English" button:



6.2.2 Localizing a Visual Basic.NET Application

Although Cisco recommends the use of .NET CIL for creating application targeting the .NET Framework and using the .NET localization model. An application written in Visual Basic 6.0 can be migrated to Visual Basic .NET (VB.NET) and still continue to use CTIOS Internationalization Toolkit.

In order for a VB.NET application to be able to use CTIOS Internationalization Toolkit it is necessary to configure the Cisco CTI OS RCWs as described in the Cisco CTIOS Developer Guide in Chapter XY and to add a reference to the CTIOS Internationalization Toolkit RCW in the VB.NET Project references as follows:

1. From Visual Studio's "Project" menu make sure to select the "Add Reference..." command
2. From the "Add Reference" dialog box select the ".NET" tab.

Warning: *Never select the COM tab from the "Add Reference" dialog box and never select the CTIOS Internationalization Toolkit COM component. Doing this will cause Microsoft Visual Studio .NET 2003 to automatically generate a set of private RCW that is not optimized a nor approved by Cisco and your application will probably have an unexpected behavior that could lead to the application to fail*

3. From the list select the CTIOS Internationalization Toolkit RCW. The name of the RCW related to CTIOS Internationalization Toolkit is prefixed with "Cisco." Such that the RCW for CTIOS Internationalization Toolkit is : Cisco.INTLRESOURCELOADERLib.dll

6.2.3 Localizing a C++ and COM Application

1. In your C++ project import the “Cisco CTI OS IntlResourceLoader 1.0” type library:

```
// IntResKitSample.h : Declaration of the CIntResKitSample

#import "D:\CTIOSDEV\Com\IntlResourceLoader.dll"
using namespace INTLRESOURCELOADERLib;

const long CTIOS_AGENTPHONE_APPNAME = 0x702A;
const long CTIOS_AGENTPHONE_PHONELOADING = 0x702B;
```

2. Create an instance of a CTI OS Internationalization Resource Loader:

```
////////////////////////////////////
////////
// CIntResKitSample
class CIntResKitSample :
    public CxDialogImpl<CIntResKitSample>
{
private:
    IGetLanguagePtr m_IntKit;

public:
    CIntResKitSample()
    {
        HRESULT hr =
m_IntKit.CreateInstance(OLESTR("IntlResourceLoader.GetLanguage"));
    }

    BEGIN_MSG_MAP(CIntResKitSample)
        MESSAGE_HANDLER(WM_INITDIALOG, OnInitDialog)
        COMMAND_ID_HANDLER(IDOK, OnEnglishClicked)
        COMMAND_ID_HANDLER(IDCANCEL, OnCancel)
    END_MSG_MAP()
}
```

3. Set the language code for the language library to load :

```
LRESULT CIntResKitSample::OnInitDialog(UINT uMsg, WPARAM wParam, LPARAM
lParam, BOOL& bHandled){

    _bstr_t bstrText = OLESTR("");

    //Sets the code for Mexican Spanish and Loads the Library

m_IntKit->PutLanguageID(0x80a);
```

4. Retrieve translated text strings and display them:

```
LRESULT CIntResKitSample::OnInitDialog(UINT uMsg, WPARAM wParam, LPARAM
lParam, BOOL& bHandled){

bstrText=m_IntKit->GetTextStringDefault(CTIOS_AGENTPHONE_APPNAME,
OLESTR("CTI OS Agent Softphone"));
this->SetWindowText(bstrText);

bstrText=m_IntKit->GetTextStringDefault(CTIOS_AGENTPHONE_PHONELOADING,
OLESTR("Phone Loading..."));

::SetWindowText(this->GetDlgItem(IDC_MESSAGE),bstrText);

} //end OnInitDialog
```

5. Changing language:

```
LRESULT CIntResKitSample::OnEnglishClicked(WORD wNotifyCode, WORD wID,
HWND hWndCtl, BOOL& bHandled){

m_IntKit->PutLanguageID(0x409);

bstrText=m_IntKit->GetTextStringDefault(CTIOS_AGENTPHONE_APPNAME,
OLESTR("CTI OS Agent Softphone"));
this->SetWindowText(bstrText);

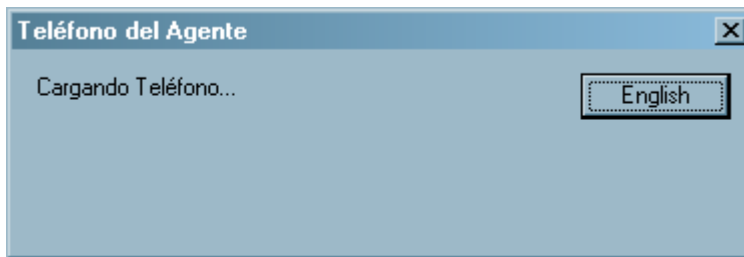
bstrText=m_IntKit->GetTextStringDefault(CTIOS_AGENTPHONE_PHONELOADING,
OLESTR("Phone Loading..."));

::SetWindowText(this->GetDlgItem(IDC_MESSAGE),bstrText);

} //end OnEnglishClicked
```

6. Application running:

Program at startup appears in Mexican Spanish:



After clicking the "English" button:



7 Localizing CTI OS Agent and Supervisor Softphones

This section describes the procedure to localize the CTI OS Agent and Supervisor Softphones. The process involves the installation of new language libraries on both agent and supervisor desktop computers, and the reconfiguration of some settings under the CTI OS Enterprise Desktop Settings registry key at each CTI OS Server host machine.

7.1 Level of Localization

The CTI OS Agent and Supervisor Softphones are out of the box solutions. They can easily be localized by using the prebuilt language libraries provided with the Kit or by generating a new language library on the workstation where the application runs. The level of localization that can be achieved with the current implementation of the CTI OS Softphones and the CTI OS Internationalization kit is as follows:

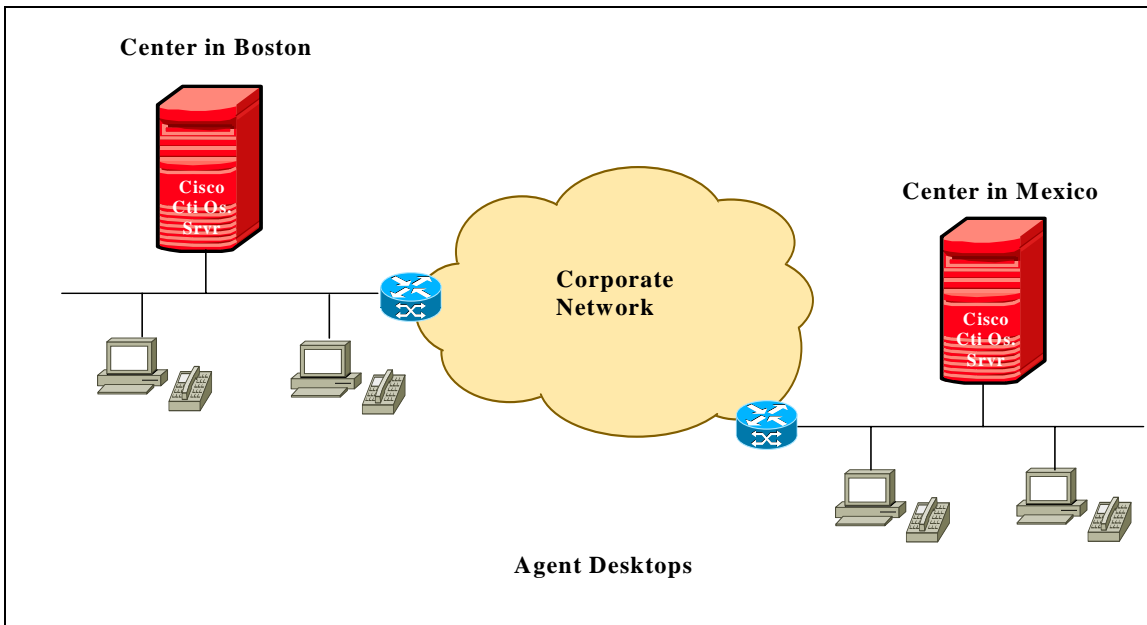
1. *Static Language Selection.* This means a new language from any CTI OS Softphone cannot be selected at run time. The language selection must be specified before the Softphone is launched. See Chapter 5, Installing Localized Libraries.
2. *Use of System Locale.* As explained in Chapter 5, the CTI OS International Resource Loader will determine from the system what language code to use. If a language library exists for this language, the library will be used. Otherwise, English USA will be the default language.
3. *Column Header Localization.* With this release, localization of column headers for the Call Appearance, Agent and Skill Groups Statistics, and Blended Agent Call Variables is limited to CTI OS System level. This means that if a CTI OS Softphone in English connects to a CTI OS Server for which its Enterprise Desktop Settings have a Spanish translation for the column headers, the Softphone will display the columns headers in Spanish but the rest of the Softphone in English.
4. *Text Messages from ICM use ICM locale.* Some of the text messages displayed by the CTI OS Softphones are generated by Cisco ICM software. These messages will be shown in the language that ICM software used to generate them.
5. *Text Messages from CTI OS Server are in English.* In this release the CTI OS Server does not support localization.

7.2 Planning Localization

Before installing any new language libraries or modifying the CTI OS Enterprise Desktop Settings, define for each site the level of localization that is required, and identify the CTI OS components that are involved in each setup.

For example, suppose that XYZ, Inc. has two call centers, one in Boston and the other in Mexico City. At each site, CTI OS (Server and Softphones) is installed. Management has decided that each center must use the Softphones in the native language at each site, and directs MIS to perform the localization for both sites.

Assume that XYZ’s deployment of CTI OS is as in the diagram below.



MIS will have to plan for the following tasks only for the call center in Mexico City—since in Boston, English USA will be the default.

No.	Task	Activities
1	Create a new build project for the new Language Library	a) Make a copy of the project template provided with the CTI OS Internationalization Toolkit and rename all files to reflect the new language,. e.g. CtiOsLanguage.dsp → CtiOsLanguage.ESM.dsp CtiOsLanguage.mc → CtiOsLanguage.ESM.mc b) Follow the procedure in Chapter 3 to set up the project to build the appropriate language library
2	Translate “*.mc” File.	Edit the “*.mc” file, translate all the strings in this file and make all entries Language= equal to the name of the language, see

		Section 2.4. For example: CtiOsLanguage.ESM.mc
3	Build Language Library	For example: CtiOsLanguage.ESM.dll
4	Test Language Library	In your development environment, install your new language library as in Chapter 5, and run the CTI OS Agent and Supervisor Softphones to test the translation
5	Translate Column Headers	Using the column definition file templates, create a translated version of the header names for: 1) Call Appearance Grid 2) Agent & Skill Groups Statistics 3) Blended Agent Call Variables (<i>only if Blended Agent functionality is available through Cisco ICM software</i>) For more details about these templates, refer to the <i>Cisco ICM Software CTI OS System Manager's Guide</i>
6	Load Translated Column Headers into CTI OS Server in Development	Using RegEdit.exe, import the translated column header definition files
7	System Test	Using the CTI OS Agent and Supervisor Softphone, log into the system and verify your localization is successful
8	Deploy Localization to Production	In Mexico City: a) Import the translated column headers into the CTI OS Server registry using RegEdit.exe b) On each agent and supervisor workstation install and configure the new language library for Spanish Mexican

7.3 Translating *.mc File

The *CtiOsLanguage.mc* template message file contains the MessageIds and SymbolicNames as the CTI OS Agent and Supervisor Softphones use them. When translating the message text, make sure, in your copy, to only modify *LanguageNames=* to select the language code, the message text and *Language=*.

Following is an example of how the *CtiOsLanguage.ESM.mc* will look:

```

; /* //////////////////////////////////////
;
; CTIOS Internationalization Toolkit
; ... (additional comments removed)
;
; LanguageNames=(afrikaans=0x0436:AFK_SouthAfrica)
; LanguageNames=(albanian=0x041c:SQL_Albania)
; LanguageNames=(arabic=0x0401:ARA_Arabic)
; ... (additional LanguageNames removed)
;
; ////////////////////////////////////// */
;
LanguageNames=(spanish_mexican=0x080a:ESM_Mexico)
;
; /* Agent Phone Application Name */
;
MessageId=0x702A
SymbolicName= CTIOS_AGENTPHONE_APPNAME
Language=spanish_mexican
Teléfono del Agente
.
;
; /* Agent Phone Progress Messages */
;
MessageId=0x702B
SymbolicName= CTIOS_AGENTPHONE_PHONELOADING
Language=spanish_mexican
Cargando Teléfono...
.
;
MessageId=0x702C
SymbolicName= CTIOS_AGENTPHONE_DOWNLOADSETTINGS
Language=spanish_mexican
Bajando Opciones...
.
;
MessageId=0x702D
SymbolicName= CTIOS_AGENTPHONE_DOWNLOADSETTINGSCOMPLETE
Language=spanish_mexican
Terminó de Bajar Opciones...
.

```

7.4 Translating Column Headers

To translate the column headers for the Call Appearance, Agent & Skill Groups Statistics, and the Blended Agent Call Variables, make copies of the following files, and make sure you rename them such that the new name indicates the language used for translation.

callappearance.default.reg.txt	→	callappearance.ESM.reg.txt
agentstatistics.default.reg.txt	→	agentstatistics.ESM.reg.txt
skillgroupstatistics.default.reg.txt	→	skillgroupstatistics.ESM.reg.txt
blendedagent_addecc.reg.txt	→	blendedagent_addecc.ESM.txt

The localization of the column headers consists in editing each of the files listed above. Modify the *Header* attribute for each column such that the value is the text in the desired language. For more details on configuring column headers, refer to the *Cisco ICM Software CTI OS System Manager's Guide*.

7.4.1 Column Headers for Call Appearance

```
REGEDIT4
[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\1]
"Type"="CallID"
"Header"="Cve. Llamada"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\2]
"Type"="CallStatus"
"Header"="Estado"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\3]
"Type"="DNIS"
"Header"="DNIS"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\4]
"Type"="ANI"
"Header"="ANI"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\5]
"Type"="CED"
"Header"="CED"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CtiOs\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\6]
"Type"="DialedNumber"
"Header"="Número Llamado"
```


7.4.2 Column Headers for Agent Statistics

```
REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number]
"DisableStatsMinimization"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\1]
"Type"="CallsHandledToday"
"Header"="Llamadas Atendidas Hoy"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\2]
"Type"="TimeLoggedInToday"
"Header"="Tiempo en el Sistema"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\3]
"Type"="TimeTalkingToday"
"Header"="Tiempo Hablando"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\4]
"Type"="TimeHoldingToday"
"Header"="Tiempo en Espera"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\5]
"Type"="TimeReadyToday"
"Header"="Tiempo Disponibe"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\AgentStatistics\Columns\Number\6]
"Type"="TimeNotReadyToday"
"Header"="Tiempo No Disponible"
```

7.4.3 Column Headers for Skill Group Statistics

```
REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number]
"DisableStatsMinimization"=dword:00000000

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\1]
"Type"="SkillGroupNumber"
"Header"="Núm. Grupo"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\2]
"Type"="CallsQNow"
"Header"="Llamdas en Cola"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\3]
"Type"="CallsQTimeNow"
"Header"="Tiempo en Cola"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\4]
"Type"="LongestCallQNow"
"Header"="Cola mas Larga"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\5]
"Type"="AgentsLoggedOn"
"Header"="Agentes Firmados"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\SkillGroupStatistics\Columns\Number\6]
"Type"="AgentsAvail"
"Header"="Agentes Disp."
```

7.4.4 Column Headers for Blended Agent

```
REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns]

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number]

; =====
; Previous columns definition were deleted
; =====

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\7]
"Type"="ECC"
"Name"="BAResponse"
"Header"="Resp. Campaña"
"Maxchars"="24"
"ReadOnly"="false"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\8]
"Type"="ECC"
"Name"="BAStatus"
"Header"="Edo. Campaña"
"Maxchars"="3"
"ReadOnly"="true"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\10]
"Type"="ECC"
"Name"="BAAccountNumber"
"Header"="Campaña Num. Cuenta"
"Maxchars"="33"
"ReadOnly"="true"

[HKEY_LOCAL_MACHINE\SOFTWARE\Cisco Systems\CTIOS\EnterpriseDesktopSettings\All
Desktops\Grid\CallAppearance\Columns\Number\11]
"Type"="ECC"
"Name"="BATimeZone"
"Header"="Campaña Zone"
"Maxchars"="7"
```